

New era. New plan.

FISCAL REFORMS FOR AN INCLUSIVE, CIRCULAR ECONOMY

Case study the Netherlands

The Ex'tax Project

in cooperation with

Deloitte, EY, KPMG Meijburg and PwC



New era. New plan. Fiscal reforms for an inclusive, circular economy.
Case study the Netherlands
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“We cannot solve our problems with the same thinking that created them.”

- Albert Einstein

Preface

By H.R.H. Prince Carlos de Bourbon de Parme

“Taxes are what we pay for civilized society”, Oliver Wendell Holmes, Jr. said in 1904. Throughout history, the definition of ‘civilized’ has changed - and tax systems have evolved accordingly.

In ancient Egypt (3000 BC) ‘labour’ was a synonym for ‘tax’. Peasants provided labour to the state as a form of tax. Since then, taxation has evolved from crude systems where anything from crops, windows, doors and even beards could be taxed, to sophisticated -and complicated- systems. Taxes have always evolved, and we are about to enter a new era again.

Over the last few decades, it has become clear that we as humans leave a significant footprint on earth. In fact, we live as though there were more than one earth at our disposal. Global trends, challenges and yes, multiple *crises*, such as resource scarcity, climate change and water shortages signal us to reconsider the current economic and social dynamics.

The idea of a ‘circular economy’ has gained more and more traction as a new systematic solution that could steer our production and consumption patterns in the right direction. Every reputable report on the topic concludes that one of the preconditions for a circular economy is a fundamental shift in taxes from labour to the use of natural resources. This would mean a major redesign of our current tax systems. Challenging and complicated? Of course. Impossible? Of course not. History has taught us that much.

For the sake of civilized society, it’s time we truly figure out how to enable economic growth, while keeping intact the very grounds upon which all prosperity is based; clean air, fertile soil, metals and minerals and all natural resources that enable us to flourish as human beings.

The Ex’tax Project, together with Deloitte, EY, KPMG Meijburg and PwC picked up the gauntlet and went to work, trying to identify the fiscal possibilities of a fundamental update of our tax system. Their report *New era. New plan. Fiscal reforms for an inclusive, circular economy. Case study the Netherlands* is a valuable and thorough study. It will help decision makers to continue to explore the adaptations our tax system needs to facilitate a circular economy.

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Executive Summary

Introduction

Global socio-economic and environmental megatrends are causing major challenges. Five of these megatrends are mass unemployment and fresh water supply risks, materials supply risks, air pollution and climate change. The European Union is particularly vulnerable to these global trends. Together, the 28 nations of the Union (EU28) form the largest economy in the world. Europe is also the continent with the largest net imports of resources. Awareness has been growing that a transition is needed towards an inclusive and 'circular' economy, providing meaningful employment while making clever use of resources.

Unfortunately, EU tax systems play a key role in inhibiting such economy. Many labour-intensive business models are needed in a circular economy, including repair, urban mining, innovation and redesign of products and services. But high labour taxes and social contributions currently give incentives to businesses to hire as few people as possible, or to outsource to low-income countries. High taxes on labour also cause technological innovation to focus on making people redundant in production processes. Environmental taxes, on the other hand, are considered more growth-friendly and less distortive than taxes on labour. In the EU, however, environmental taxes are at their lowest level in more than a decade.

The European Commission, the OECD, the IMF, the Eurogroup and the ILO have called for a shift in taxation from labour to natural resource use and consumption. This would create incentives to save natural resources and to bring materials in a closed loop. Lower taxes on labour, at the same time, would make it possible to tap into the abundance of talents and capacities of people. Although a tax shift is budget neutral for governments, it fundamentally changes the margins within which business, consumers and governments operate.

The research in this report was conducted in a unique partnership between The Ex'tax Project and tax experts from Deloitte, EY, KPMG Meijburg and PwC. The working group set off to explore the role of taxes in the transition to a circular economy. Jointly, the group has identified viable options for a fundamental shift in taxation from labour to natural resource use and consumption. The first case study, provided in this report, looks at a (mid-to long-term) tax shift worth more than € 30 billion, in the Netherlands alone. If internationally coordinated, such tax shift could potentially create hundreds of thousands of jobs.

The findings in this report are the result of extensive studies and deliberations, but the effects of the proposals have not yet been calculated. Therefore, they cannot be viewed as a blueprint. The study is meant to contribute to the challenge of adapting our tax systems to 21st century needs, as targeted by Dutch and EU policies.

Global challenges: an overview

Mass unemployment

The economic crisis has severely hit the European Union and unemployment is rampant. Between 2008 and 2013, ten million Europeans lost their jobs. In August 2014, 24.6 million men and women were unemployed, five million of which are young persons.

Mass unemployment is a social drama as well as an economic problem. Unemployment causes poverty and health problems. It undermines human dignity. It denies people the opportunity to participate in society and to develop their full potential. From an economic perspective, unemployment means that human capital is underutilized. The European Commission's *Europe 2020 Strategy* sets a target of creating more than 17 million new jobs by 2020.

It is important to note that unemployment statistics do not tell the full story of the excess capacity of human potential. Many groups are not represented in unemployment statistics. For example, those who have given up searching for a job; 9.3 million Europeans are available to work, but not seeking. Also, 9.9 million part-time workers are *underemployed*, meaning they wished to work more hours and were available to do so. The waste of talents and capacities is much higher than unemployment statistics suggest.

Ageing is another great social and economic challenge of the 21st century. By 2025, more than twenty percent of Europeans will be 65 or over. An increasing 'grey pressure' means that fewer workers have to support the health and financial needs of a growing group of elderly. This drives up the costs of employment, which in turn pushes businesses to outsource outside of Europe. In our ageing societies, it is key to create jobs suitable for the elderly to enable them to stay active in the labour market and to supplement their pensions. More and more elderly will find they can't afford *not* to work.

On a global scale, more than 1.2 billion young people will enter the global labour market in the next ten years, with only 300 million jobs awaiting them.

Water supply risks

Fresh water scarcity and the associated food supply risks are among the main problems of the 21st century. Already, 1.2 billion people in more than forty countries live in areas of water scarcity, and this number is growing. It is expected that, by 2025, two thirds of the world population will live under water stressed conditions.

Although public perception is that Europe generally has adequate water resources, water scarcity, including the depletion of water resources through pollution, is an increasingly frequent phenomenon in Europe. The cost of droughts in Europe over the past thirty years were € 100 billion. Damages from *excesses* of water, through flooding, between 2002 and 2013 across the EU28, have been another € 150 billion. The European Commission expects further deterioration of the water situation in Europe if extreme weather conditions continue to increase in frequency due to global warming.

Materials supply risks

The current European import dependency on non-renewables is unsustainable, as in mining, the 'low hanging fruit has been picked'. Ore grades are declining and mining is taking place under increasingly difficult circumstances, requiring more and more energy per ton of ore. In general, physical scarcity of materials is compounded by geopolitical restraints. Fossil fuel dependency means energy prices are determined by the global price of fossil fuels, over which the EU has very little control. In 2011, the EU's net import bill for fossil fuels amounted to €

388 billion, more than 3 percent of EU GDP. Import routes are limited in number and exposed to an increased geopolitical risk, with impacts on both availability and price of fossil fuels.

Air pollution

In 2012, seven million people died as a result of air pollution exposure; one in eight of total global deaths. Air pollution is the number one environmental cause of death in the EU, with over 400,000 premature deaths per year. The external costs of air pollution in the EU are € 330-940 billion per annum.

Climate change

Climate change is one of the biggest challenges facing mankind. The latest report from the IPCC warns that a 'business as usual scenario' in carbon emissions means that these emissions will likely cause global average temperatures to rise beyond 2°C. This may sound insignificant, but a one- to two-degree drop in temperature was all it took to plunge the Earth into the Little Ice Age, 18,000 years ago. Two degrees of global warming means catastrophic events will be inevitable, including Arctic melting, sea level rise, disruptive storms, droughts and flooding.

The European Commission estimates that the overall EU damages of climate change are € 120 billion (1.2 percent of GDP) in a 2 degrees scenario, due to, amongst others, falling crop yields, flood damages, and increased mortality. In 2005, Europe introduced the European Emission Trading Scheme (EU ETS) to accelerate the reduction of CO₂ production. However, the price of emitting carbon under the ETS is too low to have a significant impact.

Impact of these challenges on European economies and businesses

Resource scarcity and the accelerating rate of climate change act as catalysts for global political conflict. In the words of the European Parliament, resource scarcity will possibly culminate in 'a scramble for resources'. Companies in all sectors are facing a world where raw materials may be in short supply and subject to price volatility. Reports by Deloitte, EY, KPMG and PwC underline the risks of the above-mentioned megatrends on businesses operating in the global economy.

EU policy to develop an inclusive circular economy

The *Europe 2020* strategy and its flagship initiative *Roadmap to a Resource Efficient Europe* aim to transform EU economies towards decoupling economic growth from resource use. This means Europe needs to develop towards an inclusive and 'circular' economy that provides employment to most and depends less on imports. Such economy requires smart resource use and labour-intensive business models, including repair, remanufacturing, refurbishment, spare parts harvesting, and redesign of products. Unfortunately, the prevailing tax systems in European countries play a fundamental role in inhibiting the emergence of an inclusive, circular economy.

The tax system in relation to these challenges

The basic architecture of our current system

In 2012, Europe's 500 million inhabitants paid € 5.1 trillion in taxes; 51 percent of which (weighted average) was derived from labour taxes and social contributions. Consumption taxes provided 28 percent and the remaining 21 percent was based on capital. Only 6.1 percent of tax revenues consisted of environmental taxes (mainly on energy and transportation). A

negligible 0.3 percent of total tax revenues were derived from pollution and natural resource use such as fish and water.

An increasing tax burden on labour

High labour taxes and social contributions provide incentives to businesses to hire as few people as possible, or to outsource to low-income countries. High labour taxes have also incentivized technological innovation to focus on making people redundant in production processes by substituting people with robots and computers.

The tax burden on labour has increased significantly since 1970, and is still growing. Between 2010 and 2013, the average labour tax wedge across the OECD increased by 0.8 percent, to 35.9 percent. This means that, on average, of every euro an employer pays in labour costs, only € 0.64 ends up in the pocket of the employee.

Low environmental taxes

Environmental taxes in general are considered more growth-friendly and less distortive than taxes on labour and income. Also, the administrative costs and transaction costs of green taxes are lower than other taxes (notably income taxes). Still, in the EU, environmental taxes are at their lowest level in more than a decade.

Environmentally Harmful Subsidies

Almost all nations apply direct and indirect subsidies (tax breaks and lower tariffs) for environmentally damaging activities. Such policies are now generally being referred to as *Environmentally Harmful Subsidies* (EHS). OECD countries subsidize the use of fossil fuels to an amount of € 40-66 billion each year, which is higher than the total subsidies for renewable energy. The IEA's latest estimates indicate that fossil-fuel consumption subsidies worldwide amounted to \$ 544 billion (€ 392 billion) in 2012. The IMF estimates global energy subsidies at \$ 1.9 trillion (€ 1.5 trillion) per year, taking into account the negative externalities from energy consumption.

EHS are still on the rise, even though international institutions such as the OECD, the European Commission, the World Bank and the IMF are pleading for lowering these subsidies as they hinder businesses from investing in green technologies. EHS encourage excessive energy consumption and accelerate the depletion of natural resources.

The full costs of pollution, such as ecological damage, health costs and economic impacts are not included in the price of pollution. These costs are borne by society or individuals, rather than the polluter.

VAT

Value Added Tax (VAT) plays a special role as a factor in consumption patterns. Legally, VAT is a consumption tax. In practice, however, consumers pay VAT both on products (such as cans of paint) and services (the efforts of a painter). Since 2009, VAT standard rates have been on a rising trend in most Member States. The *implicit tax rate on consumption* as a measure of the tax burden on consumption, however, has not evolved significantly since 1995. The main legislative change that occurred is the introduction of reduced VAT rates for a limited number of labour-intensive services in an effort to foster employment in those sectors.

In general, modern European tax systems apply high rates to employment while leaving the use of natural resources relatively tax-free or even subsidized. The environmental and social megatrends underline the need for European Member States to move to an inclusive,

circular economy. As taxes play such an important role in steering the economy, it is common sense to start here.

Ex'tax: shifting taxation from labour to natural resource use

Prosperity that lasts

The Ex'tax Project is a think tank on the tax system of the 21st century, inspired by the vision of (the late) Eckart Wintzen. Since the early 1990s, Wintzen promoted the shift of taxation from labour to natural resource use. As an entrepreneur, Wintzen was fully aware of the impact of taxation on business models. He coined the term *Value Extracted Tax* (in short: Ex'tax) as a means to sustainable growth, based on the belief that humanity can flourish by saving natural resources and tapping into the abundance of human talents and capacities instead.

Shifting incentives

Rising taxes on natural resource use (such as water, harmful emissions, metals and minerals) cause both challenges and opportunities for businesses. On the one hand, it will be challenging to reduce water consumption and carbon footprints. On the other hand, when costs of natural resources go up, the business case of resource efficient technologies improves. This boosts activities that 'close the loop' or apply renewable materials.

When taxes on labour go down, human resources become more affordable. This will bring major business opportunities. Business models can then shift to labour-intensive activities, including urban mining, repair and maintenance services, remanufacturing of products and R&D. A lower tax burden on labour also benefits sectors such as healthcare, education and scientific research.



Worldwide support

Economists have referred to such tax reform as a 'no-brainer'. Over the last twenty years, the European Commission has repeated the message that a shift of taxes from wages to natural resources and consumption has positive effects on GDP and employment. Amongst others, the concept appears in the *Annual Growth Survey*, the *Roadmap to a Resource Efficient Europe*, the *Europe 2020* strategy and the 2013 *Country Specific Recommendations*. International institutions – including the OECD, ILO, IMF and WBCSD - also support the principle.

Internalisation of external costs

Governments worldwide have been struggling with internalisation of external costs, as they are hesitant to change legislation that affects businesses. Over the last few years, however, taxation based on the 'polluter pays' principle has been gaining more and more support. Carbon emissions are attracting most attention, with major international institutions such as the OECD, the IMF, the UN, the World Bank and the European Commission arguing in favour of putting a price on carbon. New initiatives are emerging all over the globe; about forty countries and over twenty sub-national jurisdictions are putting a price on carbon. The landscape of green taxes in the world is rapidly changing due to the trend towards internalisation of external costs.

Businesses are preparing for green taxes

Sustainability has become an important topic in the boardroom. Businesses are integrating environmental issues more and more in their annual reporting. In practice, however, CFOs are struggling to make the business case for sustainability as sustainable solutions can hardly compete with options based on 'tax-free' primary resources and subsidized fossil fuels. High labour costs are also holding back labour-intensive R&D efforts and activities such as repair and recycling, needed for a circular economy.

In September 2014, the World Bank has issued a statement called '*We Support Putting a Price on Carbon*'. A thousand businesses and 73 countries signed this call to action. It also includes the signature of 340 institutional investors with more than \$ 24 trillion in assets, which shows the massive 'wave' of support for putting a price on carbon emissions.

Twenty-nine multinationals, including Shell, BP, ExxonMobil, General Electric and Microsoft are even taking unilateral action, in anticipation of effective carbon taxation in future. In their accounts, they apply a fictitious, internal carbon tax rate in order to improve long-term investment decision-making.

Lowering the tax burden on labour to solve unemployment

An increase in environmental taxes by applying the 'polluter pays' principle seems inevitable. But what are the *opportunities*, if the proceeds of such tax increases would be used to lower taxes on labour? There is a general consensus that a lower tax burden on labour creates employment opportunities. Not surprisingly, institutions such as the World Bank, the IMF and the European Commission have called for lower labour costs to solve unemployment.

Ongoing discussion and barriers

The 'double dividend' discussion

In the literature, especially dating from the 1990s, scholars have warned, based on economic modelling, not to be too optimistic about the 'double dividend' effect of both improving the environment and creating jobs at the same time. While taxes on labour income have the clearest and most direct impact on employment, almost all taxes can have some effect on employment, indirectly, by distorting economic decisions.

In the 1990s, six European countries took steps to shift the tax burden from labour to energy and transportation: Sweden, Denmark, the Netherlands, Finland, Slovenia and Germany. The UK followed in 2001. In total, these tax reforms shifted tax revenues for more than € 25 billion annually. The revenues were recycled towards lower taxes on labour. The impact of these tax shifts have been analysed and the associated reductions of carbon emissions have been documented. The tax shifts generally had a positive effect on economic activity and caused employment in some of the countries to increase by as much as 0.5 percent.

A recent study commissioned by the European Commission concludes that gains in employment are likely to be achieved where offsetting reductions in other taxes are made. A review in 2005 looked at a total of 186 model simulations from 61 separate studies. On average, all of the different groupings of studies predicted net job creation with significant reductions in CO₂ emissions.

Based on the literature and on practical experience so far, there is ample support for the assumption that a shift in taxation can have a positive impact on employment, economic growth and the environment. The degree to which a double dividend occurs depends on the

specifics of the environmental tax being considered, how the revenues will be spent, and the employment and economic dynamics within a country. Typically, revenues derived from the taxes are best used to offset social security taxes.

Barriers

While evidence is growing that a tax shift offers an effective response to the economic crisis, as well as the environmental crises, policy makers are still struggling to put the idea into practice. Five barriers to the implementation of a tax shift are:

1. *International coordination is essential to achieve a level playing field and to solve transnational problems.*
2. *There have been doubts about the stability of environmental taxes and faith in the stability of the prevailing labour taxes.*
3. *The benefits of lower taxes on labour have been insufficiently highlighted in the past.*
4. *An interdisciplinary approach is needed.*
5. *There is a lack of information on the impact of a tax shift from a business perspective.*

The Ex'tax Project Foundation attempts to contribute to addressing these barriers.

Updating the tax system is not a simple undertaking. One thing is clear, though, as major international institutions recognize: we have entered an era of rapid change and great social and environmental challenges, and the current tax system is not structured to cope with these challenges.

How The Ex'tax Project contributes to the transformation

The Ex'tax working group

Invited by The Ex'tax Project, in 2011, tax specialists of Deloitte, EY, KPMG Meijburg and PwC have joined a working group to research how Ex'tax could be implemented in the Netherlands and the rest of the European Union. The working group consists of tax specialists (in general, Tax Partners) of each of the four tax practices, with expertise in relevant areas such as Indirect Tax, Custom Duties, Sustainability, Tax Supply Chain Management, Energy and Natural Resource Tax as well as Human Resource Services and Corporate Income Tax.

The working group set out to explore a fundamental tax shift that moves incentives towards resource-efficiency and employment in a budget neutral way, while maintaining long-term competitiveness. The overall goal of the working group is to help develop a long-term vision on the tax system of the 21st century, in the Netherlands and Europe, and to explore specific policy measures to fundamentally shift taxation from labour to natural resource consumption, by providing:

1. *A Policy Toolkit to explore the options to implement Ex'tax principles;*
2. *A (mid- to long-term) scenario for the Netherlands (the first case study);*
3. *Recommendations for continued research.*

In order to define the scope of the fiscal exploration, the following question was put forward:

Which changes are needed in the Dutch and European fiscal systems in order for the Netherlands to generate additional tax revenues to the amount of € 30

billion by increasing taxes on consumption while lowering the tax burden on labour with the same amount (including spin-off consequences)?

The amount of € 30 billion was chosen as a target for this study as it represents a significant share (13 percent) of government budget and it therefore enables the exploration of a fundamental shift in taxation. The group has chosen to limit the scope in order to create a workable assignment:

- **Geographical focus.** The Dutch context is focused on primarily, assuming that ultimately there will be European coordination.
- **Time frame.** Implementation of the proposals is expected to be three to fifteen years.
- **Criteria.** Each proposal should (1) encourage employment or discourage the use of natural resources, and (2) raise substantial tax revenues or send a clear price signal.
- **Simplification.** Ideally, each proposal should contribute to a simplification of the tax system. The group has focused on generic measures.
- **Impact assessment.** The scope of this research has not yet included modelling of the impact of the proposals.

Methodology: The Ex'tax Policy Toolkit

The working group developed a Policy Toolkit; a methodology consisting of five steps or phases:

1. Collecting data with regard to the geographic area under review.
2. Making an inventory of tax base options to implement the Ex'tax principles.
3. Choosing a focus group of tax bases, in order to create a workable scope.
4. Identifying a focus group of measures.
5. Elaborating on the expected impacts of the proposed measures in terms of their goals and main challenges.

This methodology was applied to the Netherlands as the first case study. Below is a summary of the findings.

Case study the Netherlands

Step 1: Data collection

The Netherlands is a relatively small, densely populated country. It has almost 17 million inhabitants and a GDP of € 607 billion. The country is characterized by an open economy and ranks among the top ten exporters in the world. It is the second largest exporter of agricultural products in the world.

The labour market

The Dutch labour force consists of 7.9 million people. In the year 2000, 270,000 people were unemployed in the Netherlands (3.8 percent of the labour force). By 2013, this number had risen to 656,000 people (8.3 percent of the labour force). The social security system in the Netherlands is under heavy pressure, with almost 4.8 million people depending on social welfare. In 2014, the Dutch spend € 78.6 billion on social security and the labour market.

The Dutch labour market is characterized by a large number of self-employed (1.1 million people). A large percentage of people work part time, especially women. By 2040, the so-called 'grey pressure' is expected to stabilize at around two workers per elderly person. This is about twice as high as the current grey pressure.

Natural resource use

The ecological footprint of the Netherlands is three times the size of the country. Dutch Government policy includes the ambition to develop towards green growth and a circular economy. With regard to metals, the Netherlands is fully depending on imports. The Dutch generate almost sixty million tons of waste per year, including 392 million kilograms of electronic waste. 32 Percent of e-waste is collected for recycling or export. The Dutch agricultural sector is heavily depending on minerals in animal manure, artificial fertilizers and other fertilizers.

With only 4.5 percent of total energy supply based on renewable sources, the Netherlands is ranking fourth from the bottom, compared to other European countries. The Netherlands has substantial but dwindling resources of natural gas. It is expected that by 2025 the Netherlands will have changed from a net exporter to a net importer of gas. At current consumption rates, within fifty years, gas reserves in the Netherlands and the North Sea will be depleted. Import dependency with regard to oil is 96.1 percent.

Dutch Government has set a renewable energy target of fourteen percent of the energy mix by 2020 and a hundred percent in 2050.

Air quality in the Netherlands is one of the worst in Europe, ranking 25th. According to an OECD study, the economic cost of deaths from outdoor air pollution in Netherlands was € 18 billion in 2010. The Netherlands is the 8th largest emitter of greenhouse gases in the EU. Dutch Government policy is aligned with the European carbon emissions reduction target of twenty percent in 2020 compared to 1990. With 26 percent of its area below sea level and 29 percent susceptible to river flooding, the country is particularly vulnerable to climate change and rising sea levels.

Relevant features of the tax system

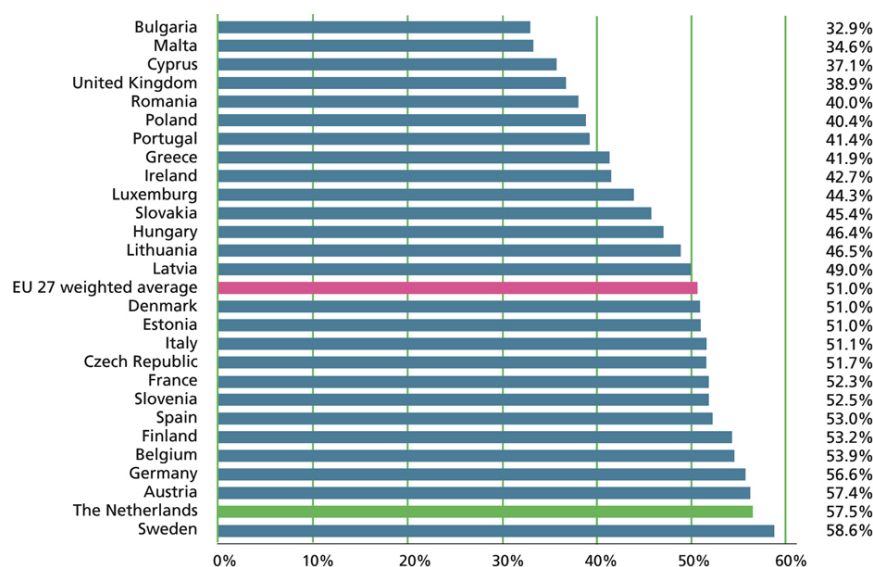
Between 2001 and 2012, labour taxes as a percentage of total taxation have risen from 48.3 percent to 57.5 percent; the second highest level of labour taxes in the EU. At 9.1 percent (€

21.3 billion) of total tax revenues and 3.6 percent of GDP, the Netherlands has the third highest level of environmental taxes. Since the turn of the century, environmental taxes in the Netherlands have gone down from 9.4 percent of total taxation in 2000 to 9.1 percent in 2012. As a percentage of GDP they have also decreased (from 3.8 percent to 3.6 percent).

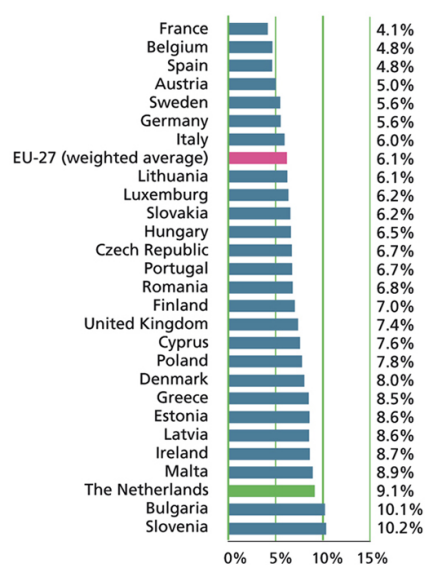
Tax revenues by economic function (The Netherlands, 2012)

	€ bn	% of total tax revenues	% of GDP
Labour (including social contributions, payroll and earned income taxes)	134.5	57.5%	22.4%
Consumption (including VAT, duties and environmental taxes)	66.1	28.3%	11.0%
Capital (including taxes on profits, savings, exports and assets)	33.3	14.2%	5.6%
Total	233.8	100.0%	39.0%

Taxes on labour as a percentage of total taxation (EU27, 2012)

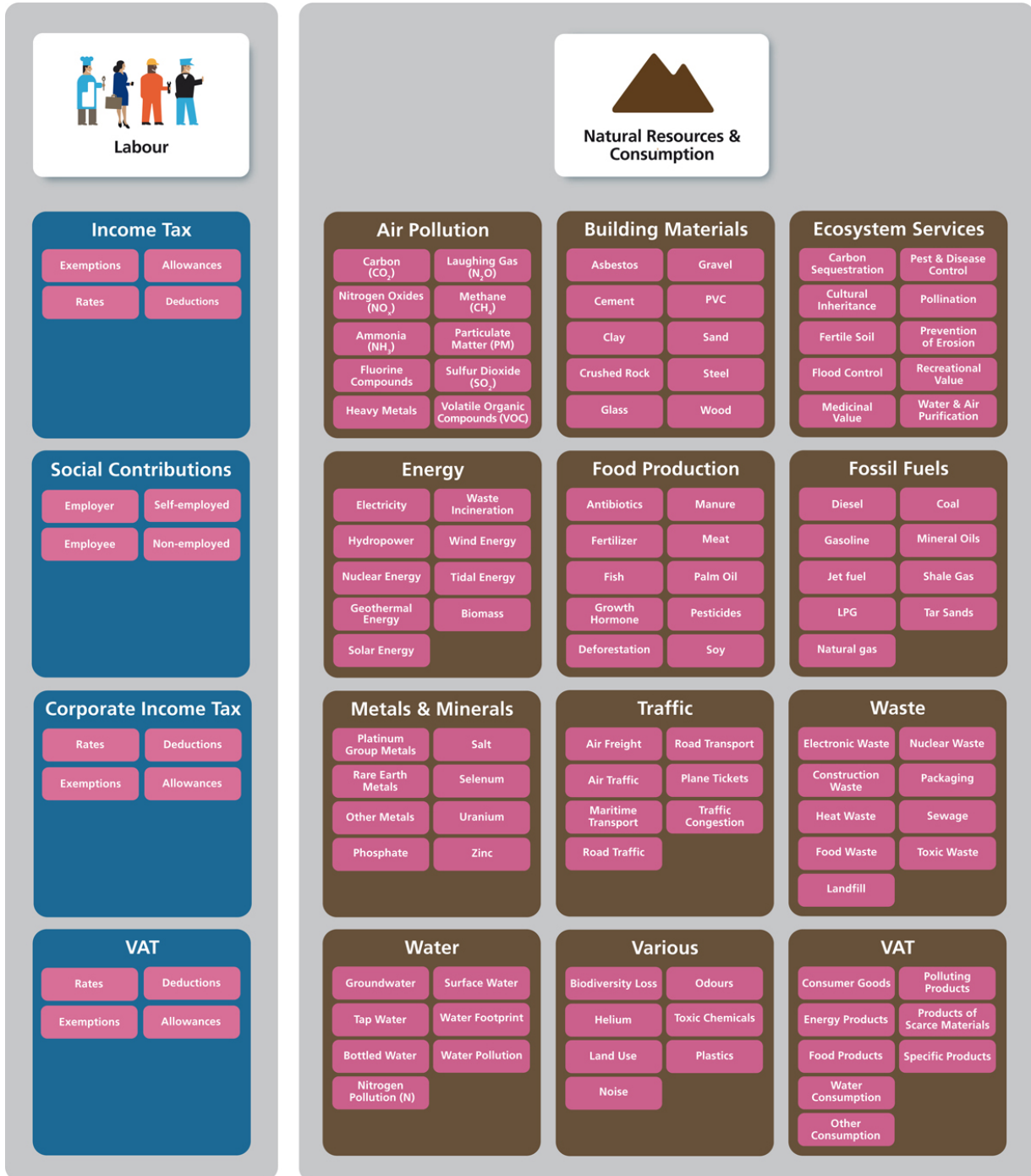


Environmental taxes as a percentage of total taxation (EU27, 2012)



Step 2: Options for shifting the tax base

Below is an inventory of potential tax base options to implement the Ex'tax principles, in other words, the 'buttons' governments could push to shift taxation from labour to natural resources. On the left side of the figure are (in blue) the tax bases with regard to labour, and on the right hand side (in brown) potential tax bases with regard to natural resources and consumption.



The building blocks available to governments to lower labour taxes, and more generally the costs of labour, are: income tax, social contributions, corporate income tax and VAT. Within

each category there are several options, with regard to tax rates, deductions, exemptions and allowances.

Governments could increase taxes on resources, and the costs of consumption and pollution in general, by raising taxes on air pollution, building materials, ecosystem services, energy, food production inputs, fossil fuels, metals and minerals, traffic, waste, water and VAT. Within each category there are several sub-categories. Within the waste category, for example, there is electronic waste, sewage, nuclear waste and other types of waste.

VAT plays a special role as it can be found on both sides. Although legally, VAT is a consumption tax, in practice consumers pay VAT both on products (such as cans of paint) and services added to those products (the efforts of a painter).


This Toolkit has been based on the Dutch case study. The goal is to further develop the Toolkit in the upcoming years.

Clearly, tax systems cannot be static; they will evolve with new circumstances. When the new system works properly, the tax base can be extended to other categories within the Toolkit, in order to guarantee a stable government income. Rates and tariffs can be raised or lowered too. Current levels of taxation are not carved in stone and there is no reason why a system based on 'extracted value' instead of 'added value' should be either.

After this exploration the group has identified a focus group of tax bases, in order to create a workable scope.

Step 3: Focus group of tax bases

Below is an overview of the tax bases the working group has decided to focus on, based on criteria such as urgency, potential benefits and (mid- to long-term) attainability. The working group considers the highlighted measures most promising. Some options can be put in practice fairly easily (such as increasing water taxation). Others are expected to play a role in future scenarios (such as taxing jet fuel), as they require international coordination.



Labour

Income Tax

Exemptions	Allowances
Rates	Deductions

Social Contributions


Employer	Self-employed
Employee	Non-employed

Corporate Income Tax

Rates	Deductions
Exemptions	Allowances

VAT

Rates	Deductions
Exemptions	Allowances

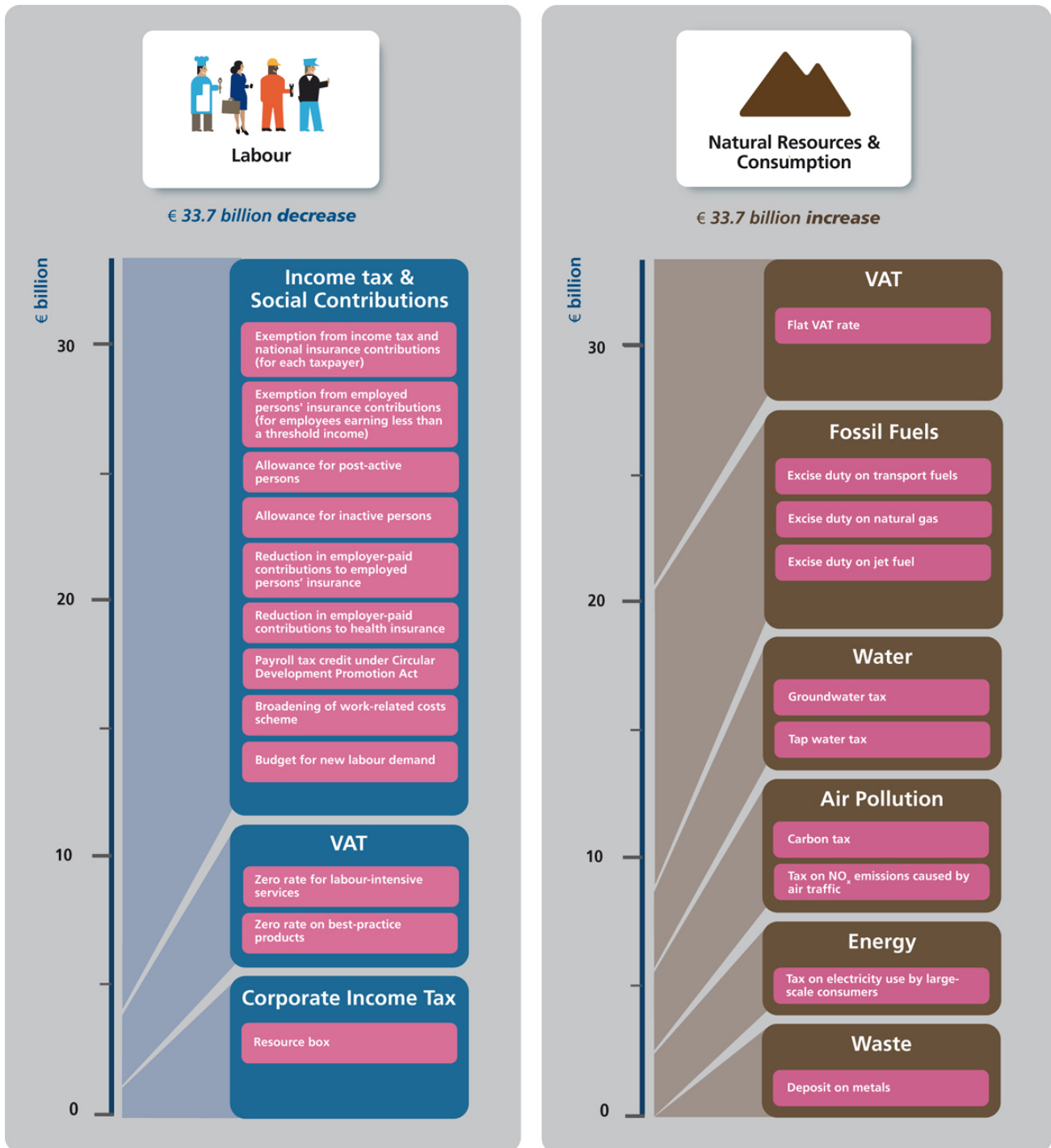


Natural Resources & Consumption

<p>Air Pollution</p> <table border="1" style="width: 100%; text-align: center; border-collapse: collapse;"> <tr> <td style="background-color: #e91e63; color: white;">Carbon (CO₂)</td> <td>Laughing Gas (N₂O)</td> </tr> <tr> <td style="background-color: #e91e63; color: white;">Nitrogen Oxides (NO_x)</td> <td>Methane (CH₄)</td> </tr> <tr> <td>Ammonia (NH₃)</td> <td>Particulate Matter (PM)</td> </tr> <tr> <td>Fluorine Compounds</td> <td>Sulfur Dioxide (SO₂)</td> </tr> <tr> <td>Heavy Metals</td> <td>Volatile Organic Compounds (VOC)</td> </tr> </table>	Carbon (CO ₂)	Laughing Gas (N ₂ O)	Nitrogen Oxides (NO _x)	Methane (CH ₄)	Ammonia (NH ₃)	Particulate Matter (PM)	Fluorine Compounds	Sulfur Dioxide (SO ₂)	Heavy Metals	Volatile Organic Compounds (VOC)	<p>Building Materials</p> <table border="1" style="width: 100%; text-align: center; border-collapse: collapse;"> <tr> <td>Asbestos</td> <td>Gravel</td> </tr> <tr> <td>Cement</td> <td>PVC</td> </tr> <tr> <td>Clay</td> <td>Sand</td> </tr> <tr> <td>Crushed Rock</td> <td>Steel</td> </tr> <tr> <td>Glass</td> <td>Wood</td> </tr> </table>	Asbestos	Gravel	Cement	PVC	Clay	Sand	Crushed Rock	Steel	Glass	Wood	<p>Ecosystem Services</p> <table border="1" style="width: 100%; text-align: center; border-collapse: collapse;"> <tr> <td>Carbon Sequestration</td> <td>Pest & Disease Control</td> </tr> <tr> <td>Cultural Inheritance</td> <td>Pollination</td> </tr> <tr> <td>Fertile Soil</td> <td>Prevention of Erosion</td> </tr> <tr> <td>Flood Control</td> <td>Recreational Value</td> </tr> <tr> <td>Medicinal Value</td> <td>Water & Air Purification</td> </tr> </table>	Carbon Sequestration	Pest & Disease Control	Cultural Inheritance	Pollination	Fertile Soil	Prevention of Erosion	Flood Control	Recreational Value	Medicinal Value	Water & Air Purification
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Step 4: Focus group of measures for a € 33.7 billion tax shift

The overview below shows how the tax bases could potentially contribute to a budget-neutral package of measures to shift taxation from labour to natural resource use. In brown (on the right) are the measures that could help raise an additional € 33.7 billion per year for the treasury. In this proposal, the results are being used to lower the costs of labour by the same amount (in blue, on the left). It should be noted that the proposed changes are designed for to the medium to long-term.



Step 5: Measures in more detail

Below is an overview of the proposed policy measures, including their expected effect on employers, consumers and the treasury.

Measure	Section #	Employer %	Consumer %	Employer € mln	Consumer € mln	Δ Budget € mln
Income tax and social contributions				-4,054	-25,658	-29,711
- Exemption from Income tax & national insurance contributions	6.6.1	0%	100%		-24,222	-24,222
- Exemption from employed person's insurance contributions	6.1.2	0%	100%	0	0	0
- Allowance for post-active persons	6.1.3	0%	100%	0	-2,262	-2,262
- Allowance for inactive persons	6.1.4	0%	100%	0	-24	-24
- Reduction in employer-paid contributions to employed persons' insurance contributions (provisional sum)	6.1.5	100%	-50%	-1,700	850	-850
- Reduction in employer-paid contributions to health insurance (provisional sum)	6.1.6	100%	0%	-8,600	0	-8,600
- Payroll tax credit under Circular Development Promotion Act (provisional sum)	6.1.7	100%	0%	-1,000	0	-1,000
- Broadening of work-related costs scheme	6.1.8	100%	0%	-445	0	-445
- Budget for new labour input	6.1.9	-100%	0%	7,691	0	7,691
VAT				-600	-2,400	-3,000
- Zero rate for labour-intensive services (provisional sum)*	6.2.1	20%	80%	-600	-2,400	-3,000
- Zero rate on best-practice products*	6.2.2	PM	PM	PM	PM	PM
Corporate income tax				-1,000	0	-1,000
- Resource box (circular innovation)	6.3.1	100%	0%	-1,000	0	-1,000
Total reduction				-5,654	-28,058	-33,711
VAT				2,634	10,532	13,166
- Flat VAT rate (22%)	7.1.1	20%	90%	2,634	10,532	13,166
Fossil fuels				1,599	10,217	11,816
- Excise duty on transport fuels (€ 0.55/l)	7.2.1	10%	90%	765	6,881	7,645
- Excise duty on natural gas (€ 0.07/m3)	7.2.2	20%	80%	634	2,537	3,171
- Excise duty on jet fuel (€ 0.24/l)*	7.2.3	20%	80%	200	800	1,000
Water				325	2,926	3,251
- Tap water and groundwater tax (€ 1.61/m3)	7.3.1	10%	90%	325	2,926	3,251
Air pollution				657	2,626	3,283
- Carbon tax (€ 25/ton)	7.4.1	20%	80%	650	2,600	3,250
- Tax on nitrogen oxide emissions caused by air traffic (€ 5/kg)	7.4.2	20%	80%	7	26	33
Energy				439	1,756	2,195
- Tax on electricity use by large-scale consumers (€ 0.03/kWh)	7.5.1	20%	80%	439	1,756	2,195
Waste				PM	PM	PM
- Deposit on metals	7.6.1	PM	PM	PM	PM	PM
Total increase				5,653	28,058	33,711
Net effect				0	0	0

*Requires approval of EU Member States or adaptation of EU directives.

Expected impact of the proposals

Each line item has been explored briefly in terms of its object, tariff, exemptions, estimated gross revenues, fiscal effects for government, employers and employees, areas of concern and possible solutions. The modelling of macro-economic effects and distributional impacts is beyond the scope of this report.

Below, the measures are represented, clustered by the goals they should serve.

Goal	Measure
- To decrease unemployment	- Budget for new labour demand
- To reduce the tax burden on labour	- Exemption from income tax, national insurance contributions and employed persons' insurance contributions - Reduction in employer-paid contributions to employed persons' insurance - Reduction in employer-paid contributions to health insurance - Broadening of work-related costs scheme - Payroll tax credit under Circular Development Promotion Act - Zero VAT rate for labour-intensive services
- To compensate for higher consumer taxes.	- Exemption from income tax and national insurance contributions - Allowances for post-active and inactive persons
- To simplify the tax system / to reduce the administrative burden	- Exemption from income tax, national insurance contributions and employed persons' insurance contributions - Broadening of work-related costs scheme - Flat VAT rate (22 percent)
- To promote sustainable innovation	- Payroll tax credit under Circular Development Promotion Act - Zero VAT rate for labour-intensive services - Zero VAT rate on best-practice products - Corporate income 'resource box' for circular innovation - Taxation of transport fuels, natural gas, jet fuel, water use and extraction, carbon emissions, nitrogen oxide emissions caused by air traffic, electricity use - Deposit on metals (a non-tax measure)
- To internalise external costs ('the polluter pays')	- Taxation of transport fuels, natural gas, jet fuel, water use and extraction, carbon emissions, nitrogen oxide emissions caused by air traffic, electricity use
- To reduce dependency on fossil fuels	- Taxation of transport fuels, natural gas, jet fuel
- To increase tax revenue	- Flat VAT rate (22 percent) - Taxation of transport fuels, natural gas, jet fuel, water use and extraction, carbon emissions, nitrogen oxide emissions caused by air traffic, electricity use
- To reduce carbon emissions	- Taxation of carbon emissions
- To increase sustainability awareness.	- Zero VAT rate on best-practice products.

More research needed

At € 33.7 billion, the combined measures represent the equivalent of 5.6 percent of GDP or 14.4 percent of total tax revenues in the Netherlands. The package (including the VAT measures) increases environmental tax revenues from 9.1 percent to 23.5 percent and lowers labour tax revenues from 57.5 percent to 43.1 percent. Although international institutions agree that a tax shift is necessary and beneficial to economic growth, employment and the environment, a comparable long-term, fundamental tax shift package has, as far as we know, never been worked out in this much detail. The costs of the measures have been estimated based on limited and occasionally out-dated public data. More research, by parties who have access to up-to-date data and the required models, is therefore needed.

International coordination

Throughout this research, it is assumed that the measures will take place in an international effort in order to minimize border effects. If applied at the same scale (14.4 percent of total tax revenue) across Europe, this would translate to a tax shift of € 736.7 billion. Such major reallocation of means will likely be needed to reach fundamental and ambitious goals with regard to lower import dependence, low-carbon and resource-efficient production and minimal unemployment. It may be clear that national and international players will only agree on specific policy measures when there is a basic agreement on the long-term direction of reforms.

Feedback loops

In general, the proposals in this report can be expected to provoke both negative and positive feedback loops, as part of a chain of cause-and-effect. If resource efficiency is achieved, for example, fewer materials and fuels need to be imported in the EU. Developing countries could then suffer from a decrease in demand for commodities. Positive feedback loops may include reduction of pollution, which in turn improves overall health and reduces mortality rates. Also, for example, lower labour costs will likely bring down healthcare costs (as healthcare is labour-intensive).

Shift in consumption

The transition to a circular economy (as pursued by the European Commission) requires a truly fundamental redesign of products, production methods and, basically, the metabolism of our economies. Already, new technologies and disruptive innovations are rapidly changing the marketplace. In a fast changing world, the potential of macro-economic modelling is limited. The composition of our consumption can be expected to keep on changing over the next decade. If, in future, the 'polluter pays' principle is applied more, the *consumption basket* (a sample of consumption goods and services, used to track purchasing power) will likely contain fewer products (e.g. new TV sets) and more services (such as TV repair, which is labour-intensive).

Innovative business models

Effects of a tax shift will likely be unevenly distributed between business sectors. Some businesses will find it hard to adapt to changing market circumstances, and others will thrive. It is important to note, however, that even without a tax shift, global market circumstances are changing rapidly, and therefore, adaptability and innovation towards new business models are more urgent than ever. By announcing new policy measures in time or by applying a 'tax escalator' regime (adding small annual price signals that are agreed for many years in advance) industries will have a chance to increase efficiency step-by-step. Lower labour costs at the same time provide an opportunity to shift to more labour-intensive business models. Innovation is labour-intensive, and therefore, will benefit from lower labour costs.

It will be a challenge, but every sector should be able to innovate to low-carbon, biobased, resource-efficient or more labour-intensive business models. Many technological innovations are available, but not yet economically viable, as harmful emissions and resource use currently remain untaxed or even subsidized. By fostering its full innovative power, Europe – and the Netherlands - could still become a frontrunner in sustainable technology.

The impact of a tax shift depends, amongst others, on price elasticity and substitutability of products. Substitutability is particularly difficult to model, as it depends on the development of demand by consumers, and the strategic choices of businesses with regard to bringing new products and services to market. Therefore, strategic insights of the business community will be needed to effectively model the impact of a system change.

Employment impact: hundreds of thousands of new jobs

Predicting the potential negative impact on employment of the increased tax burden on consumption is a major challenge. In the short run, such increase will likely decrease employment in some sectors as long as polluting activities remain unchanged. Some (labour-intensive, resource-intensive) business activities might be relocated to other countries. Other activities (especially labour-intensive ones) are likely to relocate to Europe/the Netherlands. There is a lack of data on this effect, and therefore, we need to quantify this effect at zero. It needs to be noticed that in fact, the European Commission sees the green economy as one of the major areas for employment *expansion*.

As stated earlier, the analysis in this report is limited and much still needs to be researched. A brief analysis shows, however, that a € 33.7 billion tax shift from labour to resources and consumption potentially provides significant employment benefits. It provides for:

1. A budget to finance 280,000 new jobs.

If such labour demand increase were to be fully taken by formerly unemployed persons, this, in turn, causes a social security costs reduction of € 4.7 billion (even without considering the administrative cost reduction involved in executing smaller social security schemes).

2. A potential increase of labour demand of 650,000 FTE.

Based on economic theory, this is the effect a tax wedge reduction of 13.5 percent could have.

3. A potential increase of 87,000 jobs in the repair sector.

The potential impact of a zero percent VAT rate on repair and maintenance services.

Five recommendations for next steps

Below are five recommendations for continued research. For each step, a specific action for business leaders, political leaders and thought leaders is suggested:

1. Increase knowledge on the metabolism of economies.

Action: Extending and standardizing integrated reporting in order to have the appropriate information in place to take effective measures.

2. Research the full macro-economic impact of a tax shift.

Action: Applying the Ex'tax Policy Toolkit in multiple European countries and studying the macro-economic effects of proposals, including revenue maximization effects and other side effects.

3. Interdisciplinary research.

Action: studying the connections between economic, environmental, health and social concerns, by organising interdisciplinary research programs.

4. Research impact from a business perspective.

Action: Developing a methodology to help business leaders and sectors analyse the impact of a tax shift, including business cases to illustrate the effects.

5. Develop an ambitious European Master Plan and a 'coalition of the willing'.

Action: A European Master Plan maps the preferred policy measures throughout Europe. Start mobilizing a 'coalition of the willing' of countries that are willing to advance implementation of the tax shift.

Call to action

Times have changed. The linear (take-make-waste) economy is past its sell-by date. We've entered a new era; one that requires an inclusive circular economy, as targeted by Dutch and EU policy. The tax system plays a fundamental role in this transition.

Updating the tax system is not a simple task. But we do not live in simple times, and considering the megatrends that we are facing, doing nothing is no longer an option. Our research shows that there is widespread support for the principles of a tax shift from labour to consumption and the use of natural resources.

Our society and economy can flourish by saving natural resources and tapping into the abundance of human talents and capacities instead. This transformation requires a long-term vision on the tax system combined with a pragmatic pathway and a realistic timeframe.

The Ex'tax working group recognizes the tension between vision and pragmatism, between long-term and short-term interests. It may be clear that many details and complications still need to be researched. The question is whether to resolve these issues or allow them to immobilize our current system; a system that was built for a different era; the era of the linear economy.

We therefore call upon businesses, governments and NGOs to continue researching the opportunities and risks of a tax shift, and to take the necessary steps towards a 'new plan'; a robust and sustainable tax system that enables current and future generations to develop prosperity based on human capital rather than natural resources.

The world has moved on; tax systems need to do the same.

The Ex'tax Project, Deloitte, EY, KPMG Meijburg and PwC invite all interested parties to support this call to action.

Introduction

Global environmental megatrends (such as climate change and water scarcity) and socio-economic megatrends (such as mass unemployment) are posing serious threats to long-term prosperity and quality of life. The prevailing Western tax systems play a fundamental role in providing solutions to deal with these megatrends. Taxes steer the economy and currently, our systems are focussed on high costs of labour, while leaving environmentally damaging activities untaxed, or even subsidized. These price signals give rise to unwanted problems such as unemployment and overexploitation of natural resources. Current environmental and socio-economic megatrends make it perfectly clear that ‘business as usual’ is not an option.

Over the years, numerous academics, governmental institutions, politicians and NGOs have called for a tax shift from labour to natural resource use consumption, as a strategy to adapt the tax system to the challenges of the 21st century. Although budget-neutral for governments, a tax shift fundamentally changes the margins within which business, consumers and governments operate. Natural resources would be saved, while human skills and ingenuity could be applied more. Such tax shift (Ex’tax, short for *Value Extracted Tax*) is a precondition for developing a circular, sustainable economy.

The Ex’tax Project researches the potential of this tax shift together with knowledge partners. In 2011, the foundation brought together Dutch tax partners of Deloitte, EY, KPMG Meijburg and PwC in a unique cooperation to explore the opportunities of applying the Ex’tax principles in the Netherlands and Europe. The fiscal exploration revolved around a case study with the central question:

“Considering the fact that a fundamental shift in taxation is necessary from labour to natural resource use. Which changes are needed in the Dutch and European fiscal systems in order for the Netherlands to generate additional tax revenues to the amount of € 30 billion, by increasing taxes on consumption while lowering the tax burden on labour with the same amount (including spin-off consequences)?”

In a series of meetings, the working group has gathered to develop ideas on the implementation of Ex’tax. The meetings have led to a range of potential policy options with regard to, amongst others, VAT and excise duties on fuels, water and carbon, that could contribute to lower the tax burden on labour. Such fiscal exploration fully fits the strategy papers of the European Union and the European Commission’s recommendations to Member States. This report provides a Policy Toolkit that helps to identify potential government action in the Netherlands, as well as other countries. The Tool consists of five steps; data collection,

the exploration of potential tax bases and a focus group of tax bases, identification of policy options and detailed exploration of the chosen policy options.

The findings are the result of extensive deliberations and studies, but the effects of the proposals have not been researched yet, so they cannot be viewed as a blue print. They are meant to explore a possible pathway to a circular economy, as targeted by Dutch and EU policy.

Of course, there are barriers and challenges ahead, and there are specific concerns that need to be addressed. However, a general consensus has been growing that the tax system has a significant role to play in solving unemployment and enabling green growth. Obviously, a fundamental change of our tax systems will not happen overnight, and will likely evolve over time. Ex'tax requires a long-term vision on the role of taxation in facilitating growth based on human capital rather than natural resources. Also, a pragmatic roadmap for implementation is needed. This report may be helpful to both.

Chapter 1 of this report provides an overview of some of the major challenges that European societies are facing. Chapter 2 looks at the European tax system in relation to these challenges. Chapter 3 gives an introduction to the Ex'tax approach, and how academics, international institutions and businesses view the concept. Chapter 4 describes how The Ex'tax Project attempts to contribute to solving the barriers for implementation, and how the Ex'tax working group, consisting of Tax Partners of Deloitte, EY, KPMG Meijburg and PwC has researched the topic of a tax shift. Chapter 5 contains the key findings of the working group, which are explained in more detail in chapters 6 and 7. Chapter 8 explores the expected effects of the proposals, in terms of feedback loops, innovative business models and job creation. Finally, chapter 9 includes recommendations for continued research.

Please note that the opinions expressed in this working paper are those of the authors and do not necessarily reflect the position of Deloitte, EY, KPMG Meijburg or PwC.

1. Global challenges

Socio-economic megatrends (such as a lack of economic growth and mass unemployment) and global environmental megatrends (such as climate change and water scarcity) are causing major challenges to our societies. The European Union is the largest economy in the world,¹ and Europe is also the continent with the largest net imports of resources and energy.² Therefore, its economies are particularly vulnerable to global trends. Below, we briefly discuss five of the major issues and their impact on business and society.

1.1. Mass unemployment

The economic crisis has severely hit the 28 countries of the European Union (EU28) and unemployment is rampant. Between 2008 and 2013, ten million Europeans lost their jobs.³ In August 2014, 24.6 million men and women were unemployed of whom five million young persons (under 25 years old).⁴

Unemployment causes poverty and health problems. It undermines human dignity. It denies people the opportunity to participate in society and to develop their full potential. From an economic perspective, unemployment means that human capital is underutilized.

It is important to note that unemployment statistics do not tell the full story of the excess capacity of human potential. Many groups are not represented in unemployment statistics, such as those who have given up searching for a job. 9.3 Million Europeans are available to work, but not seeking. In 2013, 9.9 million part-time workers were *underemployed*, meaning they wished to work more hours and were available to do so. Also, in times of economic downturn, the self-employed tend to lower their hourly rates, and as they are offered fewer job opportunities, their income decreases. This effect is not represented in unemployment statistics either.⁵

¹ CIA (2013) The World Factbook.

² SERI (2012) Green economies around the world? Implications of resource use for development and the environment.

³ ILO (April 8, 2013) Ten million more unemployed in Europe than in 2008.

⁴ Eurostat (August 2014) Unemployment statistics.

⁵ Eurostat (April 10, 2014) Labour Force Survey 2013. In the EU28, 10 million part-timers are underemployed... and 11 million persons considered as a potential additional labour force.

Full employment and social cohesion are basic EU objectives. Europe's *2020 Strategy for smart, sustainable and inclusive growth* sets a target of 75 percent of 20-64 year olds in employment by 2020.⁶ If this target is to be met, employment in the EU will have to increase by 17.6 million additional jobs.⁷ This is obviously a massive challenge.

Ageing is another great social and economic challenge of the 21st century. By 2025, more than twenty percent of Europeans will be 65 or over.⁸ An increasing 'grey pressure' means that fewer workers have to support the health and financial needs of a growing group of elderly. This drives up the costs of employment, which in turn pushes businesses to outsource employment outside of Europe. In our ageing societies, it is therefore key to create jobs suitable for the elderly to enable them to stay active in the labour market and to supplement their pensions. More and more elderly will find they can't afford not to work.

Illegal employment is also a major threat to a well-functioning labour market. The shadow economy in the EU is estimated to be worth more than € 2 trillion. In general, two thirds of the shadow economy consists of wages that workers and businesses do not declare.⁹ This means that in Europe, each year, € 1.3 trillion worth of labour remains undeclared. This work takes place outside the social, fiscal and legal system where workers derive social protection, pension and child benefits and the like.

On a global scale, more than 1.2 billion young people will enter the global labour market in the next ten years, with only 300 million jobs awaiting them.¹⁰ Most of these youngsters miss out on opportunities to participate in society, to fulfil their basic needs and to develop their full potential. This is obviously a social drama as well as a huge economic problem.

Mass unemployment and illegal employment cause poverty, health problems and social unrest. From an economic perspective, unemployment means that human capital is underutilized. The challenge is to develop economies that include as many people as possible in the (official) labour process.

1.2. Water supply risks

Fresh water scarcity and the associated food supply risks are among the main problems to be faced by many societies in the 21st century. Already, 1.2 billion people in more than forty countries live in areas of water scarcity, and this number is growing. It is expected that, by 2025, two thirds of the world population will live under water stressed conditions.¹¹

Although public perception is that Europe has adequate water resources, water scarcity, including the depletion of water resources through pollution, is an increasingly frequent

⁶ European Commission (2010) Europe 2020. A strategy for smart, sustainable and inclusive growth.

⁷ European Commission (2012) Towards a job-rich recovery.

⁸ European Commission (accessed July, 2014) Ageing, Policy.

⁹ The shadow economy ranges from 8% of GDP in Switzerland and Austria to more than 30% in some Central and Eastern European countries. A.T. Kearney (2013) The Shadow Economy in Europe, 2013.

¹⁰ World Economic Forum (2012) New Essay Competition Challenges Global Shapers to Tackle Youth Unemployment.

¹¹ FAO (2007) Coping with water scarcity. Challenge of the twenty-first century.

phenomenon in Europe.¹² It was estimated that by 2007, at least 11 percent of Europe's population and 17 percent of its territory had been affected by water scarcity. The cost of droughts in Europe over the past thirty years were € 100 billion.¹³

Damages from excesses of water, through flooding, between 2002 and 2013 across the EU are estimated at another € 150 billion.¹⁴ The European Commission expects further deterioration of the water situation in Europe if extreme weather conditions continue to increase in frequency due to global warming:

“Water is no longer the problem of a few regions, but now concerns all 500 million Europeans.”¹⁵

Many European enterprises are reliant on supply chains located in water stressed or water scarce regions.¹⁶ Surveys amongst multinationals show that water scarcity is already severely impacting global supply chains. Two thirds of the respondents to CDP surveys, for example, report that they have experienced water-related business impacts in the past five years; a dramatic increase of fifty percent since 2012.¹⁷

It is obvious that lowering the water footprint of consumption in Europe is key to long-term sustainable prosperity.

1.3. Materials supply risks

In mining, the low hanging fruit has been picked

The vast majority (89 percent) of all materials used in the EU are non-renewables; resources that do not regenerate after extraction from nature, such as fuels, metals and minerals.¹⁸ Global material extraction has grown by almost eighty percent over the past thirty years and is around seventy billion tons per year today.¹⁹ Worldwide demand is still growing steeply due to high population growth and increased consumption. Since the 1990s, however, there is a clear downward trend in the discovery rate of major mineral deposits, even though exploration expenses have increased significantly.²⁰ Ore grades of existing mines are declining,²¹ meaning that there is less metal per ton of rubble to be found. Mining is taking place under increasingly difficult circumstances, at remote locations, requiring more and more energy per ton of ore.²²

¹² CDP (March 22, 2014) Water scarcity threatens profitability of European companies - alarming data on a vanishing resource.

¹³ European Commission (accessed April, 2014) Water Scarcity & Droughts in the European Union.

¹⁴ RPA/HKV (2014) Study on Economic and Social Benefits of Environmental Protection and Resource Efficiency Related to the European Semester.

¹⁵ European Commission (accessed April, 2014) Water Scarcity & Droughts in the European Union.

¹⁶ UN (accessed July, 2014) Water for Life Decade.

¹⁷ CDP (2013) Moving beyond business as usual. A need for a step change in water risk management. CDP Global Water Report 2013.

¹⁸ Wuppertal Institute (2004) Globalisation and the shifting environmental burden. Material trade flows of the European Union.

¹⁹ SERI (2012) Green economies around the world? Implications of resource use for development and the environment.

²⁰ Materials Innovation Institute (2009) Material Scarcity.

²¹ UNEP (2011) Decoupling natural resource use and environmental impacts from economic growth. A Report of the Working Group on Decoupling to the International Resource Panel.

²² Raw Materials Group (2010) Minerals – Future threats and past conflicts.

Already, mining strips more of the earth's surface than natural erosion does.²³

In the past, new technologies have helped push the limits of mining towards deeper and harsher conditions, but past performance is no guarantee for future results. When oil first began to flow, for example, drillers had to invest one barrel of oil to extract a hundred barrels from the ground. Today, it takes about one barrel of oil to produce the equivalent of four barrels of oil from shale and tar sands.²⁴ In general, in mining, despite large quantities of remaining mineral reserves, the low-hanging fruit has been picked.²⁵

The EU's fossil fuel import dependence stands at 53 percent. Current energy prices in the European Union are primarily determined by the global price of fossil fuels, over which the EU has very little control. In 2011, the EU's net import bill for fossil fuels amounted to € 388 billion, more than three percent of EU GDP. Import routes are limited in number and exposed to an increased geopolitical risk, with impacts on both availability and price of fossil fuels.²⁶

Metals

The EU is self-sufficient in construction minerals, but highly dependent on imports of metallic minerals.²⁷ In 2010, the European Commission earmarked 35 critical raw materials with a high supply risk. Their high supply risk is mainly caused by the fact that Europe is fully dependent on imports of these metals, and a high share of the worldwide production comes from only a handful of countries. This production concentration, in many cases, is compounded by low substitutability and low recycling rates.²⁸ Presently, for example, less than one percent of the so-called Rare Earth Metals (needed for technologies such as medical scanners, smart phones, hybrid cars and wind turbines) are recycled.²⁹ Unfortunately, for many critical technology materials, the usual market mechanisms do not work, as explained by Bleischwitz (et al.):

“The structural scarcity is most severe for many technology metals, which are often not mined on their own but occur only as by-products from so-called major or carrier metals. Indium and germanium, for example, are mainly by-products from zinc-mining, gallium from aluminum, and selenium, tellurium from copper and lead. (...) Since the by-product is only a very small fraction of the carrier metal, here the usual market mechanisms do not work. (...) In this respect, the supply of by-product metals is price-inelastic, even a “tenfold increase” in its

²³ UNEP (2011) Waste from Consumption and Production - A threat to natural resources. Vital Waste Graphics.

²⁴ Leeb, Stephen (May 6, 2013) Dangerous Times As Energy Sources Get Costlier To Extract. Forbes.

²⁵ Diederer, André (2009) Metal minerals scarcity: A call for managed austerity and the elements of hope; Bardi, Ugo (2014) Extracted: How the Quest for Mineral Wealth is Plundering the Planet. Club of Rome.

²⁶ Euractiv (November 13, 2013) Industry statement on a 2030 EU climate and energy framework.

²⁷ HCSS, TNO (2010) Resource Scarcity in the 21st Century: Conflict or Cooperation?

²⁸ The materials with a high supply risk are: Antimony, Beryllium, Cobalt, Fluorspar, Gallium, Germanium, Graphite, Indium, Magnesium, Niobium, Tantalum, Tungsten, Platinum Group Metals (Platinum, Palladium, Iridium, Rhodium, Ruthenium, Osmium) and Rare Earth Metals (Yttrium, Scandium and Lanthanides (Lanthanum, Cerium, Praseodymium, Neodymium, Promethium, Samarium, Europium, Gadolinium, Terbium, Dysprosium, Holmium, Erbium, Thulium, Ytterbium, Lutetium)). European Commission (2010) Critical raw materials for the EU. Report of the Ad-hoc Working Group on defining critical raw materials.

²⁹ UNEP (2011) Recycling rates of metals. A status report. A report of the Working Group on the Global Metal Flows to the International Resource Panel.

*price could usually not compensate the negative impact on total revenues when there is oversupply of major metal.*³⁰

Because of the high costs of recycling in Europe and despite stringent environmental laws for disposal of e-waste, in 2009, some 220,000 tons of electrical and electronic waste were shipped from the EU to West Africa. The uncontrolled dumping of this waste is of particular concern as e-waste contains hazardous substances such as heavy metals and endocrine disrupting substances. African countries have called for uniform action to end the European export of hazardous electronic waste.³¹

Minerals for agriculture

Europe is also highly dependent on imports of minerals for agriculture. Per annum, for example, Europe imports 7.5 million tons of phosphorus rock.³² Phosphorus is an essential raw material in fertilizers and therefore agricultural production. It is a non-renewable resource for which there is as yet no substitute. It's largely extracted from phosphate ore, reserves of which are only found in a small number of countries, primarily Morocco, China, South Africa and the United States. With this restricted number of producing countries, phosphate scarcity is related to geopolitical relations. China – with more than three quarters of the total reserves – has already imposed an export tariff of 135 percent on phosphate to secure supply for the domestic market. Some of the phosphate comes from the disputed Western Sahara, making supply uncertain.³³

In general, with regard to materials such as fuels, metals and minerals, physical scarcity is compounded by geopolitical restraints. Efficiency measures and urban mining (mining from waste streams) could significantly reduce Europe's dependency on imports.

1.4. Air pollution

Air Pollution

Indoor and outdoor air pollution (including emissions of nitrous oxides, particulate matter and sulfur dioxides) are the cause of heart disease, respiratory diseases and cancers. In 2012, seven million people died as a result of air pollution exposure; one in eight of total global deaths.³⁴ Air pollution reduces human life expectancy by more than eight months on average and by more than two years in the most polluted cities and regions.³⁵ Only twelve percent of city dwellers reside in cities where air quality complies with WHO air quality guidelines.³⁶ The external costs of air pollution – the costs imposed to society, in terms of environmental costs, health costs and economic costs - are huge. According to former EU Commissioner Potočník:

³⁰ Bleischwitz, Raimund, Welfens, Paul, Zhang, ZhongXiang (eds.) (2011) International Economics of Resource Efficiency. Eco-Innovation Policies for a Green Economy.

³¹ UNEP (2012) Where are WEEE in Africa? Findings from the Basel Convention E-waste Africa Programme.

³² HCSS (2012) Risks and Opportunities in the Global Phosphate Rock Market.

³³ PBL (2011) Scarcity in a sea of plenty.

³⁴ WHO (March 25, 2014) 7 million premature deaths annually linked to air pollution.

³⁵ EEA (accessed April, 2014) Air pollution.

³⁶ WHO (May 7, 2014) Air quality deteriorating in many of the world's cities.

“(…) air pollution is the number one environmental cause of death in the EU, with over 400 000 premature deaths in 2010. More than 10 times the deaths from traffic accidents! This is a huge cost to citizens' health and the economy. The external costs were between €330-940 billion per year in 2010. Among these are significant direct impacts on the economy: 100 million lost workdays each year, with a direct cost of about €15 billion in lost productivity. Bad air also adds €4 billion to our healthcare costs because of hospitalisation.”³⁷

Studies illustrating the external costs of emissions of air pollutants include CE Delft (2004),³⁸ CE Delft (2005),³⁹ EEA (2011),⁴⁰ EEA (November 2011),⁴¹ Sutton (2011),⁴² and Paulot & Jacob (2014).⁴³ According to the OECD, in OECD countries plus China and India, road transport is responsible for approximately \$ 1 trillion (€ 0.7 trillion) in health costs.⁴⁴

Reducing air pollution is of the utmost importance as it saves valuable natural resources, millions of lives and billions of dollars.

1.5. Climate change

Climate change is one of the biggest challenges facing mankind. According to the IPCC (the Intergovernmental Panel on Climate Change, a group of thousands of scientists from all over the world), it is extremely likely that human activities are the cause of global warming, by increasing concentrations of carbon dioxide (CO₂) and other greenhouse gases⁴⁵ in the atmosphere. The latest report from the IPCC warns that a ‘business as usual scenario’ in carbon emissions means that these emissions will likely cause global average temperatures to rise beyond 2°C.⁴⁶ This may sound insignificant, but a one- to two-degree drop in temperature was all it took to plunge the Earth into the Little Ice Age, 18,000 years ago,⁴⁷ when an ice sheet a mile thick extended over the northern half of North America right down to New York.⁴⁸

Two degrees of global warming means catastrophic events will be inevitable, including Arctic

³⁷ Potočnik, Janez (October 15, 2013) Launch of the EEA's Report on Air Quality 2013. Speech 13/822.

³⁸ CE Delft (2004) De prijs van een reis.

³⁹ CE Delft (2005) Luchtkwaliteit in Nederland: gezondheidseffecten en hun maatschappelijke kosten.

⁴⁰ The cost to human health and the environment from emissions of regional air pollutants across all sectors of the EU-25 economy equaled € 280 – 794 billion in the year 2000. EEA (2011) Revealing the costs of air pollution from industrial facilities in Europe.

⁴¹ The 10,000 largest polluting facilities in Europe alone cause between € 102 and 169 billion in damage annually. EEA (November 24, 2011) Industrial air pollution cost Europe up to €169 billion in 2009, EEA reveals.

⁴² The overall environmental costs of the use of reactive nitrogen in fertilisers in Europe (estimated at € 70-320 billion per year) outweigh the direct economic benefits of nitrogen in agriculture. Sutton, Mark (editor) (2011) The European Nitrogen Assessment: sources, effects, and policy perspectives.

⁴³ The health cost associated with ammonia emissions from US agriculture exports are estimated to be USD 36 billion a year - equal to about half of the revenue generated by those same exports. Paulot, Fabien, Jacob, Daniel (2014) Hidden Cost of U.S. Agricultural Exports: Particulate Matter from Ammonia Emissions. Environmental Science & Technology, 2014; 48 (2): 903 DOI: 10.1021/es4034793.

⁴⁴ OECD (2014) The Cost of Air Pollution. Health Impacts of Road Transport.

⁴⁵ Methane, nitrous oxide (or laughing gas) and fluorine compounds.

⁴⁶ The Corporate Climate Communiqués (accessed July, 2014) The Trillion Tonne Communiqué.

⁴⁷ Nasa Earth Observatory (accessed June, 2014).

⁴⁸ LeGrande, Allegra (2008) Getting a Grip on Future Ice Sheet Changes. NASA Goddard Institute for Space Studies.

melting, sea level rise, disruptive storms, droughts and flooding.⁴⁹ The US National Climate Assessment, a report compiled by 300 leading scientists and experts states:

*“Human-induced climate change means much more than just hotter weather. Increases in ocean and freshwater temperatures, frost-free days, and heavy downpours have all been documented. Global sea level has risen, and there have been large reductions in snow-cover extent, glaciers, and sea ice. These changes and other climatic changes have affected and will continue to affect human health, water supply, agriculture, transportation, energy, coastal areas, and many other sectors of society”.*⁵⁰

The European Commission estimates that the overall EU damages are € 120 billion (1.2 percent of GDP) in a 2 degrees scenario, due to, amongst others, falling crop yields, flood damages, and increased mortality. The geographical distribution of the climate damages is very asymmetric with a clear bias towards the southern European regions.⁵¹

To prevent these climate disasters from happening, until 2050, only about twenty percent of the total carbon embedded in the world’s fossil fuel reserves can be burned.⁵²

Global warming is a transnational problem; a single country is not capable of solving it, and unilateral action may hurt economies that are ahead of others. This prisoner’s dilemma causes governments to wait until regional or global agreement is reached. Unfortunately, international negotiations have not yet resulted in fundamental and collective action.

In 2005, Europe did introduce the European Emission Trading Scheme (EU ETS), to accelerate the reduction of CO₂ production of some 12,000 factories, power plants and other installations across the EU. However, as the World Bank states, the price of emitting carbon under the ETS is too low to have a significant impact:

*“Prices in the major existing carbon markets are at an historic low. (...) Kyoto offsets are currently being traded at a few Euro (€) cents, while EU Allowance (EUA) prices fell from about €30 in mid-2008 to lows of below €4 in early 2013, substantially less than what is needed for a transition to a sustainable, low-carbon world.”*⁵³

The collapse in carbon prices forced the Commission to withdraw credits from the market in an attempt to increase prices, which are currently at € 6 per ton⁵⁴ compared to € 30 in 2008.

According to the OECD and IEA (International Energy Agency):

“The carbon intensity of the energy system has held steady – less than 1% change- for the past 40 years. To meet long-term climate targets in the face of

⁴⁹ IPCC (2013-2014) The Fifth Assessment Report (AR5); European Commission, Joint Research Centre (2014) Climate Impacts in Europe. The JRC PESETA II Project.

⁵⁰ U.S. Global Change Research Program (2014) The National Climate Assessment.

⁵¹ European Commission (2014) Climate Impacts in Europe. The JRC PESETA II Project.

⁵² Carbon Tracker, The Grantham Research Institute (2013) Unburnable Carbon 2013: Wasted capital and stranded assets.

⁵³ Carbon Financing at the World Bank, Ecofys (2013) Mapping Carbon Pricing Initiatives. Developments and prospects.

⁵⁴ EEX (Accessed July 24, 2014) European Emission Allowances. Global Environmental Exchange.

rapidly increasing energy demand, radical action is needed to decarbonise both generation and end-use.”⁵⁵

Analyses of the IEA show that the longer we wait, the more expensive it becomes to transform our energy system.⁵⁶

1.6. Conflicts over resources

Resource scarcity and the accelerating rate of climate change act as catalysts for global political conflict. CNA, a leading US government-funded military research organization, warns that climate change-induced drought in the Middle East and Africa is leading to conflicts over food and water and escalating longstanding regional and ethnic tensions into violent clashes. Rising sea levels are putting people and food supplies in vulnerable coastal regions like eastern India, Bangladesh and the Mekong Delta in Vietnam at risk, and could lead to a new wave of refugees.⁵⁷

According to the United Nations, over the last sixty years, at least forty percent of all intrastate conflicts already had a link to natural resource, and:

“As the global population continues to rise, and the demand for resources continues to grow, there is significant potential for conflicts over natural resources to intensify in the coming decades.”⁵⁸

In the words of the European Parliament, resource scarcity will possibly culminate in ‘a scramble for resources’.⁵⁹

The EU’s competitiveness is directly affected by these developments, with as many as thirty million jobs depending on sufficient access to natural resources.⁶⁰ The *Europe 2020* strategy and its flagship initiative *Roadmap to a Resource Efficient Europe* aim to transform EU economies towards decoupling economic growth from resource use.⁶¹

Saving natural resources is important for environmental, social and economic reasons, as well as for international stability. It is in the interest of Europe to increase self-sufficiency and reduce import dependency.

⁵⁵ OECD, IEA (2014) Energy Technology Perspectives 2014.

⁵⁶ IEA (May 12, 2014) Taking on the challenges of an increasingly electrified world.

⁵⁷ CNA Military Advisory Board (2014) National Security and the Accelerating Risks of Climate Change.

⁵⁸ UNEP (2009) From Conflict to Peacebuilding. The Role of Natural Resources and the Environment.

⁵⁹ European Parliament (2011) Draft report on an effective raw materials strategy for Europe (2011/XXXX(INI)).

⁶⁰ Barroso, José Manuel (June 14, 2011) 'Commodities and raw materials: challenges and policy responses', Keynote speech at Bureau of European Policy Advisers conference.

⁶¹ European Commission (2011) Roadmap to a Resource Efficient Europe. COM(2011) 571 final.

1.7. Impact of these challenges on business

Reports by Deloitte, EY, KPMG and PwC underline the risks of the above-mentioned megatrends on businesses operating in the global economy. According to PwC, resource scarcity and climate change are amongst the five global megatrends that are expected to impact clients over the next decade.⁶² An inventory by KPMG among Global Fortune 250 companies that report on corporate responsibility showed that:

“Most (87 percent) identify at least some social and environmental megaforges that affect the business. Climate change and material resource scarcity are the most frequently named.”⁶³

The *Deloitte 2012 Sustainability & the CFO Survey* found that some 53 percent of the CFO participants say their involvement in sustainability issues has become more pronounced in the last year. Their motivation is clear: 49 percent of the 250 CFOs surveyed - representing companies in 14 countries with an average of \$ 12 billion (€ 8.8 billion) in revenue - see a strong link between sustainability performance and financial performance.⁶⁴ EY finds similar results in their surveys.⁶⁵

Companies in all sectors are facing a world where raw materials may be in short supply and subject to price volatility, including large price rises and increased disruption to supplies.⁶⁶ The impact of rising commodity and food prices on businesses is clearly illustrated by the more than € 700 million increase of the commodity prices paid by paint and chemicals company AkzoNobel in 2011.⁶⁷ In the same year, the resources bill of Unilever (consumer goods) increased by € 2.5 billion.⁶⁸ EY therefore states:

“(…) there is a compelling case for elevating corporate resource management to the highest levels of executive management through a C-suite position with the global perspective and remit to manage resource risk strategically — call it a chief resource and energy officer (CREO).”⁶⁹

1.8. The need for a circular economy

Over the last few years, awareness has been growing that the above-mentioned megatrends are interconnected. In order to solve the fundamental issues our societies are facing, Europe needs to develop towards an inclusive and ‘circular’ economy that provides meaningful employment while making clever use of natural resources. In such economy, consumption shifts away from the prevailing, linear, ‘take-make-waste’ system. In a circular economy,

⁶² PwC (2013) Global Annual Review 2013.

⁶³ KPMG (2013) The KPMG Survey of Corporate Responsibility Reporting 2013. KPMG International Cooperative.

⁶⁴ Deloitte (2012) CFO Insights Sustainability: Why CFOs are driving savings and strategy.

⁶⁵ EY (2013) Six growing trends in corporate sustainability.

⁶⁶ KPMG International (2012) Expect the Unexpected: Building business value in a changing world.

⁶⁷ Witteman, Jonathan (October 21, 2011) 'Perfecte storm' raakt AkzoNobel. Volkskrant.

⁶⁸ Z24 (November 3, 2011) Dure grondstoffen drukken marge Unilever.

⁶⁹ EY (2013) Do you need a chief resource and energy officer? The case for elevating the management of energy, water and other critical natural resources to the C-suite.

natural resources are brought in a closed loop while businesses can add value over and over again by applying principles such as resource efficiency, Cradle-to-Cradle and biomimicry. Such economic system requires labour-intensive business models including repair, remanufacturing, refurbishment, spare parts harvesting and redesign of products.

The Ellen MacArthur Foundation defines a circular economy as:

“an industrial system that is restorative or regenerative by intention and design (...). It replaces the ‘end-of-life’ concept with restoration, shifts towards the use of renewable energy, eliminates the use of toxic chemicals, which impair reuse, and aims for the elimination of waste through the superior design of materials, products, systems, and, within this, business models.”⁷⁰

Moving towards a circular economy is at the heart of the European Commission resource efficiency agenda established under the *Europe 2020* strategy for ‘smart, sustainable and inclusive growth’.⁷¹

Global environmental and social megatrends pose serious challenges to economic development, health and stability in Europe and abroad. A transformation to an inclusive, circular economy will be key to sustain prosperity in future. Unfortunately, the prevailing tax systems in European countries play a key role in inhibiting such an economy, as will be explained below.

⁷⁰ Ellen MacArthur Foundation (2012) Towards the circular economy. Economic and business rationale for an accelerated transition.

⁷¹ European Commission (accessed June, 2014) Moving towards a circular economy.

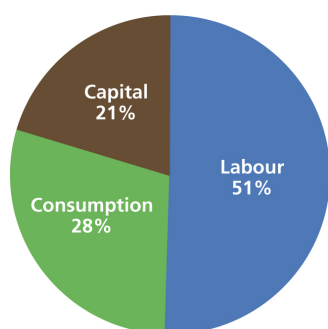
2. The tax system in Europe in relation to these challenges

Chapter 2 explores the role of taxes in Europe, in relation to the environmental and socio-economic challenges mentioned in the first chapter.

2.1. High labour taxes and social contributions

In 2012, Europe's 500 million inhabitants⁷² paid € 5,109,446,000,000 (€ 5.1 trillion) in taxes. Historically, tax systems in Western nations have evolved towards relatively high taxes on labour (such as income tax, payroll tax) and high social contributions. In 2012, 51 percent of all tax revenues (EU27 weighted average) was derived from labour. Consumption taxes (including Value Added Tax, duties and green taxes) provided 28 percent. The remaining 21 percent of total tax revenues was based on capital (including profits, exports and assets) (see Figure 1).

Figure 1: Tax structure by economic function (EU27, 2012, weighted average as a % of total taxation)⁷³



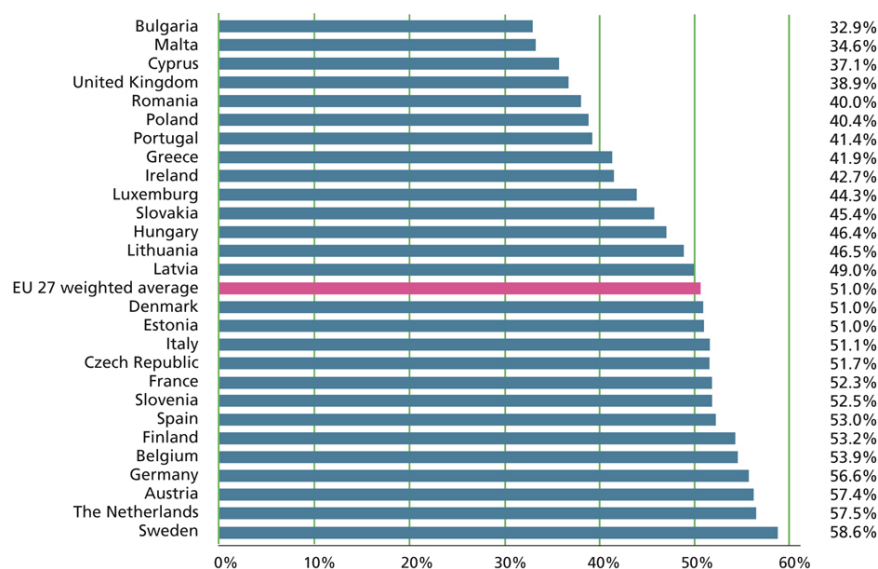
Labour taxes were the largest source of tax revenue in 2012 in 24 Member States, and in 13 Member States they accounted for more than half of total tax revenue. The highest shares of taxation from labour were observed in Sweden (58.6%), the Netherlands (57.5%), Austria

⁷² Eurostat (2011) Population on 1 January.

⁷³ European Commission (2014) Taxation Trends in the European Union. Edition 2014.

(57.4%) and Germany (56.6%). Only in Bulgaria (32.9%), Malta (34.6%), Cyprus (37.1%) and the United Kingdom (38.9%) was the share below forty percent.⁷⁴

Figure 2: Tax burden on labour as a proportion of overall tax revenues (EU27, 2012)⁷⁵



The tax burden on labour has increased significantly since 1970.⁷⁶ The *ITR on labour* is a measure of the tax burden on labour, calculated as the ratio of taxes and social security contributions on employed labour income to total compensation of employees and payroll taxes. The increase of the ITR on labour was very marked in the 1970s, decelerating slightly in the 1980s. In the first half of the 1990s, further increases were due to the rise in unemployment caused by the recession at the beginning of the decade. Finally, in the second half of the decade, budgetary consolidation forced several Member States to increase the tax burden. Since falling sharply in 2009 and leveling off in 2010, the EU28 average has climbed back to pre-crisis levels (see Figure 3).⁷⁷

The *labour tax wedge* is another measure of the tax burden on employment incomes, in terms of the difference between labour costs to the employer and the corresponding net take-home pay of the employee.⁷⁸ The tax wedge varies between different types of household and income intervals.⁷⁹ Between 2010 and 2013, the average labour tax wedge across the OECD increased by 0.8 percent, to 35.9 percent.⁸⁰ This means that, on average, of every euro an employer pays in labour costs, only € 0.64 ends up in the pocket of the employee.

⁷⁴ Eurostat (June 16, 2014) The overall tax-to-GDP ratio in the EU28 up to 39.4% of GDP in 2012.

⁷⁵ European Commission (2014) Taxation Trends in the European Union. Edition 2014.

⁷⁶ European Commission (2011) Taxation Trends in the European Union. Edition 2011.

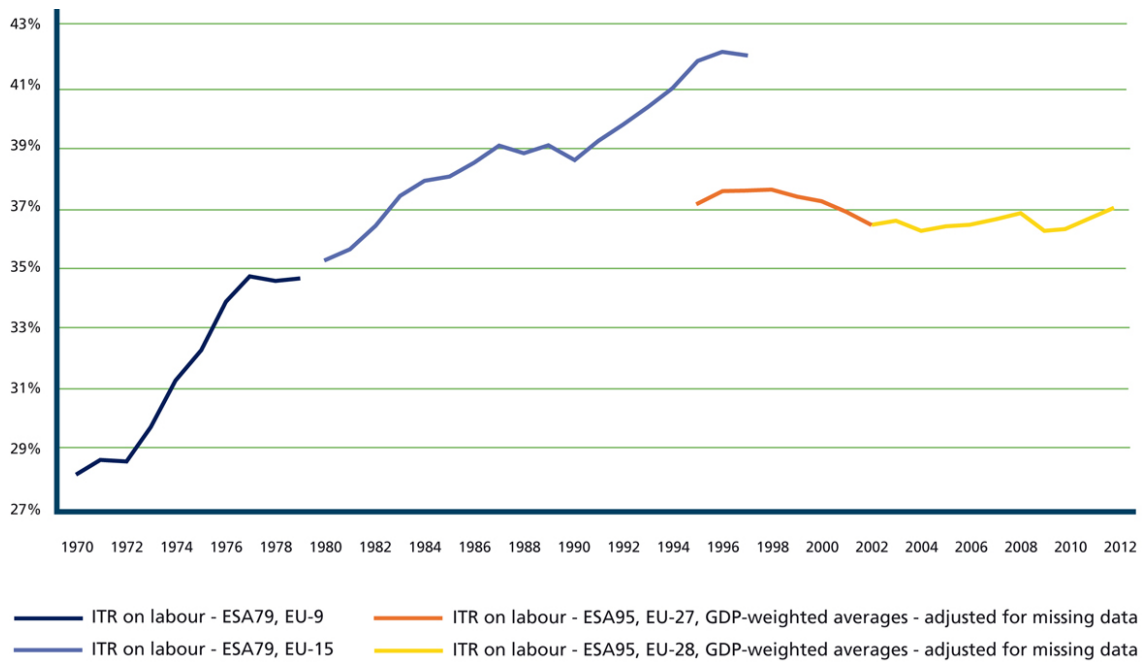
⁷⁷ European Commission (2014) Taxation Trends in the European Union. Edition 2014.

⁷⁸ It is calculated by expressing the sum of personal income tax (employee plus employer) social security contributions together with any payroll tax, minus benefits, as a percentage of total labour costs. OECD (2011) Taxing wages 2009-2010. Special issue: Wage income tax reforms and changes in tax burdens.

⁷⁹ The OECD mentions: singles without children, single parents with 2 children, one-earner married couples without and with 2 children, two-earner married couples with and without 2 children as well as 7 income levels. OECD (2014) Taxing Wages 2014.

⁸⁰ Single individual without children at the income level of the average worker. OECD (April 11, 2014) Tax burdens on labour income continue to rise across the OECD.

Figure 3: Implicit tax rate on labour (EU, 1995–2012)⁸¹



According to a PwC study, labour taxes and social contributions in the EU and the European Free Trade Association (which includes Iceland, Liechtenstein, Switzerland and Norway) account for more than 65 percent of the Total Tax Rate for businesses. Labour taxes and social contributions are also the most time-consuming tax obligations for businesses.⁸²

High labour taxes and social contributions give incentives to businesses to gain efficiency by employing as few people as possible, or to outsource to low-income countries. These high costs have also incentivized technological innovation to be focused on making people redundant in production processes. This is a significant problem considering the current mass unemployment (see 1.1).

2.2. Low environmental taxes

Environmental taxes, according to the definition used by the European Commission, include taxes on energy, transport, pollution and resource extraction. *Energy taxes* are taxes on energy products used for both transport and stationary purposes, including petrol and diesel, fuel oils, natural gas, coal and electricity. *Transport fuel taxes* (a subgroup of energy taxes) are levied on

⁸¹ The average ITRs on labour based on ESA79 system of national accounts are weighted by the total compensation of employees in the economy, whereas for ESA95 the GDP-weighted average is used. Data based on ESA79 are only available for the EU-9 and EU-15 Member States (1970-79 and 1980-97, respectively). ESA79 data: European Commission (2011) Taxation Trends in the European Union. Edition 2011. ESA95 data: European Commission (2013) Taxation Trends in the European Union. Edition 2013.

⁸² In the EU and the EFTA, in 2012, it cost an average company 179 hours to comply with its tax obligations. Labour taxes and mandatory contributions are the most time consuming to comply with, at 86 hours per year. PwC (2013) Paying Taxes 2014: The Global Picture. A comparison of tax system in 189 economies worldwide.

the transport use of fuels/energy products. *Transport taxes* (excluding fuel) are related to the ownership and use of motor vehicles. *Pollution taxes* are taxes on emissions to air and water, management of solid waste and noise. *Resource taxes* include taxes linked to extraction or use of a natural resource. This means that licenses paid for hunting, fishing and the like are classified as resource taxes, because these activities deplete natural resources. CO₂ taxes are included under energy taxes rather than under pollution taxes, as it is often not possible to identify them separately in tax statistics.⁸³

Environmental taxes in general are considered more growth-friendly as they are less distortive than taxes on labour and income.⁸⁴ Also, the administrative costs and transaction costs of green taxes are lower than other taxes (notably income taxes).⁸⁵ In addition, the efficiency losses from green taxes are far smaller than for labour taxes. Considering EU-wide figures, the value for labour taxes of 1.90 implies that to raise an additional euro of revenue, the average efficiency loss would be € 0.90. In contrast, raising an additional euro of revenue from energy taxes, leads to an average efficiency loss of only eight cents.⁸⁶ The European Commission states that:

“(...) the economic distortions provoked by labour taxes are significantly larger than for green taxes. (...) our results suggest overwhelmingly that should tax increases be considered in EU countries, energy taxes represent a better candidate than labour taxes.”

Still, environmental tax revenues are a relatively small part of total tax revenues in the EU. The weighted average in 2012 was 6.1 percent of total tax revenues. These revenues are mainly based on energy and transportation. A negligible fraction of just 0.3 percent of total tax revenues comes from pollution and natural resources (see Figure 4 and Figure 5).

Materials/natural resources taxes are in place in eight Member States:

“Four countries have aggregates-related charges: the Czech Republic has a quarrying charge on sand, gravel and stone, France has a tax on the same materials, Sweden has a natural gravel tax, and the UK has an aggregates levy on rock, sand and gravel. Cyprus has a quarrying charge on mineral extraction, Denmark has a tax on extracted raw materials, Estonia has a mineral resources extraction charge, and Latvia has a far-reaching natural resources tax which covers the extraction of natural resources (of a long list of materials including curative mud, dolomite, lime, cement, stone, soil, sand, gravel, and loam), waste disposal, environmentally hazardous goods, packaging, radioactive substances, end-of-life vehicles and coal, coke and lignite.”⁸⁷

⁸³ Taxes on the extraction of oil or gas are not anymore booked as resource taxes in line with the statistical guideline which excludes taxes on oil and gas extraction from the definition of environmental taxes. European Commission (2013) Taxation Trends in the European Union. Edition 2013.

⁸⁴ European Commission (2012) The 2013 Annual Growth Survey: Towards fair and competitive tax systems. MEMO/12/915; European Commission (2013) The marginal cost of public funds in the EU: the case of labour versus green taxes; European Commission (2013) Annual Growth Survey 2014. COM(2013) 800 final.

⁸⁵ Aarhus University, Eunomia (2014) Study on Environmental Fiscal Reform Potential in 12 EU Member States.

⁸⁶ European Commission (2013) The marginal cost of public funds in the EU: the case of labour versus green taxes.

⁸⁷ Fedrigo-Fazio, Doreen (et al.) (2013) Steps towards greening in the EU. Monitoring Member States achievements in selected environmental policy areas - EU summary report.

Figure 4: Environmental taxes as a proportion of overall tax revenues (EU27, 2012)⁸⁸

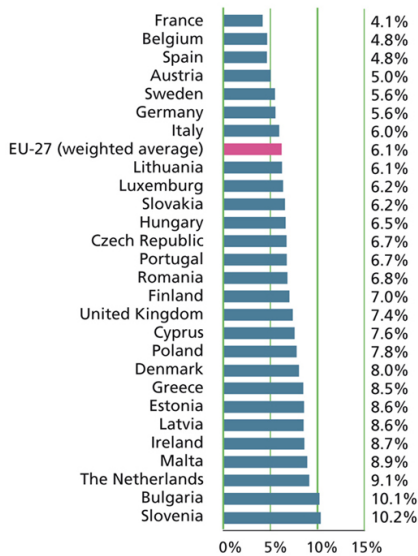
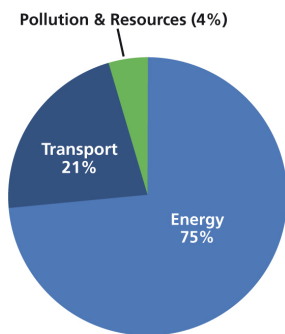


Figure 5: Structure of environmental tax revenues (EU27, 2012, weighted average)⁸⁹



Environmental taxes can be very effective in averting environmental damage. In Sweden, for example, in the early 1990s, a tax on fertilisers reduced demand of fertilizers by 15-20 percent and also reduced financially optimal dosages by about ten percent, thereby effectively “decoupling pesticide use and toxicity”.⁹⁰ In the Netherlands, in 1989, leaded petrol was taxed, because of the heavy pollution it caused, and two months later, leaded petrol was taken off the market.⁹¹

Environmental taxes in the EU have peaked in the 1990s. As a percentage of total tax revenues, they are at their lowest level in more than a decade, down from 6.9 percent in 1999 to 6.1 percent in 2012.⁹² Revenue from environmental taxes as a percentage of GDP has also been declining. Only nine countries show an increase in environmental tax revenues as a percentage of GDP between 1995-2011 (Austria, Bulgaria, Estonia, Finland, Latvia, Malta, the Netherlands, Poland and Romania), with only three countries experiencing increases of more than one percent (Estonia at 1.8%, Latvia at 1.3% and Romania at 1.9%). Cyprus is the only

⁸⁸ European Commission (2014) Taxation Trends in the European Union. Edition 2014.

⁸⁹ European Commission (2014) Taxation Trends in the European Union. Edition 2014.

⁹⁰ World Bank Group (2003) Fertilizer and Pesticide Taxes for Controlling Non-point Agricultural Pollution.

⁹¹ Nieuwsbrief Milieu en Economie (2007) Aan schaarste geen gebrek. 21 jaar milieueconomie in Nederland.

⁹² European Commission (2014) Taxation Trends in the European Union. Edition 2014.

country to have stagnated with a zero percent change. The remaining seventeen countries have had declining revenues from environmental taxes as a percentage of GDP with the highest decline of 0.8 percent in Italy.⁹³

According to the European Commission:

“Environmental taxes remain underdeveloped in many Member States and their revenues in percentage of GDP declined during the period 1999-2008, despite efforts to move to a greener society. (...) There is potential to raise revenue through tax increases as well as through reducing tax expenditure in environmental taxation.”⁹⁴

A study commissioned by the European Commission showed a potential € 35 billion increase of environmental tax revenue by 2016, in a selection of twelve European countries, rising to € 101 billion in 2025 (in real 2013 terms).⁹⁵ Many European countries are planning changes to various environmental taxes.⁹⁶

2.3. Environmentally Harmful Subsidies

Almost all nations apply direct and indirect subsidies (tax breaks and lower tariffs) for environmentally damaging activities. Such policies are now generally being referred to as *Environmentally Harmful Subsidies* (EHS). According to the OECD, EHS include tax breaks and lower tariffs for the combustion of fossil fuels, linked to pollution, health hazards, premature deaths and climate change.

The 34 OECD countries subsidize fossil energy to an amount of \$ 55-90 billion (€ 40-66 billion) each year.⁹⁷ This is higher than the total subsidies for renewable energy in these countries.⁹⁸ The IEA's latest estimates indicate that fossil-fuel consumption subsidies worldwide amounted to \$ 544 billion (€ 392 billion) in 2012, with subsidies to oil products representing over half of the total.⁹⁹ The IMF even estimates global energy subsidies at \$ 1.9 trillion (€ 1.5 trillion) per year, taking into account the negative externalities from energy consumption.¹⁰⁰

Environmentally Harmful Subsidies are still on the rise,¹⁰¹ even though international institutions, such as the OECD,¹⁰² the European Commission,¹⁰³ the World Bank¹⁰⁴ and the

⁹³ Fedrigo-Fazio, Doreen (et al.) (2013) Steps towards greening in the EU. Monitoring Member States achievements in selected environmental policy areas - EU summary report.

⁹⁴ European Commission (2013) Taxation. Excerpt from Tax reforms in EU Member States 2013.

⁹⁵ Belgium, Czech Republic, Estonia, France, Hungary, Italy, Lithuania, Romania, Austria, Slovakia, Poland, Croatia. Aarhus University, Eunomia (2014) Study on Environmental Fiscal Reform Potential in 12 EU Member States.

⁹⁶ Fedrigo-Fazio, Doreen (et al.) (2013) Steps towards greening in the EU. Monitoring Member States achievements in selected environmental policy areas - EU summary report.

⁹⁷ OECD (2013) Climate and Carbon. Aligning Prices and Policies.

⁹⁸ PBL (2012) Voorwaarden voor de vergroening van de economie in Nederland.

⁹⁹ IEA (Accessed September 2014) Energy subsidies.

¹⁰⁰ IMF (2013) Energy subsidy reform: lessons and implications.

¹⁰¹ OECD (2013) Inventory of Estimated Budgetary Support and Tax Expenditures for Fossil Fuels 2013.

¹⁰² “(...) subsidies can have negative effects on the environment that are unforeseen, undervalued or ignored in the policy process. For example, fuel tax rebates and low energy prices stimulate the use of fossil fuels and greenhouse

IMF¹⁰⁵ are pleading for lowering these subsidies on fossil fuels. The European Commission puts it this way:

“The scale of subsidies with potential negative impacts on the environment, notably in the areas of fossil fuels, transport and water, are estimated to be worth a global total of \$1 trillion per year. EHS lead to higher levels of waste, emissions, resource extraction, or to negative impacts on biodiversity. They can lock in inefficient practices and hinder businesses from investing in green technologies. Such subsidies take different forms, with tax reductions or exemptions being one example.”¹⁰⁶

The IMF adds to these effects:

“Subsidy expenditures aggravate fiscal imbalances, and crowd out priority public spending and private investment, including in the energy sector. Underpriced energy distorts resource allocation by encouraging excessive energy consumption, artificially promoting capital-intensive industries (thus discouraging employment creation), reducing incentives for investment in renewable energy, and accelerating the depletion of natural resources.”¹⁰⁷

In developing countries, fuel subsidies have proven to be a costly approach to protecting the poor due to substantial benefit leakage to higher income groups. In absolute terms, the top income quintile captures six times more in subsidies than the bottom.¹⁰⁸

In twelve selected European countries alone, in addition to the above-mentioned potential € 35 million increase of environmental tax revenue by 2016, an additional € 24 billion could be saved by removing some environmentally harmful subsidies.¹⁰⁹

2.4. Value Added Tax in the EU

Value Added Tax (VAT) plays a special role as a factor in consumption patterns. Legally, VAT is a consumption tax, but in practice, consumers pay VAT both on products (such as cans of paint) and services (the efforts of a painter). The current VAT system in the EU is organized by the Council VAT Directive 2006/112/EC. Member States have to subject the supplies of goods and services to a standard rate of at least fifteen percent. Also, they have the possibility to apply one or two reduced rates – of no less than five percent - to a list of supplies of goods and

gas emissions and subsidies for road transport increase congestion and pollution.” OECD (2005) Environmentally Harmful Subsidies. Challenges for Reform; OECD (2013) Climate and Carbon. Aligning Prices and Policies.

¹⁰³ European Commission (2011) Roadmap to a Resource Efficient Europe.

¹⁰⁴ World Bank (2012) Implementing Energy Subsidy Reforms. An Overview of the Key Issues.

¹⁰⁵ IMF (2013) Energy subsidy reform: lessons and implications.

¹⁰⁶ European Commission (2011) Roadmap to a Resource Efficient Europe.

¹⁰⁷ IMF (2013) Energy Subsidy Reform: Lessons And Implications.

¹⁰⁸ IMF (2010) The Unequal Benefits of Fuel Subsidies: A Review of Evidence for Developing Countries.

¹⁰⁹ Belgium, Czech Republic, Estonia, France, Hungary, Italy, Lithuania, Romania, Austria, Slovakia, Poland, Croatia. Aarhus University, Eunomia (2014) Study on Environmental Fiscal Reform Potential in 12 EU Member States.

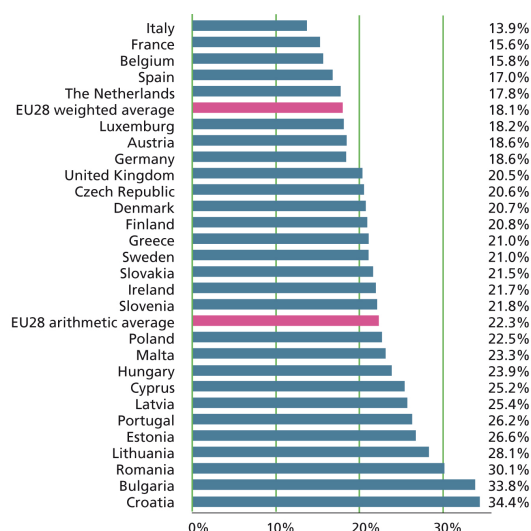
services included in the VAT Directive.¹¹⁰ The zero rate is currently limited to international trade and some ‘temporary derogations’ in the United Kingdom and Ireland.¹¹¹

Trend: rising VAT rates

Since 2009, VAT standard rates have been on a rising trend in most Member States. The EU average VAT standard rate increased by two percent - from 19.5% in 2008 to 21.5% in 2014. Over this period, twenty Member States registered a standard rate rise. The highest VAT standard rate is found in Hungary (27%), followed by Croatia, Denmark and Sweden (all 25%). The lowest standard rates are found in Luxembourg (15%) and Malta (18%).

The weighted average revenue of VAT, as a percentage of total tax revenues in the EU, is 18.1 percent. The arithmetic average is 22.3 percent, which can be explained by the fact that the new Member States tend to have a higher proportion of revenue raised from consumption taxes, and a somewhat lower proportion from taxes on labour (see Figure 6).

Figure 6: VAT as a proportion of overall tax revenues (EU28, 2012)¹¹²



The *tax burden on consumption* may include VAT, taxes and duties on imports and taxes on products (including excise duties), international transactions and pollution. The *implicit tax rate on consumption* as a measure of the tax burden on consumption has not evolved significantly since 1995.¹¹³

¹¹⁰ Supply and construction of all housing; services related to the housing sector (including renovation, maintenance, cleaning); restaurants and catering services; minor repair of tangible movable goods (including bikes but excluding other means of transport. Examples include shoes, clothes, computers, watches) and cleaning and maintenance services of all these goods; domestic care services (e.g. home help and care of the young, elderly, sick or disabled); all personal care services (including hairdressing, beauty services); gardening services; renovation and maintenance services provided to places of worship, cultural heritage and historical monuments. European Commission (2013) Summary report of the outcome of the public consultation on the review of existing legislation on VAT reduced rates. 8 October 2012 – 4 January 2013.

¹¹¹ Council of the European Union (2006) Council Directive 2006/112/EC on the common system of value added tax.

¹¹² European Commission (2014) Taxation Trends in the European Union. Edition 2014.

¹¹³ European Commission (2014) Taxation Trends in the European Union. Edition 2014.

The reduced VAT rate on labour-intensive services

Up to now, harmonisation of VAT rates has proven to be very complicated, as adaptation of the VAT Directive requires general consensus. The only major legislative change that occurred since 1995 is the introduction of reduced VAT rates for labour-intensive services:

“As a follow up to the conclusions of the European Council of December 1998, the Commission made a proposal allowing Member States to experiment with reduced VAT rates on labour-intensive services which are not exposed to cross-border competition, in order to test their impact in terms of job creation and in combating the black economy. The experiment started in 2000 for a period of 3 years and was extended 4 times. Finally in 2009, with the adoption of Council Directive 2009/47/EC, the optional use of reduced rates of VAT for certain labour-intensive local services, including restaurant services, became permanent and open to all Member States.”¹¹⁴

Studies on the employment effects of VAT reductions have come to varying conclusions. In the Netherlands, for example, in 2002, no demonstrable effect was found on the number of employees, but in two out of five sectors, a definite conclusion on the effect on the employment could not be drawn because of a lack of historical data.¹¹⁵ A counter-expertise by the Dutch Central Planning Bureau found that in practice, the temporary VAT reduction on labour-intensive services had been passed on to consumers by 70-80 percent, that the measure had contributed to an increased turnover in those sectors, and that employment had increased substantially.¹¹⁶ Other studies also confirmed a positive impact on employment.¹¹⁷ Copenhagen Economics concluded in 2007:

“We find that labour intensive services to households, such as hairdressers, minor repairs, and domestic care see a relative high effect on employment from lower VAT rates. For domestic care, a reduction in the VAT rate equal to one percent of prices increases long term employment in that industry with nearly 1 percent. By contrast, the effect in petroleum production and electricity use is much smaller, just over 0.2 percent.”¹¹⁸

In 2008 the Commission published proposals to extend reduced VAT rates to labour-intensive sectors whose services are easily substituted for do-it-yourself or underground work, such as locally supplied services and some parts of the hospitality sector. These activities were, however, not included in the 2009 decision.¹¹⁹

VAT and resource efficiency

Moving away from reduced VAT rates could be a vital instrument to incentivise resource efficiency and the reduction of food waste. In the EU, food waste has been estimated at approximately 89 million tons (or 180 kilograms per capita) per year, and is expected to rise to

¹¹⁴ European Commission (2013) Summary report of the outcome of the public consultation on the review of existing legislation on VAT reduced rates. 8 October 2012 – 4 January 2013.

¹¹⁵ Research voor Beleid (2002) Effects of the lowering of VAT rates on labour-intensive services. Survey carried out for the Ministry of Finance.

¹¹⁶ CPB (2003) Contra-expertise effecten BTW-verlaging arbeidsintensieve diensten.

¹¹⁷ Copenhagen Economics (2007) Study on reduced VAT applied to goods and services in the Member States of the European Union; Hotrec (2008) Reduced VAT rates: A must for a sustainable European hospitality industry.

¹¹⁸ Copenhagen Economics (2007) Study on reduced VAT applied to goods and services in the Member States of the European Union.

¹¹⁹ Seely, Antony (2011) VAT on ‘labour-intensive’ services.

about 126 million tons a year by 2020.¹²⁰ European Parliament explicitly advises Member States to eliminate the reduced VAT rate on food, “in order to remove all incentives that may encourage the generation of food waste.”¹²¹ Also, the European Commission has proposed to bring energy under the standard VAT rate.¹²² According to the Commission there is a broad consensus in the economic literature that the use of progressive income taxation is more suitable for redistribution purposes than differentiated commodity tax rates (e.g. reduced VAT rates).¹²³

2.5. Updating our tax systems

The architecture of modern European tax systems stems from a time when globalisation had not yet materialized and jobs could not be moved around the globe. In the past, computers and robots could not substitute employees, and labour provided a stable and reliable source of income for governments. Natural resources seemed available indefinitely and linear (take-make-waste) consumption did not yet show its harmful effects.

Times have changed. The environmental and social megatrends described in chapter 1 underline the need for European Member States to move to an inclusive, circular economy. In the words of Feike Sijbesma (CEO of Royal DSM):

“We need to face it: if we are to make our economic system really sustainable, it is inevitable that we redesign it. This requires an approach in which we will create value on three dimensions simultaneously: People, Planet and Profit.”¹²⁴

It is legitimate to ask how our economic system could become better equipped for today's and tomorrow's challenges. As taxes play such an important role in steering the economy (both intentionally and unintentionally) it is common sense to start there. Levels of taxation should better reflect the effects of value *creation* and value *extraction*, by applying the ‘polluter pays’ principles.

This report focuses on the potential of a shift in taxation from labour to natural resources as an important first step towards updating the tax system to 21st century challenges.

¹²⁰ Households produce the largest share of EU food waste (42%), followed by agriculture/ food processing (39%), food service/catering (14%), and retail/wholesale (5%). European Parliamentary Research Service (EPRS) (January 22, 2014) Tackling food waste. The EU's contribution to a global issue.

¹²¹ European Parliament (2013) Technology options for feeding 10 billion people. Options for Cutting Food Waste.

¹²² European Commission (2013) Tax reforms in EU Member States. Tax policy challenges for economic growth and fiscal sustainability; European Commission (2013) Recent Reforms of Tax Systems in the EU: Good and Bad News.

¹²³ European Commission (2013) Recent Reforms of Tax Systems in the EU: Good and Bad News.

¹²⁴ Sijbesma, Feike (February 1, 2013) We Need to Redesign Our Economy, Huffington Post.

3. Shifting taxation from labour to natural resource use

This chapter explores the concept of a tax shift from labour to natural resources and consumption. It maps the international support for a tax shift, the global trend towards applying the ‘polluter pays’ principle and the relevance for businesses to prepare for increasing environmental taxation. Finally, based on the available literature, this chapter focuses on the potential ‘double dividend’ of a tax shift and how lower labour costs can help combat unemployment.

3.1. Introduction to Ex’tax

Ex’tax (short for *Value Extracted Tax*) is an approach to update the tax system to respond to the challenges of the 21st century, particularly by shifting the tax burden from labour to natural resource use and consumption. Such a tax shift creates incentives to save natural resources and to bring materials in a closed loop, empowering the circular economy. Lower taxes on labour would make it possible to tap into the abundance of talents and capacities of people, boosting services, innovation and education. Although budget neutral for governments, a tax shift fundamentally changes the margins within which business, consumers and governments operate. The concept (visualized below) has gained support over the last few years amongst academics, international institutions and business organizations as well as in politics.

Figure 7: The Ex’tax concept



Raising taxes on natural resource use (such as water, harmful emissions, metals and minerals) causes both challenges and opportunities for businesses. On the one hand, it will be challenging to reduce water consumption and carbon footprints. On the other hand, when costs of natural resources go up, the business case of resource efficient technologies improves. This boosts activities that ‘close the loop’ or apply renewable materials.

When taxes on labour go down, human resources (manpower, craftsmanship and ingenuity) become more affordable. This will bring major business opportunities. Business models can then shift to labour-intensive business models, including urban mining, repair and maintenance services, remanufacturing of products and R&D. A lower tax burden on labour also benefits sectors such as healthcare, education and scientific research.

This tax shift has a fundamental impact on consumption patterns, as pricing of products and services better reflects the 'external' costs (the costs that an activity or product imposes on the community). In an Ex'tax economy, sustainable products would no longer be the more expensive option.

The concept of shifting taxation has been known as Environmental Tax Reform (ETR), Environmental Fiscal Reform (EFR), Green Fiscal Reform (GFR) or Green Tax Swaps (GTS). The term 'Value Extracted Tax' was coined in 1994 by Dutch entrepreneur Eckart Wintzen in a more integrated approach, focussing on the role of taxes in enabling sustainable prosperity.¹²⁵ Due to the aforementioned megatrends, over the last few years, the concept has been gaining traction. Economists across the political spectrum have referred to such tax reform as an 'economic no-brainer'¹²⁶ and international institutions – including the European Commission and European Parliament, the OECD, the ILO, the IMF and WBCSD - support the principle, as will be explained in more detail below.

3.2. Support for a tax shift

Over the years, numerous academics, governmental organizations and NGOs have published about the need for a tax shift. Appendix 1 provides a list of supporting quotes. The European Commission has recommended Member States to apply the Ex'tax principles since as early as 1993:

"The tax burden must be redistributed so as to lighten the burden on labour and increase the burden on the use of natural resources."¹²⁷

For twenty years since, the European Commission has repeated the message that a permanent shift of taxes from wages to consumption has positive GDP effects.¹²⁸ Recent statements are included for example in the *Annual Growth Survey*, which was adopted November 2013:

"Tax systems should be redesigned by broadening tax bases, and shifting the tax burden away from labour on to tax bases linked to consumption, property and pollution."¹²⁹

¹²⁵ Wintzen, Eckart (1994) Re-engineering the Planet. Three Steps to a Sustainable Free Market Economy.

¹²⁶ NPR (July 18, 2012) Episode 387: The No-Brainer Economic Platform.

¹²⁷ European Commission (1993) Growth, competitiveness and employment. Challenges and the ways forward into the 21th century.

¹²⁸ European Commission (2013) Tax reforms in EU Member States. Tax policy challenges for economic growth and fiscal sustainability.

¹²⁹ European Commission (2013) Annual Growth Survey 2014.

The concept also appears in the European Commission's *Roadmap to a Resource Efficient Europe*,¹³⁰ the *Europe 2020*¹³¹ strategy and the 2013 *Country Specific Recommendations*:

“12 Member States are asked to put more effort into shifting the tax burden away from labour to other, less distortive taxes such as consumption, pollution and recurrent property taxes: Austria, Belgium, Czech Republic, France, Germany, Hungary, Italy, Latvia, Lithuania, the Netherlands, Romania and Spain.”¹³²

Appendix 2 provides an inventory of quotes of the European Commission and the Council of the European Union (1993-2014) on the tax shift.

The OECD mentions the need for a tax shift in *Towards Green Growth*¹³³ and in a specific advice to Portugal.¹³⁴ The IMF,¹³⁵ the European Parliament,¹³⁶ the Eurogroup¹³⁷ and the ILO also call for a tax shift:

“Taxing polluters generates revenues that can be leveraged to reduce other (distortionary) taxes, for example taxes on labour. These reductions can lead to higher labour demand and higher employment, while using less energy.”¹³⁸

Despite these calls for action, however, as mentioned before, environmental tax revenues as a proportion of overall tax revenues in the EU are at their lowest level in more than a decade and labour taxes are still on the rise across OECD countries.¹³⁹ Section 4.1 will touch upon some of the barriers for the implementation of a tax shift. But first, the worldwide trend towards ‘internalisation of external costs’ will be discussed.

3.3. Trend: internalisation of external costs

An external cost occurs when the production or consumption of a good or service imposes a cost upon a third party. These costs are borne by society or individuals, rather than the polluter. Internalisation of external costs means that the full economic, social, health and environmental costs are covered by the price of a product or service, applying the ‘polluter pays’ principle.

Governments worldwide have been struggling with internalisation of external costs, as they are hesitant to change legislation that affects businesses. Over the last few years, however,

¹³⁰ European Commission (2011) *Roadmap to a Resource Efficient Europe*.

¹³¹ European Commission (2010) *Europe 2020. A strategy for smart, sustainable and inclusive growth*.

¹³² European Commission (2014) *Q&A: Country-specific recommendations 2014*.

¹³³ OECD (2011) *Towards Green Growth*.

¹³⁴ OECD (2013) *Portugal Reforming The State To Promote Growth*.

¹³⁵ IMF (2012) *Fiscal Policy to Mitigate Climate Change. A Guide for Policymakers*. Pre-publication copy.

¹³⁶ European Parliament (2013) *Decision of the European Parliament and of the Council on a general union Environment Action Programme to 2020 “Living well, within the limits of our planet”*.

¹³⁷ The finance ministers of countries whose currency is the euro. Eurogroup (July 8, 2014) *Structural reform agenda - thematic discussions on growth and jobs - Reduction of the tax wedge*.

¹³⁸ ILO (2012) *Working towards sustainable development. Opportunities for decent work and social inclusion in a green economy*.

¹³⁹ OECD (April 11, 2014) *Tax burdens on labour income continue to rise across the OECD*.

taxation based on the polluter pays principle has been gaining more and more support. Carbon emissions are attracting most attention, with major international institutions such as the OECD,¹⁴⁰ the IMF,¹⁴¹ the United Nations,¹⁴² the World Bank¹⁴³ as well as the European Commission¹⁴⁴ arguing in favour of putting a price on carbon. The OECD, for example states:

“If governments are serious in their fight against climate change, the core message of this reform must be that the cost of CO2 emissions will gradually increase, creating a strong economic incentive to reduce the carbon entanglement and to shift towards a zero carbon trajectory. A central feature of such an approach is placing a price on carbon.”¹⁴⁵

New carbon pricing initiatives are emerging all over the globe. About forty countries and over twenty sub-national jurisdictions are putting a price on carbon. Together, these carbon pricing instruments cover about twelve percent of the annual global greenhouse gas emissions. The world’s emissions trading schemes are worth about \$ 30 billion (€ 22 billion). The EU and China house the two largest carbon markets in the world. Carbon taxation is also gaining ground:

“New carbon taxes were introduced in Mexico and France this past year. In North America, Oregon and Washington are searching for the right carbon pricing options, joining first-movers California, Québec and British Columbia in concerted efforts to tackle climate change. (...) carbon prices between schemes occupy a significant range, from under US\$1/tCO2 in the Mexican carbon tax up to US\$168/tCO2 in the Swedish carbon tax. (...) prices in emissions trading schemes tend to be lower, clustering under US\$12/tCO2.”¹⁴⁶

The main reason for the lower prices currently seen in emissions trading schemes seems to be that taxes often exempt industry and put the tax burden on private households thereby avoiding issues of competitiveness and carbon leakage. Increased ambition in these emissions trading schemes could lead to higher prices. The World Bank states;

“The majority of existing pricing instruments generate carbon prices below US\$35/tCO2, one recent estimate of an appropriate shadow price of carbon.”¹⁴⁷

According to the OECD, market-based approaches like taxes and trading systems consistently reduce CO₂ at a lower cost than other instruments. Capital subsidies and feed-in tariffs are among the most expensive ways of reducing emissions.¹⁴⁸ The IMF also supports fiscal instruments over other instruments:

“Fiscal instruments (carbon taxes or similar) are the most effective policies for reflecting environmental costs in energy prices and promoting development of cleaner technologies, while also providing a valuable source of revenue. Fiscal

¹⁴⁰ OECD (2013) Climate and Carbon. Aligning Prices and Policies.

¹⁴¹ IMF (2013) Fact Sheet: Climate, Environment and the IMF.

¹⁴² UN (July 5, 2012) UN calls for international tax to raise \$400 billion to finance development needs.

¹⁴³ World Bank (2012) Fiscal Implications of Climate Change. Policy Research Working Paper 5956.

¹⁴⁴ European Commission (2013) Tax reforms in EU Member States. Tax policy challenges for economic growth and fiscal sustainability. Working Paper n.38.

¹⁴⁵ OECD (2013) Climate and Carbon. Aligning Prices and Policies.

¹⁴⁶ World Bank Group, Ecofys (2014) State and Trends of Carbon Pricing 2014.

¹⁴⁷ World Bank Group, Ecofys (2014) State and Trends of Carbon Pricing 2014.

¹⁴⁸ OECD (2013) Effective carbon pricing.

policies also have an important role to play in addressing other major environmental challenges, like poor air quality and urban congestion.”

“Carbon taxes can also raise substantial amounts of government revenue. Fiscal challenges created by current economic difficulties present an opportunity to consider these types of innovative environmental charges.”¹⁴⁹

With regard to water, similar positions are presented. The World Bank,¹⁵⁰ the United Nations,¹⁵¹ the OECD¹⁵² and the EEA¹⁵³ have called for a rise in water prices to help manage water as a finite resource.

As shown by the KPMG Green Tax Index, the landscape of green taxes in the world is rapidly changing due to the trend towards internalisation of external costs.¹⁵⁴

3.4. Businesses preparing for green taxes

Over the last few years, sustainability has become an increasingly important topic in the boardroom.¹⁵⁵ Businesses worldwide are gaining more and more insight in their impact by integrating environmental issues in their annual reporting.¹⁵⁶ In practice, however, CFOs are struggling to make the business case for sustainability.¹⁵⁷ Introducing sustainable products and services is often an uphill battle, as business cases of sustainable solutions can hardly compete with options based on ‘tax-free’ primary resources and subsidized fossil fuels. High labour costs are also holding back labour-intensive R&D efforts and activities such as repair and recycling,¹⁵⁸ needed for a circular economy.

Since 2012, Royal Dutch Shell, Unilever and more than 150 other major corporations have signed the *Carbon Price Communiqué*, calling for lawmakers worldwide to put a ‘clear’ price on carbon emissions in order to contain global warming.¹⁵⁹ In September 2014, the World Bank has issued a statement called ‘*We Support Putting a Price on Carbon*’. 1,000 Businesses and 73 countries signed this call to action. It also includes the signature of 340 institutional investors with more than \$ 24 trillion in assets, which shows the massive ‘wave’ of support for putting a price on carbon emissions.¹⁶⁰

¹⁴⁹ IMF (2013) Fact Sheet: Climate, Environment and the IMF.

¹⁵⁰ Trucost (2011) FTSE 350 Commodity Exposure Index.

¹⁵¹ United Nations World Water Assessment Programme (2014) The United Nations World Water Development Report 2014: Water and Energy.

¹⁵² OECD (2013) Water security for better lives. OECD studies on water.

¹⁵³ EEA (2013) Assessment of cost recovery through water pricing.

¹⁵⁴ KPMG (2013) The KPMG Green Tax Index 2013. An exploration of green tax incentives and penalties.

¹⁵⁵ EY (2014) Sustainability reporting — the time is now.

¹⁵⁶ KPMG (2013) The KPMG Survey of Corporate Responsibility Reporting 2013.

¹⁵⁷ Accenture, UN Global Compact (2013) The UN Global Compact-Accenture CEO Study on Sustainability 2013. Architects of a Better World.

¹⁵⁸ The operating costs of recycling depend strongly on the labour cost at the location of the dismantling plant. In China, a worker costs about twenty times less than a worker in Europe. In countries where the labour cost is low, manual dismantling can be deployed to prevent large losses due to shredding. Meskers, Christina, Hagelüken, Christian (2009) The Impact of different pre-processing routes on the metal recovery from Pcs.

¹⁵⁹ The Carbon Price Communiqué (accessed April, 2014) What is The Carbon Price Communiqué?.

¹⁶⁰ World Bank (2014) We support putting a price on carbon.

Twenty-nine multinationals, including Royal Dutch Shell, BP, ExxonMobil, General Electric and Microsoft are even taking unilateral action, in anticipation of effective carbon taxation in future. In their accounts, they apply a fictitious, internal carbon tax rate, in order to improve long-term investment decision-making. An inventory by CDP indicates that these businesses apply rates between \$ 6 and \$ 60 (€ 4-44) per ton of CO₂:

“(...) companies cite use of a carbon price as a planning tool to help identify revenue opportunities, risks, and as an incentive to drive maximum energy efficiencies to reduce costs and guide capital investment decisions.”¹⁶¹

Royal Dutch Shell, for example, states:

“A strong, stable price on CO₂ within a comprehensive policy framework is needed to achieve significant reductions in the long term. (...) But we are not waiting for government policy to develop; we already consider a potential screening value of CO₂ emissions at \$40 a tonne.”¹⁶²

ExxonMobil has published an outlook, which includes a ‘low carbon scenario’, which would require CO₂ prices rising to over \$ 200 (€ 164) per ton by 2050.¹⁶³ The company itself applies a proxy cost of \$ 80 (€ 59) per ton by 2040:

“Our proxy cost, which in some areas may approach \$80/ton over the Outlook period, is not a suggestion that governments should apply specific taxes. It is also not the same as a “social cost of carbon” (...) It is simply our effort to quantify what we believe government policies over the Outlook period could cost to our investment opportunities. (...) We continue to believe a revenue-neutral carbon tax is better able to accommodate these key criteria than alternatives such as cap-and-trade.”

With regard to water, similar issues arise. The costs of water extraction are bound to rise, either through price mechanisms or government action. Businesses are developing methodologies to assess the ‘true’ value of water, for example Holcim,¹⁶⁴ Veolia¹⁶⁵ and WBCSD.¹⁶⁶

Over the last few years, business leaders have become aware of the economic impact of global environmental megatrends and of the social impact of business activities. There are many inspiring examples of businesses on a path to transformation to fit the circular economy. Royal DSM, for example, has first evolved from the *Dutch State Mines* to a chemical company and then to a life sciences and material sciences company. Umicore has changed from a mining company into an *urban mining* company; recycling of precious metals. Interface (carpet tiles) is determined to reach Mission Zero (no negative impact) by 2020 and Unilever (consumer goods) has pledged to double the size of its business while decreasing its environmental footprint.¹⁶⁷

¹⁶¹ CDP (2013) Use of internal carbon price by companies as incentive and strategic planning tool. A review of findings from CDP 2013 disclosure.

¹⁶² Royal Dutch Shell (2014) Sustainability Report 2013.

¹⁶³ The scenario is based on stabilization of carbon at 450 ppm. ExxonMobil (2014) Energy and Carbon - Managing the Risks.

¹⁶⁴ Holcim (2014) Building Ambition, Adding Value. Corporate Sustainable Development Report 2013.

¹⁶⁵ Veolia (accessed July, 2014) The True Cost of Water.

¹⁶⁶ WBCSD (accessed July, 2014) The Global Water Tool.

¹⁶⁷ Company websites; Dutch Sustainable Growth Coalition (2012) Towards Sustainable Growth Business Models.

In 2010, the World Business Council for Sustainable Development (WBCSD), a CEO-led association of some 200 international companies published its *Vision 2050* report which lays out a pathway leading to a global population of some nine billion people living well, within the resource limits of the planet by 2050. This work included a plea for green taxes:

“Increase price levels, via taxes and levies, to influence a shift of consumption toward the offering with the best environmental and social profile (...) Tax strategies [should] shift towards incentivizing job creation and healthier products and discouraging negative external factors like pollution and environmental damage.”¹⁶⁸

An increase in environmental taxes by applying the ‘polluter pays’ principle seems inevitable. But what are the *opportunities*, if the proceeds of such tax increases would be used to lower taxes on labour?

3.5. Lowering the tax burden on labour to solve unemployment

The relation between high labour costs and unemployment has been extensively documented; high labour costs drive businesses to minimize the number of staff or to outsource to low-wage countries, and there is a general consensus that a lower tax burden on labour creates employment opportunities. See for example Nickell & Layard (1999),¹⁶⁹ ECB (2008),¹⁷⁰ Vermeend (et al.) (2008),¹⁷¹ Dolenc & Laporsek (2010),¹⁷² Brys (2011)¹⁷³ and many more. According to the OECD, especially low-income workers, single parents, second earners and older workers are responsive to changes in labour income taxation. The retirement decision of older workers is also highly responsive to tax incentives. The same is true for international mobility of high-skilled workers.¹⁷⁴ In general, both the decision to enter the labour force and the hours worked are affected by labour taxes.¹⁷⁵

The impact of a reduction in labour taxes on employment has been documented in many studies. The European Commission stated in 1993:

“Studies have been carried out in several countries with very high levels of security contributions. These studies show that a reduction of 30 to 40% in social

¹⁶⁸ WBCSD (World Business Council for Sustainable Development) (2010) *Vision 2050*.

¹⁶⁹ Nickell & Layard (1999), cited in Dolenc, Primož, Laporšek, Suzana (2010) *Tax wedge on labour and its effect on employment growth in the European Union*.

¹⁷⁰ ECB (2008) *Labour cost and employment across euro area countries and sectors*. Working Paper Series no 912.

¹⁷¹ Vermeend, Willem, van der Ploeg, Rick, Timmer, Jan (2008) *Taxes and the Economy. A Survey on the Impact of Taxes on Growth, Employment, Investment, Consumption and the Environment*.

¹⁷² Primož Dolenc, Suzana Laporšek (2010) *Tax wedge on labour and its effect on employment growth in the European Union*.

¹⁷³ Brys, Bert (2011) *Making Fundamental Tax Reform Happen*, OECD Taxation Working Papers, No. 3.

¹⁷⁴ OECD (2011) *Taxation and Employment*. Tax Policy Studies No21.

¹⁷⁵ Bocconi (2011) *The role and impact of labour taxation policies*.

security contributions for low-paid workers would increase employment by 2%.”¹⁷⁶

Bassanini and Duval (2006) investigated the influence of taxation on employment and unemployment on the sample of 21 OECD countries between 1983 and 2003 and found that:

“(…) a 10 percentage points reduction of the tax wedge in an average OECD country would reduce equilibrium unemployment by 2.8 percentage points and increase the employment rate by a larger 3.7 percentage points (due to the positive impact on participation).”¹⁷⁷

Other researchers found an even stronger correlation between a tax wedge decrease and an employment increase (see 8.4.2). Not surprisingly, institutions such as the World Bank,¹⁷⁸ the IMF,¹⁷⁹ the European Commission,¹⁸⁰ the Eurogroup¹⁸¹ and the European Council¹⁸² have called for lower labour costs to solve unemployment.

3.6. The ‘double dividend’ discussion

Impact of a tax shift in theory

There has been much discussion amongst economists on the net employment effect of a tax shift from labour to consumption, as the OECD states:

“While taxes on labour income have the clearest and most direct impact on employment, almost all taxes can have some effect on employment, indirectly, by distorting economic decisions, and thus leading to an inefficient allocation of resources and reduced labour demand.”¹⁸³

An increased tax burden on environmentally harmful consumption could indeed decrease consumption of particular products. Also, employment in resource- and energy-intensive sectors might decrease, thereby counterbalancing the positive impacts of lower labour tax rates in general. In the literature, especially dating from the 1990s, scholars have warned, based on economic modelling, not to be too optimistic about the ‘double dividend’ effect of both improving the environment and creating jobs. See for example Bovenberg (1999)¹⁸⁴ and Kosonen & Gaëtan (2009).¹⁸⁵ Other studies do find positive effects of ETR on employment; see

¹⁷⁶ European Commission (1993) Growth, competitiveness and employment. Challenges and the ways forward into the 21st century.

¹⁷⁷ Bassanini & Duval (2006), cited in Primož Dolenc, Suzana Laporšek (2010) Tax wedge on labour and its effect on employment growth in the European Union.

¹⁷⁸ The World Bank (2007) Fiscal policy and economic growth. Lessons for Eastern Europe and Central Asia.

¹⁷⁹ IMF (March 31, 2014) The IMF's Advice on Labor Market Issues.

¹⁸⁰ European Commission (2013) Tax reforms in EU Member States. Tax policy challenges for economic growth and fiscal sustainability.

¹⁸¹ The finance ministers of countries whose currency is the euro. Eurogroup (July 8, 2014) Structural reform agenda - thematic discussions on growth and jobs - Reduction of the tax wedge.

¹⁸² European Council (March 24/25, 2011) Conclusions. EUCO 10/1/11 REV 1.

¹⁸³ OECD (2011) Taxation and Employment. Tax Policy Studies No21.

¹⁸⁴ Bovenberg, Lans (1999) Green Tax Reforms and the Double Dividend: an Updated Reader's Guide. International Tax and Public Finance, 6, 421–443.

¹⁸⁵ Kosonen, Katri, Nicodème, Gaëtan (2009) The role of fiscal instruments in environmental policy.

for example Majocchi & Missaglia (2002),¹⁸⁶ Dresner (2004),¹⁸⁷ EEA (2011),¹⁸⁸ Bocconi (2011)¹⁸⁹ and European Commission (2013).¹⁹⁰ The attractiveness of a shift to a consumption tax stems from the fact that consumption is a broader base than labour income, according to Bocconi:

“Consumption is financed also by a number of sources other than labour income, including government transfers, corporate income, previously accumulated wealth, etc. A higher base obviously means a lower rate, and this reduces the distortionary effect on labour supply and possibly, given that the distortion increases more than proportionally with the rate, the overall distortionary effect of the tax system.”

“This redistribution is expected to have positive effects on growth, as the lower cost of labour will induce an increase in investments. Note that we have a positive effect on employment and growth even if the joint final effect of the change in wages and prices offset each other.”¹⁹¹

A recent study on the potential of indirect benefits of ETR commissioned by the European Commission concluded that a tax shift can help to stimulate employment. The degree to which this occurs depends on the specifics of the environmental tax being considered, how the revenues will be spent, and the employment and economic dynamics within a country (e.g. the size of the informal sector, the extent of unemployment, and the flexibility of the labour force). The findings of detailed modelling work appear to be relatively consistent and suggest that gains in employment may be achieved under certain circumstances; typically, when revenues derived from the taxes are used to offset social security taxes, the report states:

“(...) some studies have suggested that unemployment may rise as a result of environmental tax reform, but these are certainly more limited than those which suggest net positive gains in employment.”¹⁹²

The World Bank has added that the effective environmental tax rate would determine its effect on employment. An optimal carbon price, according to one publication, would lie below the ‘Pigovian’ level, meaning below the level, which includes all external costs:

“It might be tempting to suppose that carbon pricing can thus yield a double dividend in the sense of not only mitigating climate change but also improving the overall efficiency of the tax system in which case it might be optimal to set the carbon price above the Pigovian level. But in addition to this beneficial —revenue recycling effect is a —tax interaction effect: carbon pricing will affect, and possibly exacerbate, the distortions caused by the pre-existing tax system. By raising the consumer price of energy-intensive goods, for instance, it would have effects similar to a reduction in the after-tax wage, and thus reinforce the distortionary impact of labor taxes—implying an

¹⁸⁶ Majocchi Alberto, Missaglia Marco (2002) Environmental taxes and border tax adjustments: An economic assessment.

¹⁸⁷ Dresner, Simon (et al.) (2004) Social and political responses to ecological tax reform in Europe: an introduction to the special issue. *Energy Policy* 34 (2006) 895–904.

¹⁸⁸ EEA (2011) Environmental tax reform in Europe: opportunities for eco-innovation.

¹⁸⁹ Bocconi (2011) The role and impact of labour taxation policies.

¹⁹⁰ European Commission (2013) Tax reforms in EU Member States. Tax policy challenges for economic growth and fiscal sustainability.

¹⁹¹ Bocconi (2011) The role and impact of labour taxation policies.

¹⁹² Aarhus University, Eunomia (2014) Study on Environmental Fiscal Reform Potential in 12 EU Member States.

*optimal carbon price below the Pigovian level, by perhaps 15–20 percent.*¹⁹³

The term ‘double dividend’ (sometimes ‘double edged sword’) is rather misleading as it suggests that ETR is about a single measure having a double effect. In practice, a shift in taxation covers multiple policy measures, and therefore, by nature, multiple effects. According to the EEA (an agency of the European Union) a tax shift can produce at least four different types of impacts:

*“(1) the direct consequences of increasing taxes (e.g. higher prices for certain goods); (2) the consequences of recycling (e.g. direct transfers or alleviation of taxes); (3) the broader economic impacts of ETR (e.g. job creation or inflation); and (4) the environmental effects of ETR (e.g. a cleaner environment).”*¹⁹⁴

The EEA therefore argues that environmental fiscal reform can deliver even more than two dividends; not just increased resource productivity, eco-innovation and increased employment but also improved health of environments and people and a more efficient tax system. A fifth ‘dividend’ could be that the financial burdens of an ageing population are distributed more fairly as these burdens are shared according to consumption.¹⁹⁵

Impact of a tax shift in practice

Experiences have generally shown a positive impact on employment, although this –again– depends on whether and how revenues are recycled as well as the nature of the wider tax reform, including what other taxes or charges are reduced (e.g. labour taxes).¹⁹⁶

In the 1990s, six European countries took steps to shift the tax burden from labour to energy and transportation: Sweden (initial year of the reforms: 1990), Denmark (1993), the Netherlands (1996), Finland (1997), Slovenia (1997) and Germany (1999). The UK followed in 2001. In total, these tax reforms shifted tax revenues for more than € 25 billion annually. The revenues were recycled towards lower taxes on labour. The impact of these tax shifts have been analysed and the associated reductions of carbon emissions have been documented in several studies. The burden for specific energy-intensive industries remained modest (1-2 percent increase in energy costs) and the tax shifts generally had a positive effect on economic activity, depending on how the revenues from the environmental taxes were recycled. Also, ETR caused employment in some of the countries to increase by as much as 0.5 percent.¹⁹⁷

The following positive impact on employment was found in Germany, Denmark and Sweden:

*“(...) an ex-post assessment of ETR in Germany with recycling was found to have positive employment effects of between 0.15 to 0.75 per cent (Truger 2008), while ETR has been shown to contribute to a growth in employment by up to 0.5 per cent in Denmark and Sweden (Andersen et al 2007).”*¹⁹⁸

Conclusions based on the available literature

Over the last few decades a growing body of literature has emerged which has looked at the

¹⁹³ The World Bank (2012) Fiscal Implications of Climate Change. Policy Research Working Paper 5956.

¹⁹⁴ EEA (2012) Environmental tax reform in Europe: implications for income distribution.

¹⁹⁵ EEA (2013) Environmental Fiscal reform – illustrative potential in Portugal.

¹⁹⁶ Withana, Sirina (et al.) (2013) Evaluation of environmental tax reforms: International experiences.

¹⁹⁷ Andersen, Mikael Skou (et al.) (2007) Competitiveness Effects of Environmental Tax Reforms (COMETR). Final report to the European Commission.

¹⁹⁸ Withana, Sirina (et al.) (2013) Evaluation of environmental tax reforms: International experiences.

relationship between a tax shift and employment. According to the Aarhus & Eunomia study, much of this literature is based on theoretical modelling as opposed to the gathering of empirical evidence (this may not be surprising given the difficulties of gathering empirical data and assigning cause and effect to a particular policy intervention). Nevertheless:

“(...) the findings appear to be relatively consistent and suggest that gains in employment are likely to be achieved where offsetting reductions in other taxes are made. (...) The effects of EFR are most well documented in relation to energy and carbon taxes. Other forms of environmental taxes, such as resource taxes, or taxes on pollution, have received less attention. One reason for this is that the modelling studies have tended to address effects at the level of the macro-economy, whilst the level of revenue generation by some pollution and resource taxes is rather low (so that the net effects estimated by models are likely to lie within, or close to, their limits of resolution).”¹⁹⁹

It is important to note that the European Commission sees the green economy as one of the major areas for employment expansion, with a potential of twenty million new jobs between now and 2020. Also, it has been estimated that full compliance with EU policy on waste management could create an additional 400,000 jobs and an extra annual turnover of € 42 billion. The potential benefits of resource efficiency could reach € 2.1 trillion of annual savings by 2030. Every percentage point reduction in resource use is worth around € 23 billion to business and could result in 100,000 to 200,000 new jobs.²⁰⁰

In 2000, a review looked at 139 model simulations coming from a total of 59 studies. Seventy-five of the 108 simulations that were reviewed for employment impacts (i.e. 73 percent) predicted that ETR would result in net job creation. The best results in terms of employment are obtained when recycling occurs through cuts in SSC. Aarhus & Eunomia conclude that:

“A review of EFR conducted in 2005 updated the findings from the study discussed above. This work looked at a total of 186 model simulations from 61 separate studies. (...) The results of this work are summarised in Table 143, from which it can be seen that, on average, all of the different groupings of studies predicted net job creation with significant reductions in CO2 emissions.”²⁰¹

Based on the literature and on practical experience so far (appendix 3 provides a list of quotes), it can be concluded that there is ample support for the assumption that a shift in taxation can have a positive impact on employment, economic growth and the environment. The impact of a tax shift depends, amongst others, on the effective level of environmental taxation, the applied measures to lower costs of labour, price elasticity and substitutability of products and services.

Updating the tax system is not a simple undertaking; tax systems and their interaction with the economy, prosperity and well-being are complicated. One thing is clear, though, as major international institutions recognize: we have entered an era of rapid change and great social and environmental challenges, and the current tax system is not structured to cope with these challenges.

¹⁹⁹ Aarhus University, Eunomia (2014) Study on Environmental Fiscal Reform Potential in 12 EU Member States.

²⁰⁰ European Commission (2014) Boosting growth and jobs. Success stories from EU Environment Policy.

²⁰¹ Aarhus University, Eunomia (2014) Study on Environmental Fiscal Reform Potential in 12 EU Member States.

4. The Ex'tax Project approach

While evidence is growing that a tax shift offers an effective response to the economic crisis, as well as the environmental crises, policy makers are still struggling to put the idea into practice. This chapter describes five main barriers to the implementation of a tax shift, and how The Ex'tax Project attempts to contribute to addressing these challenges.

4.1. How The Ex'tax Project addresses main barriers

Below are five of the main barriers to the implementation of a tax shift:

International coordination is essential to achieve a level playing field and to solve transnational problems.

Many environmental problems (such as climate change) are transnational problems. A single country is not capable of solving these issues, and unilateral action may hurt economies that are ahead of others. This prisoner's dilemma causes governments to wait until regional or global agreement is reached. This is especially relevant in Europe, where unanimity is required to change tax directives.

The Ex'tax Project has set up a working group of tax specialists (see below) in order to develop a Policy Toolkit that can be applied internationally (see page 65). This may be helpful in the creation of a European scenario. It is important to note, however, that international players will only agree on specific policy measures when there is a basic agreement on the direction and long-term goals of structural reforms.

There have been doubts about the stability of environmental taxes and faith in the stability of the prevailing labour taxes.

In general, Environmental Tax Reform research has focused on carbon emissions, which feeds criticism that successful regulation may erode the stability of tax revenues; supposing, that government income erodes when measures effectively reduce carbon emissions. Also, policy makers have long trusted the labour force as a stable source of income. Of course, this no

longer holds true in a globalized world in which jobs simply move across the globe. New sources of income for governments are necessary as high unemployment rates, ageing populations and increasing health costs undermine the stability of tax revenues from labour.

The Ex'tax Project contributes to solve this barrier by showing the range of options for environmental tax bases (see page 78), which helps secure stable tax revenues.

The benefits of lower taxes on labour have been insufficiently highlighted in the past.

In the literature, generally, there has been a narrow focus on increasing environmental taxes and a lack of focus on the techniques and benefits of lowering labour taxes.

The Ex'tax Project contributes to solve this barrier by focussing on both sides of the equation (see page 78).

An interdisciplinary approach is needed.

As economic, environmental and social issues are interconnected; an integrated, systemic approach is needed to solve them. The existing segmentation between government departments (Ministries of Finance, Environment, Economic Affairs and Employment) is a barrier for the development of an interdisciplinary approach.

The Ex'tax Project works at communicating on the connections between the tax system and 'triple P' (people, planet & profit) issues and intends to bring together different fields of expertise. The recent -first ever- meeting between Employment and Environment ministries, organised under the Italian EU Presidency is an inspiring example.

There is a lack of information on the impact of a tax shift from a business perspective.

An inclusive, circular economy requires a major paradigm shift and risks and opportunities are not evenly distributed among business sectors. In the past, research on the tax shift has focused on modelling the impact on a macro-economic level. There is a general lack of information on the impact of the risks and opportunities from a business perspective.

The Ex'tax Project contributes to solve this barrier by bridging the information gap on the effects of a tax shift, focussing on business risks and opportunities, as a follow-up on this report. After an initial analysis of the impact on businesses (in 2013, in collaboration with the WBCSD), The Ex'tax Project intends to further develop this research towards a 'Toolkit for Business', providing strategic insights in the risks and opportunities of a tax shift for businesses in different sectors.

Gathering more information on business cases that benefit from the tax shift is key to an informed discussion between policy makers and businesses.

In the next section, the approach of the Ex'tax working group is explained.

4.2. The Ex'tax working group

Invited by The Ex'tax Project, in 2011, tax specialists of Deloitte, EY, KPMG Meijburg and PwC have joined a working group to research how Ex'tax can be implemented in the Netherlands and the rest of the European Union. The group consists of tax specialists (in general, Tax Partners) of each of the four practices, with expertise in relevant areas such as Indirect Tax, Custom Duties, Sustainability, Tax Supply Chain Management, Energy and Natural Resource Tax, Human Resource Services and Corporate Income Tax. Below is a description of the goal of the working group, as well as the scope of the research and the applied criteria and methodology.

4.2.1. Goal of the working group

The working group set out to explore a fundamental tax shift that moves incentives towards resource-efficiency and employment in a budget neutral way, while maintaining long-term competitiveness. The overall goal of the working group is to help develop a long-term vision on the tax system of the 21st century, in the Netherlands and Europe, and to explore specific policy measures to fundamentally shift taxation from labour to natural resource consumption, by providing:

1. **A Policy Toolkit to explore the options to implement Ex'tax principles;**
2. **A (mid- to long-term) scenario for the Netherlands (the first case study);**
3. **Recommendations for continued research.**

By sharing their specific tax expertise, Deloitte, EY, KPMG Meijburg and PwC aim to contribute positively to the major challenges our societies are facing.

4.2.2. Limiting the scope

In order to define the scope of the fiscal exploration, the following question was put forward to the working group:

Which changes are needed in the Dutch and European fiscal systems in order for the Netherlands to generate additional tax revenues to the amount of € 30 billion by increasing taxes on consumption while lowering the tax burden on labour with the same amount (including spin-off consequences)?

The amount of € 30 billion was chosen as a target for this study as it represents a significant share (thirteen percent) of government budget²⁰² and it therefore enables the exploration of a fundamental shift in taxation.

The group has chosen to limit the scope in a number of ways, In order to create a workable assignment:

²⁰² European Commission (2014) Taxation Trends in the European Union. Edition 2014.

Geographical focus. Although national governments are fully capable of applying the Ex'tax principles step by step, a fundamental shift in taxation can only be realised through European cooperation. The European context therefore has to be taken into account. In order to limit the scope of this exploration, however, the Dutch context is focused on primarily, assuming that ultimately there will be European coordination.

Time frame. European cooperation will require a long-term negotiation process of at least three to fifteen years, depending on the developments in the international arena and the acceleration of the urgency with regard to environmental problems (such as resource scarcity and climate change) as well as developments in the employment market and changes in public opinion. The timeline for implementation of the proposals in this report is therefore expected to be three to fifteen years.

Social equilibrium. The working group has the ambition to develop a fair and social proposal. The Dutch and European tax systems are sophisticated tax systems that are capable of facilitating a fair equilibrium between income groups. It is a challenge to define how to compensate for effects on specific income groups and business sectors while at the same time decreasing the tax burden on labour sufficiently. As change is inevitable, the total package can and will not be budget-neutral for each and every sector and for consumers with different consumption quota. The goal, however, is to reach a reasonable and fair effect. As noted in a review chaired by Nobel laureate Professor Sir James Mirrlees:

*"(...) it is important to consider all taxes (and transfer payments) together as a system. It is the redistributive impact of the system as a whole which needs to be measured and judged. (...) not all taxes need be progressive as long as the overall system is."*²⁰³

Tax base. The categories 'natural resource use' and 'consumption' allow for measures covering the full spectrum of natural resources, including but not limited to metals, minerals and fossil fuels, irrespective of the form of these materials (as a primary material, in semi-finished products and used in (parts of) products). Pollution of clean air and water usage are also taken into account. In order to simplify the case study, the group chose a focus group of tax bases. Natural resources use such as fishing, deforestation and the use of ecosystem services have not yet been elaborated on. The Ex'tax principle does however envision possible pricing of these environmental factors in due time. (See page 78 for an overview).

With regard to labour costs the focus is on the total cost of labour, including but not limited to social contributions.

Criteria. Each proposal is supposed to:

- 1) Encourage employment or discourage the use of natural resources, and**
- 2) Raise substantial tax revenues or send a clear price signal to discourage environmentally damaging products and activities, and, preferably:**
- 3) Contribute to a simplification of the tax regime.** As much as possible, the measures should contribute to a simplification of the tax system in order to lower administrative burdens and minimize economic distortions. The group has focused as much as

²⁰³ Mirrlees, James (et al.) (2011) Tax by Design. Institute for Fiscal Studies.

possible on *generic* measures rather than specific measures, exemptions and subsidies, based on the following principle:

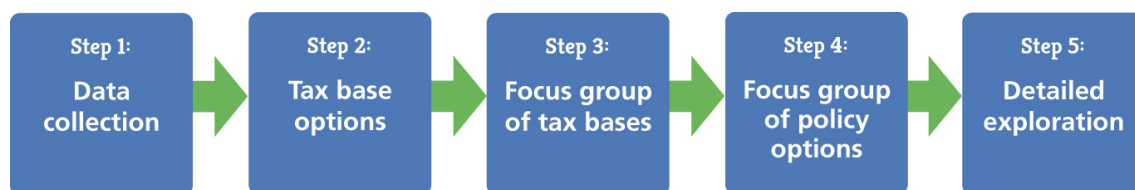
“A tax system that treats similar economic activities in similar ways for tax purposes will tend to be simpler, avoid unjustifiable discrimination between people and economic activities, and help to minimize economic distortions.”²⁰⁴

Impact assessment. The scope of this research has not yet included modelling of the impact of the proposals. For example, the effects for income groups and specific business sectors still need to be assessed.

4.2.3. Methodology: The Ex'tax Policy Toolkit

The Ex'tax Policy Toolkit in Figure 8 offers a methodology to analyse the options of a tax shift from labour to natural resources and consumption.

Figure 8: The Ex'tax Policy Toolkit



The tool consists of five steps or phases. In step one, data are collected with regard to the geographic area under review; exploring the economic and fiscal landscape with regard to environmental and labour issues. Then, an inventory is made of the range of options, or ‘building blocks’, available for governments to apply the Ex'tax principles. Thirdly, a focus group of tax bases is identified, in order to create a workable scope.

The fourth step entails brainstorm sessions to determine a focus group of policy options; ‘high potential’ measures, based on criteria such as urgency, potential benefits and (mid- to long-term) attainability. This step involves the identification of specific measures that could (a) broaden the tax *base* of environmental taxes, (b) increase the *rates* of environmental tax, (c) terminate Environmentally Harmful Subsidies, and (d) lower labour taxes and social contributions.

Finally, as far as possible, the proposed measures are elaborated on in terms of the object, rates, exemptions, goals, challenges and possible solutions, fiscal effects for government, employers, employees and other parties (such as the unemployed and local governments), compensation for potential negative effects of a measure and estimated gross revenues.

This methodology has been applied to the Netherlands as the first case study. Chapter 5 provides the key findings of this case study and chapters 6 and 7 elaborate on the findings.

²⁰⁴ Mirrlees, James (et al.) (2011) Tax by Design. Institute for Fiscal Studies.

5. Case study: The Netherlands

This chapter describes the key findings of the Ex'tax working group. Section 5.1 provides an overview of the economic, fiscal and environmental context in the Netherlands, as far as relevant for the case study. Section 5.2 presents options for shifting the tax base. 5.3 Shows this case study's focus group of tax bases. In section 5.4, an overview is given of potential policy measures for a budget-neutral tax shift in the Netherlands. Finally, an overview is given of the measures in more detail.

5.1. Step 1: Data collection

This chapter gives a brief introduction on the Dutch economy, the major issues with regard to natural resource use and relevant features of the Dutch fiscal structure.

5.1.1. The Dutch economy at a glance

Export nation

The Netherlands is a relatively small, densely populated country. It has almost 17 million inhabitants²⁰⁵ and a GDP of € 607 billion.²⁰⁶ In 2013, the Dutch shadow economy was estimated to be around nine percent of GDP, at approximately € 55 billion.²⁰⁷ The country is characterized by an open economy and ranks among the top ten exporters in the world.²⁰⁸ Each year, 556 million tons of goods pass through its harbours, railways, airports and rivers. The Port of Rotterdam is the largest European seaport and Amsterdam Airport Schiphol is one of the major European airports. The Netherlands is the second largest exporter of agricultural products in the world, at \$ 101 billion (€ 74 billion) a year.²⁰⁹ The most important trade partners are Belgium, China, France, Germany, Great Britain, Italy, Russia and the United States.²¹⁰

²⁰⁵ CBS Stateline (2013) Population; key figures.

²⁰⁶ CBS (2013) Bruto nationaal inkomen 607 miljard euro in 2012.

²⁰⁷ A.T. Kearney (2013) The Shadow Economy in Europe, 2013.

²⁰⁸ CIA (2013) The World Fact Book.

²⁰⁹ PBL (2012) Nederland verbeeld. Een andere blik op vraagstukken rond de leefomgeving.

²¹⁰ CIA (2013) The World Factbook.

2.6 Percent of Dutch GDP is contributed by agriculture, 25.4 percent by industry and 72.1 percent by services.²¹¹ More than half of the land surface is used for agriculture and horticulture.²¹²

Top sectors

The Dutch Government has identified nine so-called ‘top sectors’: High Tech Material & Systems, Agro-Food, Water, Energy, Horticulture, Chemicals, Creative Industries, Logistics and Life Sciences. These sectors receive active support by the government as they are considered to be knowledge-intensive, export-oriented and depending on specific legislation. They are also expected to contribute significantly to solving societal issues. Government has earmarked approximately € 1.5 billion for targeted investments in these sectors and is actively seeking to solve issues that might impede growth of the sectors (such as bothersome rules or lack of qualified personnel).

The top sectors contribute approximately 27 percent of the total added value and 21 percent of total employment. With regard to environmental issues, the top sectors are responsible for seventy percent of all emissions of greenhouse gasses and particulate matter, and 75 percent of all energy and materials use in the Netherlands.²¹³

The labour market

In 2013, the Dutch labour force consisted of 7.9 million people.²¹⁴ At the turn of the century, 270,000 people were unemployed in the Netherlands (3.8 percent of the labour force). By 2013, this number had risen to 656,000 people (8.3 percent of the labour force).²¹⁵ The social security system in the Netherlands is under heavy pressure, with almost 4.8 million people depending on social welfare (see table 1).

Table 1: Dependency on social security (the Netherlands, 2013)

Type of benefit	Number of beneficiaries (2013 est.) ²¹⁶
Incapacity benefits ²¹⁷	810,100
Unemployment benefits ²¹⁸	389,600
Social welfare benefits ²¹⁹	409,900
National pension ²²⁰	3,168,800
Totaal	4,777,400

²¹¹ CIA (2013) The World Factbook.

²¹² CBS (April 25, 2104) Bodemgebruik; uitgebreide gebruiksvorm, per gemeente.

²¹³ CBS (2013) Green growth in the Netherlands 2012.

²¹⁴ CBS (2014) Beroepsbevolking; geslacht en leeftijd. According to the (broader) international definition the labour force is 8,949,000. CPB (2014) Centraal Economisch Plan 2014.

²¹⁵ CBS (2013) Beroepsbevolking; kerncijfers naar geslacht en andere persoonskenmerken.

²¹⁶ CBS (August 29, 2014) Sociale zekerheid; kerncijfers, uitkeringen naar uitkeringssoort.

²¹⁷ In Dutch: Arbeidsongeschiktheidsuitkeringen (WAO, Wajong, WAZ, WIA).

²¹⁸ In Dutch: Werkloosheidsuitkeringen (WW).

²¹⁹ In Dutch: Bijstands(gerelateerde) uitkeringen (WWB, IOAW, IOAZ).

²²⁰ In Dutch: Algemene ouderdomswet (AOW). Other social security benefits (in Dutch: *volksverzekeringen*), which are not directly related to employment are not included in this overview; survivor benefits (in Dutch: Algemene Nabestaandenwet, Anw) and child benefits (in Dutch: Algemene Kinderbijslandswet, AKW).

In 2014, the Dutch spend € 78.6 billion on social security and the labour market. This is the largest component of the national budget.²²¹

The labour market in the Netherlands is characterized by a large number of self-employed (1.1 million people),²²² a group which is not represented in unemployment statistics. In times of economic downturn, the self-employed tend to lower their hourly rates. As they are offered fewer job opportunities, their income decreases. The average income of the self-employed has decreased by about 17 percent between 2008 and 2013, which is much more than in the case of employees. This income flexibility has absorbed part of the decreased labour demand without showing up in unemployment statistics.²²³

The Dutch labour force is characterized by a large percentage of part time workers, especially amongst women. 75 Percent of the female labour force works less than 32 hours a week²²⁴ and average working hours for females (24.5 hours per week) is the lowest in the EU27.²²⁵

Ageing population

In 2013, the official retirement age has been increased by one month to 65 years and one month. The retirement age will gradually increase, to 67 in 2021. However, the *effective* age of retirement for men is 63.6 years and for women 62.3 years.²²⁶ The population is expected to grow to 17.7 million in 2035, after which it will stabilize. The increase of aging population is expected to peak around the year 2040, after which the so-called 'grey pressure' will remain stable and high at around two workers per elderly person. This is about twice as high as the current grey pressure.²²⁷

5.1.2. Natural resource use

The ecological footprint of the Netherlands is three times the size of the country.²²⁸ The Dutch economy consumes approximately 240 billion kilograms of biomass, minerals, fossil fuels and metals per year. For a significant part, the country is depending on imports.²²⁹ Overall, the Netherlands has a physical trade deficit, which implies that imports of materials exceed exports in terms of weight. At the same time there is a monetary trade surplus indicating that the export value is higher than the import value. The Dutch economy can therefore be characterized as one that turns cheap bulk materials into more expensive high-quality products.²³⁰

Dutch Government policy includes the ambition to develop towards green growth and a circular economy.²³¹ Below are some indicators that illustrate the use of natural resources in

²²¹ Tweede Kamer der Staten-Generaal (2013) Miljoenennota 2014.

²²² CBS Statline (February 21, 2014) Zelfstandigen zonder personeel.

²²³ CPB (2014) Centraal Economisch Plan 2014.

²²⁴ Sociaal en Cultureel Planbureau (2013) Aanbod van arbeid 2012.

²²⁵ European Commission (2013) Tax reforms in EU Member States. Tax policy challenges for economic growth and fiscal sustainability.

²²⁶ OECD (2012) Statistics on average effective age and official age of retirement in OECD countries.

²²⁷ CBS (April 28, 2003) Ageing will hit the Netherlands sharply after 2010.

²²⁸ PBL (2012) De Nederlandse voetafdruk op de wereld: hoe groot en hoe diep?

²²⁹ CBS, TNO (2010) Critical Materials in the Dutch Economy.

²³⁰ CBS (2013) Environmental accounts of the Netherlands 2012.

²³¹ Ministry of Economic Affairs (March 28, 2013) Groene Groei: voor een sterke, duurzame economie. Kamerbrief.

the Netherlands, with regard to metals and minerals, fossil fuel and biomass, and clean air (in terms of air pollution and greenhouse gas emissions).

Metals and minerals

With regard to metals, the Netherlands is fully depending on imports.²³² In 2010, 440 million kilograms of electronics and electronic equipment were sold in the Netherlands (or 26.5 kilograms per inhabitant). The Dutch generate almost sixty million tons of waste per year,²³³ including 392 million kilograms of electronic waste. This translates to 23.7 kilograms of electronic waste per inhabitant per year, of which only 7.5 kilograms (or 32 percent) was collected for recycling or export.²³⁴

In line with the European Union, the country has adopted the list of 35 metals and minerals with a high supply risk (see section 1.3). Three additional elements are specifically relevant for the Dutch economy; gold, phosphorus and uranium.²³⁵

The Dutch agricultural sector is heavily leaning on minerals such as nitrogen, phosphorus and potassium, as these minerals are found in animal manure, artificial fertilizers and other fertilizers.²³⁶ The manure surplus in the Netherlands has led to excess phosphate in soil and surface waters, which in turn has caused harmful algal blooms and biodiversity loss.²³⁷ Measures, such as milk quota and regulation of agricultural mineral streams, have effectively helped reduce emissions of phosphate and nitrogen.²³⁸ The national goal is to reach a 'manure equilibrium' by 2015, meaning that phosphate inputs from fertilization are equal to phosphate outputs from crops. At the moment, however, the soil still contains enough phosphate for several decades.²³⁹

Fossil fuels

Energy use in the Netherlands amounts to 3,258 PetaJoule annually (2011).²⁴⁰ With only 4.5 percent of total energy use based on renewable sources in 2012, the Netherlands is ranking fourth from the bottom, compared to other European countries.²⁴¹ More than seventy percent of renewable energy is generated by biomass, twenty percent from wind. The contribution of other sources such as hydropower, solar energy and geothermal energy is limited.²⁴² Half of all energy consumption in the Netherlands is currently still based on natural gas.

The Netherlands has substantial but dwindling resources of natural gas, having been a major producer and exporter of gas to the rest of Europe since the super-giant Groningen field – the 11th largest ever discovered and the fourth-largest by peak production – was first developed in the early 1960s. Production has been in decline for several years, as Groningen edges closer to

²³² CBS (2013) Monitor materiaalstromen.

²³³ 2010, excluding contaminated soil, dredge spoil and animal manure. CBS, PBL, Wageningen UR (2012) Vrijkomen en verwerking van afval per doelgroep, 1990-2010 (indicator 0206, versie 11, 10 september 2012).

²³⁴ CBS, PBL, Wageningen UR (2012) Verkoop, gebruik en afgedankte elektronische en elektrische apparatuur, 1995-2010 (indicator 0561, versie 02, 27 juli 2012).

²³⁵ CBS, TNO (2010) Critical Materials in the Dutch Economy.

²³⁶ CBS (April 18, 2014) Mineralen op landbouwgrond (bodembalansen).

²³⁷ SNB (accessed May, 2014) Fosfaat in Nederland.

²³⁸ CBS, PBL, Wageningen UR (2007) Land- en tuinbouw: toegevoegde waarde en milieudruk, 1980-2004.

²³⁹ SNB (accessed May, 2014) Fosfaat in Nederland.

²⁴⁰ PBL (2012) Nederland verbeeld. Een andere blik op vraagstukken rond de leefomgeving.

²⁴¹ Eurostat (March 10, 2014) Share of renewables in energy consumption up to 14% in 2012.

²⁴² CBS (2013) Hernieuwbare energie in Nederland 2012.

exhaustion and as smaller fields are reaching maturity.²⁴³ There are also hundreds of small underground gas fields in the Netherlands and under the Dutch part of the continental shelf (offshore). These fields have passed the point of peak production and the gas reserves are diminishing. It is expected that by 2025 the Netherlands will have changed from a net exporter to a net importer of gas.²⁴⁴ At current consumption rates, within fifty years, gas reserves in the Netherlands and the North Sea will be depleted.²⁴⁵

Since the 1960s, state revenues from natural gas have been more than € 250 billion.²⁴⁶ In 2014, the expected state revenues from natural gas are € 11.9 billion.²⁴⁷ Large-scale users pay significantly less energy tax than households and other small-scale users: 1.15 cents and 18.62 cents per cubic meter, respectively.²⁴⁸

Oil resources in the Netherlands are smaller. According to the IEA, import dependency with regard to oil is 96.1 percent.²⁴⁹

Dutch Government has set a renewable energy target of fourteen percent of the energy mix by 2020 and a hundred percent in 2050.²⁵⁰

Biomass

Biomass is the most important source of renewable energy in the Netherlands. In 2013, an ambitious Energy Accord was reached amongst over forty governmental and non-governmental organizations, aiming to double the share of energy from biomass by 2020 compared to 2010, in order to substitute fossil fuels. For 2050, plans are even more ambitious. However, in 2010, total demand for biomass was 115 PetaJoule and the expected demand in 2050 is 1600 PJ, while by then, the Netherlands could produce only 200 PJ of biomass. Due to an increased global demand and the expected constraints in supply, it is unsure if demand for biomass can be met in future. Also, as biofuels sometimes have more harmful side effects than fossil fuels, the European Commission has proposed to stimulate the use of biofuels from waste streams instead of agricultural crops.²⁵¹ A transition to biofuels from waste streams requires major innovation efforts and investments.

Air pollution

Air quality in the Netherlands is one of the worst in Europe, ranking 25th. With Belgium and Luxemburg, the Netherlands is responsible for the highest NO_x emissions per square kilometre. NO_x (nitrogen oxides) cause acid rain and smog. The concentration of particulate matter in the Netherlands is 25 percent higher than the European average.²⁵² Several studies that indicate the health costs of bad air quality include CE Delft (2004),²⁵³ CE Delft (2005),²⁵⁴ EEA (2011)²⁵⁵

²⁴³ OECD (2013) Inventory of Estimated Budgetary Support and Tax Expenditures for Fossil Fuels 2013.

²⁴⁴ Rijksoverheid (2014) Energy, gas.

²⁴⁵ NOGEP (Nederlandse Olie en Gas Exploratie en Productie Associatie) (accessed June, 2014).

²⁴⁶ Aardgas in Nederland (2014) Aardgas en de economie.

²⁴⁷ Tweede Kamer der Staten-Generaal (2013) Miljoenennota 2014.

²⁴⁸ For uses of more than 10 million m³ and up to 5,000 m³ respectively. Belastingdienst (2014) Tabellen tarieven milieubelastingen.

²⁴⁹ IEA (International Energy Agency) (2012) Oil and Gas Security.

²⁵⁰ Rijksoverheid (accessed July, 2014) Meer duurzame energie in de toekomst.

²⁵¹ PBL (2014) Biomassa: wensen en grenzen.

²⁵² Natuur & Milieu (2011) Ranking the stars.

²⁵³ In 2002, the total cost to society of traffic (road, railway and waterway transport) in the Netherlands was approximately € 22,5 billion. CE Delft (2004) De prijs van een reis.

and Nitrogen in Europe Research Networking Programme (2011).²⁵⁶ According to an OECD study, the economic cost of deaths from outdoor air pollution in the Netherlands was \$ 25 billion (€ 18 billion) in 2010.²⁵⁷ These social costs are currently 'external costs', which means they are born by society at large and harmed individuals, rather than the polluters.

The Netherlands took some measures that can be seen as counterproductive from an air quality point of view, including increasing the maximum speed on motorways to 130 km/h and abandoning plans for a 'kilometre charge' (road pricing), which were part of the *National Cooperation Programme on Air Quality*.²⁵⁸

Greenhouse gas emissions

In 2011, total carbon emissions in the Netherlands were 168,000 tons, of which 38,000 tons by traffic. In addition, the country emits about 27,000 tons of other greenhouse gases (methane (CH₄), laughing gas (N₂O) and the F-gasses HFKs, PFKs and SF₆) annually.²⁵⁹ The Netherlands is the 8th largest emitter of greenhouse gases in the EU.²⁶⁰ Dutch Government policy is aligned with the European reduction target of twenty percent in 2020 compared to 1990.²⁶¹

Water

With 26 percent of its area below sea level, and 29 percent susceptible to river flooding,²⁶² the Netherlands is particularly vulnerable to climate change and rising sea levels. Salinization of groundwater and surface water is an increasing problem for agricultural areas. According to the 2008 Delta Committee, water shortages will occur more often in the Netherlands (translated):

*"A rising sea level, diminishing river discharge in summer, persistent drought, and invading salt water through rivers and ground water put pressure on fresh water supply. This causes harmful effects to the supply of drinking water, the agricultural sector, the shipping industry and other sectors depending on water and cooling water."*²⁶³

Over the past decade, in the Netherlands, water prices have decreased in real terms. The estimated average price decrease of tap water is about seven percent.²⁶⁴

²⁵⁴ The total health costs due to exposure to particulate matter are estimated to be € 4 – 40 billion, of which three quarters is caused by premature deaths. CE Delft (2005) Luchtkwaliteit in Nederland: Gezondheidseffecten en hun maatschappelijke kosten.

²⁵⁵ In 2009, the total costs of damage to health and the environment of air pollution by a limited number of industrial facilities in the Netherlands alone were at least € 3.9 - 5.4 billion per year (or € 300 - 375 per inhabitant). EEA (2011) Revealing the costs of air pollution from industrial facilities in Europe.

²⁵⁶ In 2008, the external costs of Nitrogen pollution to air and water in the Netherlands was € 2.5 - 12.6 billion. Nitrogen in Europe (NinE) Research Networking Programme (2011) The European Nitrogen Assessment.

²⁵⁷ OECD (2014) The Cost of Air Pollution. Health Impacts of Road Transport.

²⁵⁸ Fedrigo-Fazio, Doreen (et al.) (2013) Steps towards greening in the EU. Monitoring Member States achievements in selected environmental policy areas - EU summary report.

²⁵⁹ Emissieregistratie (2011) Nationale Broeikasgasemissies volgens IPCC.

²⁶⁰ EEA greenhouse gas - data viewer (accessed July, 2014) Emissions shares by country in EU 28, 2012.

²⁶¹ Rijksoverheid (accessed July, 2014) Energiebeleid Nederland.

²⁶² PBL (accessed April, 2014) Correction wording flood risks for the Netherlands in IPCC report.

²⁶³ Deltacommissie (2008) Samen werken met water. Een land dat leeft, bouwt aan zijn toekomst.

²⁶⁴ Fedrigo-Fazio, Doreen (et al.) (2013) Steps towards greening in the EU. Monitoring Member States achievements in selected environmental policy areas - EU summary report.

5.1.3. Relevant features of the tax structure

The table below provides an overview of the structure of Dutch Government tax and social contributions revenues in 2012.

Table 2: Structure of tax revenues (the Netherlands, 2012) ²⁶⁵

	€ bln	% of tax revenues	% of GDP
VAT	41.7	18%	7%
Excise duties and consumption taxes	13	6%	2%
Other taxes on products (incl. import duties)	8.9	4%	2%
Other taxes on production	7.5	3%	1%
Indirect taxes	71.1	30%	12%
Personal income	45.9	20%	8%
Corporate income	12.7	5%	2%
Other	8.3	4%	1%
Direct taxes	67	29%	11%
Employers' contributions	32.6	14%	5%
Employees contributions	41.7	18%	7%
Self- and non-employed	21.4	9%	4%
Social Contributions	95.8	41%	16%
Total	233.8	100%	39%

Tax revenues by economic function are as follows:

Table 3: Tax structure by economic function (the Netherlands, 2012) ²⁶⁶

	€ bln	% of tax revenues	% of GDP
Labour (including social contributions, payroll and earned income taxes)	134.5	57.5%	22.4%
Consumption (including VAT, duties and environmental taxes)	66.1	28.3%	11.0%
Capital (including taxes on profits, savings, exports and assets)	33.3	14.2%	5.6%
Total	233.8	100.0%	39.0%

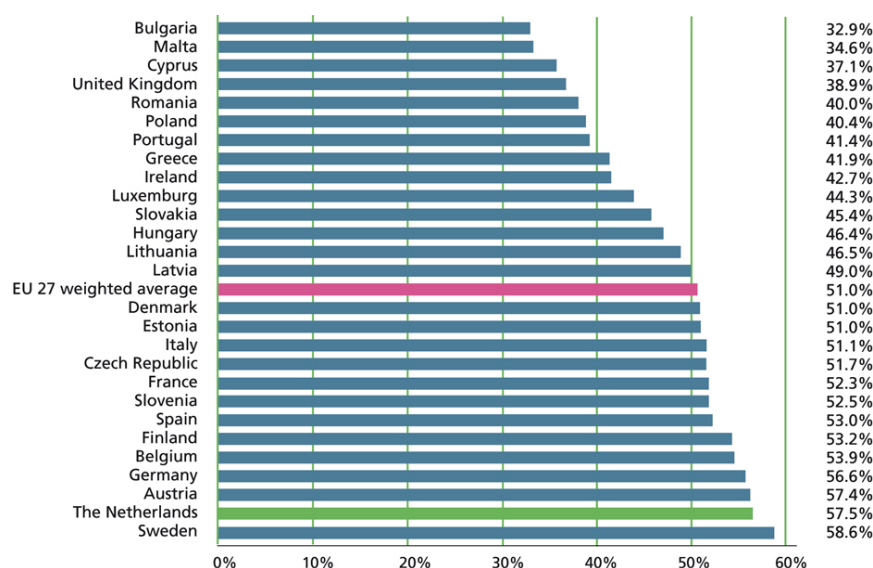
Labour tax and social contributions

In 2012, labour taxes (including social contributions, payroll and earned income taxes) represented 57.5 percent of total taxation, which put the Netherlands on the second place in the EU (see Figure 9)

²⁶⁵ European Commission (2014) Taxation Trends in the European Union. Edition 2014.

²⁶⁶ European Commission (2014) Taxation Trends in the European Union. Edition 2014.

Figure 9: Taxes on labour as a percentage of total taxation (EU27, 2012)²⁶⁷



Between 2001 and 2012, in the Netherlands, labour taxes as a percentage of total taxation have risen from 48.3 percent to 57.5 percent.²⁶⁸ In 2014, labour taxes are expected to continue to rise to 58.4 percent of total tax revenues.²⁶⁹

The social security system is composed of national insurance (national pension, special health care and widow's pension)²⁷⁰ and employee insurance (unemployment, disability).²⁷¹ The national insurance applies to all inhabitants and the collection of contributions for it is integrated in the income tax and wage (withholding) tax levy. The employee insurance applies to employees and is financed by a levy calculated on gross salaries (with a maximum amount) and depends on the economic sector.

For basic health insurance²⁷² each adult pays a fixed amount of around € 1,250 a year. As of 2014 employers pay 7.5 percent of gross earnings to a maximum salary of € 51,414 to the State health insurance fund. The self-employed and pensioners pay a contribution of 5.4 percent of their net business profits or pension, on their income up to € 51,414.²⁷³

Personal income tax

The Dutch Personal Income Tax system consists of three so-called boxes:

- Box 1 consists of labour income as well as some types of capital income, such as the proceeds of capital that proprietors employ in their own businesses, and the deemed income from owner-occupied housing, balanced with paid interest on mortgages. The sum of income in Box 1 is taxed at progressive rates ranging from 36 percent to 52 percent (income tax and social contributions). For taxpayers over the retirement age, the

²⁶⁷ European Commission (2014) Taxation Trends in the European Union. Edition 2014.

²⁶⁸ European Commission (2014) Taxation Trends in the European Union. Edition 2014.

²⁶⁹ Tweede Kamer der Staten-Generaal (2013) Miljoenennota 2014.

²⁷⁰ In Dutch: Volksverzekeringen.

²⁷¹ In Dutch: Werknemersverzekering.

²⁷² In Dutch: Zorgverzekeringswet.

²⁷³ Belastingdienst (2014) Veranderingen inkomensafhankelijke bijdrage Zvw 2014.

combined rates range from 18 to 52 percent due to the fact that this group is exempt from contribution for the national pension. The highest rate applies to income above € 56,531. A punitive labour tax of sixteen percent is applied to income over € 150,000 a year.

- Box 2 contains profit distributions and realized capital gains in connection with closely held companies, in which shareholders have a substantial interest. The nominal PIT rate on these income items is 25 percent, but the effective overall tax rate is higher, because these items are also subject to the previous corporation tax at the level of the company.
- Box 3 includes the returns on privately held assets such as saving deposits, stocks, bonds and real estate (except owner-occupied housing). The items in this box are subject to a tax rate of thirty percent on a deemed return of four percent on the net value of the assets exceeding € 21,139.²⁷⁴

A general tax credit of € 2,001 applies. This credit can be partly transferred to partners without income of their own. Other tax credits exist for the working, for single parents, for young handicapped and for the elderly.²⁷⁵

Under the Expense allowance scheme,²⁷⁶ employers are allowed to provide minor tax-free allowances to employees to the amount of 1.5 percent of total payroll costs. Allowances above this threshold are taxed eighty percent.²⁷⁷

In 2013, the Income Tax and Benefits Committee advised Dutch parliament to opt for an improved tax system with lower rates and a very long first bracket, fewer deductible items and simpler benefits. The proposed budget-neutral package of measures totals € 12.6 billion, including a single VAT rate and lower income- and payroll taxes. These measures are aiming to 'make work worthwhile' and increase employment. A calculation of the effect of the proposals in the interim report by CPB Netherlands Bureau for Economic Policy Analysis showed that the number of jobs would increase by 2.1 percent, which corresponds with 142,000 full-time jobs.²⁷⁸

Corporate income tax

Profits of corporations are subject to the corporation tax at a rate of 25 percent (twenty percent for profits up to € 200,000). In addition to this a large number of international tax treaties exist, in order to avoid double taxation. Due to the subsidiary-exemption, profits within a group of companies are taxed only once.

VAT

The standard VAT rate in the Netherlands is 21 percent. The reduced rate of six percent is applicable to, inter alia, food, water, pharmaceuticals, art, cultural events and publications. The reduced rate is also applicable to ornamental horticulture. Since February 28, 2013 (and until December 31, 2014) the reduced rate is applied for rebuilding, renovation and repair of owner-occupied dwellings. The reduced rate only applies to employment costs made, including

²⁷⁴ European Commission (2013) Taxation Trends in the European Union. Edition 2013; Belastingdienst (Accessed July 2014).

²⁷⁵ Belastingdienst (accessed July, 2014) Algemene heffingskorting.

²⁷⁶ In Dutch: Werkkostenregeling.

²⁷⁷ Rijksoverheid (accessed July, 2014) Werkkostenregeling.

²⁷⁸ The Income Tax and Benefits Committee (2012) Towards a more motivating tax system. Introduction and summary of the final report of the Income Tax and Benefits Committee.

those of architects and gardeners; not to the materials used.²⁷⁹ Other labour-intensive services under the reduced rates are: repair of bicycles, repair of shoes and leatherwear, repair and remodelling of clothes, hairdressing services, renovation and repairing of private dwellings; window cleaning and cleaning in private households and domestic care services. An exemption from VAT is applicable, inter alia, to healthcare, education, housing and lending.

Fiscal R&D and innovation facilities

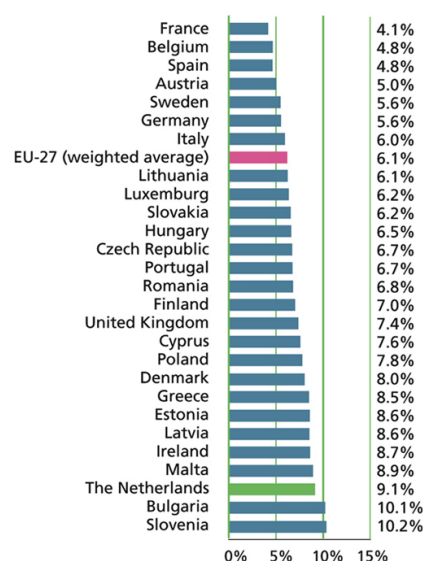
Several facilities are available for R&D activities in the Netherlands:

- *Innovatiebox*. Income derived from R&D is taxed in a separate ‘innovation box’. The rate for income in this box is five percent.²⁸⁰
- *WBSO*:²⁸¹ Wage costs for R&D activities are reduced by a reduction of the wage tax of 35 percent of the wage up to € 250,000 and fourteen percent of the excess, with a maximum reduction of € 14 million per enterprise. Self-employed carrying out R&D activities can deduct fixed amounts from their taxable profits.²⁸²
- *EIA, MIA, VAMIL*. Several tax facilities for environmentally friendly investments.²⁸³
- *Innovatiekrediet*. A tax facility provides for additional deductions for R&D capital- and current expenses.²⁸⁴

Environmental taxes

At 9.1 percent (€ 21.3 billion) in 2012, the Netherlands has the third highest level of environmental taxes as a percentage of total tax revenues in the EU, after Slovenia and Bulgaria (see Figure 10).

Figure 10: Environmental taxes as a percentage of total taxation (EU27, 2012)²⁸⁵



²⁷⁹ VAT Resource (accessed May, 2014) Netherlands – Reduced VAT rate on the maintenance and renovation of buildings introduced.

²⁸⁰ Deloitte (2014) Netherlands Highlights 2014.

²⁸¹ In Dutch: Wet Bevordering Speur- en Ontwikkelingswerk (WBSO).

²⁸² Pienter (accessed May, 2014) WBSO nader belicht.

²⁸³ Belastingdienst (accessed July, 2014) Investeringsregelingen.

²⁸⁴ RVO (accessed May, 2014) Innovatiekrediet.

²⁸⁵ European Commission (2014) Taxation Trends in the European Union. Edition 2014.

At 3.6 percent of GDP in 2012, the Netherlands has the third highest level of environmental taxes as a percentage of GDP in the EU after Denmark and Slovenia.²⁸⁶

The Netherlands applies a range of 'green' taxes: environmental taxes (taxes on tap water, coal and the energy tax), excise duties on mineral oils and taxes on vehicles (vehicle tax, tax on passenger cars and motorcycles and tax on heavy goods vehicles). The conversion of the car registration tax (tax on passenger cars and motorcycles) to a tax based on CO₂-emission has been completed in 2013. The most fuel-efficient cars remain exempt from the vehicle tax.²⁸⁷ This favourable tax treatment has led to a large increase in sales of emission-efficient cars.²⁸⁸ The number of electric vehicles, for example, has grown from 7,311 (December 2012) to 35,567 (April 2014).²⁸⁹ Between 2006 and 2012, the effective carbon emissions of private cars sold decreased by two percent.²⁹⁰

The Netherlands is one of the few countries in the EU with a significant proportion of pollution taxes, beginning with a tax on the pollution of surface waters and sewerage charges (0.72 percent of GDP versus 0.1 percent of GDP on average in the EU). Even though it has one of the highest levels of environmental taxes in the EU, Environmentally Harmful Subsidies through lower energy taxes for energy-intensive industry and horticulture remain.²⁹¹

Since the turn of the century, environmental taxes in the Netherlands have not evolved progressively. In fact, they have gone down from 9.4 percent of total taxation in the year 2000 to 9.1 percent in 2012. As a percentage of GDP they have also decreased (from 3.8 to 3.6 percent).²⁹² Some environmental taxes have recently been abolished; packaging, waste and groundwater taxes representing a combined revenue of € 750 million.²⁹³

In 2011 subsidies on renewable energy in the Netherlands amounted up to € 1.5 billion, whereas tax exemptions on fossil fuels amounted up to € 5.6 billion.²⁹⁴ Net environmental costs for companies of twenty or more employees in the mining sector, industry and public energy & water services have been going down from € 2 billion in 2002 to € 1.3 billion in 2012.²⁹⁵

Taxes on energy and natural resources are relatively inelastic compared to labour taxes, which means that there is room to increase the rates without causing a decrease in government income. A shift from labour to energy, resources and environment could potentially have a stabilizing effect on public finance.²⁹⁶ Over the years, the PBL Netherlands Environmental Assessment Agency (a governmental agency) has done numerous proposals for environmental taxation, including taxation of traffic, waste dumping and incineration, coal, energy, kerosene, and maritime fuels. Other proposals included increasing the VAT rate on meat, dairy and fish,

²⁸⁶ European Commission (2014) Taxation Trends in the European Union. Edition 2014.

²⁸⁷ European Commission (2013) Taxation Trends in the European Union. Edition 2013.

²⁸⁸ European Commission (2013) Tax reforms in EU Member States. Tax policy challenges for economic growth and fiscal sustainability.

²⁸⁹ RVO (accessed July, 2014) Cijfers elektrisch vervoer.

²⁹⁰ PBL (2014) Vergroening van de aanschafbelasting voor personenauto's. Effecten op de verkoop van zuinige auto's en de CO₂-uitstoot.

²⁹¹ European Commission (2014) Commission Staff Working Document. Assessment of the 2014 national reform programme and stability programme for The Netherlands.

²⁹² European Commission (2014) Taxation Trends in the European Union. Edition 2014.

²⁹³ PBL (2012) Voorwaarden voor de vergroening van de economie in Nederland.

²⁹⁴ PBL (2012) Nederland verbeeld. Een andere blik op vraagstukken rond de leefomgeving.

²⁹⁵ CBS, PBL, Wageningen UR (2014) Netto milieulasten in de industrie en energiesector, 1985-2012.

²⁹⁶ CE Delft (2010) Grenzen aan groen? Bouwstenen voor een groen belastingstelsel.

as well as horticulture, airplane tickets and maritime transport.²⁹⁷ The abolishment of Environmentally Harmful Subsidies could benefit the treasury by € 10 billion.²⁹⁸

Support for a tax shift

In 2013 the Netherlands received EU country specific recommendations concerning the reduction of tax disincentives to labour. In 2014, a working document concluded that the Netherlands has made 'some progress' to address the recommendation, but there is still room for a shift from labour to 'environmental and other taxes less detrimental to growth':

*"(...) taxation could be shifted further away from labour towards environmental and other taxes less detrimental to growth (e.g. by reducing the preferential tax treatment of diesel compared to petrol; reducing environmentally harmful subsidies; reducing the scope of the reduced VAT rate, abolishing the deduction for small mortgage debt and reducing mortgage interest more quickly and ambitiously, while considering increasing recurrent property taxation, which are still relatively low)."*²⁹⁹

In 2012, the election programs of six out of ten political parties in parliament stated to be in favour of a tax shift from labour to consumption. Nine out of included the wish to lower taxes on labour.

²⁹⁷ PBL (2013) Changing track, changing tack; Dutch ideas for a robust environmental policy for the 21st century, and PBL (2012) Voorwaarden voor de vergroening van de economie in Nederland. Similar recommendations were done by CE Delft (2010) Grenzen aan groen? Bouwstenen voor een groen belastingstelsel, and Stichting Natuur en Milieu (2006) De groene schatkist. Vijftien belastingvoorstellen voor milieu en innovatie.

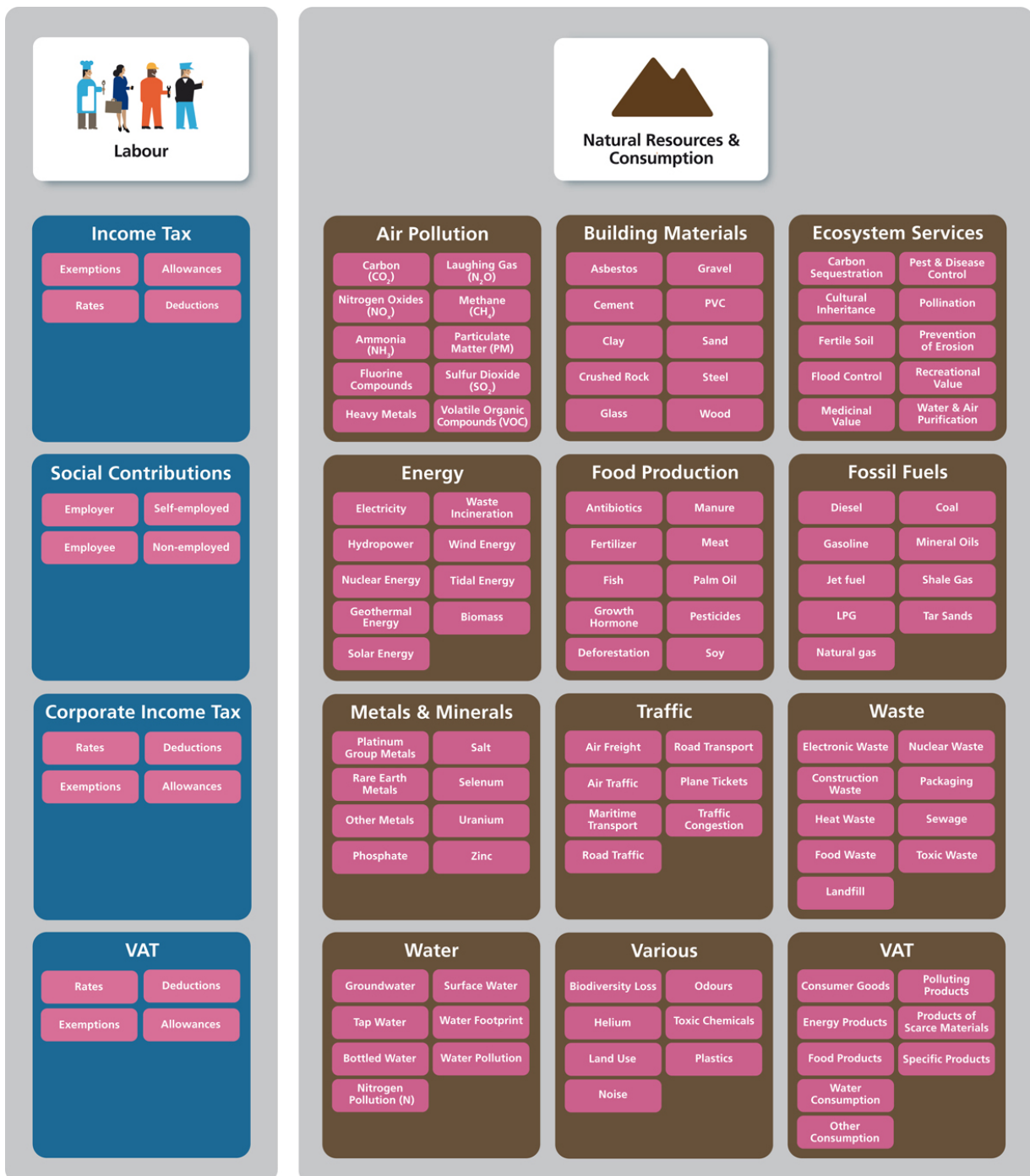
²⁹⁸ Drissen, Eric (et al.) (2011) cited in PBL (Planbureau voor de leefomgeving) (2012) Voorwaarden voor de vergroening van de economie in Nederland.

²⁹⁹ European Commission (2014) Commission Staff Working Document. Assessment of the 2014 national reform programme and stability programme for The Netherlands.

5.2. Step 2: Options for shifting the tax base

Below is an inventory of tax base options for the implementation of Ex'tax principles; the 'buttons' governments could push to shift taxation from labour to natural resources. Studies on green tax shifts generally focus on energy and carbon emissions, while measures to lower costs of labour are often neglected. The Toolkit below shows both sides of the equation; with on the left hand side (in blue) the tax bases with regard to labour and on the right hand side (in brown) potential tax bases with regard to natural resources and consumption.

Figure 11: Options for shifting the tax base from labour to natural resources & consumption



The building blocks available to governments to lower labour taxes, and more generally the costs of labour, are: income tax, social contributions, corporate income tax and VAT. Within each category there are several options, with regard to tax rates, deductions, exemptions and allowances.

Governments could increase taxes on resources, and the costs of consumption and pollution in general, by raising taxes on air pollution, building materials, ecosystem services, energy, food production inputs, fossil fuels, metals and minerals, traffic, waste, water and VAT. Within each category there are several sub-categories. Within the waste category, for example, there is electronic waste, sewage, nuclear waste and other types of waste.

VAT plays a special role as it can be found on both sides. Although legally, VAT is a consumption tax, in practice consumers pay VAT both on products (such as cans of paint) and services added to those products (the efforts of a painter).

This Toolkit has been based on the Dutch case study. The goal is to further develop the Toolkit in the upcoming years.

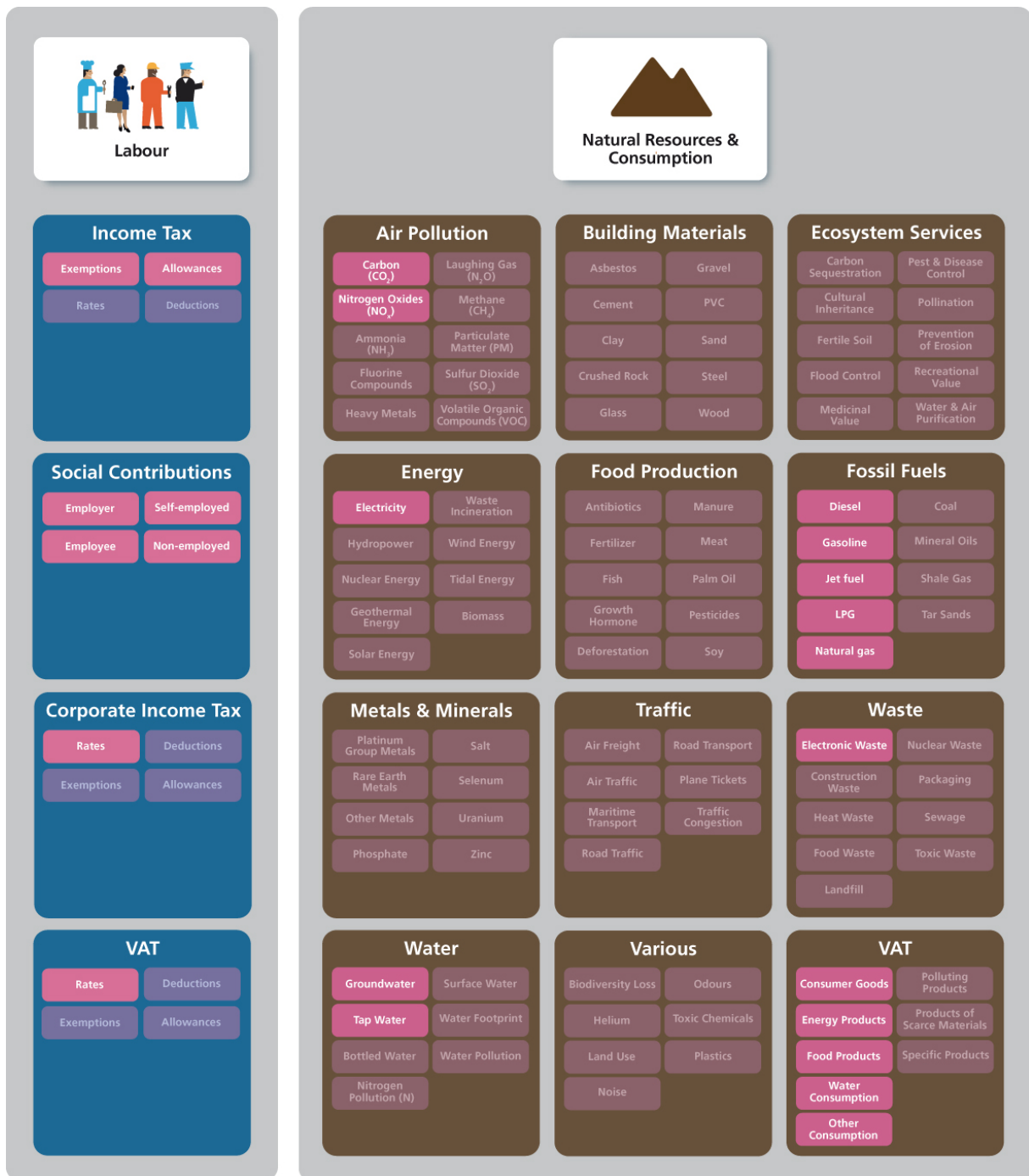
Clearly, tax systems cannot be static; they will evolve with new circumstances. When the new system works properly, the tax base can be extended to other categories within the Toolkit, in order to guarantee a stable government income. Rates and tariffs can be raised or lowered too; just like the current system of labour taxes, the future system will also be adapted periodically. Current levels of taxation are not carved in stone and there is no reason why a system based on 'extracted value' instead of 'added value' should be either.

After this exploration the group has identified a focus group of tax bases, in order to create a workable scope.

5.3. Step 3: Focus group of tax bases

Below is an overview of the tax bases the working group has decided to focus on, based on criteria such as urgency, potential benefits and (mid- to long-term) attainability. The working group considers the highlighted measures most promising. Some options can be put in practice fairly easily (such as increasing water taxation). Others are expected to play a role in future scenarios (such as taxing jet fuel), as they require international coordination.

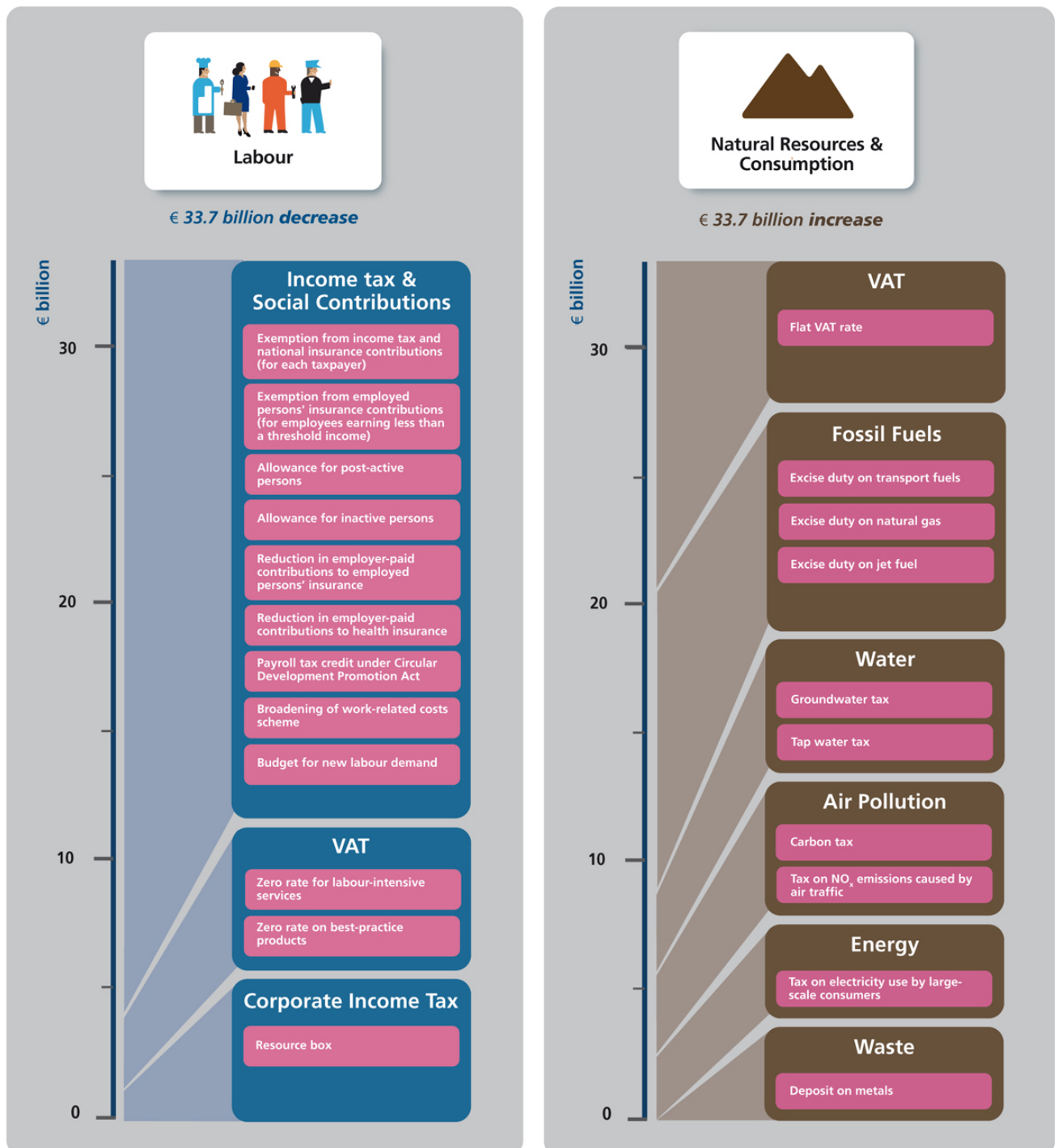
Figure 12: Focus group of tax bases (case study the Netherlands)



5.4. Step 4: Focus group of measures for a € 33.7 billion tax shift

The overview below shows how the tax bases could potentially contribute to a budget-neutral package of measures to shift taxation from labour to natural resource use. In brown (on the right) are the measures that could help raise an additional € 33.7 billion per year for the treasury. In this proposal, the results are being used to lower the costs of labour by the same amount (in blue, on the left).

Figure 13: Focus group of measures for a € 33.7 billion tax shift (case study the Netherlands)



5.5. Step 5: Measures in more detail

Below is an overview of policy options for a shift in taxes from labour to natural resources and consumption, including the expected effects on employers, consumers and the treasury. The indicated sections provide an explanation for each line item.

Figure 14: Focus group of measures in more detail (case study the Netherlands)

Measure	Section #	Employer %	Consumer %	Employer € mln	Consumer € mln	Δ Budget € mln
Income tax and social contributions				-4,054	-25,658	-29,711
- Exemption from Income tax & national insurance contributions	6.6.1	0%	100%		-24,222	-24,222
- Exemption from employed person's insurance contributions	6.1.2	0%	100%	0	0	0
- Allowance for post-active persons	6.1.3	0%	100%	0	-2,262	-2,262
- Allowance for inactive persons	6.1.4	0%	100%	0	-24	-24
- Reduction in employer-paid contributions to employed persons' insurance contributions (provisional sum)	6.1.5	100%	-50%	-1,700	850	-850
- Reduction in employer-paid contributions to health insurance (provisional sum)	6.1.6	100%	0%	-8,600	0	-8,600
- Payroll tax credit under Circular Development Promotion Act (provisional sum)	6.1.7	100%	0%	-1,000	0	-1,000
- Broadening of work-related costs scheme	6.1.8	100%	0%	-445	0	-445
- Budget for new labour input	6.1.9	-100%	0%	7,691	0	7,691
VAT				-600	-2,400	-3,000
- Zero rate for labour-intensive services (provisional sum)*	6.2.1	20%	80%	-600	-2,400	-3,000
- Zero rate on best-practice products*	6.2.2	PM	PM	PM	PM	PM
Corporate income tax				-1,000	0	-1,000
- Resource box (circular innovation)	6.3.1	100%	0%	-1,000	0	-1,000
Total reduction				-5,654	-28,058	-33,711
VAT				2,634	10,532	13,166
- Flat VAT rate (22%)	7.1.1	20%	90%	2,634	10,532	13,166
Fossil fuels				1,599	10,217	11,816
- Excise duty on transport fuels (€ 0.55/l)	7.2.1	10%	90%	765	6,881	7,645
- Excise duty on natural gas (€ 0.07/m3)	7.2.2	20%	80%	634	2,537	3,171
- Excise duty on jet fuel (€ 0.24/l)*	7.2.3	20%	80%	200	800	1,000
Water				325	2,926	3,251
- Tap water and groundwater tax (€ 1.61/m3)	7.3.1	10%	90%	325	2,926	3,251
Air pollution				657	2,626	3,283
- Carbon tax (€ 25/ton)	7.4.1	20%	80%	650	2,600	3,250
- Tax on nitrogen oxide emissions caused by air traffic (€ 5/kg)	7.4.2	20%	80%	7	26	33
Energy				439	1,756	2,195
- Tax on electricity use by large-scale consumers (€ 0.03/kWh)	7.5.1	20%	80%	439	1,756	2,195
Waste				PM	PM	PM
- Deposit on metals	7.6.1	PM	PM	PM	PM	PM
Total increase				5,653	28,058	33,711
Net effect				0	0	0

*Requires approval of EU Member States or adaptation of EU directives.

6. Specifications of measures to reduce tax on labour

This chapter offers an overview of policy measures that could be taken to reduce tax on labour. For each measure, we will address the purpose, the effect for employers, employers and consumers, the underlying assumptions, some areas of concern and potential solutions.

Please keep in mind that the costs of the measures have been estimated based on limited and occasionally out-dated data. What is more, the effects on purchasing power of the package of measures have not yet been researched. We would recommend that parties who have access to the required models and up-to-date data project the effects. Both positive and negative side effects have not yet been taken into account.

Another general point to consider is the political feasibility of the measures. It should be noted in this regard that the proposed changes are designed for to the medium to long-term.

6.1. Income tax and social security contributions

This section contains various proposals for the reduction of labour costs by lowering income tax and social security contributions.

6.1.1. Exemption from income tax and national insurance contributions

Measure

An exemption threshold of € 16,300 for income tax and national insurance contributions³⁰⁰ (Old Age Pensions Act,³⁰¹ Dependants Benefits Act³⁰² and Exceptional Medical Expenses

³⁰⁰ In Dutch: Premies Volksverzekeringen (PVV).

³⁰¹ In Dutch: Algemene Ouderdomswet (AOW).

³⁰² In Dutch: Algemene Nabestaandenwet (Anw).

(Compensation) Act)³⁰³ would cost about € 24.2 billion. This exemption replaces the current system of tax credits³⁰⁴ and will not be means-tested. Employees who have multiple employers qualify for the exemption only once.

Purpose

- To reduce the tax burden on labour for employees.
- To compensate for higher consumer taxes.
- To simplify the tax system.
- To reduce the administrative burden for employers.

Effect for employers and consumers

The exemption primarily entails a tax break for consumers. Based on income distribution in the Netherlands, approximately 800,000 income earners will no longer have to file tax returns for income tax and national insurance purposes. This would result in a considerable simplification of the tax system and a reduction in the overall administrative burden.

A secondary effect is that employers will no longer be required to keep tax and national insurance records for these employees. Given this considerable reduction in administrative burden for employers, it will become more attractive for them to hire people. This secondary effect will benefit employers with staff at the lower levels of the income spectrum.

Underlying assumptions

The costs of this measure are based on available Statistics Netherlands (CBS) data relating to income classes (for the year 2011),³⁰⁵ tax credits (2013),³⁰⁶ tax brackets (2013)³⁰⁷ and the number of persons earning an income from employment, business activities, or secondary income (2011).³⁰⁸ The number of persons earning an income under the exemption threshold is so high that a small adjustment in level has a relatively large impact on the scope of the scheme.

The exemption does not apply to the Health Insurance Act³⁰⁹ because total revenue from means-tested health insurance contributions (€ 22.7 billion)³¹⁰ is so high that the introduction of a general tax exemption for the Health Insurance Act would result in excessive costs. In section 6.1.6, we do, however, foresee a reduction in the employer-paid contribution to means-tested health insurance contributions. Section 6.1.5 provides an overview of the current situation and the new situation where income tax, national insurance contributions and employed persons' insurance contributions are concerned.

³⁰³ In Dutch: Algemene Wet Bijzondere Ziektekosten (AWBZ).

³⁰⁴ The general tax credit, earned income tax credit, newcomers tax credit, earned income tax credit for continuing to work longer, life-course special leave tax credit, child credits, combination tax credits, single-parent's tax credit, parental leave tax credit, elderly person's tax credit, young disabled person's tax credit and tax credits for investments. This study is based on the tax credits in force in 2013 (and some that were in force in 2009).

³⁰⁵ CBS (2013) Inkomensklassen; particuliere huishoudens naar diverse kenmerken.

³⁰⁶ Belastingdienst (accessed July, 2014) Algemene heffingskorting.

³⁰⁷ Belastingdienst (accessed July, 2014) Overzicht tarieven en schijven.

³⁰⁸ CBS (2011) Inkomensklassen; particuliere huishoudens naar diverse kenmerken.

³⁰⁹ In Dutch: Zorgverzekeringswet (Zvw).

³¹⁰ Rijksoverheid (2013) Rijksbegroting 2013. Voorbereiding, Begroting, Vaststelling begroting Ministerie van Volksgezondheid, Welzijn en Sport (XVI) voor het jaar 2013.

Area of concern	Solution
A strict separation between persons earning an income above or below the exemption threshold will discourage them from gainful employment; putting in extra hours of labour will lead to a more than proportionate tax burden.	In the current system, marginal revenues from labour are already negative in some cases. ³¹¹ Given this situation, the solution should lie in a package of means-oriented complementary policies.
Citizens stay outside the reach of the tax authorities when they are no longer required to file tax returns. These citizens are unable to capitalise on available tax credits (this is also referred to as the 'capitalisation problem').	Expectations are that the exemption threshold will effectively reduce the scale of the capitalisation problem. Because of the nature of the exemption, people earning an income below the threshold will no longer pay tax, so that the income policy in the form of allowances can possibly be phased out.

6.1.2. Exemption from employed persons' insurance contributions

Measure

Employees earning less than € 16,300 will be exempt from employed persons' insurance contributions.³¹² Although the tax base for the contributions will not change, the contribution rate will be set at zero percent up to the amount of the exemption threshold.³¹³ The costs of this measure, € 191 million, will be apportioned to income from employment above the threshold, so that total state revenue will remain the same.

The contributions are levied based on the uniform wage definition.³¹⁴ Benefit rights do not change, meaning that maximum benefits will be kept at the current level. The tax reduction is designed for persons earning an income up to the threshold; the scheme would be too costly if it were to apply to all classes of income earners. That is why the scheme has to be restricted.

Purpose

- To reduce the tax burden on labour (at the lower levels of the income spectrum) for employers.
- To simplify the tax system.
- To reduce the administrative burden for employers.

Effect for employers and consumers

Under the current system, employed persons' insurance contributions are fully paid by employers. This measure favours persons earning an income below the exemption threshold; it will become more attractive for employers to hire persons falling in this group. Employers of

³¹¹ European Commission (2013) Tax reforms in EU Member States. Tax policy challenges for economic growth and fiscal sustainability.

³¹² In Dutch: Premies werknemersverzekeringen (pwn).

³¹³ Income from € 0 to € 50,853 was subject to national insurance in 2013. Belastingdienst (accessed July, 2014), Hoe betaalt u mee aan de premies werknemersverzekeringen?

³¹⁴ The Uniform Wage Definition Act came into effect on January 1, 2013; under this Act, the tax base for employed persons' insurance contributions was equated to that for statutory payroll tax. The permitted exemptions were also abolished as of January 1, 2013. EY (2012) De Wet uniformering loonbegrip per 1 januari 2013. Fiscaal Praktijkblad, nr. 17.

persons earning an income above the threshold will pay about 0.33 percent more in employed persons' insurance contributions.

Underlying assumptions

The most recent Statistics Netherlands (CBS) data available (for the year 2011) were used.

Section 6.1.5 provides an overview of the current situation and the new situation where income tax, national insurance contributions and employed persons' insurance contributions are concerned.

Area of concern	Solution
A strict separation between persons earning an income above or below the threshold will discourage them from gainful employment; putting in extra hours of labour will lead to a more than proportionate tax burden.	In the current system, marginal revenues from labour are already negative in some cases. Given this situation, the solution should lie in a package of means-oriented complementary policies.

6.1.3. Allowance for post-active persons

Measure

Post-active persons (retirees) – and those with a small pension in particular – will be hit especially hard by an increase in the reduced VAT rate (see section 7.1.1) because they cannot be recompensed through any exemptions. After all, post-active persons do not pay statutory payroll tax in the current system. An allowance of about € 2.3 billion in total will compensate post-active persons for the increase in the reduced VAT rate of 6 to 22 percent.

Purpose

- To compensate for higher consumer taxes.

Effect for employers and consumers

The measure will benefit consumers.

Underlying assumptions

Allowance was made for 3.1 million post-active persons in total and for the difference in state old-age benefits for married and unmarried persons, as reported by Statistics Netherlands (CBS) December 2012.³¹⁵ The costs of the measure have been calculated for all post-active persons and up to the level of state old-age pension benefits.

The assumption underlying the cost calculations for this measure was that post-active persons receiving state old-age pension benefits spend half of their benefits on VAT-taxable products; the other half is spent on non-taxable products (such as rent, medical expenses and healthcare contributions). It was then assumed that eighty percent of their taxable consumption is spent on products subject to the reduced VAT rate and twenty percent on products subject to the regular rate.

³¹⁵ CBS (December, 2012) AOW-uitkeringen.

Area of concern	Solution
There are post-active persons commanding an income far above the level of state old-age pension benefits. The measure does not have much of an effect for them.	It could be considered introducing an income cap for such recipients.

6.1.4. Allowance for inactive persons

Measure

Inactive persons³¹⁶ whose income from labour and/or secondary income is lower than € 5,400 do not pay income tax and national insurance contributions in the current system because of the general tax credit.³¹⁷ Similar to post-active persons, they will be hit especially hard by an increase in VAT rate because they cannot be expected to be recompensed through any exemptions. An allowance of about € 24 million will compensate inactive persons earning less than € 5,400 for an increase in the reduced VAT rate of 6 to 22 percent (see section 7.1.1).

Purpose

- To compensate for higher consumer taxes.

Effect for employers and consumers

The measure will benefit consumers.

Underlying assumptions

This measure concerns a vulnerable group of about 65,000 people (data 2011)³¹⁸ who are estimated to spend ninety percent of their income on products subject to the reduced VAT rate and ten percent on products subject to the regular rate.

Area of concern	Solution
There are inactive persons who have only a small income from labour and/or secondary income, but enjoy significant other forms of income. The measure does not have much of an effect for them.	It could be considered introducing a means test or asset test in Income Boxes 2 and 3.

6.1.5. Reduction in employer-paid contributions to employed persons' insurance

Measure

Employer-paid contributions to employed persons' insurance will be reduced by € 1.7 billion. This reduction will be funded partially by employees/consumers (€ 850 million) and partially

³¹⁶ This category includes unemployed persons, incapacitated persons and students.

³¹⁷ In Dutch: Algemene Heffingskorting.

³¹⁸ CBS (2013) Inkomensklassen; particuliere huishoudens naar diverse kenmerken.

from general resources (€ 850 million). In the current system, it is the employers who fully fund employed persons' insurance contributions.

Purpose

- To reduce the tax burden on labour for employers.

Effect for employers and consumers

The measure entails a shift in tax from employers to consumers.

Reduction in employer-paid contributions for employed persons' insurance is a powerful tool to lower labour costs. The international literature demonstrates that such a reduction is an incentive for job creation (see section 3.5).

Underlying assumptions

In 2013, employed persons' insurance contributions were estimated at € 53.8 billion.³¹⁹ The figure of € 1.7 billion is a provisional sum.

Area of concern	Solution
This measure requires a major change in the system; the contributions cover the full insurance costs.	<p>The contributions should indeed cover the full insurance costs. However, in practice, a surplus posted in any year is compensated by lower contributions in the next one to two years; the same applies to a deficit. Owing to the crisis and the high unemployment rate, the funds have become inadequate for the required benefits. That is why they are already being supplemented from general resources in the current system. In that sense, the contributions are already being funded from general resources.</p> <p>The proposal to partially fund employed persons' insurance contributions from general resources requires an adjustment by analogy to state old-age pension benefits, which are also already partially funded from general resources given that contributions have stayed the same while costs have increased.</p>

Below is an overview of the current situation and the new situation where income tax, national insurance contributions and employed persons' insurance contributions are concerned.

Table 4: Income tax, social security contributions (the Netherlands, 2014)

Gross income	Income tax	National insurance contributions	Employed person's insurance contributions
€ 0 - € 16,300	Yes	Yes	Yes
€ 16,300 - € 33,500	Yes	Yes	Yes
€ 33,500 - € 50,000	Yes	No	Yes
€ 50,000 or higher	Yes	No	No

³¹⁹ Rijksoverheid (2012) Overzicht van belasting- en premieontvangsten 2012–2013.

Table 5: Income tax, social security contributions (the Netherlands, case study)

Gross income	Income tax	National insurance contributions	Employed person's insurance contributions
€ 0 - € 16,300	No	No	No (zero rate)
€ 16,300 - € 33,500	Yes	Yes	Yes
€ 33,500 - € 50,000	Yes	No	Yes
€ 50,000 or higher	Yes	No	No

6.1.6. Reduction in employer-paid contributions to health insurance

Measure

Employer-paid contributions to means-tested health insurance³²⁰ will be funded from general resources rather than being paid by employers. The costs associated with this measure are € 8.6 billion.

Purpose

- To reduce the tax burden on labour for employers.

Effect for employers and consumers

This measure entails a shift in costs from employers to general resources.

Underlying assumptions

Insured persons currently pay fifty percent of their health insurance through the flat-rate contribution they pay to their health insurer. The other fifty percent is levied through means-tested health insurance contributions, which are due by employers in principle, at least to the extent that the income is subject to statutory payroll tax.³²¹ In the current system, the cost for employers is about € 22.7 billion.³²²

Area of concern	Solution
Why do employers qualify for this tax cut?	Under the current system, employers already bear the costs of paid sick leave for two to three years and the costs of non-work-related illness over that period. This measure reduces the tax burden on labour for employers. ³²³ It should be noted that, until the Uniform Wage Definition Act came into force on January 1, 2013, employees already partially bore the costs of health insurance contributions.

³²⁰ In Dutch: Zorgverzekeringswet (Zvw).

³²¹ Exceptions apply to post-active persons and directors/majority shareholders; they pay a reduced rate of 5.4%. Employers owe 7.5% in contributions. Belastingdienst (2014) Handboek Loonheffingen 2014.

³²² Rijksoverheid (2013) National Budget 2013 Voorbereiding, Begroting, Vaststelling begroting Ministerie van Volksgezondheid, Welzijn en Sport (XVI) voor het jaar 2013.

³²³ See also: Werger, Frank (2011) Loonsomheffing, Fiscale Monografie nr. 135.

6.1.7. Payroll tax credit under Circular Development Promotion Act

Measure

By analogy to the Research & Development Promotion Act,³²⁴ the Circular Development Promotion Act³²⁵ will be introduced. This is a € 1 billion facility for a wage cost reduction for research and development of circular resource use (resource efficiency, closing the loop in resource supply chains and new (bio-based) materials).

Purpose

- To reduce the tax burden on labour for R&D employers (and at the same time to promote job creation in innovative sectors).
- To promote sustainable innovation.

Effect for employers and consumers

The measure will benefit employers.

Underlying assumptions

The current Research & Development Promotion Act is a measure of about € 0.8 billion (2014) per year aimed at lowering wage costs for research and development. An evaluation commissioned by the Ministry of Economic Affairs, Agriculture and Innovation shows that, thanks to the Research & Development Promotion Act, private-sector wages paid for R&D effectively went up in the period from 2006 to 2010.³²⁶ Up to now, there is no tax facility specifically targeting R&D in the area of sustainable use of resources in the Netherlands. The figure of € 1 billion is a provisional sum.

Area of concern	Solution
It is necessary to determine what type of activities will qualify and to delineate the dividing line with the Research & Development Promotion Act.	The scope of the measure could be limited at the start (e.g. innovation in the area of recycled or bio-based materials), only to be broadened later.

6.1.8. Broadening of work-related costs scheme

Measure

In accordance with the work-related costs scheme,³²⁷ tax is deducted at source on relatively minor fringe benefits (wages in kind, such as Christmas hampers, company parties and lunch expenses). Employers are currently permitted to grant employees a tax-free allowance of no more than 1.5 percent of their salary (the 'margin'), over and above any specific exemptions and zero ratings. Any allowances in excess of this margin are subject to eighty percent tax. By no longer levying tax on allowances in excess of the margin under the work-related costs

³²⁴ In Dutch: Wet Bevordering Speur- en Ontwikkelingswerk (WBSO).

³²⁵ In Dutch: Wet bevordering Circulair Ontwikkelingswerk (WBCO).

³²⁶ EIM (2012) Evaluatie WBSO 2006-2010. Effecten, doelgroepbereik en uitvoering.

³²⁷ In Dutch: Werkkostenregeling (WKR).

scheme, employers will be left with about € 444 million in savings. This measure also reduces the administrative burden.

Purpose

- To reduce the tax burden on labour for employers.
- To simplify the tax system.
- To reduce the administrative burden for employers.

Effect for employers and consumers

This measure will reduce income for the treasury; it indirectly entails a shift from employers to consumers in general.

Underlying assumptions

Tax deducted at source amounted to € 444 million in 2011.³²⁸

Area of concern	Solution
If the facility is not capped, there is a risk of picking and mixing (uncontrolled levels of wages in kind).	An easy-to-use cap is recommended to restrict the use of the facility (for example, 4 to 5 percent of the total wage bill).

6.1.9. Budget for new labour demand

The total proposed package of measures (see section 5.5) would provide for a net benefit to employers of approximately € 7.7 billion, if left unchanged. As the fundamental goal of this exercise is to increase demand for employment, we propose to effectively 'plough back' this budget to investments in realized additional employment. Ideally, the labour costs decreases should be connected to an effective employment increase and should benefit employers only as far as labour demand is actually increased structurally. The fact that this increase in labour demand also increases productivity/output for employers at no extra cost is considered to be another advantage for employers. This effect remains at the disposal of employers.

The exact use of the budget is yet to be determined. Section 8.4 will provide a rough estimate of the potential job creation of such budget.

³²⁸ Ministerie van Financiën (2010) Werkkostenregeling (Belastingplan 2010 c.a.).

6.2. VAT

This section sets out various proposals for a reduction in VAT rate.

6.2.1. Zero rate for labour-intensive services

Measure

The long-term goal is to introduce the zero rate for labour-intensive services. If € 3 billion were to be freed up for this measure, the zero rate could apply to:

1. The entire repair sector, including repair and maintenance of machines, electronics, cars, computers and shoes;³²⁹ and
2. Businesses providing energy advice and installing renewable energy technology in social housing (capped at € 900 million in revenue). These activities will be capped per taxpayer by analogy to the small businesses facility.

The right to deduct input tax³³⁰ will remain intact.

Purpose

- To reduce the tax burden on labour for employers in labour-intensive sectors (and at the same time to promote job creation in those sectors).
- To reduce the cost of labour-intensive services for consumers.
- To promote sustainable innovation.

Effect for employers and consumers

Of the reduction in VAT, twenty percent is expected to benefit businesses. Eighty percent will be passed on to consumers. This ratio is based on a survey conducted by CPB Netherlands Bureau of Economic Policy Analysis (CPB) in 2003 with regard to the reduction in VAT rate on services such as hairdressing, painting, plastering (if property is older than fifteen years), bike repair, shoe repair and clothing repair, which was introduced in 2001. This survey showed that seventy percent to eighty percent of the reduction in the VAT rate on these services was in fact passed on to consumers.³³¹

Underlying assumptions

If € 3 billion (a provisional sum) were available for this facility, an amount of € 13.6 billion would qualify for taxation at the zero rate. The repair sector generates approximately € 12.7 billion in revenue (2010 data).³³² The remainder has been designated to the category 'energy savings in social housing'.

³²⁹ The repair sector includes business repairing metal products, machines, tools, electronics, electrical appliances, aircraft, communication equipment, shoes, computers, car parts and furniture, as well as laundries and dye works, the watch-making industry, tire services, body shops, other car repair shops and towing businesses, retailers in motorcycles, retailers in sewing and knitting machines, linen rental companies, and businesses trading in and repairing passenger cars. ECORYS (2012) De sector ambachten: economie en arbeidsmarkt.

³³⁰ In Dutch: Recht op vooraf trek.

³³¹ CPB (2003) Contra-expertise effecten Btw-verlaging arbeidsintensieve diensten.

³³² ECORYS (2012) De sector ambachten: economie en arbeidsmarkt.

Area of concern	Solution
<p>In accordance with European rules, the zero rate is currently the preserve – in principle – of international trade (plus a number of temporary derogations in the United Kingdom and Ireland).³³³</p>	<p>The Netherlands could advocate amending the directive to its European partners. If necessary, the reduced VAT rate rather than the zero rate could be applied in a transitional phase. Although reduced VAT rates are a sensitive issue in European negotiations,³³⁴ such a measure would be justifiable because it ties in with the resource efficiency targets of the European Commission.³³⁵ The EU Tax Directive already allows for a reduced VAT rate on repair services of minor products, including computers. A reduced VAT rate for electronics repairs would increase the ability of local shops to offer repair services, which would tie in perfectly with the overall goal of achieving resource efficiency and solving unemployment.</p> <p>Please note that sixty percent of total consumer spending by households and public authorities is already ‘exempt’ from VAT. Exempt sectors, such as healthcare, education and financial services are not required to charge VAT on their sales, nor are they permitted to deduct VAT paid on their purchases.³³⁶</p>
<p>The job creation effect of a reduction in VAT rate is difficult to predict.</p>	<p>The literature is not unanimous about this effect (see section 2.4). An evaluation of a temporary reduction in VAT on a number of labour-intensive services in the Netherlands, which was performed in 2002, did not, for instance, show a visible increase in employment. However, because of a lack of historical data in two out of five sectors, a definite conclusion on the effect on job creation could not be drawn.³³⁷ Based on the findings of a second survey, the temporary reduction in the Dutch VAT rate did, in fact, create more jobs in terms of man-years.³³⁸ In the construction sector, the temporary reduction in VAT rate on labour also had a positive effect on job creation in man-years, which is why the measure was extended to March 2014.³³⁹</p>

³³³ Council of the European Union (2006) Council Directive 2006/112/EC on the common system of value added tax.

³³⁴ European Commission (2013) Summary report of the outcome of the public consultation on the review of existing legislation on VAT reduced rates. 8 October 2012-4 January 2013.

³³⁵ European Commission (2010) Europe 2020. A strategy for smart, sustainable and inclusive growth; European Commission (2011) Roadmap to a Resource Efficient Europe.

³³⁶ CPB (2014) Bouwstenen voor een moderne btw.

³³⁷ Research voor beleid (2002) Effects of the lowering of VAT rates on labour-intensive services. Survey carried out for the Ministry of Finance.

³³⁸ CPB (2003) Contra-expertise effecten Btw-verlaging arbeidsintensieve diensten.

³³⁹ Translated: “The reduction in VAT rate from 21% to 6% will result in an additional construction volume of € 600 million in 2013, which corresponds to nearly 5,000 man-years.” EIB (September 10, 2013) Notitie: Effecten van een aantal maatregelen gericht op stimulering van de woningbouw. Translated: “The measure has led to € 2.6 billion extra turnover, which would not have been realized without the VAT-reduction. At least 20,000 jobs have been maintained in the building industry, installation sector and in landscaping.” USP Marketing Consultancy (2014) Monitor: wat zijn de effecten van de tijdelijke btw verlaging voor renovatie en onderhoud in de bouw-, installatie- en groenvoorziening? Belangrijkste resultaten Meting 2.

6.2.2. Zero rate on best-practice products

Measure

It could be considered applying the zero rate to best-practice products, possibly by analogy to the Japanese Top Runner Program, which was launched in 1998 to increase the energy efficiency of products. This program works as follows:

“Japan's Top Runner program sets efficiency standards for 21 products (e.g., vending machines, air conditioners, TVs) sold in Japan. On a regular basis, officials test all the products currently available in a category, determine the most efficient model, and make that model's level of efficiency the new baseline. Manufacturers have the obligation to make efforts to achieve the new baseline within four to eight years. If a manufacturer does not meet the target or fails to make a good faith effort, this fact is publicized.”³⁴⁰

The Top Runner Program has proved to be highly effective in boosting energy efficiency:

“The rates of energy efficiency improvement required by the Top Runner Standards range from 16% to 80%, these have so far been achieved for all products, and often greatly exceeded.”³⁴¹

Such a facility should not only target energy efficiency, but focus also on the 35 materials the European Commission claims come with a high supply risk and whose substitution and recycling are critical in terms of economics (see section 1.3).³⁴²

Purpose

- To promote sustainable innovation.
- To increase sustainability awareness among consumers.

Effect for employers and consumers

The effect of this measure is thought to be neutral due to the high target that is set. The measure has been added as a token measure because it serves as a signal.

Underlying assumptions

A ‘gold standard’ (by analogy to the Top Runner Program) should be defined; if the bar is high, few products will meet the target and the measure will not be costly. The reverse applies if the bar is low.

³⁴⁰ United Nations Conference on Sustainable Development (accessed June, 2014) Top Runner Program.

³⁴¹ Kimura (2010) Japanese Top Runner Approach for energy efficiency standards.

³⁴² The materials with a high supply risk are: Antimony, Beryllium, Cobalt, Fluorspar, Gallium, Germanium, Graphite, Indium, Magnesium, Niobium, Tantalum, Tungsten, Platinum Group Metals (Platinum, Palladium, Iridium, Rhodium, Ruthenium, Osmium) and Rare Earth Metals (Yttrium, Scandium and Lanthanides (Lanthanum, Cerium, Praseodymium, Neodymium, Promethium, Samarium, Europium, Gadolinium, Terbium, Dysprosium, Holmium, Erbium, Thulium, Ytterbium, Lutetium)). European Commission (2010) Critical raw materials for the EU. Report of the Ad-hoc Working Group on defining critical raw materials.

Area of concern	Solution
The European VAT Directive currently rules out this measure. ³⁴³	The Netherlands could advocate amending the directive to its European partners. If necessary, the reduced VAT rate rather than the zero rate could be applied in a transitional phase. Although reduced VAT rates are a bone of contention in European negotiations, ³⁴⁴ such a measure would be justifiable because it ties in with the resource efficiency targets of the European Commission. ³⁴⁵
How to standardise what is meant by best practice?	This is to be fleshed out further, possibly based on existing quality marks and systems (such as Cradle-to-Cradle, EPD or ISO certification) or a minimum percentage of recycled materials.
Certain products such as cars would weigh down the budget heavily.	Some sectors, such as the automobile industry, will have to be excluded for budgetary reasons. In those cases, environmental rules are more appropriate than tax measures.
VAT is not designed for this purpose.	Supplementary to the push factor of environmental rules, a reduction in VAT rate will provide a pull-factor for consumers to purchase a certain product for financial reasons.

³⁴³ Council of the European Union (2006) Council Directive 2006/112/EC of 28 November 2006 on the common system of value added tax.

³⁴⁴ European Commission (2013) Summary report of the outcome of the public consultation on the review of existing legislation on VAT reduced rates. 8 October 2012-4 January 2013.

³⁴⁵ European Commission (2010) Europe 2020. A strategy for smart, sustainable and inclusive growth; European Commission (2011) Roadmap to a Resource Efficient Europe.

6.3. Corporate income tax

This section sets out a proposal for a reduction in corporate income tax on specific innovative activities.

6.3.1. Resource box

Measure

The so-called innovation box is a special corporate income tax category for innovation profits. Gains coming under this category are taxable at an effective rate of five percent rather than at the 25 percent top rate. The innovation box should be broadened to include a € 1 billion facility for activities involving the circular use of materials. This so-called 'resource box' would be a special corporate income tax category for gains from circular development projects, such as innovations aimed at resource efficiency, recycling and biobased materials.

Purpose

- To promote sustainable innovation.

Effect for employers and consumers

The measure will benefit employers.

Underlying assumptions

The figure of € 1 billion is a provisional sum.

Innovation is knowledge-intensive, and therefore labour-intensive. Sustainable innovation is desirable from both the environmental and employment point of view.

Area of concern	Solution
It is necessary to determine what type of activities will qualify and to delineate the dividing line with the innovation box.	The scope of the measure could be limited at the start (e.g. innovation in the area of recycled or bio-based materials), only to be broadened later.

7. Specifications of measures to increase tax on consumption

This chapter offers specifications of measures that could be taken to increase taxes on natural resources and consumption. For each measure, we will briefly address the purpose, the effect for employers and consumers, the underlying assumptions, some areas of concern and potential solutions.

Please keep in mind that the costs of the measures have been estimated based on limited and occasionally out-dated data. What is more, the effects on purchasing power of the package of measures have not yet been researched. These measures may have a negative effect on purchasing power, although that effect is compensated by the reduction in tax on labour. We would recommend that parties who have access to the required models and up-to-date data project the effects.

Another general point to consider is the political feasibility of the measures. It should be noted in this regard that the proposed changes are designed for the medium to long-term. A number of factors, such as early announcement, transitional schemes and lower tax on labour could be beneficial in the transitional phase. Most of the measures in this chapter are reductions of Environmentally Harmful Subsidies (see section 2.3).

Positive and negative secondary effects are outside the scope of this research. Also, the quantitative effects in meeting national resource efficiency targets have not yet been taken into account. The measures will need to be introduced gradually over a prolonged period in order to allow for monitoring and adjusting where necessary.

7.1. VAT

This section includes a proposal for increasing VAT rates.

7.1.1. Flat VAT rate (22%)

Measure

A flat VAT rate of 22 percent will result in approximately € 13.2 billion in tax revenue (excluding side effects). The existing exemptions will remain intact.

Purpose

- To increase tax revenue.
- To simplify the tax system.

Effect for employers and consumers

Although VAT is raised against businesses, it is ultimately a consumer tax. Businesses with limited relief options will tend to pass on most of the higher, non-deductible VAT to consumers through their pricing. Businesses are expected to bear twenty percent of the costs and eighty percent is likely to be passed on to consumers. This ratio is based on a survey conducted by CPB Netherlands Bureau of Economic Policy Analysis (CPB) in 2003 with regard to the reduction in VAT rate on labour-intensive services (e.g. hairdressing, bike repair and painting), which was introduced in 2001. This survey showed that 70-80 percent of the reduction in VAT rate on labour-intensive services was in fact passed on to consumers.³⁴⁶ The assumption is that there is a symmetrical correlation between VAT increases and reductions.

A negative effect on purchasing power (mainly for lower income groups) is offset (in part) by a reduction in tax on income with specific focus on post-active and inactive persons (see sections 6.1.3 and 6.1.4). According to CPB the reduced VAT rate is not an effective instrument for lowering the tax burden on lower income groups; the related loss of tax revenue is great (more than € 8 billion) and the redistribution effect is minor. CPB claims that income tax and social security contributions are more effective tools for income redistribution.³⁴⁷

Underlying assumptions

Based on the conversion table, it has been assumed that an increase in the regular VAT rate to 22 percent would result in about € 2 billion additional tax revenue. An increase of the reduced VAT rate to 22 percent would yield € 11.1 billion.³⁴⁸

An increase in VAT rates would tie in with a trend in the European Union (see section 2.4). Introduction of a flat rate entails a major simplification of the tax system and would alleviate the administrative burden. As CPB put it in a recent report (translated):³⁴⁹

"A flat rate will also contribute to a less complex tax system with lower collection and compliance costs. The VAT-related compliance costs for the private sector

³⁴⁶ CPB (2003) Contra-expertise effecten Btw-verlaging arbeidsintensieve diensten.

³⁴⁷ CPB (2014) Bouwstenen voor een moderne btw.

³⁴⁸ Rijksoverheid (April 17, 2012) Kamerbrief over sleuteltabel 2013.

³⁴⁹ CPB (2014) Bouwstenen voor een moderne btw.

were estimated at 408 million euros for 2007 (Studiecommissie Belastingstelsel, 2010). The Ministry of Finance (2008) estimated that a flat VAT rate would lower these costs by about 100 million euros."

One of the benefits of less differentiation is that fewer checks have to be performed. According to CPB (translated):

"The measure would also lower the direct administrative costs for the Tax & Customs Administration, which are estimated at 138 million euros. Contrary to a dual rate, a flat rate is less sensitive to lobbying and the chance of misclassification is ruled out. In other words, introduction of a flat rate would not only reduce the policy deficit, but also the compliance deficit."

An increase in VAT rate would drive up the cost of primary necessities, including food. This effect is partially offset by lower taxes on labour. In addition, there is a need in the EU, and in the Netherlands in particular, to prevent food wastage:

"In the EU, food waste along the supply chain has been estimated at approximately 89 million tons or 180 kg per capita per year, and is expected to rise to about 126 million tons a year by 2020, unless action is taken."³⁵⁰

The European Parliament explicitly advises Member States to eliminate the reduced VAT rate on food in a bid to *"remove all incentives that may encourage the generation of food waste"*.³⁵¹ At 541 kilograms per capita, the Netherlands is the highest food waste generator in the EU.³⁵² The Dutch Government estimates that € 5 billion worth of food is wasted annually in the Netherlands.³⁵³

Another side effect of raising the VAT rate on food may be a lower consumption of meat, dairy products and eggs in the European Union, which would significantly reduce nitrogen emissions, greenhouse gas emissions and the need for crop land for food production; it would also lower health risks and improve air and water quality in the EU.³⁵⁴

The positive revenue effects and feedback loops described above have not yet been factored into the results.

In this proposal, plane tickets will continue to be exempt from VAT to avoid practical problems associated with the introduction and because of the international nature of aviation. A tax on jet fuel has, however, been factored into this proposal (see section 7.2.3). The increase in VAT

³⁵⁰ Households produce the largest share of EU food waste (42%), followed by agriculture/ food processing (39%), food service/catering (14%), and retail/wholesale (5%). European Parliamentary Research Service (EPRS) (January 22, 2014) Tackling food waste. The EU's contribution to a global issue.

³⁵¹ European Parliament (2013) Technology options for feeding 10 billion people. Options for Cutting Food Waste.

³⁵² Next on the list are Belgium (345 kg), Cyprus (327 kg) and Estonia (265 kg); the countries wasting the lowest amounts of food are Slovenia (72 kg), Malta and Romania (both 76 kg), followed by Greece (80 kg) and the Czech Republic (81 kg). European Parliamentary Research Service (EPRS) (January 22, 2014) Tackling food waste. The EU's contribution to a global issue.

³⁵³ Dutch consumers are responsible for about € 2.5 billion worth of food waste (more than € 150 per person). Producers, traders, catering and supermarkets waste another € 2.5 billion worth of food. Rijksoverheid (accessed June, 2014) Voedselverspilling.

³⁵⁴ Westhoek, Henk (et al.) (2014) Food choices, health and environment: Effects of cutting Europe's meat and dairy intake.

rate would in fact apply to the floriculture industry, which is currently subject to the reduced VAT rate.

Area of concern	Solution
Political feasibility.	This adjustment will take some time to realize. The measure contributes significantly to lowering tax on labour. In case of a smaller adjustment of the VAT structure, tax on labour could not be reduced as much. Alternatively, other forms of consumer tax increases would need to be explored.
Fall in tax revenue due to lower consumption.	It should be noted that under the current system, unemployment is a major threat to stability of tax revenues. The Policy Toolkit (see page 78) demonstrates the options for broadening and increasing tax bases based on consumption with a view to stabilising tax revenue for the treasury. Under a new tax system, consumption can be expected to shift from goods to services, as the cost of services is likely to drop because of a lower tax on labour.
A weaker competitive position of businesses in border areas.	Coordination with neighbouring countries and at EU level, perhaps by forming a 'coalition of the willing'.
Some businesses will not be able to implement the increase in VAT rate in their prices right away, causing their profit margins to drop.	Such a measure should be announced with ample notice and introduced gradually so that businesses have the chance to prepare for changing market circumstances and the transition to other products/services.

7.2. Fossil fuels

This section offers various suggestions for increasing taxes on the use of fossil fuels.

7.2.1. Transport fuels

Measure

An increase in excise duties on transport fuels (petrol, diesel and natural gas) of € 0.55 per litre is expected to result in € 7.6 billion in tax revenue. The current exemptions (local public transport, fire service and police) will be kept intact. Shipping and inland navigation will also remain exempt.

Purpose

- To increase tax revenue.
- To internalise external costs ('the polluter pays').
- To promote sustainable innovation towards fuel efficiency and cleantech.
- To reduce dependency on fossil fuels.

Effect for employers and consumers

Based on mileage clocked up³⁵⁵ and the spread between private and business mileage, the increase in excise duties would be spread over employers and consumers at a rate of about sixty percent and forty percent respectively.³⁵⁶ Businesses are expected, however, to be able to pass on eighty percent of the additional cost to consumers, thereby reducing their increase to approximately ten percent.

Underlying assumptions

13.5 Billion litres of fossil fuels are used for transport purposes in the Netherlands every year.³⁵⁷ The proceeds of the measure are based on the conversion table for 2013.³⁵⁸

The increase in excise duties is a step towards the internalisation of the external costs of fossil fuel combustion, including health hazards, premature deaths, climate change and pollution (see chapter 1).³⁵⁹ The lack of internalisation qualifies as an Environmentally Harmful Subsidy (see section 2.3) given that the polluter does not pay for the damage caused.

The existing instruments could be used to bring about a gradual step-up in duties without a complex new infrastructure having to be developed. Higher consumer prices will make the system transparent. In order to prevent border effects, the increase should ideally be implemented on a Europe-wide basis, perhaps initially by a 'coalition of the willing'.

It should be noted that revenues from fuel excise duties would decrease significantly if the trend towards electric cars were set to continue. Traffic and transport will then largely come to

³⁵⁵ CBS (2011) Verkeersprestaties motorvoertuigen; kilometers, voertuigsoort, grondgebied.

³⁵⁶ EIM (2011) De werking van de benzinemarkt en de opbouw van de brandstofprijzen.

³⁵⁷ CBS (2012) Motorbrandstoffen voor vervoer; afzet in petajoule, gewicht en volume.

³⁵⁸ Rijksoverheid (April 17, 2012) Kamerbrief over sleuteltabel 2013.

³⁵⁹ External costs may also be associated with noise, congestion, infrastructure, pressure on public space, ground and water pollution, damage to nature and landscapes, energy security. CE Delft (2014) Externe en infrastructuurkosten van verkeer.

fall under the European Emissions Trading Scheme. Preparations for this transition are crucial to keep government income stable; the Ex'tax Policy Toolkit (see page 78) provides guidance for government policy in response to such types of trends.

Area of concern	Solution
Political feasibility.	Some of the proceeds could be transferred to a shared European fund for reducing the dependency on fossil fuels. As a result, the reduction in tax on labour will be lower.
The measure will weaken the competitive position of sectors that are heavy users of fossil fuels.	Owing to the dependency on imports, it is not feasible for Europe in the long run to compete on the lowest fossil fuel price, nor is it a tenable option to continue the current considerable subsidy on fossil fuel consumption. By shifting pricing incentives, energy-efficient businesses are creating an edge, which will boost their competitive position in the longer term. A transitional measure could be introduced, in which case the reduction in tax on labour will be lower too. That said, labour-intensive industries will be given a boost by the reduction in tax on labour, which will result in some substitution.
This measure will put a brake on mobility.	The business case for renewable energy sources and sustainable mobility will improve, facilitating a transition to renewable energy. The measure will provide an impetus to The New World of Work, the use of public transport, energy-efficient cars, etc.
Leakage may occur when businesses move their operations to countries where fossil fuels are cheaper.	It is likely that energy-intensive industries will relocate their operations. On the other hand, labour-intensive activities are expected to be able to return because of the measure ('reshoring'). The energy footprint of imports will also be taxable in due course in order to prevent leakage of environmental effects.

7.2.2. Natural gas

Measure

An increase in energy tax on the use of natural gas by € 0.07 per m³ is expected to result in approximately € 3.2 billion for the treasury.

Purpose

- To increase tax revenue.
- To internalise external costs ('the polluter pays').
- To promote sustainable innovation towards fuel efficiency and cleantech.
- To reduce dependency on fossil fuels.

Effect for employers and consumers

The measure entails a sharp increase on the tariffs for 2013 (see Table 6).

Table 6: Energy tax tariffs on natural gas (the Netherlands 2013 and increase).

Bracket/m3	Energy tax/m3 (2013) ³⁶⁰	Proposed increase (Δ)	Energy tax/m3 (new)	Increase (%)
1) 0-5,000	€ 0.1862	€ 0.07	€ 0.2562	38%
2) 5,000-170,000	€ 0.1862	€ 0.07	€ 0.2562	38%
3) 170,000-1 million	€ 0.0439	€ 0.07	€ 0.1139	159%
4) 1 million-10 million	€ 0.0160	€ 0.07	€ 0.0860	438%
5) > 10 million	€ 0.0115	€ 0.07	€ 0.0815	609%

Most of this cost-increasing tax (eighty percent) will be passed on to consumers. This is based on a general benchmark of twenty and eighty percent because no specific benchmarks are known.

Underlying assumptions

Approximately 45.3 billion m³ of natural gas is consumed in the Netherlands each year.³⁶¹ Dutch production of natural gas is set to taper off in due course. In eleven years' time, the Netherlands is expected to change from being a net exporter to a net importer of gas.³⁶² For that reason, the proposed tariff increase encompasses total use (i.e. including imports). Because of the Ukraine crisis, reducing the Dutch dependency on imports has become a political priority.³⁶³

Raising the tax rate on natural gas is consistent with the aim to lower Environmentally Harmful Subsidies (see section 2.3).

Area of concern	Solution
This measure weakens the competitive position of industries that are heavy users of natural gas.	Owing to the dependency on imports, it is not feasible for Europe in the long run to compete on the lowest fossil fuel price, nor is it a tenable option to continue the current considerable subsidy on fossil fuel consumption. By shifting pricing incentives, energy-efficient businesses are creating an edge, which will boost their competitive position in the longer term. The business case for renewable energy sources will improve. Transitional compensation measures could be considered, in which case the reduction in tax on labour will be lower too.
Leakage may occur when companies move their operations to countries where natural gas is cheaper.	It is likely that energy-intensive industries will relocate their operations. On the other hand, labour-intensive activities are expected to be able to return because of the measure ('reshoring'). The energy footprint of imports will also be taxable in due course in order to prevent leakage of environmental effects.

³⁶⁰ Belastingdienst (2013) Tabellen tarieven milieubelastingen.

³⁶¹ CBS (2011) Aardgasbalans; aanbod en verbruik.

³⁶² Rijksoverheid (2014) Energy, gas.

³⁶³ AIV (2014) De EU-gasafhankelijkheid van Rusland. Hoe een geïntegreerd EU-beleid dit kan verminderen.

7.2.3. Jet fuel

Measure

Levying excise duties on jet fuel would result in € 1 billion in tax revenue.

Purpose

- To increase tax revenue.
- To internalise external costs ('the polluter pays').
- To promote sustainable innovation towards fuel efficiency and cleantech.
- To reduce dependency on fossil fuels.

Effect for employers and consumers

Most of this tax (eighty percent) is expected to be passed on to the consumer.

Underlying assumptions

4.2 Billion litres of jet fuel were used in the Netherlands in 2010.³⁶⁴ Based on this figure, € 1 billion in tax revenue would correspond to a price increase of € 0.24 per litre. Although the minimum tax rate for jet fuel in the EU is € 0.33 per litre, jet fuel used for international air traffic is currently exempt from this tax in the EU. Road transport and rail transport are not exempt from excise duties and taxes in the current constellation. As a result, it is cheaper to fly than it is to take the train in Europe, despite the fact that air traffic comes with higher external environmental and health costs. This proposal is a step towards a level playing field.

CE Delft calculated in 2013 that, if the existing EU minimum tax of € 0.33 per litre were to apply to all jet fuel in Europe, the tax bonus would be nearly € 20 billion.³⁶⁵ CE Delft performed an analysis of the impact of such a tax on the demand for flights in 2007. A tax of € 0.33 per litre of jet fuel would result in a 6.1 percent drop in the number of flights to and from the Netherlands in 2010 and an eight percent fall in the number of passengers travelling from the Netherlands to other EU countries. Obviously, such a fall in demand will also lead to lower emissions.³⁶⁶

It is important to note that developments in aviation have not stopped since 2007. KLM Royal Dutch Airlines, for instance, has operated a weekly biofuel flight from New York to Amsterdam since 2013. The aircraft fly on 50 percent jet fuel and 50 percent biofuel made from processed frying fat.³⁶⁷ Introducing excise duties on jet fuel will give a boost to these types of innovations because it improves the business case for renewable fuels and energy-efficient technologies.

Area of concern	Solution
This measure will weaken the competitive position of Dutch airports.	Current use of and subsidies on fossil fuels are not tenable in the long run. A gradual increase in excise duties on non-renewable fuels will create an incentive to seek out more sustainable solutions. Excise duties on motor fuels have, after all, also contributed to more fuel-efficient cars. European cooperation is crucial in this area.

³⁶⁴ US Energy Information Administration (2011) International Energy Statistics.

³⁶⁵ CE Delft (2013) Estimated revenues of VAT and fuel tax on aviation.

³⁶⁶ The researchers found that carbon (CO₂) emissions would fall by 1.3%, NO_x emissions by 3.4%, SO₂ emissions by 4.1% and emissions from volatile organic compounds (VOCs) by 7.0%. CE Delft (2007) as presented in Ministry of Infrastructure and the Environment (2010) Belastingen en heffingen in de luchtvaart. KiM Netherlands Institute for Transport Policy Analysis.

³⁶⁷ KLM (March 8, 2013) Weekly flight using sustainable biofuel.

7.3. Water

This section includes proposals for increased water taxation.

7.3.1. Tap water and groundwater

Measure

Water tax could be raised by € 3.25 billion in total compared with 2013. This amount can be broken down as follows:

1. A € 1.13 billion increase in revenue from tax on tap water; up to a usage of 300 m³ the rate will be € 1.61 per m³.
2. A € 0.49 billion increase in revenue from tax on tap water; above 300 m³ the rate will be € 1.61 per m³.
3. A € 1.63 billion increase in revenue by reintroducing groundwater tax at € 1.61 per m³.

Purpose

- To increase tax revenue.
- To internalise external costs ('the polluter pays').
- To promote sustainable innovation towards water efficiency (at both consumers and businesses).

Effect for employers and consumers

Businesses are likely to pass on most of the costs (ninety percent) to consumers.

The price paid for water is made up of factors such as price per litre, taxes, standing charges and sufferance tax,³⁶⁸ which vary strongly from province to province.³⁶⁹ For this reason, it is difficult to determine what the average consumer pays per cubic metre. Assuming that an average household (of 2.2 persons)³⁷⁰ uses approximately 100 m³ per year,³⁷¹ they will see their costs rise by roughly € 180 compared to the first half of 2014. This figure makes allowance for the increase in VAT rate from 6 to 22 percent (see section 7.1.1).

Underlying assumptions

With regard to tap water, calculations have been made based on available data with regard to water use (2010)³⁷² and (2012),³⁷³ tax rates (2013)³⁷⁴ and tax revenues (2013 est.).³⁷⁵

In 2010, one billion m³ of groundwater (and fourteen billion m³ of surface water) were extracted in the Netherlands.³⁷⁶ In 2011, groundwater tax was still levied at € 0.1963 per cubic metre of extracted fresh groundwater, unless the extraction was exempt.³⁷⁷ The tax was

³⁶⁸ In Dutch: Precariorechten.

³⁶⁹ Cijfernieuws (accessed January, 2014) De prijs van water in 2014 & 2013.

³⁷⁰ CBS (July 2, 2012) Grote verschillen in gemiddelde huishoudensgrootte per buurt in de vier grote steden.

³⁷¹ CBS (2013) Environmental accounts of the Netherlands 2012.

³⁷² CBS (November 13, 2013) Milieurekeningen; watergebruik.

³⁷³ CBS (2013) Environmental accounts of the Netherlands 2012.

³⁷⁴ Belastingdienst (accessed July, 2014) Tabellen tarieven milieubelastingen.

³⁷⁵ Tweede Kamer der Staten-Generaal (2013) Miljoenennota 2014.

³⁷⁶ CBS (November 13, 2013) Milieurekeningen; watergebruik.

³⁷⁷ PwC (January 19, 2011) Belastingnieuws Binnenlands Bestuur 2011/1.

abolished because of the minor revenue, estimated at € 176 million in 2011.³⁷⁸ Reintroducing groundwater tax and increasing its rate considerably should promote water efficiency and water technologies.

Until January 1, 2014, the Dutch tax rate on tap water was € 0.165 per m³ up to 300 m³. Bulk users did not pay any tax on tap water on their use in excess of 300 m³. The rate up to 300 m³ was increased to € 0.33 on January 1, 2014. The ceiling of 300 m³ was to be abolished on July 1, 2014 in favour of a degressive rate.³⁷⁹ Because of pressure from bulk users, the State Secretary decided in June 2014, however, not to introduce the proposed changes, partly because the side effect would be that they would promote the use of groundwater (which is not taxable any more). The withdrawal of the reform will result in € 80 million in lost tax revenue per year with effect from 2014.³⁸⁰

This proposal is based on the 'polluter pays' principle. It does not make allowance for exemptions and lower rates for large-scale consumers. Technologically speaking, there are many options for conserving water, but many of them are not economically viable because of the relatively low price of water. To promote efficient use of water, the price of water in Europe will have to be raised significantly – we share this opinion with the European Environment Agency (EEA) – so that external costs of water treatment, transport, pollution and resource depletion are reflected in the price. In the period 1993-2004, Denmark, for example, increased its urban water prices by 54 percent, which caused daily water use to go down by twenty percent, to 125 litres, one of the lowest levels of any developed country.³⁸¹

All countries neighbouring the Netherlands have taxes on water, but because – as mentioned above – the water price is made up of many factors, it is difficult to compare the Dutch tax rate to that of foreign countries:

“The average price of water across many European cities varies from € 0.40 to € 5.75 per 1,000 litres. Within countries huge variation can be seen. In Sweden, for example, citizens in Malmö pay just € 1.03 while those in Gothenberg pay € 4.19 per 1,000 litres.”³⁸²

Given that there is a global trend towards increasing water scarcity, taxes on water consumption are expected to increase globally.

Area of concern	Solution
Water is a primary necessity.	It might be considered following Belgium's example. In this country, every citizen receives 15 m ³ fresh water free of charge. ³⁸³

In a world where water scarcity is so widespread we surely cannot expect European toilets to remain being flushed using drinking water?

³⁷⁸ Rijksoverheid (April 13, 2011) Fiscale Agenda. About 4,000 taxpayers were liable to groundwater tax. Water supply companies accounted for some 80% of this revenue. The other 20% was paid by companies using groundwater (15%) and pumping stations (5%). Vereniging Industriewater (April 15, 2011) Afschaffen grondwaterbelasting.

³⁷⁹ Belastingdienst (accessed July, 2014) Tabellen tarieven milieubelastingen.

³⁸⁰ Staatssecretaris van Financiën (Eric Wiebes) (June 4, 2014) Belasting op leidingwater. Kamerbrief.

³⁸¹ EEA (2013) Assessment of cost recovery through water pricing.

³⁸² Public Policy (May 1, 2013) Domestic Water Charges in Europe. See also: EEA (2013) Assessment of cost recovery through pricing of water.

³⁸³ EMWIS (2008) Water pricing in some EU countries.

7.4. Air pollution

This section proposes an increase in the cost of air pollution.

7.4.1. Carbon emissions

Measure

A carbon tax of € 25 per ton³⁸⁴ results in € 3.25 billion in tax revenue. In order to avoid double taxation (see section 7.2.1), emissions caused by road traffic are excluded from this carbon tax.

Purpose

- To increase tax revenue.
- To internalise external costs ('the polluter pays').
- To reduce carbon emissions
- To promote sustainable innovation towards cleaner and energy-efficient production.

Effect for employers and consumers

The tax is paid by industrial, energy and transport sectors. Probably, most of the costs (eighty percent) will be passed on to consumers. The remaining twenty percent will not be rechargeable (e.g. where exports are concerned).

By making use of the existing European Emissions Trading Scheme infrastructure, the measure will not result in a large additional administrative burden.

Underlying assumptions

Total carbon emissions in the Netherlands were 168,000 tons in 2011, including 38,000 tons caused by traffic.³⁸⁵ Other greenhouse gases such as methane and nitrous oxide are not included in this proposal.³⁸⁶

The principle of pricing carbon emissions is now broadly supported globally (see section 3.3). According to the OECD, compared to other instruments such as subsidies and feed-in tariffs, a carbon tax is the most cost-efficient way to reduce emissions.³⁸⁷

Our neighbouring countries have already introduced a carbon tax. In April 2013, the UK introduced a carbon price floor set at approximately € 13 per ton of CO₂. The price floor is set to gradually increase to € 25 per ton by 2020 and to € 59 per ton by 2030.³⁸⁸

³⁸⁴ Academic papers distinguish between 'carbon' (chemical formula: 'C') and 'carbon dioxide' (CO₂). One ton of carbon equals 3.67 tons of carbon dioxide. As a result, a price of € 25 per ton of carbon dioxide equals a price of approximately € 90 per ton of carbon. Confusingly, policy papers commonly use the term 'carbon tax' to refer to a tax per ton of CO₂.

³⁸⁵ Emissieregistratie (2011) Nationale Broeikasgasemissies volgens IPCC.

³⁸⁶ In 2011, the Netherlands additionally emitted about 27 megatons of methane (CH₄), nitrous oxide (N₂O) and fluorinated gases (F-gases) such as HFCs, PFCs and SF₆. Emissieregistratie (2011) Nationale broeikasgasemissies volgens IPCC.

³⁸⁷ OECD (2013) Effective carbon prices.

³⁸⁸ GBP 16, GBP 30 and GBP 70, respectively (exchange rate April 1, 2013). OECD (2013) Climate and Carbon. Aligning Prices and Policies.

France introduced a carbon tax of € 7 per ton in 2014; this tax is scheduled to increase to € 14 by 2015 and to € 22 by 2016. The tax applies to household use of gas, heating oil and coal, according to carbon content. The tax is to be implemented for transport fuels such as gasoline and diesel from 2015 onwards. Companies, which are part of the EU's carbon Emissions Trading Scheme, as well as transport and fishing sectors, are to be exempted from the carbon tax.³⁸⁹

The average price for EU emission allowances between 2007 and 2012 was € 20 per ton. The proposed € 25 per ton is higher than the average ETS price; what is more, this figure is added to the ETS price (currently: € 6 per ton).³⁹⁰ However, the proposal still falls short of € 40 per ton; the price forecast when the trading system was launched.³⁹¹ It is also significantly lower than some of the estimates of the social cost of carbon emissions, including the costs of sea level rises, extreme weather conditions, etcetera.

Depending on the scope of the calculations and the discount rate applied, US Government agency EPA claims that the social cost of a ton of carbon could range from approximately € 50-90 in 2015 to € 80-180 in 2050.³⁹² Based on the same method, NS (Dutch Railways) chose to apply a shadow price of € 84 per ton of CO₂ in its Annual Report for 2013.³⁹³ Economist Nicholas Stern (former Chief Economist of the World Bank) was asked by the British Government to estimate the social cost per ton of CO₂ and did so at € 66.³⁹⁴

According to the World Bank, estimates of appropriate charges are in some respects only moderately daunting:

“(...) a charge of US\$20 per ton is equivalent to around US\$8 per barrel of oil, or 20 cents per gallon of gasoline—well within commonplace fluctuations. For coal, however—which accounts for around 44 percent of all emissions from fossil fuels (compared to 37 percent for gasoline)—this is in the order of a doubling of the price.”³⁹⁵

The major challenge is to pursue an effective carbon policy and not to do too much harm to industries that currently depend on large-scale carbon emissions for their profitability. A number of factors, such as early announcement, transitional schemes and lower tax on labour could be beneficial in the transitional phase.

The proposal basically is to introduce a flat carbon tax rate of € 25 per ton, to be broadened to a hybrid system, e.g. in combination with a trading system with a pre-defined threshold.

³⁸⁹ Sayles, Robin (December 19, 2013) France adopts 2014 budget; carbon tax on fossil fuels.

³⁹⁰ EEX (Accessed July 24, 2014) European Emission Allowances. Global Environmental Exchange.

³⁹¹ Ecofys (2010) Prijsbeleid voor een versnelde energietransitie.

³⁹² USD 61-116 to USD 104-235, exchange rate July 1, 2014. At the lowest discount rate of 3%. The social cost of carbon in this report “(...) includes, but is not limited to, changes in net agricultural productivity, human health, and property damages from increased flood risk. However, given current modeling and data limitations, it does not include all damages. As noted by the IPCC Fourth Assessment Report, it is ‘very likely that [SCC] underestimates’ the damages.” EPA (United States Environmental Protection Agency) (accessed July, 2014) The Social Cost of Carbon.

³⁹³ NS (2014) MVO berekeningen februari 2014. Beschrijving scope en berekeningswijze energieverbruik, CO₂ uitstoot, afval en waarde creatie analyse van NS – Jaarverslag 2013.

³⁹⁴ USD 85, exchange rate July 1, 2014. Stern, Nicholas (2006) Stern Review on The Economics of Climate Change.

³⁹⁵ The World Bank (2012) Fiscal Implications of Climate Change. Policy Research Working Paper 5956.

Area of concern	Solution
Some industries will experience pressure on profit margins during the transitional phase towards renewable energy.	Measures are to be announced with ample notice so that businesses can make preparations and develop new bio-based and other types of fuels, more efficient transport methods and business models that tie in with a circular economy. A carbon tax will improve the business case for renewable energy technologies versus fossil fuel-based technologies.
Carbon leakage (relocation of carbon emissions to foreign countries).	Europe-wide introduction and, in due course, taxation of the carbon footprint of imports. Every \$ 1,000 worth of exports from China is estimated to correspond to 2-3 tons of carbon emissions ³⁹⁶ that are not taxed. To offset this competitive disadvantage for European businesses and prevent carbon leakage, a supplemental border tax adjustment will be needed.
Fewer jobs in sectors that will feel the pressure of higher taxes on carbon emissions.	A significant increase in resource efficiency is one of the main challenges of our time. Based on the literature (see chapter 3), it can be assumed that job creation will benefit on balance from a shift in tax from labour to consumption. This net effect has been identified, for instance, when evaluating shifts in taxes in various European countries since 1990. ³⁹⁷ If taxes on labour are lowered, resource-intensive industries can also start to focus on higher value-added operations and sustainable innovation.

7.4.2. Nitrogen oxide emissions caused by air traffic

Measure

Nitrogen oxide emissions (NO_x) cause smog and acid rain. A tax of € 5 per kilogram of NO_x emissions by aircraft will result in € 0.033 billion in tax revenue.

Purpose

- To increase tax revenue.
- To internalise external costs ('the polluter pays').
- To promote sustainable innovation towards a reduction in nitrogen oxide emissions.

Effect for employers and consumers

³⁹⁶ Grosz, Daniel (2009) Global welfare implications of carbon border taxes, CEPS Working Document, No. 315.

³⁹⁷ Andersen, Mikael Skou (et al.) (2007) Competitiveness Effects of Environmental Tax Reforms (COMETR). Final report to the European Commission.

The measure is a cost-increasing tax, the majority of which (eighty percent) can be expected to be passed on to consumers. This is based on a general benchmark of twenty and eighty percent because no specific benchmarks are known.

Underlying assumptions

Aircraft cause more than ninety percent of their NO_x emissions during take-off and landing,³⁹⁸ so that the pollution is locally focused. About 462,000 flights are operated from airports in the Netherlands each year.³⁹⁹ The costs associated with the pollution caused by these flights are currently regarded as external; the principle of 'the polluter pays' is not yet being applied.

The estimated revenue of the measure is based on a proposal presented in 2006 by Stichting Natuur en Milieu, a Dutch nature conservation organisation, based on aircraft movements and NO_x emissions per flight.⁴⁰⁰ Based on approximately 53.9 million passengers travelling through Dutch airports,⁴⁰¹ this implies an increase of € 0.61 per ticket.

A study commissioned by the European Commission has suggested rates of € 1 per kilo of NO_x, claiming that such rates are "still well below the level of the externalities generated".⁴⁰² In its Annual Report for 2013, Dutch Railways (NS) applied shadow pricing of € 11.7 per kilo NO_x.⁴⁰³

There is a trade-off between NO_x and CO₂ in the area of aeronautics. A higher combustion temperature in the engine leads to more efficient combustion, i.e. lower CO₂ emissions. That said, a higher combustion temperature causes higher NO_x emissions. In other words, technology as it stands now does not allow for a reduction in both CO₂ and NO_x emissions. New technology will, however, enable aircraft engines to reduce both CO₂ and NO_x emissions.⁴⁰⁴ The 'polluter pays' principle provides a financial boost to investing in sustainable technologies.

Area of concern	Solution
A weaker competitive position for Dutch airports; passengers may choose to use airports outside the Netherlands.	Coordination with neighbouring countries at EU level.
What is the tax base?	Initially, the tax base will be litres of jet fuel; differentiation by emissions per litre will eventually be needed.

³⁹⁸ Stichting Natuur en Milieu (2006) De groene schatkist. Vijftien belastingvoorstellen voor milieu en innovatie.

³⁹⁹ CBS (2011) Aviation; monthly figures of Dutch airports.

⁴⁰⁰ Stichting Natuur en Milieu (2006), De groene schatkist. Vijftien belastingvoorstellen voor milieu en innovatie.

⁴⁰¹ CBS (2011) Luchtvaart; maandcijfers Nederlandse luchthavens van nationaal belang.

⁴⁰² Aarhus University, Eunomia (2014) Study on Environmental Fiscal Reform Potential in 12 EU Member States.

⁴⁰³ NS (2014) MVO berekeningen februari 2014. Beschrijving scope en berekeningswijze energieverbruik, CO₂ uitstoot, afval en waarde creatie analyse van NS – Jaarverslag 2013. Based on CE Delft (2010), Shadow prices Handbook: Valuations and weighting of emissions and environmental impacts.

⁴⁰⁴ CE Delft (2009) Hoe groen kunnen we vliegen? De ontwikkeling van klimaatmissies van de luchtvaart en consequenties voor beleid.

7.5. Energy

In this section, we will present a proposal for increasing energy tax on electricity.

7.5.1. Electricity

Measure

An increase in energy tax on the use of electricity (irrespective of the source) by € 0.03 per kWh for large-scale consumers will result in approximately € 2.2 billion for the treasury.

Purpose

- To increase tax revenue.
- To internalise external costs ('the polluter pays').
- To promote sustainable innovation towards energy efficiency.

Effect for employers and consumers

The measure entails a cost-increasing tax, most of which (eighty percent) can be expected to be passed on consumers. A general twenty and eighty percent benchmark is used because no specific benchmarks are known.

Underlying assumptions

In 2013, households (using up to 10,000 kWh per year) paid 225 times more energy tax per kWh than large-scale consumers (>10 million kWh per year).⁴⁰⁵ Large-scale users account for about seventy percent of total energy consumption in the Netherlands.⁴⁰⁶

There is much debate in the Netherlands (and in Europe) about the correlation between energy prices and the competitive position of European economies. Reduced rates for bulk users of fossil energy are already being designated as Environmentally Harmful Subsidies in international literature (see section 2.3). Because of major and increasing dependency on imports of fossil fuels, it is clear that subsidising fossil energy is no longer viable in the longer term. The challenge is to scale down these subsidies and give the industry an opportunity to shape the energy transition. The scaling down of energy subsidies for large-scale users will create an incentive in Europe for energy-efficient production and developing renewable energy sources, which will eventually strengthen the European industry's competitive position. A transitional facility may have to be introduced to help energy-intensive sectors make the transition to renewable energy and energy efficiency. It should be noted, however, that the higher the compensation for bulk use, the lower the amount that will be available for reducing tax on labour, while lowering tax on labour is precisely what will encourage the industry to invest more in innovation and job creation.

What is crucial is that the measure should be introduced gradually, that its introduction is announced early and supported by successive governments (stable government policy). This requires an energy plan similar to the Dutch Delta Act, which provided for regulations that allowed successive governments to work towards achieving the same end goal of preventing another flood.

⁴⁰⁵ Belastingdienst (2013) Tabellen tarieven milieubelastingen.

⁴⁰⁶ CBS (2013) Nulmeting Groene Groei in de Topsectoren; Energiezaak (2011) Energy in the Netherlands 2011.

The energy tax tariffs for 2013 and the proposed increases (excluding mark-ups) are shown in the table below. After this shift, large-scale consumers will still pay four times less than households.

Table 7: Energy tax tariff on electricity (the Netherlands 2013 and increase).

Bracket/kWh	Energy tax/ kWh (2013) ⁴⁰⁷	Proposed increase (Δ)	Energy tax/ kwh new	Increase (%)
1) 0-10,000	€ 0.1165	€ 0.00	€ 0.12	0%
2) 10,001-50,000	€ 0.0424	€ 0.03	€ 0.07	71%
3) 50,001-10 million	€ 0.0113	€ 0.03	€ 0.04	265%
4) >10 million (households)	€ 0.0010	€ 0.03	€ 0.03	3000%
5) >10 million (businesses)	€ 0.0005	€ 0.03	€ 0.03	6000%

Area of concern	Solution
A weaker competitive position of energy-intensive sectors.	Coordination with neighbouring countries at EU level. To offset this competitive disadvantage for European businesses, a supplemental border tax adjustment will eventually be needed. According to the European Commission, the economic distortions provoked by labour taxes are significantly larger than for green taxes, for that matter. Energy taxes in particular are less distortive than taxes on labour. ⁴⁰⁸
Energy-intensive industries relocating to countries where energy is cheaper (leakage).	A step-by-step introduction will give the industry the chance to gradually increase its energy efficiency. By reducing tax on labour at the same time, the Netherlands/Europe will become more attractive for the reshoring of labour-intensive operations.
The energy tax currently also applies to energy generation for renewable sources, which increases the cost of that energy too.	It could be considered exempting energy generation from renewable sources (i.e. solar, wind and possibly biomass), in which case the tax rate on fossil energy generation should increase in proportion to the increase in the share of renewable energy, so that the tax revenue is stable.

⁴⁰⁷ Belastingdienst (2013) Tabellen tarieven milieubelastingen.

⁴⁰⁸ European Commission (2013) The marginal cost of public funds in the EU: the case of labour versus green taxes. Taxation papers.

7.6. Waste

This section describes a method for promoting resource efficiency of metals.

7.6.1. Deposit on metals

Measure

A significant deposit could be levied on the import of metal-containing products (initially: electronics). The deposit money would be transferred to a newly to be established fund. Importers recharge the deposit to consumers. Consumers who return the products in question are refunded some of the deposit. The remaining deposit will be left behind in the fund and be used to invest in recycling and resource research.

The measure is primarily focused on materials identified by the European Commission as materials with a high supply risk (see 1.3).⁴⁰⁹ The measure would initially be introduced by product group; differentiation by content will follow later. Exemptions could apply to medical applications and to products containing a certain percentage of recycled materials.

The deposit for a television would have to be around € 75, of which some € 50 would be refunded upon return. Products such as batteries cannot be taxed as heavily in absolute terms, which is why the deposit should be a percentage (for example, ten or twenty percent) of the price of the product.

Purpose

- To create a closed cycle for resources by encouraging consumers to return products at the end of their life cycle.
- To promote job creation in the recycling industry.
- To promote investments in recycling and R&D in the area of resource usage (by establishing a fund).

Effect for employers and consumers

The importer pays the deposit and is expected to pass on this cost to consumers and businesses. The burden sharing between employers and consumers is difficult to predict, but it will eventually be neutral (see below). The tax revenue for the treasury will in principle be zero.

Underlying assumptions

In 2010, 689 million household appliances were in use in the Netherlands.⁴¹⁰ Every Dutch person creates 23.7 kilos in e-waste every year.⁴¹¹

Sales of retail white and brown goods amounted to € 5.1 billion in 2011.⁴¹² Assuming that these sales represent a wholesale value of about € 2 billion, the fund would grow by € 200

⁴⁰⁹ European Commission (2010) Critical raw materials for the EU. Report of the Ad-hoc Working Group on defining critical raw materials.

⁴¹⁰ Volkskrant (March 16, 2012) Inleveren E-waste moet makkelijker.

⁴¹¹ CBS, PBL, Wageningen UR (2012) Verkoop, gebruik en afgedankte elektronische en elektrische apparatuur, 1995-2010.

million if the deposit were set at ten percent. Based on a lifespan of five years per product, the fund would grow by twenty percent each year until it reaches the € 1 billion mark. After that, it could be considered refunding a higher amount for each product. The fund's interest income alone would be enough to make considerable investments in the promotion of recycling and resource research. This system would replace the disposal charge, which will create a starting position of about € 300 million.

It would not be advisable to tax products by the kilo because critical materials are usually present in products in minute quantities.⁴¹³ Perhaps differentiation by (eco)labels and products that contain more or fewer recycled materials will become possible in the future.

Area of concern	Solution
A weaker competitive position of businesses in border areas.	This system could be started up in the Netherlands and broadened to Europe.
Leakage from the fund due to returns of older products for which no deposit was paid.	The year of production could be identified based on product codes, thereby excluding older products.
Leakage from the fund due to returns of imported products for which no deposit was paid.	<ul style="list-style-type: none"> - Regulation of imports of e-waste. - Registration of place of purchase (as is already the practice for iPads, for instance). - Mandatory use of a 'resources passport' (a list of materials used in a particular product).⁴¹⁴

⁴¹² ING Group Economics (May 2012) Back to the future. Retail teruggeworpen door bezuinigingen. Non-food Detailhandel Kwartaalbericht.

⁴¹³ MARAS (2011) Kwantificering kritische (grond)stoffen in E-waste producten.

⁴¹⁴ Maayke Damen (2012) A resources passport for a circular economy.

8. The expected impact of the proposals

As mentioned earlier, a detailed impact analysis is beyond the scope of this study. This chapter will, however, provide a brief analysis of the expected general impacts of the package of measures. Also, this chapter touches upon the expected positive and negative feedback loops and the impact on employment and innovative business models.

8.1. Goals

The available literature and growing international support confirm that a tax shift from labour to consumption and resources is a prerequisite for, as the Commission calls it: ‘smart, sustainable and inclusive growth’ (see chapter 3).⁴¹⁵ An inclusive, circular economy is not likely to emerge if the tax system doesn’t evolve away from incentivising resource use and negatively incentivising employment. Taxes have a direct impact on day-to-day decisions of consumers and businesses, and each tax (or lack thereof, see section 2.3 on Environmentally Harmful Subsidies) provides a ‘nudge’ towards certain purchase decisions. The decision to buy a (resource-intensive) new product, versus having a broken item repaired (which is labour-intensive), for example. When labour costs go down, the decision to hire an extra hand is more easily made by entrepreneurs, as the business case for labour-intensive activities improves. A tax shift changes incentives, and thus, consumption patterns and business models.

Some of the proposed measures described in chapter 6 and 7 aim to lower labour costs and encourage labour demand and input; others are designed to discourage the use of natural resources and abolish Environmentally Harmful Subsidies. The measures have been selected based on their capacity to raise substantial tax revenues or send a clear price signal to discourage environmentally damaging products and activities. Ideally, they should also contribute to a simplification of the tax regime, which is why the group has focused as much as possible on generic measures rather than (temporary) specific measures, exemptions and subsidies. Below, the measures are represented, clustered by the goal they should serve.

⁴¹⁵ European Commission (accessed June, 2014) Moving towards a circular economy.

Table 8: Goals of the measures

Goal	Measure
- To decrease unemployment	- Budget for new labour demand
- To reduce the tax burden on labour	- Exemption from income tax, national insurance contributions and employed persons' insurance contributions - Reduction in employer-paid contributions to employed persons' insurance - Reduction in employer-paid contributions to health insurance - Broadening of work-related costs scheme - Payroll tax credit under Circular Development Promotion Act - Zero VAT rate for labour-intensive services
- To compensate for higher consumer taxes.	- Exemption from income tax and national insurance contributions - Allowances for post-active and inactive persons
- To simplify the tax system / to reduce the administrative burden	- Exemption from income tax, national insurance contributions and employed persons' insurance contributions - Broadening of work-related costs scheme - Flat VAT rate (22 percent)
- To promote sustainable innovation	- Payroll tax credit under Circular Development Promotion Act - Zero VAT rate for labour-intensive services - Zero VAT rate on best-practice products - Corporate income 'resource box' for circular innovation - Taxation of transport fuels, natural gas, jet fuel, water use and extraction, carbon emissions, nitrogen oxide emissions caused by air traffic, electricity use - Deposit on metals (a non-tax measure)
- To internalise external costs ('the polluter pays')	- Taxation of transport fuels, natural gas, jet fuel, water use and extraction, carbon emissions, nitrogen oxide emissions caused by air traffic, electricity use
- To reduce dependency on fossil fuels	- Taxation of transport fuels, natural gas, jet fuel
- To increase tax revenue	- Flat VAT rate (22 percent) - Taxation of transport fuels, natural gas, jet fuel, water use and extraction, carbon emissions, nitrogen oxide emissions caused by air traffic, electricity use
- To reduce carbon emissions	- Taxation of carbon emissions
- To increase sustainability awareness.	- Zero VAT rate on best-practice products.

At € 33.7 billion, the combined measures represent the equivalent of 5.6 percent of GDP⁴¹⁶ and 14.4 percent of total tax revenues in the Netherlands.⁴¹⁷ The package (including the VAT measures) increases environmental tax revenues from 9.1% to 23.5%⁴¹⁸ and lowers labour tax revenues from 57.5% to 43.1%⁴¹⁹

Throughout this research, it is assumed that the measures will take place in an international effort in order to minimize border effects. If applied at the same scale (14.4 percent of total tax revenue) across Europe, this would translate to a tax shift of € 736.7 billion.⁴²⁰ Such major reallocation of means will likely be needed to reach fundamental and ambitious goals with regard to lower import dependence, low-carbon and resource-efficient production and minimal unemployment. Please note that the rates in this proposal do not include full social costs of harmful use of resources. Full cost accounting may not be necessary, as even partial pricing of externalities has proven to effectively shift incentives away from harmful behaviour.

The modelling of macro-economic effects and distributional impacts is beyond the scope of this report and will be the subject of continued research. Below, some of the expected negative and positive feedback loops will be touched upon.

8.2. Positive and negative feedback loops

In general, the proposals in this report can be expected to provoke both positive and negative feedback loops, as part of a chain of cause-and-effect. As stated earlier throughout this study, the measures are assumed to eventually take place in an international effort, in order to minimize cross border effects. Still, potential negative feedback loops may occur. When policy measures are effective and resource efficiency is achieved, for example, import dependency decreases, as less materials and fuels need to be imported. In particular, developing countries could suffer from this effect, as European demand for commodities decreases. Such negative effect would need to be addressed on a case-by-case basis.

In addition, if resource use is effectively (and structurally) decoupled from economic growth, as requested by Dutch and EU resource-efficiency strategies, there could be a detrimental effect on exports in monetary terms. The composition of exports is likely to shift towards products with a lower environmental footprint, which, in turn reduces the global materials supply risks (see 1.3) and potential conflicts over resources (see 1.6).

Potential *positive* feedback loops of the measures may include lower administrative costs. Also, lower labour costs will likely bring down healthcare costs (as healthcare is labour-intensive). If pollution is reduced effectively, this can be expected to improve overall health

⁴¹⁶ GDP the Netherlands 2012 (estimate): € 599,338 million. CBS (June 26, 2014) Nationale rekeningen; opbouw binnenlands product (bbp) 1969 - 2012.

⁴¹⁷ Total tax revenues the Netherlands 2012: € 233.808 million. European Commission (2014) Taxation Trends in the European Union. Edition 2014.

⁴¹⁸ Environmental taxes as % of Total Taxation 2012 the Netherlands: 9.1% (€ 21,319 million). European Commission (2014) Taxation Trends in the European Union. Edition 2014.

⁴¹⁹ Taxes on labour as % of Total Taxation 2012 the Netherlands: 57.5% (€ 134,474 million). European Commission (2014) Taxation Trends in the European Union. Edition 2014.

⁴²⁰ Total tax revenues (including SSC) EU28 2012: € 5,109,446 million. European Commission (2014) Taxation Trends in the European Union. Edition 2014.

and reduce mortality rates (see 1.4). According to a World Bank report, for example, a shift to low-carbon transport and improved energy efficiency could avert at least 94,000 premature deaths a year from pollution-related diseases by 2030.⁴²¹

Other potential positive feedback loops include the progression of innovation and education potential (as both are labour-intensive). Environmental feedback loops will include, for example, the effect that lower carbon emissions will likely also decrease the emissions of a number of other pollutants, such as sulphur dioxide, nitrogen oxides and particulate matter.⁴²²

As a tax shift entails a *systems change*, it will have numerous, often interacting effects. Unfortunately, currently available macro-economic models are not fully capable of modelling the range of impacts of a tax shift.

8.3. Innovative business models

The transition to a circular economy (as pursued by the European Commission)⁴²³ requires a truly fundamental redesign of products, production methods and, basically, the metabolism of our economies. Economic models used to provide a useful tool for looking into the future by extrapolating the past. In a fast changing world, however, past performances are no guarantee for future results. This limits the potential of macro-economic models. Who could have modelled, for example, for CDs to be substituted by iTunes and then Spotify, or for the last economic crisis to hit as hard as it did, a few years before it happened? These are turbulent times, and disruptive innovations⁴²⁴ are rapidly changing the global marketplace. A few years ago, for example, the *consumption basket* (a sample of consumption goods and services, used to track purchasing power) did not yet contain the iPad, solar panels or car sharing, and the composition of our consumption can be expected to keep on changing fast over the next decade. If, in future, the ‘polluter pays’ principle is applied more, the consumption basket will likely contain fewer products (e.g. new TV sets) and more services (such as TV repair, which is labour-intensive).

The effects of a tax shift will likely be unevenly distributed between business sectors. Some businesses will find it hard to adapt to changing market circumstances, and others will thrive. It is important to note, however, that even without a tax shift, global market circumstances are changing rapidly, and therefore, adaptability and innovation towards new business models are more urgent than ever (see chapter 1). By announcing new policy measures in time or by applying a ‘tax escalator’ regime (adding small annual price signals that are agreed for many years in advance) industries will have a chance to increase efficiency step-by-step. Lower labour costs, on the other hand, provide an opportunity to shift to more labour-intensive business models. Innovation is labour-intensive, and therefore, will benefit from lower labour costs.

⁴²¹ The World Bank and ClimateWorks Foundation (2014) Climate-Smart Development. Adding up the benefits of actions that help build prosperity, end poverty and combat climate change.

⁴²² Harvard & Syracuse University (2014) Co-benefits of Carbon Standards.

⁴²³ European Commission (2014) Towards a circular economy: A zero waste programme for Europe.

⁴²⁴ A term coined by Clayton Christensen to describe a process by which a product or service takes root initially in simple applications at the bottom of a market and then relentlessly moves up market, eventually displacing established competitors. www.claytonchristensen.com

It will be a challenge, but in principle, every sector should be able to innovate to low-carbon, biobased, resource-efficient and more labour-intensive business models. Many technological innovations are available, but not yet economically viable as harmful emissions and resources currently remain untaxed or even subsidized. Energy-neutral greenhouses, protein from algae, biofuels from non-edible plant residues, smart-grid technologies, etcetera; countless solutions are available. The carbon taxation scheme in British Columbia is found to have attracted green investment and green technologies at twice the Canadian average and has seen a 48 percent increase in clean technology industry sales from 2008-2010.⁴²⁵

By fostering its full innovative power, Europe - and the Netherlands - could still become a frontrunner in sustainable technology.

The impact of a tax shift depends, amongst others, on price elasticity and substitutability of products. Substitutability is particularly difficult to model, as it depends on the development of demand by consumers, and the strategic choices of businesses with regard to bringing new products and services to market. Therefore, strategic insights of the business community will be needed to effectively model the impact of a system change. In this turbulent world, business-as-usual is not an option; in the words of the OECD:

*“Progress on an incremental, piecemeal, business-as-usual basis in the coming decades will not be enough”.*⁴²⁶

One of the working group’s recommendations is therefore to gain more insight in the transformational power of businesses and business models in relation with taxes (see chapter 9).

8.4. Brief analysis of the employment impact

As stated earlier, there has been much discussion on the ‘double dividend’ effect of a tax shift (see section 3.6 and appendix 3). Based on the available literature, a net positive gain in employment is likely,⁴²⁷ however, there are many challenges in quantifying the impact on employment. A major challenge is to predict the negative impact on employment of the increased tax burden on consumption. In the short run, such increases will likely decrease employment in some sectors, as long as polluting activities remain unchanged. Some (labour-intensive, resource-intensive) business activities might be relocated to other countries. Other activities (especially labour-intensive ones) are likely to relocate to Europe/the Netherlands. There is a lack of data on this effect, and therefore, we need to quantify this effect at zero.

It needs to be noticed that in fact, the European Commission sees the green economy as one of the major areas for employment expansion, with a potential twenty million jobs to be created between now and 2020 (see section 3.6). According to a recent World Bank report, an

⁴²⁵ British Columbia Ministry of the Environment (2012) quoted in Withana, Sirina (et al.) (2013) Evaluation of environmental tax reforms: International experiences.

⁴²⁶ OECD (2012) Environmental Outlook to 2050: the consequences of inaction.

⁴²⁷ Aarhus University, Eunomia (2014) Study on Environmental Fiscal Reform Potential in 12 EU Member States.

effective shift to low-carbon transport and improved energy efficiency could increase global growth in GDP by an extra USD 1.8 trillion (€ 1.3 trillion) a year by 2030.⁴²⁸

Another challenge is to predict general equilibrium effects. How do labour markets change when reforms are enacted? Who will decide to work more? Who will be demanded? These are not easy questions to answer, as the labour market does not work perfectly in practice. The detailed study of the employment effects of the proposals will be the topic of next studies. A brief analysis, though, based on the available literature shows a potential significant increase in labour demand due to the proposed measures.

Some factors need to be taken into account:

- Although international institutions agree that a tax shift is necessary and beneficial to economic growth, employment and the environment, a comparable long-term, fundamental tax shift package has, as far as we know, never been worked out in this much detail. This is why the precise effects cannot be predicted and more research is needed.⁴²⁹
- As explained in section 8.3, there are fundamental limitations to the use of models and theories in predicting the future. All tax systems evolve based on practical impact, and this will remain the most reliable source of assessment going forward.
- The labour market is influenced by many different factors, including but not limited to taxation, dismissal law, flexibility of contracts and education of the workforce.
- This analysis focuses mainly on labour demand rather than labour supply, assuming that in due time, labour supply will adapt to demand. If there is a lack of skilled labour in a certain sector, it is assumed that lower labour costs will help provide supplementary training in order to fill the gap. It is assumed that the current mismatch between labour demand and supply is solved in the long run, as the excess capacity (in terms of unemployed and underemployment, see 1.1) is activated in the labour market.⁴³⁰

The next sections map the potential for an increase in jobs as an effect of the proposed decrease in labour costs. First, we take a closer look at the proposal to link lower labour costs to actual job creation (mentioned in section 6.1.9). Secondly, we take a brief look at the literature regarding to the impact of the tax wedge on labour demand. Finally, some other indicators are used to estimate the employment effects.

⁴²⁸ The World Bank and ClimateWorks Foundation (2014) Climate-Smart Development. Adding up the benefits of actions that help build prosperity, end poverty and combat climate change.

⁴²⁹ In 2009, the UK Green Fiscal Commission researched some tax shift scenarios for the United Kingdom. In one of the main scenarios the revenues from environmental taxes rise from 5 to 15 percent of total tax revenues, through a shift from income tax and employers' National Insurance (social security) contributions to taxes on fossil fuels, auctioned emission permits in the EU ETS, new vehicles, water and aggregates. The measures in this study are not fully comparable to the package proposed here, but macroeconomic modelling of the tax shift showed a significant increase in employment (around 1.5 percent) and a negligible impact on GDP. Green Fiscal Commission (2009) The Case for Green Fiscal Reform. Final Report of the UK Green Fiscal Commission.

⁴³⁰ Some theories point at the effect that a labour demand increase leads to a stronger negotiation power of employees, and thus higher wages, which in turn dampens the employment effect. These theories are based on the assumption that consumption patterns are stable and remain unchanged.

8.4.1. Potential impact of the budget to stimulate labour demand

The proposed net decrease in labour costs for employers of approximately € 7.7 billion is linked to effective job creation, in order to incentivize businesses to actually employ more people (rather than spending labour cost reductions on capital investments or dividends, which is not the aim of this exercise). Based on the 2013 average income,⁴³¹ such linking policy could finance more than 280,000 jobs. This estimate is on the downside of a range of reasonable values, as the budget could support many more jobs if only spent on social security cost reductions. The technical implementation of such policy measures is yet to be researched. In practice, it could mean that social security premiums are calculated as usual, but a premium rebate is provided when employment has effectively increased (much like, currently, a premium discount is provided to businesses that employ older employees).

It is assumed that increased employment will 'pull in' the available access capacity of skills (of the self-employed, the elderly and part-time workers for example, as mentioned in section 1.1). The unemployed will probably also supply part of the labour demand increase. This reduces the number of people depending on the social security system, which, in turn, causes a cost-reduction in social security costs, as previously unemployed don't need benefits any more. If the newly create jobs were to be fully taken by formerly unemployed persons, this would mean a reduction of social security costs of € 4,688 million (even without considering the administrative cost reduction involved in executing smaller social security schemes).⁴³² This is a potential positive feedback loop.

8.4.2. Potential impact of the reduction of the tax wedge

In this section, we will take a look at the proposed tax wedge reduction in this report, and then apply several ratios for its impact on employment.

Based on OECD data, the Tax Wedge for a single individual without children, at the income level of the average worker in the Netherlands was 36.9 percent in 2013.⁴³³ Depending on the type of household and income level, it was as high as 43.7 percent, consisting of an employers' wedge of 20.9 percent and an employee's wedge of 22.8 percent.⁴³⁴

The proposals in this report reduce *employer* labour costs by € 11,745 million (see table below), which is 4.5 percent of the employers' wedge.⁴³⁵

⁴³¹ A+B: € 27,323, in which: A) Average income 2012 (estimate): € 22,600. CBS (2013) Gemiddeld inkomen; personen in particuliere huishoudens naar kenmerken; and B) Average employer wedge: 20.9%. CPB (2014) Centraal Economisch Plan 2014.

⁴³² Unemployment benefit expenditure (2013): € 11,050 million (WW, Bijstand). Number of unemployment benefits: 660,000 (2013). Tweede Kamer der Staten-Generaal (2012) Vaststelling van de begrotingsstaten van het Ministerie van Sociale Zaken en Werkgelegenheid (XV) voor het jaar 2013.

⁴³³ OECD (April 11, 2014) Tax burdens on labour income continue to rise across the OECD; OECD (2014) Taxing Wages 2014.

⁴³⁴ CPB (2014) Centraal Economisch Plan 2014.

⁴³⁵ Employers' costs ('Loonkosten') the Netherlands 2013: € 260.2 billion CPB (2014) Centraal Economisch Plan 2014.

Table 9: Employer labour costs reductions (case study)

(€ mln)

Reduction in employer-paid contributions to employed persons' insurance ⁴³⁶	-1,700
Reduction in employer-paid contributions to health insurance ⁴³⁷	-8,600
Payroll tax credit under Circular Development Promotion Act ⁴³⁸	-1,000
Broadening of work-related costs scheme ⁴³⁹	-445
Total	11,745

In addition, the proposals include an exemption from income tax and social contributions, which reduces the *employee's* wedge by € 23,372 million,⁴⁴⁰ or nine percent. Combining these measures, in total, the Tax Wedge for a single individual without children, at the income level of the average worker is reduced by 13.5 percent (from 36.9% to 23.4%). Macro-economic studies reveal a varying impact of tax wedge reductions on employment. The table below includes an overview of some of the sources, and their theoretical impact on the Dutch labour market (see Table 10).

Table 10: Elasticity of the employment rate

Source	Increase in employment rate related to a 1% tax wedge decrease	Quote	Job increase in FTE ⁴⁴¹
Nickell & Layard (1999) ⁴⁴²	2.60%	<i>"a decrease in average tax wedge (that includes payroll, income and consumption taxes) for 5 percentage points would reduce the unemployment rate by 13 per cent".</i>	2,335,905
Dolenc & Laporsek (2010) ⁴⁴³	0.72%	<i>"In order to reach a Lisbon target the EU-27 should increase its average employment rate by 3.6 percentage points. To achieve this, the EU-27 should, according to our regression analysis, decrease the tax wedge by approximately 5 percentage points, ceteris paribus."</i>	646,866
Bassanini & Duval (2006) ⁴⁴⁴	0.40%	<i>"Empirical results have shown that a 10 percentage points reduction of the tax wedge in an average OECD country would reduce equilibrium unemployment by 2.8 percentage points and increase the employment rate by a larger 3.7 percentage points (due to the positive impact on participation)."</i>	359,370

⁴³⁶ In Dutch: Verlaging van de werkgeverspremies werknemersverzekering.

⁴³⁷ In Dutch: Verlaging van de werkgeversbijdrage zorgverzekeringswet.

⁴³⁸ In Dutch: Loonheffingskorting Wet Bevordering Circulaire Ontwikkeling.

⁴³⁹ In Dutch: Verruiming van de werkkostenregeling.

⁴⁴⁰ € 24,222 million minus € 850 million (the increase in contributions to employed persons' insurance).

⁴⁴¹ Number of FTE in 2014: 6,655,000. CPB (2014) Centraal Economisch Plan 2014.

⁴⁴² Nickell & Layard (1999) cited in Dolenc, Primož, Laporšek, Suzana (2010) Tax wedge on labour and its effect on employment growth in the European Union.

⁴⁴³ Primož Dolenc, Suzana Laporšek (2010) Tax wedge on labour and its effect on employment growth in the European Union.

As Dolenc & Laporsek (2010) provides a relatively recent source and specific for the European context, this ratio seems to be most applicable to the case study. Decreasing the Tax Wedge by 13.5 percent should therefore increase employment by almost 650,000 jobs (Full-time equivalents).

It needs to be noted that the estimates by Dolenc & Laporsek and other researchers are most likely accurate for small changes in the respective sample of individuals they study. For large changes, the elasticity might either be larger or smaller due to non-linearities in the decision process of individuals and firms. In this analysis, the available elasticity ratios have been applied regardless of the size of the measure. Also, the distribution of the decrease in the tax wedge over the population might matter a lot. When someone works full-time, a reduction in the average tax wedge will not lead him or her to work more hours. It may be clear, though, that based on the available literature, hundreds of thousands of new jobs could potentially be created by significantly lowering the tax wedge.

8.4.3. Other indications for job increase

Boosting innovation and high-skilled labour

Generally, a tax wedge reduction can be expected to have the strongest impact on labour demand for low-paid workers. Some of the measures, however, and particularly the WBSO, can be expected to increase employment in high-skilled areas, as it targets scientifically skilled workers. An evaluation of the current WBSO policy indicates that the measure has an effect on employment in smaller businesses. Unfortunately, this is not quantified in the available literature yet.⁴⁴⁵

In general, we expect a labour demand increase in innovative sectors, as in the Ex'tax economy the drivers for clean-tech innovation increase (which is a 'push' factor), while lower labour costs enables businesses to extend innovation efforts for new products and services (a 'pull' factor).

Impact of a reduced VAT-rate on the repair industry

As stated earlier, the impact of a lower VAT-rate on labour-intensive services is a much-debated issue (see 2.4). Copenhagen Economics has found that a one percent reduction in the VAT rate for domestic care increases long-term employment in that industry with nearly one percent.⁴⁴⁶ If we assume that repair services respond similar to a VAT rate decrease, based on the Copenhagen Economics study, the proposed VAT-rate reduction of 21 percent to zero percent would mean a 21 percent increase in long-term employment in that sector.

⁴⁴⁴ Bassanini & Duval (2006) cited in Primož Dolenc, Suzana Laporšek (2010) Tax wedge on labour and its effect on employment growth in the European Union.

⁴⁴⁵ EIM (2012) Hoofdrapport Evaluatie WBSO 2006-2010.

⁴⁴⁶ Copenhagen Economics (2007) Study on reduced VAT applied to goods and services in the Member States of the European Union. Final report.

In the Netherlands, this corresponds to 78,000 additional jobs in the repair sector.⁴⁴⁷ Due to lack of data, with regard to energy advice sector, an estimate cannot be made.

As employers are unlikely to respond strongly to VAT rate changes if they are perceived to be only temporary,⁴⁴⁸ stable and long-term policy-making is crucial to secure positive employment effects.

Impact of a VAT increase on employment

As of yet, we have found only few publications that support a quantified impact analysis of a VAT increase on employment that is accompanied by a decrease in income taxes. Such shift includes simultaneous changes in direct and indirect taxes, which interact when it comes to labour supply decisions. European Parliament, for example, wrote in 1998:

“The employment effects of changes in VAT can be estimated in several ways. In more sophisticated methods, using economic modelling, a 1% increase in the average VAT rate in the Netherlands leads to a loss of 20,000 jobs. When the 1% increase in VAT is offset by a decrease of other taxes (wage and income taxation), job loss would be reduced significantly. It can therefore be concluded that changes in VAT rates have a limited impact on employment in the Netherlands.”⁴⁴⁹

In 2012, the Labour Institute for Economic Research, however, found a positive impact on employment of a VAT-rate increase that is accompanied by a decrease in income taxes:

“(…) a one percentage point rise in the value added tax that is compensated for the government by decreasing income taxes raises the output more than 0.5 per cent and the employment rate by 0.25 percentage points in the long run.”⁴⁵⁰

In 2013, the Income Tax and Benefits Committee (‘The Van Dijkhuizen Committee’) advised Dutch parliament to opt for an improved tax system with lower income tax rates and a very long first bracket, fewer deductible items and simpler benefits. The proposed budget-neutral package of measures totals € 12.6 billion, includes a single VAT rate and lower income- and payroll taxes. These measures are aiming to ‘make work worthwhile’ and increase employment. A calculation of the effect of the proposals in the interim report by CPB Netherlands Bureau for Economic Policy Analysis shows that the number of jobs will increase by 2.1 percent. This corresponds with 142,000 full-time jobs.⁴⁵¹ The proposals in this report are only partially comparable to the Van Dijkhuizen Committee proposals. Both include a shift from direct to indirect taxes, but the Van Dijkhuizen Committee also included abolition of the mortgage interest deduction and taxes on owner-managers of small and medium sized enterprises, as well as lowering Personal Income Tax, by changing the tax brackets. Therefore, the impact cannot be easily compared.

⁴⁴⁷ Based on data, which include the number of people employed in this sector (part-timers are counted as one).

CBS (2012) Arbeidsrekeningen; arbeidsvolume naar bedrijfstak en geslacht.

⁴⁴⁸ Copenhagen Economics (2007) Study on reduced VAT applied to goods and services in the Member States of the European Union. Final report; Hotrec (2008) Reduced VAT rates: A must for a sustainable European hospitality industry.

⁴⁴⁹ European Parliament (1998) The social consequences of changes in VAT.

⁴⁵⁰ Labour Institute for Economic Research (2012) Essays on the Macroeconomic Effects of Taxation.

⁴⁵¹ The Income Tax and Benefits Committee (2012) Towards a more motivating tax system. Introduction and summary of the final report of the Income Tax and Benefits Committee.

In 2011, the UK Mirrlees review looked at the consequences of increasing VAT rates in the UK, and spending the associated increase in revenues (£ 24 billion) on a range of direct tax cuts and benefit increases. Unfortunately, the employment impact was not included in this study.⁴⁵²

Due to a lack of data, an estimate of the impact of the increased VAT-rate is hard to make, and we suggest looking into this topic in follow-up research.

8.5. Conclusions on the expected employment impact

In the Netherlands, more than 600,000 people are unemployed, while 4.8 million people depend on benefits. In addition, there are 1.1 million self-employed - many of whom are underemployed. Stability of tax revenues is a major issue, as the population ages, the costs of the social security and health care systems are on the rise, with fewer people contributing to the labour tax and SSC revenues. Over the next decade, the challenge is to decrease social security dependency, to enable businesses to create jobs, and to tap into the massive excess labour capacity in the Netherlands. Across Europe and abroad, this megatrend of underutilised human capital is showing; globally, more than 1.2 billion young people will enter the labour market in the next ten years with only 300 million jobs awaiting them (see 1.1).

The tax system has an important role in solving the issue of unemployment (and underemployment). Not surprisingly, a tax shift from labour to natural resources and consumption is an important spear point of the European Commission's employment policy:

“Stimulating recruitment through a reduction of non-wage labour costs (e.g. with a shift from labour taxes to energy consumption or pollution) is paramount in times of high unemployment, since the costs of sustaining unemployment insurance systems will most probably outweigh the reduction of revenue for the social security system. (...) Incentives to shift jobs from the informal into the regular economy are also essential”⁴⁵³

The analysis in this report is limited and much still needs to be researched. However, there is ample support to expect a significant employment benefit. Our brief analysis shows that a € 33.7 billion tax shift from labour to resources and consumption potentially provides:

1. A budget to finance 280,000 new jobs.

If such labour demand increase were to be fully taken by formerly unemployed persons, this, in turn, causes a social security costs reduction of € 4,688 million (even without considering the administrative cost reduction involved in executing smaller social security schemes).

⁴⁵² Mirrlees, James (et al.) (2011) Tax by Design. Institute for Fiscal Studies.

⁴⁵³ European Commission (November 23, 2010) An agenda for new skills and jobs: a European contribution towards full employment.

2. A potential increase of labour demand of 650,000 FTE.

Based on economic theory, this is the effect a tax wedge reduction of 13.5 percent could have.

3. A potential increase of 87,000 jobs in the repair sector.

The potential impact of a zero percent VAT rate on repair and maintenance services.

Inclusive growth requires a system change that enables hundreds of thousands of people, who are currently unemployed or underemployed, to make a decent living, to develop their skills and contribute to society. Shifting taxation from labour to natural resource use is a fundamental approach to this systemic problem. If the numbers tell us one thing, it's that the stakes are high, as are the potential gains.

It may be clear that national and international players will only agree on specific policy measures when there is a basic agreement on the long-term direction of reforms. After the North Sea flood of 1953, the Netherlands set out to develop an ambitious, long-term coastal defence plan. The Delta Plan demonstrated that long-term policy making and long-term investment in the health and safety of people can become a priority for decades of consecutive governments. Perhaps this could be a source of inspiration to the Netherlands, and Europe to create a Delta Plan for long-term job creation and sustainable growth.

In this chapter we have conducted a brief analysis with regard to the employment impact of our proposals. In order to fully explore the impact of a tax shift, more research is needed and in chapter 9, we will include recommendations for next steps.

9. Five recommendations for next steps

Below are five recommendations for continued research. For each step, a specific action for business leaders, political leaders and thought leaders is suggested:

1. Increase knowledge on the metabolism of economies.

In order to get a better grip on the dependencies and risks with regard to natural resources, governments and businesses should start intensive research on the metabolism of the economies they operate in. A robust and sustainable tax system will require appropriate risk assessments and increasing level of responsiveness to urgent matters, and this starts with proper measurement of resource use.

Action: Extending and standardizing integrated reporting in order to have the appropriate information in place to take effective measures.

2. Research the full macro-economic impact of a tax shift.

Governments and research institutes should step up and do more research on the topic of a tax shift, as a major key to a circular economy, resource independence and employment.

Action: Applying the Ex'tax Policy Toolkit in multiple European countries and studying the macro-economic effects of proposals, including revenue maximization effects and other side effects.

3. Interdisciplinary research.

As economic, environmental and social issues are inter-linked; a systemic approach is needed to solve them. The existing segmentation between government departments (Ministries of Finance, Environment, Economic Affairs and Employment) is a barrier for the development of an interdisciplinary approach while fostering cooperation between departments will be crucial for the development of effective policies. The recent - first ever - meeting between Employment and Environment ministries, organised under the Italian EU Presidency, may serve as an inspiring example.

Action: studying the connections between economic, environmental, health and social concerns, by organising interdisciplinary research programs.

4. Research impact from a business perspective.

Much more needs to be known about the risks and opportunities for companies; how does a shift in taxation affect strategic choices concerning products, services and new technologies?

Action: Developing a methodology to help business leaders and sectors analyse the impact of a tax shift, including business cases to illustrate its effects. Such a tool helps a well-informed discussion between policy makers and businesses.

In 2013, The Ex'tax Project has initiated such analysis, together with the Future Leaders Team of the WBCSD. In 2014/2015 this research is extended to include more detailed strategic analyses.

5. Develop an ambitious European Master Plan and a 'coalition of the willing'.

An ambitious vision on the tax system of the 21st century and international cooperation are indispensable. European countries should collectively develop a scenario for the transformation to a circular economy and the appropriate tax system to reach this goal, by setting specific targets for the short, medium and long-term.

Action: A European Master Plan maps the preferred policy measures throughout Europe. Start mobilizing a 'coalition of the willing' of countries that are willing to advance implementation of the tax shift.

It may be clear that, since consumers and employers are economic actors and their behaviour might not be as rational as one can expect, it is imminent that communication on the inevitability of measures and the timeframes involved are essential.

Closing statement

Times have changed. The linear (take-make-waste) economy is past its sell-by date. We've entered a new era; one that requires an inclusive circular economy, as targeted by Dutch and EU policy. The tax system plays a fundamental role in this transition.

Updating the tax system is not a simple task. But we do not live in simple times, and considering the megatrends that we are facing, doing nothing is no longer an option. Our research shows that there is widespread support for the principles of a tax shift from labour to consumption and the use of natural resources.

Our society and economies can flourish by saving natural resources and tapping into the abundance of human talents and capacities instead. This transformation requires a long-term vision on the tax system combined with a pragmatic pathway and a realistic timeframe.

The Ex'tax working group recognizes the tension between vision and pragmatism, between long-term and short-term interests. It may be clear that many details and complications still need to be researched. The question is whether to resolve these issues or allow them to immobilize our current system; a system that was built for a different era; the era of the linear economy.

The world has moved on; tax systems need to do the same.

We therefore call upon businesses, governments and NGOs to continue researching the opportunities and risks of a tax shift, and to take the necessary steps towards a 'new plan'; a robust and sustainable tax system that enables current and future generations to develop prosperity based on human capital rather than natural resources.

The Ex'tax Project, Deloitte, EY, KPMG Meijburg and PwC invite all interested parties to support this Call to Action.

Call to Action

The undersigned parties support the mission of The Ex'tax Project Foundation to thoroughly research the opportunities and effects of a shift in taxation from labour to natural resources.

This shift is vital for an inclusive, circular economy; an economy that enables current and future generations to create sustainable prosperity, based on human capital rather than natural resources.

Taxing natural resource use (such as carbon emissions, water, metals and minerals) creates the necessary financial incentives to save those resources.

Lower labour taxes will make it possible to tap into the abundance of human capital, thus creating jobs, solving unemployment.

We call upon governments, businesses and NGOs to take the necessary steps towards a robust and sustainable tax system.

Deloitte.



KPMG

KPMG Meijburg & Co
Belastingadviseurs



tax resources,
not labour

EX'TAX

www.ex-tax.com

Appendix 1:

Thought leaders on the tax shift

Below is a selection of quotes on the tax shift from labour to natural resource use and consumption. For European Commission quotes, please refer to appendix 2.

Brown, Lester (*Professor of economics at UCL*) (2008) Plan B 3.0: Mobilising to Save Civilization.

“In a troubled world economy, where many governments are facing fiscal deficits, these proposed tax and subsidy shifts can help balance the books, create additional jobs, and save the economy’s eco-supports. Tax and subsidy shifting promise energy efficiency, cuts in carbon emissions, and reductions in environmental destruction—a win-win-win situation. (...) Some 2,500 economists, including eight Nobel Prize winners in economics, have endorsed the concept of tax shifts.”

Brown, Lester (*Professor of economics at UCL*) (2001) Eco-Economy: Building an Economy for the Earth.

“Tax shifting involves changing the composition of taxes but not the level. It means reducing income taxes and offsetting them with taxes on environmentally destructive activities such as carbon emissions, the generation of toxic waste, the use of virgin raw materials, the use of nonrefillable beverage containers, mercury emissions, the generation of garbage, the use of pesticides, and the use of throwaway products. This is by no means a comprehensive list, but it does include the more important activities that should be discouraged by taxing. There is wide agreement among environmental scientists on the kinds of activities that need to be taxed more.”

Club of Rome (2009) Global Assembly. Climate, Energy and Economic Recovery.

“Government and business must realize that climate change mitigation and the protection of oceans and terrestrial ecosystems require drastic changes in the use of natural resources. Targets for resource efficiency must be introduced,

supported by tax reform, which should increase taxes on the use of resources and lower taxes on labour.”

Council of the European Union (December 13, 2010) Sustainable materials management and sustainable production and consumption: key contribution to a resource-efficient Europe. 17495/10.

[The Council of the European Union] “INVITES the Commission and Member States to develop a coherent mix of measures to make European materials use more sustainable by further considering: (...) market-based instruments, steering the market towards recycling and waste reduction and recycling certificates; the internalisation of environmental costs, and in particular Member States considering the possibility of shifting the revenue base for national budgets from taxing labour towards taxing energy and resource use”.

Daly, Herman (Professor of Economics at University of Maryland) (2009) From a Failed Growth Economy to a Steady-State Economy.

“Shift the tax base from a tax on value added (labor and capital) to a tax on “that to which value is added”, namely the entropic throughput of resources extracted from nature (depletion), and returned to nature (pollution). This internalizes external costs as well as raises revenue more equitably. It prices the scarce but previously un-priced contribution of nature. The value added by labor and capital is something we want to encourage, so stop taxing it. Depletion and pollution are things we want to discourage, so tax them.”

Daly, Herman (Professor of Economics at University of Maryland), Farley, Joshua (Professor of Economics at University of Vermont) (2004) Ecological economics: principles and applications.

“In bumper-sticker form, “Tax bads, not goods!”. The bads are depletion and pollution (throughput), and the goods are value added by labor and capital, that is, earned income.”

Dieren, Wouter van (Member of the Club of Rome) (1995) Taking nature into account. A report to the Club of Rome.

“(...) we advocate Von Weizsäcker’s proposal for ecological tax reform, which we consider acceptable from the point of view of a society which has adopted employment as its first priority, namely a slow raising of resource prices by some % percent annually over a long period of perhaps some 40 years. This can be achieved first by cutting subsidies on energy (and, likewise, on other ecologically problematic factors). Subsequently, taxes could be levied on nonrenewable sources of energy, on primary raw materials, on water consumption, on certain chemicals such as chlorine or metals, and on certain types of land use. (...) Other taxes, charges, and levies should be reduced by equivalent amounts. And in particular the fiscal burden on human labor should be reduced. Especially in the European fiscal system, taxation on labor is such that incomes suffer, and making labor redundant seems to have become a major incentive for employers.

The plea for ecotaxes (or an energy tax) in Europe is therefore counterbalanced by a relief in labor tax."

Ekins, Paul (Professor of Energy and Environment Policy at UCL) (June 11, 2010) The Price Mechanism and EcoEfficiency: the Role of Green Fiscal Reform.

"ETR [Environmental Tax Reform] is the shifting of taxation from goods (like income, profits) to 'bads' like resource use and pollution."

Ellen MacArthur Foundation (2012) Towards the circular economy. Economic and business rationale for an accelerated transition.

"Walter Stahel has argued that human labour should fall in that same category: 'Shifting taxation from labour to energy and material consumption would fast-track adoption of more circular business models; it would also make sure that we are putting the efficiency pressure on the true bottleneck of our resource consuming society/economy (there is no shortage of labour and (renewable) energy in the long term)."

"Rules of the game' in the form of better aligned economic incentives from tax authorities and regulators on issues such as cost of landfill and labour costs could potentially speed up adoption of more circular business models. Professor Roland Clift notes on this topic: "Some of the current incentives at systems levels are just perverse—for example, taxing labour instead of material. The one resource is non-renewable and in short supply yet free of taxes and the other is renewable but taxed'."

"Taxation today largely relies on labour income. Resource and labour market economists have long argued that labour as a 'renewable factor input' is currently penalised over material and non-renewable inputs in most developed economies. They promote a shift of the tax burden away from labour/income and towards non-renewable resources."

Eurogroup (July 8, 2014) Structural reform agenda - thematic discussions on growth and jobs - Reduction of the tax wedge.

"A high tax burden on labour is an impediment to the objective of supporting economic activity and increasing employment."

"tax wedge reductions need to be compensated (...) through revenue-neutral tax shifts, away from labour to revenue sources that are less detrimental to growth such as consumption taxes, recurrent property taxes and/or environmental taxes."

European Parliament (2012) European Parliament resolution of 24 May 2012 on a resource-efficient Europe (2011/2068(INI)).

[Parliament] “Urges the Member States to make a shift towards environmental taxation emphasises that this should allow for cuts in other taxes such as those on labour”.

European Parliament (2013) Decision of the European Parliament and of the Council on a general union Environment Action Programme to 2020 “Living well, within the limits of our planet”.

“The Union and its Member States will need to put in place the right conditions to ensure that environmental externalities are adequately addressed, including (...) considering fiscal measures in support of sustainable resource use such as shifting taxation away from labour towards pollution.”

European Resource Efficiency Platform (members include European Commissioners, members of the European Parliament, ministers, CEOs, academia and NGOs) (2014) Manifesto & Policy Recommendations.

“A circular, resource-efficient and resilient economy should be achieved in a socially inclusive and responsible way by: (...) Abolishing environmentally harmful subsidies and tax-breaks that waste public money on obsolete practices, taking care to address affordability for people whose incomes are hardest-pressed. Shifting the tax burden away from jobs to encourage resource-efficiency, and using taxes and charges to stimulate innovation and development of a job-rich, socially cohesive, resource-efficient and climate-resilient economy.”

“In the context of the European Semester process, the Commission should monitor and propose recommendations to phase out environmentally harmful subsidies and, without prejudice to the use for which the funds are put, to encourage Member States to shift the tax burden away from jobs to resource use in order to promote resource efficiency.”

Gore, Al (Former Vice President of the United States) (2006) Speech at New York University.

“For the last fourteen years, I have advocated the elimination of all payroll taxes – including those for social security and unemployment compensation – and the replacement of that revenue in the form of pollution taxes – principally on CO2. The overall level of taxation would remain exactly the same. It would be, in other words, a revenue neutral tax swap. But, instead of discouraging businesses from hiring more employees, it would discourage business from producing more pollution.”

Gore, Al (Former Vice President of the United States) (2008) TED Talk: New thinking on the climate crisis.

“We need to put a price on carbon. We need CO2 tax, revenue neutral, to replace tax on employment.”

Hawken, Paul, Lovins, Amory, Lovins, Hunter (2009) Natural Capitalism. Creating the next industrial revolution.

“Shifting taxes towards resources creates powerful incentives to use fewer of them now. Simultaneously removing personal and employer taxes on labor creates new arenas of employment opportunity, since the cost of employment is reduced without lowering income. (...) This in turn encourages many resource-saving activities, like closing the loops on material flows, disassembling products, and remanufacturing and repairing products, that currently look costlier than virgin resource use. This illusion is caused by keeping labor artificially expensive and raw materials artificially cheap.”

Hawken, Paul (1993) The Ecology of Commerce. A declaration of sustainability.

“Moving toward sustainability and not addressing job creation will exacerbate economic hardship and further degrade resources. Asking people to reduce consumption without increasing employment will create a world as destructive as the one they would replace.”

ILO (International Labour Organization) (2012) Working towards sustainable development: opportunities for decent work and social inclusion in a green economy.

“Taxing polluters generates revenues that can be leveraged to reduce other (distortionary) taxes, for example taxes on labour. These reductions can lead to higher labour demand and higher employment, while using less energy.”

IMF (2013) Factsheet Climate, Environment, and the IMF.

“Fiscal instruments (carbon taxes or similar) are the most effective policies for reflecting environmental costs in energy prices and promoting development of cleaner technologies, while also providing a valuable source of revenue. Fiscal policies also have an important role to play in addressing other major environmental challenges, like poor air quality and urban congestion.’ ‘Broad-based charges on greenhouse gas emissions, such as a carbon tax, are the most effective instruments for reducing emissions throughout the economy.”

IMF (2012) Fiscal Policy to Mitigate Climate Change. A Guide for Policymakers. Pre-publication copy.

“Ideally, carbon prices are applied in proportion to the carbon content of fuels as they enter the economy (...). The costs of comprehensive carbon pricing is initially modest if revenues are used productively. Productive revenue uses include reducing taxes on work effort”.

Mankiw, Gregory (Professor of Economics at Harvard) (January 21, 2012) A Better Tax System (Assembly Instructions Included). The New York Times.

“A good rule of thumb is that when you tax something, you get less of it. That means that taxes on hard work, saving and entrepreneurial risk-taking impede

these fundamental drivers of economic growth. The alternative is to tax those things we would like to get less of. Consider the tax on gasoline. Driving your car is associated with various adverse side effects, which economists call externalities. These include traffic congestion, accidents, local pollution and global climate change. If the tax on gasoline were higher, people would alter their behavior to drive less. They would be more likely to take public transportation, use car pools or live closer to work. The incentives they face when deciding how much to drive would more closely match the true social costs and benefits. (...) Economists who have added up all the externalities associated with driving conclude that a tax exceeding \$2 a gallon makes sense. That would provide substantial revenue that could be used to reduce other taxes. By taxing bad things more, we could tax good things less."

Mankiw, Gregory (Professor of Economics at Harvard) (May 24, 1999) Gas Tax Now!, Fortune.

"Cutting income taxes while increasing gasoline taxes would lead to more rapid economic growth, less traffic congestion, safer roads, and reduced risk of global warming --- all without jeopardizing long-term fiscal solvency. This may be the closest thing to a free lunch that economics has to offer."

Metcalf, Gilbert (Professor of Economics Tufts University) (2007) A green employment tax swap: using a carbon tax to finance payroll tax relief.

"The GETS (Green Employment Tax Swap) reform uses the revenue to reduce payroll taxes by providing a rebate of the employer and employee payroll taxes on the first \$3,660 of earnings per worker. This amounts to a maximum rebate of \$560 per covered worker. Given payroll tax collections of approximately \$727 billion in 2005,¹⁵ a carbon tax of \$15 per MT CO₂ could lower payroll tax burdens on average by just under 11 percent. (...) The GETS reform benefit is greatest for low-wage workers. For a worker earning \$5,000 a year, nearly three-quarters of his or her payroll taxes would be rebated. (...) while a carbon tax may be regressive, a carbon tax reform can be designed to be distributionally neutral. The use of the carbon tax revenue to lower payroll taxes makes this distributional neutrality possible."

Metcalf, Gilbert (Professor of Economics Tufts University) (date unknown) Tax Reform and the Environment: Paying for Fundamental Tax Reform.

"I'd like to focus more specifically on revenue neutral tax shifts where environmental taxes are used to finance tax reductions. (...) our failure to avail ourselves of environmental taxes and charges means we are missing revenue opportunities which could help us tackle important fiscal issues in our federal budget. (...) My overall message is that green tax shifts can provide considerable flexibility to policy makers to achieve difficult political and economic goals while contributing to a cleaner environment." "Any regressivity in the environmental tax can be offset by progressivity in the tax reductions financed by the new revenues."

OECD (2013) Water security for better lives. OECD studies on water.

“Water security objectives could be met in a more cost effective manner by using market instruments, such as water taxes (e.g. abstraction taxes, pollution taxes). These taxes provide incentives for polluters and resource users to change their behaviour today. They also provide long term incentives to innovate for a more water secure future tomorrow. (...) The revenue from water taxes can be used to strengthen the budget balance; to finance increased spending or to reduce other, distortionary taxes.”

Resource Intelligent Europe MEP/MP network (November 9, 2010) The RIE Declaration.

“(...) new legislation on resource efficiency will need to be paralleled by an Ecological Tax Reform/Value Extracted Tax on Resources: reducing taxes on labour and increasing taxes on use of virgin materials etc; supporting a paradigm shift from labour to resource productivity. (...) We need nothing less than a paradigm shift. Since the 1st industrial revolution, all efforts have been geared towards increasing the productivity of the labour factor, given that labour was scarce and nature abundant. Today, the picture has shifted to a situation, where labour is abundant, while natural resources are becoming scarce. Therefore, the efforts now have to be geared towards increasing resource productivity.”

Sarkozy, Nicolas (October 25, 2007) Presentation of the Grenelle Environment Forum conclusions – Speech by M. Nicolas Sarkozy, President of the French Republic.

“Ecological taxation should not be just a series of small taxes. What we need is an in-depth overhaul. The goal is to obtain a higher tax on pollution – especially fossil fuels – a lower tax on labour.”

Schmidt-Bleek, Friedrich (President Factor 10 Institute) (2004) Approaching and measuring sustainability.

“(...) labour is too expensive when considering its contribution to productivity whereas energy is – relatively speaking – under-priced. Under such conditions it is entirely rational when jobs are being eliminated, in particular because the expenditures for the social security system depend almost entirely on labour.”

“The labour market becomes de-coupled from growth with the consequence of decreasing tax revenues while social expenditures rise at the same time. It is thus necessary to adjust the optimal input of natural resources for wealth creation.”

“The economically rational mix for the input of labour, capital and material/energy must be shifted toward more work while reducing the input of natural resources.”

Shultz, George (Former US secretary of state), Becker, Gary (1992 Nobel laureate in economics) (April 7, 2013) Why We Support a Revenue-Neutral Carbon Tax. The Wall Street Journal.

“We propose a measure that could go a long way toward leveling the playing field: a revenue-neutral tax on carbon, a major pollutant. A carbon tax would encourage producers and consumers to shift toward energy sources that emit less carbon—such as toward gas-fired power plants and away from coal-fired plants—and generate greater demand for electric and flex-fuel cars and lesser demand for conventional gasoline-powered cars.”

“The right level of the tax for the United States deserves careful study, but the principle of a lower starting rate with scheduled increases to an identified level has proven to be a good one in the five-year experience of a similar carbon tax in British Columbia. This gives time for producers and consumers to get accustomed to a carbon tax, and to discover how they can respond efficiently.”

“Clearly, a revenue-neutral carbon tax would benefit all Americans by eliminating the need for costly energy subsidies while promoting a level playing field for energy producers.”

Sijbesma, Feike (CEO of Royal DSM) (February 1, 2013) We Need to Redesign Our Economy. Huffington Post.

“(...) we should anchor value creation (or destruction) on the People and Planet dimensions in the overall valuation of companies. One approach might be to introduce differentiated tax regimes depending on companies' performance or contribution on the ecological or societal axis. (...) A logical complement to such an approach would be to consider increased taxing on the use of scarce resources, whilst diminishing taxes on labor. This would help to tackle the scourge of unemployment and could make it easier to create jobs for older people as well as in certain services that society wants but that have become almost unaffordable.”

Stahel, Walter (Co-founder Product Life Institute) (2011) The Virtuous Circle? Sustainable Economics and Taxation in a Time of Austerity.

“In a sustainable economy, taxes on renewable resources including work—human labour—are in fact counterproductive and should be re-thought. The resulting loss of state revenue could be compensated by taxing the consumption of non-renewable resources in the form of materials and energies, and of undesired wastes and emissions. Such a shift in taxation would promote and reward a circular economy with its local low-carbon and low-resource solutions. These are inherently more labour-intensive than manufacturing, because economies of scale in a circular economy are limited.” “Changing the tax focus will in itself foster the transition to a more sustainable economy in terms of both energy and materials”

UK Green Fiscal Commission (2009) The Case for Green Fiscal Reform.

“The concept of a green tax shift is simple: taxes on the things that are valued by society; like jobs, incomes and profits; are reduced and the lost revenue is replaced by taxes on things society does not like, such as pollution and environmental degradation. ‘Pay as you burn, not pay as you earn’ as one political formulation has put it. This shift not only reduces pollution, but is a more economically efficient way of raising necessary tax revenues. Taxes on labour at their current level, for example, distort the economy and reduce its efficiency and output.”

UNEP (2013) Metal Recycling: Opportunities, Limits, Infrastructure.

“The balance of costs and benefits from these policies [such as taxation, labour regulation and energy costs] determines whether recycling is more or less profitable than alternative disposal of recyclate materials, or even to what extent individual substances are recovered from complex products. (...) In the context of recycling, differential taxation can play a role, either through energy-price controls or by favouring recycling processes or materials. The balance of taxation between energy, materials and labour cost further affects the viability of the collection of EoL [End of Life] goods.”

WBCSD (World Business Council for Sustainable Development, a CEO-led association of some 200 international companies) (2010) Vision 2050.

“Increase price levels, via taxes and levies, to influence a shift of consumption toward the offering with the best environmental and social profile (...). Tax strategies [should] shift towards incentivizing job creation and healthier products and discouraging negative external factors like pollution and environmental damage.”

World Resources Forum (2009) Resource Governance – Managing Growing Demands for Material on a Finite Planet.

“... Adjusting the fiscal framework is ... the most fundamental and urgent prerequisite for approaching a sustainable future. Subsidies that increase the consumption of natural resources must be eliminated, and economic instruments should be deployed such as a shift away from overheads on labor and toward taxing raw materials – with the side effect of creating new jobs and redistributing income to developing countries where many of the resources come from – and market creation policies including tradable permits. (...) Instead of applying value added taxation to final goods it may be more effective to tax natural resources at the point at which they are removed from nature or where they enter the industrial metabolism.”

Appendix 2: The European Commission and the Council of the European Union on the tax shift (1993-2014)

2014

European Commission (2014) Recommendation for a Council Recommendation on the Netherlands' 2014 national reform programme and delivering a Council opinion on the Netherlands' 2014 stability programme.

“HEREBY RECOMMENDS that the Netherlands take action within the period 2014-2015 to: (...) Take further measures to enhance labour market participation particularly among people at the margin of the labour market and to reduce tax disincentives on labour.”

European Commission (2014) Commission Staff Working Document. Assessment of the 2014 national reform programme and stability programme for The Netherlands.

“At 3.9 % of GDP, the Netherlands has the second highest level of environmental taxes as a percentage of GDP in the EU. It raises significant revenues from transport taxes, especially the vehicle registration tax. It is one of the few countries in the EU with a significant proportion of pollution taxes, beginning with a tax on the pollution of surface waters and sewerage charges (0.72 % of GDP, EU-27 0.1 % of GDP). Even though it has one of the highest levels of environmental taxes in the EU, subsidies through lower energy taxes for energy-intensive industry and horticulture remain.”

“The 2014 taxation plan contains some measures towards a growth-friendly tax shift, such as increasing charges on tap water and re-introducing the waste tax. However, taxation could be shifted further away from labour towards environmental and other taxes less detrimental to growth (e.g. by reducing the preferential tax treatment of diesel compared to petrol; reducing environmentally harmful subsidies; reducing the scope of the reduced VAT rate,

abolishing the deduction for small mortgage debt and reducing mortgage interest more quickly and ambitiously, while considering increasing recurrent property taxation, which are still relatively low)."

European Commission (2014) 2014 European Semester: Country-Specific Recommendations. Building Growth.

"not enough is being done to reduce the high tax wedge on labour, although lower taxes on labour remain crucial for a job-rich recovery."

"The structure of tax systems, and particularly the shifting of the tax base from labour to other sources, is an essential aspect of on-going reforms. A priority for many Member States is to alleviate labour taxation in order to increase incentives to work and to reduce the relatively high cost of labour, in particular for low-skilled workers. While several Member States have taken or started to take tax measures in response to the last year's recommendations in this area (Austria, Belgium, Italy, France, Latvia, Hungary and the Netherlands), progress has been limited overall. Thus most tax challenges identified in the last year's recommendations remain valid also for 2014/2015."

"More generally, progress can still be made to reduce the overall tax burden and/or to make the tax system more efficient and less distortive. (...) Some recommendations thus focus on (...) removing environmentally-harmful subsidies and on further shifting the tax base away from labour to taxation which is less detrimental to growth such as environmental or recurrent property taxes."

European Commission (2014) Q&A: Country-specific recommendations 2014.

"What are the main challenges facing Member States in 2014-15? Shifting to growth-friendlier taxation: Many countries have relied on tax rises rather than spending cuts during the crisis and the overall tax burden has risen. Because there is limited room for manoeuvre when it comes to public finances, a number of recommendations focus on shifting taxation from labour to more recurrent property, consumption and environmental taxes, as they are less detrimental to growth."

"What do the CSRs say about taxation? - Strong emphasis is put on the need to reduce the high tax burden on labour (which, at 46.5% in the euro area, is higher than non-European OECD countries). In total, 12 Member States are asked to put more effort into shifting the tax burden away from labour to other, less distortive taxes such as consumption, pollution and recurrent property taxes: Austria, Belgium, Czech Republic, France, Germany, Hungary, Italy, Latvia, Lithuania, the Netherlands, Romania and Spain."

European Commission (2014) Towards a circular economy: A zero waste programme for Europe.

"Policy has a further role in providing the right signals for investment in resource efficiency by eliminating environmentally harmful subsidies and switching taxation away from labour towards pollution and resources."

2013

European Commission (2013) Annual Growth Survey 2014.

"Tax systems should be redesigned by broadening tax bases, and shifting the tax burden away from labour on to tax bases linked to consumption, property and pollution."

"Environmentally harmful subsidies should be reduced."

"Tax should be designed to be more growth-friendly, for instance by shifting the tax burden away from labour on to tax bases linked to consumption, property, and combatting pollution."

"To stimulate job creation, action should be taken to reduce the tax wedge on labour, as part of overall efforts to shift the tax burden, in particular for low paid workers and young workers"

"Top personal income rates are at their highest level since 2008. The overall tax burden on labour has increased, but Member States (BE, DK, FI, FR, HU, IT, NL, PT, SE) have decreased labour taxes for specific groups."

European Commission (2013) Recent Reforms of Tax Systems in the EU: Good and Bad News. Working paper n.39.

"Country specific recommendations on the tax shift take two forms, which are complementary: 1) a general shift from labour (or capital) taxation to other taxes such as consumption, environmental and property taxation; and 2) a reduction of the labour tax burden for certain groups such as second earners or low-income workers."

"In 2012, eleven countries received a CSR referring to shifting taxation away from labour or reducing the labour tax burden on specific groups. These countries were: Austria, Belgium, Czech Republic, Germany, Estonia, Spain, France, Hungary, Italy, Latvia, and Slovakia. In 2013, the Commission assessed that the majority of the recommendations were not implemented forcefully. Member States usually increased indirect taxes, but this trend was not accompanied by corresponding cuts in labour taxation to reduce the relatively high cost of labour. As a result, for all of the above mentioned countries - except for Estonia and Spain – the recommendations were reiterated in 2013."

"In 2012, 12 countries were issued CSRs referring to environmental taxation (Austria, Belgium, Czech Republic, Estonia, Spain, France, Hungary, Italy, Lithuania, Luxembourg, Latvia and Slovakia). Where measures have been taken, tax reforms appeared to be mostly for consolidation purposes. However, the tax instrument was not always fully exploited to achieve environmental objectives. Examples of (smart)/additional reforms would be addressing the gap between diesel and petrol tax rates, limiting the use of some harmful or inefficient reduced VAT on energy products or natural resources, reforming more ambitiously company car taxation, increasing taxes on pollution, etc. Therefore, in 2013, most of the CSRs have been maintained. Between 2012 and 2013, the main measures taken were increases of the excise duty on diesel, increases of

the tax rates on energy and reforms of car taxation. The scope of action seems to be limited and at the margin (e.g. small increases of excise duties only correcting for inflation) while tax reforms were sometimes ill-designed (e.g. taxing profits of energy companies instead of consumption) or undermined by other tax reform giving the opposite signal (e.g. tax allowances granted to commuters encouraging the use of private cars instead of public transportation)."

"More than one third of the Member States have increased their excise duties on gas oil and other energy products."

"Spain has introduced a nuclear tax on the production of radioactive waste resulting from the generation of nuclear energy. Hungary and Italy now apply a surcharge on the company income tax to companies operating in the energy or public utility sectors. However, these latest measures do not provide direct incentives to reduce energy consumption and may have distortionary effects unlike, for example, energy consumption taxes."

"The limited progress in the field of environmental taxation can be partially explained by competitiveness and social issues. Environmental taxes are considered to be regressive and might aggravate the poverty risk or social exclusion. (...) However, environmental taxation can be designed in a way to reduce social impacts and properly designed environmental taxes can also stimulate the development of new technologies, promote resource efficiency and the creation of 'green' jobs."

European Commission (2013) Recommendation for a Council recommendation on Belgium's 2013 national reform programme and delivering a Council opinion on Belgium's stability programme for 2012-2016.

[The European Commission] "HEREBY RECOMMENDS that Belgium should take action within the period 2013-2014 to: Establish concrete and time-specific proposals for shifting taxes from labour to less growth-distortive tax bases, notably by exploring the potential of environmental taxes, for example on diesel, heating fuels and the taxation of the private use of company cars."

Council of the European Union (2013) Recommendation for a Council Recommendation on the Czech Republic's 2013 national reform programme and delivering a Council opinion on the Czech Republic's convergence programme for 2012-2016.

"HEREBY RECOMMENDS that the Czech Republic should take action within the period 2013-2014 to: (...) Reduce the high level of taxation on labour by shifting taxation to areas less detrimental to growth, such as recurrent taxes on housing and vehicle circulation taxes."

Council of the European Union (2013) Recommendation for a Council Recommendation on France's 2013 national reform programme and delivering a Council opinion on France's stability programme for 2012-2017.

"HEREBY RECOMMENDS that France should take action within the period 2013-2014 to: (...) Take further measures shifting the tax burden from labour to environmental taxation or consumption."

Council of the European Union (2013) Recommendation for a Council Recommendation on Hungary's 2013 national reform programme and delivering a Council opinion on Hungary's convergence programme for 2012-2016.

“HEREBY RECOMMENDS that Hungary should take action within the period 2013-2014 to: (...) Continue making taxation of labour more employment friendly by alleviating the tax burden on low-wage earners, inter alia by refining the eligibility criteria for the Job Protection Act, and by shifting taxation away to environmental taxes.”

Council of the European Union (2013) Recommendation for a Council Recommendation on Italy's 2013 national reform programme and delivering a Council opinion on Italy's stability programme for 2012-2017.

“The structure of the tax system remains complex and weighs heavily on labour and capital. After the effort undertaken in 2010-2011, additional measures adopted to shift the tax burden from the productive factors onto consumption, property and the environment have been more limited.

“HEREBY RECOMMENDS that Italy should take action within the period 2013-2014 to: (...) Shift the tax burden from labour and capital to consumption, property and the environment in a budgetary neutral manner.”

Council of the European Union (2013) Recommendation for a Council Recommendation on Latvia's 2013 national reform programme and delivering a Council opinion on Latvia's convergence programme for 2012-2016.

“Latvia has reduced taxes on labour and plans to take further steps in this regard in 2014 and 2015. However, the tax wedge for low-wage earners is still among the highest in the EU, indicating a need for appropriate calibration of tax policy to stimulate employment for the low-skilled. Moreover, shifting taxation from labour to recurrent property taxes and taxes on the use of natural and other resources should improve the structural balance. Environmental taxes remain relatively underdeveloped and are heavily dominated by motor-fuel taxation, while taxation of other energy sources, pollution and the use of natural resources is below the EU average. Further broadening of the tax base to include other sources of environmental taxation would help in achieving environmental goals.”

“HEREBY RECOMMENDS that Latvia should take action within the period 2013-2014 to: (...) Within this strategy, reduce taxation of low-income earners by shifting taxation to areas such as excise duties, recurrent property taxes and/or environmental taxes.”

Council of the European Union (2013) Recommendation for a Council Recommendation on Lithuania's 2013 national reform programme and delivering a Council opinion on Lithuania's convergence programme for 2012-2016.

“Lithuania's revenues from environmental taxes are on a downward trend and were the second lowest in the EU in 2011, also due to the lowest level of transport taxes in the EU; this does not facilitate reductions in the high energy intensity of the Lithuanian economy.”

“HEREBY RECOMMENDS that Lithuania should take action within the period 2013-2014 to: (...) Review the tax system and consider increasing those taxes that are least detrimental to growth, such as recurrent property and environmental taxation, including introducing car taxation”.

Council of the European Union (2013) Recommendation for a Council Recommendation on Luxembourg's 2013 national reform programme and delivering a Council opinion on Luxembourg's stability programme for 2012-2016.

“Currently, less than a third of tax revenues are raised from consumption taxes, partially owing to moderate standard and reduced VAT rates.”

“Luxembourg is committed to reducing its greenhouse gas emissions in the non-ETS sectors by 20 % in 2020 compared to 2005 but is expected to fail to meet its target by 23 percentage points according to the latest 2020-projections based on existing measures. The transport sector was responsible for 68% of non-ETS emissions in 2011 and represents a key challenge for Luxembourg. Measures currently in place would only contribute to approximately a third of the greenhouse gas emission reduction necessary to meet the target. Consequently, measures need to be significantly stepped up, notably by increasing fuel taxation so as to reduce the taxation gap with neighbouring countries. The vehicle tax reform should also be accelerated. Luxembourg should continue with the implementation of projects, which favour the use of public transport. It should introduce congestion charging on roads to encourage a shift towards public transport.”

“HEREBY RECOMMENDS that Luxembourg should take action within the period 2013-2014 to: (...) Step up measures to meet the target for reducing non-ETS greenhouse gas emissions, in particular by increasing taxation on energy products for transport.”

Council of the European Union (2013) Recommendation for a Council Recommendation on Romania's 2013 national reform programme and delivering a Council opinion on Romania's convergence programme for 2012-2016.

“HEREBY RECOMMENDS that Romania should take action within the period 2013-2014 to: (...) explore ways to increase reliance on environmental taxes.”

Council of the European Union (2013) Recommendation for a Council Recommendation on Spain's 2013 national reform programme and delivering a Council opinion on Spain's stability programme for 2012-2016.

“HEREBY RECOMMENDS that Spain should take action within the period 2013-2014 to: (...) Consider further limiting tax expenditure in direct taxation, explore the scope to further limit the application of the reduced VAT rates and take additional steps in environmental taxation, notably as regards excise duties and fuel taxes.”

European Commission (2013) Tax reforms in EU Member States. Tax policy challenges for economic growth and fiscal sustainability.

“Belgium, Spain, France, Austria, Slovenia, Slovakia, Czech Republic, Latvia, Lithuania, Hungary, Poland and Romania seem to have room for boosting their revenue from environmental taxes. (...) Based on the screening summarised in Table 3.11, Belgium, France (42), Italy, Latvia, Hungary (43) and Romania in particular and, to a lesser extent, Germany, the Netherlands, Austria, Finland, the Czech Republic and Sweden appear to be facing the challenge of reducing the tax burden on labour (either overall or for specific groups) and at the same time appear to have room to increase taxes which are less detrimental to growth.”

“The tax experiments presented here assume a 1 % GDP reduction in labour taxes (comprising both social contributions and taxes on personal income) financed by a similarly sized increase in consumption taxes, such that the tax shift is ex- ante budgetary neutral. It is assumed that the tax reforms are carried out simultaneously in all Member States.”

“The first scenario investigates the effect of a uniform tax shift from the wages of all skill types to consumption (central scenario). The second examines the effect of a tax shift targeted to alleviate only the tax burden of low-skilled workers, leaving the labour tax burden on medium and high-skilled workers unchanged (targeted scenario).”

“The model simulations suggest that a permanent shift of taxes from wages to consumption has positive GDP effects (see Table 3.13). Reducing labour taxes lowers wage costs and reduces prices. The gain in competitiveness that results from the labour tax reduction leads to an increase in employment and output, and boosts exports. Compared to the ‘no-policy change’ baseline, EU-wide real GDP increases in the first year by about 0.11 % and rises to 0.48 % in the long run under the central scenario.”

“(…) the second scenario, in which only the labour taxes on low skilled earners are reduced in a budgetary neutral way. This targeted tax shift produces much greater effects compared to the central scenario, with EU-27 GDP increasing by 0.18 % in the first year and 1.25 % in the long run.”

“Various measures could be taken at national level to improve the design of environmental taxation. These include: (a) adjusting the structure of tax rates on fossil fuels according to their carbon and energy content; (b) indexing environmental taxes; (c) considering the abolition of reduced VAT rates on energy; (d) reducing tax subsidies for company cars; and (e) introducing CO₂-related vehicle taxation.”

European Commission (2013) The marginal cost of public funds in the EU: the case of labour versus green taxes. Taxation papers.

“This paper uses a computable general equilibrium model to gauge these potential distortions by calculating the marginal cost of public funds (MCF) for EU member states. (...) the economic distortions provoked by labour taxes are significantly larger than for green taxes”

“result is slightly less strong when one considers the spillover effects between countries, which are more pronounced (in relative terms) for green taxes. This suggests that the use of green taxes for fiscal consolidation would be more effective were there to be close coordination across EU countries.”

“the efficiency losses from green taxes are far smaller than for labour taxes. Considering EU-wide figures, the value for labour taxes of 1.90 implies that to raise an additional 1 euro of revenue, the average efficiency loss would be 0.90 euros. In contrast, raising an additional 1 euro of revenue from energy taxes, leads to an average efficiency loss of only 8 cents.”

“The result is also consistent with economic theory, which suggests that taxing goods with a relatively inelastic demand, such as energy, will result in only small distortions. This is not the case for labour if one is faced with a labour supply curve that is at least somewhat elastic. Furthermore, increased unemployment also requires additional social security payments from the government, (...) countries with high starting level of taxation have also the highest values of the MCF.”

“An important point to notice is that in every country, the MCF for labour taxes is higher than for green taxes, suggesting that all countries would see an efficiency gain from switching from labour to green taxes.”

“(...) our results suggest overwhelmingly that should tax increases be considered in EU countries, energy taxes represent a better candidate than labour taxes. (...) energy is relatively under-taxed compared to labour taxes, at least in the EU countries considered here.”

2012

European Commission (2012) Annual Growth Survey 2013.

“This is why the Commission recommends that: - The tax burden on labour should be substantially reduced in countries where it is comparatively high and hampers job creation. To ensure that reforms are revenue neutral, taxes such as consumption tax, recurrent property tax and environmental taxes could be increased.

- Additional revenue should be raised preferably by broadening tax bases rather than by increasing tax rates or creating new taxes. Tax exemptions, reduced VAT rates or exemptions on excise duties should be reduced or eliminated. Environmentally harmful subsidies should be phased out.”

“To limit the tax burden on labour, notably for the low-paid, as part of broader efforts to shift tax burden away from labour. Temporary reductions in social security contributions or job subsidy schemes for new recruits, notably the low skilled and long-term unemployed, could also be considered to promote job creation, provided they are well targeted.”

European Commission (2012) Recommendation for a Council recommendation on Spain's 2012 national reform programme and delivering a Council opinion on Spain's stability programme for 2012-2015.

"Introduce a taxation system consistent with the fiscal consolidation efforts and more supportive to growth, including a shift away from labour towards consumption and environmental taxation."

European Commission (2012) The 2013 Annual Growth Survey: Towards fair and competitive tax systems. MEMO/12/915.

"Economic studies show that certain types of taxes – such as those on labour and income – are more distortive, while others such as consumption and environmental taxes are considered to be more growth-friendly. These latter can also steer certain behaviours in a way that meets wider societal needs and objectives. The Commission therefore advises Member States to shift taxes away from areas that impede growth (labour, corporate taxes) towards more growth-friendly taxes (consumption, environment)."

European Commission (2012) Towards a job-rich recovery.

"The Commission will: (...) 1. Promote a mainstreaming of green employment into National Job Plans (...) by emphasising in the 2013 European Semester the employment dimension of resource efficiency and the implementation of necessary reforms. In particular, Member States will be encouraged to make greater use of environmental taxes and ETS revenues in shifting taxation away from labour."

2011

European Commission (2011) Annual Growth Survey 2012.

"There is scope for broadening the tax base of certain taxes and thus increasing revenue or reducing distortively high tax rates. (...) Phasing out some hidden tax subsidies could help to widen the tax base. In particular, environmentally harmful subsidies should be eliminated."

"Greater efforts should be made to shift taxation away from labour towards taxation which is less detrimental to growth: for example, increasing consumption, environmental, wealth (for example, high value property) taxation can help to alleviate the tax burden on labour thus making hiring more attractive."

European Commission (2011) A resource-efficient Europe – Flagship initiative under the Europe 2020 Strategy.

"taxes and subsidies on the use of energy or other resources can be used both to steer behavior leading to reduced and more efficient consumption and to help restructure public finances away from labor taxation, which benefits job creation and economic growth."

European Commission (2011) Roadmap to a Resource Efficient Europe.

“Environmental taxation can also align the efforts for fiscal consolidation with facilitating the restructuring towards a resource efficient economy. Nonetheless, the average share of environmental taxation in total tax revenues in the EU has generally been declining since 1999, reaching a level of 6.3% in 2009.”

“Milestone: By 2020 a major shift from taxation of labour towards environmental taxation, including through regular adjustments in real rates, will lead to a substantial increase in the share of environmental taxes in public revenues, in line with the best practice of Member States.”

“Shifting taxation away from labour to boost employment and economic growth is already emphasized in the Annual Growth Survey for 2011 and in the European Council Conclusions from March 2011 "Green tax reforms", which consist of increasing the share of environmental taxes, while reducing others (...).”

2010

European Commission (2010) An agenda for new skills and jobs: a European contribution towards full employment.

“(...) achieving the target of spending 3% of EU GDP on R&D by 2020 would induce the creation of 3.7 million jobs by 2020.”

“Stimulating recruitment through a reduction of non-wage labour costs (e.g. with a shift from labour taxes to energy consumption or pollution) is paramount in times of high unemployment, since the costs of sustaining unemployment insurance systems will most probably outweigh the reduction of revenue for the social security system. This is particularly important for those who experience particular difficulties to find new jobs after a recession, such as the low skilled or the long-term unemployed. Incentives to shift jobs from the informal into the regular economy are also essential; a good case in point is the development of regular employment in domestic, social care and other not-for-profit activities, offering an important entry to the labour market for those furthest away from it.”

European Commission (2010) Annual Growth Survey: advancing the EU's comprehensive response to the crisis.

“Shifting taxes away from labour should be a priority for all Member States in order to stimulate demand for labour and create growth.”

“Progress on taxation also implies reducing taxes on labour to the minimum necessary and adapting the European framework for energy taxation in line with the EU energy and climate objectives.”

European Commission (2010) Europe 2020. A strategy for smart, sustainable and inclusive growth.

“For example, raising taxes on labour, as has occurred in the past at great costs to jobs, should be avoided. Rather Member States should seek to shift the tax burden from labour to energy and environmental taxes as part of a “greening” of taxation systems.

European Commission (2010) Monitoring tax revenues and tax reforms in EU Member States 2010. Tax policy after the crisis.

“simulations using the Quest III model also indicate that a shift from the most distortionary taxes (on labour and capital) to the least distortionary taxes (consumption, housing) could mitigate the output losses associated with fiscal consolidation in the short run and have a positive impact on GDP in the long run. According to these simulations, a consolidation package relying heavily on taxing consumption and housing while reducing income taxes would only lead to a minor and short-lived fall in GDP. Given the rise in potential output entailed by such a tax reform, output would be almost 1 per cent higher than baseline in the long run.”

2007

European Commission (2007) Green paper: on market-based instruments for environment and related policy purposes.

“An environmental tax reform (ETR) shifting the tax burden from welfare-negative taxes, (e.g. on labour), to welfare-positive taxes, (e.g. on environmentally damaging activities, such as resource use or pollution) can be a win-win option to address both environmental and employment issues. At the same time, a long term tax shift will require relatively stable revenues from the environment related tax base. ETR can also help to alleviate the possible adverse competitiveness effects of environmental taxes on specific sectors. If the action is closely co-ordinated at the Community level, these impacts can be further reduced compared to unilateral actions by Member States. Reductions in labour taxation or social-security contributions which tend to benefit lower-income households, can counterbalance any possible regressive effect from environmental taxes. Finally, with an ageing population, which increases pressure on public expenditure, and globalisation that makes taxation of capital and labour less viable, the shift of tax burden from direct taxation towards consumption and, in particular, environmentally damaging consumption, may provide considerable benefits from a fiscal perspective”

2005

European Commission (2005) Commission Staff Working Document on the links between employment policies and environment policies.

“The key messages of this Communication were reflected in the 1998 Employment Guidelines [Council Resolution of 15.12.1997], highlighting the need to exploit fully the job creation potential in new activities, such as those in the environment sector, and to reduce the tax burden on labour, e.g. by shifting tax to energy and environmental pollutants.”

1997

European Commission (1997) Communication from the Commission on environment and employment. Building a sustainable Europe.

[The European Commission proposes to] “Continue the gradual restructuring of tax systems by reducing non-wage labour costs on the one hand and on the other, incorporating environmental and resource costs into market prices of goods and services.”

1993

European Commission (1993) Growth, competitiveness and employment. Challenges and the ways forward into the 21th century.

“The serious economic and social problems the Community currently faces are the result of some fundamental inefficiencies: an ‘under-use’ of the quality and quantity of the labour force, combined with an ‘overuse’ of natural and environmental resources.”

“The tax burden must be redistributed so as to lighten the burden on labour and increase the burden on the use of natural resources.”

“The twin challenge of unemployment/environmental pollution is to be addressed, a trade off can be envisaged between lower labour costs and higher pollution charges.” (...) An important dimension of the proposal concerns the widely advocated shift towards a more intensive use of indirect taxation, as well as a widening and balancing of the tax base for energy products. In the Community these proposals enjoy popular support: about 60% of European citizens are in favour of such a tax.”

Appendix 3: Literature on the employment impact of a tax shift

Aarhus University, Eunomia (2014) Study on Environmental Fiscal Reform Potential in 12 EU Member States. No 07.0307/ETU/2013/SI2.664058/ENV.D.2. Final Report to DG Environment of the European Commission.

“The findings of detailed modelling work appear to be relatively consistent and suggest that gains in employment may be achieved under certain circumstances (typically, when revenues derived from the taxes are used to offset social security taxes). It should be noted, however, that some studies have suggested that unemployment may rise as a result of environmental tax reform, but these are certainly more limited than those which suggest net positive gains in employment.”

“Over the last few decades a growing body of literature has emerged which has looked at the relationship between EFR and employment. Although a substantial amount of work has been done much of this is based on theoretical modelling as opposed to the gathering of empirical evidence (this may not be surprising given the difficulties of gathering empirical data and assigning cause and effect to a particular policy intervention). Nevertheless, the findings appear to be relatively consistent and suggest that gains in employment are likely to be achieved where offsetting reductions in other taxes are made. ”

“The effects of EFR are most well documented in relation to energy and carbon taxes. Other forms of environmental taxes, such as resource taxes, or taxes on pollution, have received less attention. One reason for this is that the modelling studies have tended to address effects at the level of the macro-economy, whilst the level of revenue generation by some pollution and resource taxes is rather low (so that the net effects estimated by models are likely to lie within, or close to, their limits of resolution. ”

“Although slightly outdated, a compressive review in 2000 looked at 139 model simulations coming from a total of 59 studies.600 Seventy-five of the 108 simulations which were reviewed for employment impacts (i.e. 73%) predicted

that EFR would result in net job creation. The authors note that: "...the best results in terms of employment are obtained when recycling occurs through cuts in SSC [social security contributions]. This is because employers' SSC directly influence the price of labour; the higher employers' SSC, the more costly it is to hire labour, similarly, the higher employees' SSC, the greater the disincentive to supply labour".

"A review of EFR conducted in 2005 updated the findings from the study discussed above. This work looked at a total of 186 model simulations from 61 separate studies. (...) The results of this work are summarised in Table 143, from which it can be seen that, on average, all of the different groupings of studies predicted net job creation with significant reductions in CO2 emissions."

Andersen, Mikael Skou (et.al) (2007) Competitiveness Effects of Environmental Tax Reforms (COMETR). Final report to the European Commission.

"The Porter hypothesis suggests that environmental regulation can induce efficiency and innovation and improve competitiveness as efficiency gains partially, or more than fully, offset the costs of complying with the regulation. In the COMETR context, environmental regulation has been more narrowly defined, however, as energy taxation implemented to encourage households and industries to behave in an environmentally-sustainable manner. On this definition, our results show, in contrast, that in the absence of revenue recycling mechanisms, ETR leads to a net loss of output in all examined countries (except Finland). However, when there is revenue recycling, ETR, as modelled within E3ME, produces a small 'double dividend' effect in every country, with GDP increasing by up to 0.5% compared to the Reference case."

"ETR caused employment in some of the ETR countries to increase by as much as 0.5%"

Bocconi (2011) The role and impact of labour taxation policies. Client: European Commission.

"The empirical evidence shows that men's hours of work and the decision to participate do not respond very strongly to tax changes, while married women's, lone mothers' and low-skilled men's hours of work and participation decisions are more responsive to taxation." "What kinds of tax reforms may enhance social welfare? The normative theory of optimal taxation suggests that the lowest-paid workers should face rather low marginal tax rates in order for their participation not to be discouraged."

"Despite the general reduction of top marginal tax rates of the personal income tax, progressivity measured by the total tax wedge has increased between 2000 and 2009. In the period 2000-2009 the total tax wedge has been declining in most EU countries. The greatest decline occurred in Northern European countries where the tax wedge decreased by more than 5 percentage points. In most EU countries there has been a partial shift from employers to employees of the wedge component due to social security contributions."

“Making taxes less distortionary by shifting taxation from more mobile to less mobile tax bases and by broadening the tax base while reducing rates is a way to improve economic performance. Consumption taxes are the main candidate to implement a tax shift from labour taxation. Due to the broad base of the VAT, an increase in its tax rate is usually considered as a crucial ingredient of such a tax reform.

“According to Nickell (2003), a 10% rise in the tax wedge reduces employment by about 2%.

“A ranking of taxes according to their distortionary effect has been identified, where the least distortive are taxes on immobile property, followed by consumption taxes, personal income taxes and corporate income taxes.”

“As to environmental taxes, aimed at discouraging the consumption of goods with negative externalities, a shift from labour taxes to these taxes is often presented as bringing about a “double dividend”: on the one hand, they have positive effects on the environment, on the other hand, they allow to reduce a distortionary tax. Although the role for these taxes is probably larger than it has been experienced so far, its use has proved quite difficult in most States (with some exceptions). Moreover, the main environmental tax is the excise tax on fossil fuels, which is generally already heavy in most EU countries and consequently offers limited scope for further increases. In addition, political concern that an increase in fuel taxes can affect production and competitiveness negatively may play a role. Finally, environmental taxes, as all taxes aimed at correcting externalities, have a self-defeating nature, as their success in reducing the tax base implies a reduction in revenue. For these reasons, most attention has been paid to the possibility to carry out a reduction in non-wage labour costs through a tax shift from labour income, and especially from social security contributions, to broad base general consumption taxes, and an increase in the VAT is usually considered as the key ingredient of the tax reform.”

“Labour taxes affect labour supply and demand decisions. With regard to labour supply, both the decision to enter the labour force (the so called extensive margin) and the hours worked (intensive margin) are affected, although by different characteristics of the tax.

“the attractiveness of a shift to a consumption tax stems from the fact that consumption is a broader base than labour income. Consumption is financed also by a number of sources other than Labour income, including government transfers, corporate income, previously accumulated wealth, etc. A higher base obviously means a lower rate, and this reduces the distortionary effect on labour supply and possibly, given that the distortion increases more than proportionally with the rate, the overall distortionary effect of the tax system.”

“This redistribution is expected to have positive effects on growth, as the lower cost of labour will induce an increase in investments. Note that we have a positive effect on employment and growth even if the joint final effect of the change in wages and prices offset each other.”

Bovenberg, Lans (1999) Green Tax Reforms and the Double Dividend: an Updated Reader's Guide. *International Tax and Public Finance*, 6, 421–443.

“Environmental tax reforms have become increasingly popular in recent years. One reason is increasing concern about the quality of the natural environment; environmental taxes are generally an efficient instrument for protecting the environment. A second reason involves the revenues from environmental taxes. These revenues can be used to cut other, distortionary taxes. In this way, the government may reap a ‘double dividend’—not only a cleaner environment but also a less distortionary tax system.

“The overall message of this paper is rather disappointing for those who expect substantial non-environmental benefits from green tax reform. The analysis shows that stringent conditions need to be met in order for an environmental tax reform to yield a double dividend. Moreover, such a double dividend often yields negative political or distributional dividends.”

Copenhagen Economics (2007) Study on reduced VAT applied to goods and services in the Member States of the European Union.

(43) “producers are unlikely to respond strongly to VAT rate changes if they are perceived to be only temporary.”

(9) “there is little doubt that permanently lowering the VAT rate on a particular good (or service) sooner or later will lead to a reduction in the price of the good more or less corresponding to the monetary equivalent of the lower VAT rate. If the VAT rate goes down by 10 percentage points on a good with a before tax price of €100, the price paid by the consumer will sooner or later drop by €10 for the vast majority of products. In economics jargon, there will be a strong tendency towards full pass-through.”

“We find that labour intensive services to households, such as hairdressers, minor repairs, and domestic care see a relative high effect on employment from lower VAT rates. For domestic care, a reduction in the VAT rate equal to one percent of prices increases long term employment in that industry with nearly 1 percent.”

Dresner, S. (et al.) (2004) Social and political responses to ecological tax reform in Europe: an introduction to the special issue. *Energy Policy* 34 (2006) 895–904.

“Employment and the national product tend to be positively influenced by an ETR if it is introduced gradually, is revenue neutral and increases energy prices by no more than four percent per annum in real terms.”

Ekins, Paul (2009) Resource Productivity, Environmental Tax Reform and Sustainable Growth in Europe. *Anglo-German Foundation for the Study of Industrial Society*.

“(…) an ETR that meets 20% GHG emissions reduction target will raise employment and lower resource consumption and will have only small effects on GDP.”

“(...) the effects of the revenue recycling are greater than those of the higher energy costs and there are increases in both GDP and employment... the extra 2.7% employment shown by 2020 in scenario S3H amounts to an extra 6 million jobs across the EU.”

“Both models [E3ME & GINFORS] produce nearly identical results concerning labour and resource productivity, ... and environmental tax reform that meets the 20% GHG emissions reduction target will raise employment, lower resource consumption and will have only small effects on GDP.”

Ekins, Paul, Speck, Stefan (2011) Environmental Tax Reform (ETR). A Policy for Green Growth.

“A further effect on output may come from the impact of the tax shift on employment. If employers’ labour taxes have been reduced as part of the tax shift, (and this has often been the case where such shifts have been implemented), this may increase employers’ labour demand. If there is unemployment in the economy, this may lead to more people being employed who were formerly unemployed. This would result in an increase in output.”

“(...) the effects of ETR on employment tend to be small and can be positive, depending on the size of the reduction in the labour cost effected by the ETR and the extent to which labour use increases as energy becomes more expensive”

EEA (European Environment Agency) (2013) Green fiscal reform can create jobs and stimulate innovation across the EU.

“Studies have demonstrated that environmental taxes can achieve environmental objectives at the same time as raising revenues. Modelling shows that they also have a less negative effect on GDP compared to other types of taxes, such as direct taxes, for example income tax, or indirect taxes such as value added tax. This crucial feature of environmental taxes means countries could use them to support either fiscal consolidation or to reduce other taxes.”

EEA (European Environment Agency) (2011) Environmental tax reform in Europe: implications for income distribution.

“(...) the 'eco-bonus' concept (whereby per-capita refunds are distributed across the population) has been found to neutralise regressive impacts effectively. However, automatic redistribution reduces the function of ecotaxes to steering environmental incentives, while completely forsaking their revenue-raising function. It would also mean giving up the 'double dividend' of also generating employment by lowering labour costs. (...) Fiscal and social policies (such as adjusting income tax and child allowance) can largely offset distributional problems and deliver economic benefits too, potentially making this a better solution than building all correction factors into the environmental policy package itself.”

“ETR can increase real incomes for all groups and hence encourage employment, supporting the case for future ETR in the EU”.

“In Germany, recycling of ETR revenues has stabilised and even cut pension contributions, which were previously climbing steadily. It also created a significant number of new jobs, estimated at 250 000 in 2003, which corresponds to employment levels 0.75 % above the reference scenario. The job creation is thought to have partially offset some of the negative distributional effect.”

“In conclusion, the modelled ETR can potentially deliver a double dividend, increasing employment and improving the environment.”

EEA (European Environment Agency) (2011) Environmental tax reform in Europe: opportunities for eco-innovation.

“The results indicate that environmental tax reform can deliver environmental objectives, create additional jobs and trigger eco-innovation, while having negligible negative impacts on GDP. These findings are particularly evident in the scenario assuming that 10 % of revenues are invested in eco-innovation and EU exports of renewable technologies increase. In that case, EU GDP is just 0.04 % below the baseline in 2020 and employment is 0.51 % (or more than 1 million jobs) higher.”

EEA (European Environment Agency) (2010) The European environment. State and Outlook 2010.

“The polluter pays principle can stimulate a greening of the economy through taxes that allow market prices to reflect full costs of production, consumption and wastes. This can be achieved via greater use of fiscal reform which in addition to removing harmful subsidies, replaces distortionary taxes on economic ‘goods’ such as labour and capital, with more efficient taxes on economic ‘bads’, such as pollution and inefficient resource use.”

“Evidence of the benefits of fiscal reform has grown in recent years. Such benefits include environmental improvements, employment gains, a stimulus to eco-innovation and more efficient tax systems. Studies show the benefits from modest environmental tax reform in several European countries that have been implemented over the last 20 years.”

EERD (European Employment Research Dialogue) (20 February 2013) Shifting the burden of labour taxation to environmental resources: open challenges and the way ahead.

“Modelling, which compared EU ambition levels - in terms of environmental taxation - found that employment effects are greater, the more ambitious the auctioning level. In the most ambitious reform scenario, employment effects are estimated at 1-1.5 million additional jobs. Higher carbon tax combined with lower labour taxation leads to increased GDP and employment results.” (Bert Saveyn, DG JRC)

*“A double dividend is more likely if the resource is imported, and if the tax is targeted early in the supply chain. Reducing social contributions in the model, there was a net benefit in terms of a small increase in GDP and increase in jobs.”
(Richard Lewney, Cambridge Econometrics)*

European Commission (2013) Tax reforms in EU Member States. Tax policy challenges for economic growth and fiscal sustainability.

“employer side measures are better suited to contribute to an ‘internal devaluation’ by reducing the tax cost of labour in the short term.”

“The model simulations suggest that a permanent shift of taxes from wages to consumption has positive GDP effects. Reducing labour taxes lowers wage costs and reduces prices. The gain in competitiveness that results from the labour tax reduction leads to an increase in employment and output, and boosts exports. Compared to the ‘no-policy change’ baseline, EU-wide real GDP increases in the first year by about 0.11 % and rises to 0.48 % in the long run under the central scenario.”

European Commission (November 17, 2005) On the links between employment policies and environment policies. Commission Staff Working Document. SEC (2005) 1530.

“At present, the share of revenue that comes from environmentally-related taxes in the EU is equivalent to 2.8% of GDP. Promoters of “green” tax reforms argue that increasing this figure could increase the overall number of people in work: for example, by moving away from taxing labour towards taxing pollution and using the tax revenue to lower social security contributions. This “double dividend” effect depends, however, on fulfilling a number of conditions: in particular, wage moderation and high initial taxes on labour. In practice, it is difficult to provide a robust ex-post example of the double dividend increasing the net number of jobs in an economy although there are ex-ante assessments suggesting this is the case in individual Member States”.

International Labour Organization (2012) Working towards sustainable development. Opportunities for decent work and social inclusion in a green economy.

“A successful strategy is one that links the dimensions of sustainable development in a way that generates positive outcomes in all areas. For instance, the GEL model indicates that if an eco-tax is combined with employment-support measures, by 2020 multi-factor productivity would be 1.5 per cent higher than if green taxes are not used to support employment, and by 2050, it would be 5 per cent higher. Growing evidence indicates that the net impact on employment is also likely to be positive. At the global level, if a tax on CO2 emissions was imposed and the resulting revenues were used to cut labour taxes, then up to 14 million net new jobs could be created.”

“if an eco-tax equivalent of 1 per cent of GDP were introduced in 2012, and labour taxes were simultaneously reduced by the same amount, multi-factor productivity would be 1.5 per cent higher in 2020 compared with the case in

which green taxes are not used to support employment (figure 10.1). Moreover, by 2050, multi-factor productivity would be 5 per cent higher. The rationale behind this result is that lower labour taxes boost employment, in turn stimulating potential output and creating new investment opportunities. The latter paves the way for improved technology and productivity growth.”

“A study of an environmental tax reform in the EU with the Hermes model, a one-dimensional multi-year model covering the entire EU, found that increased energy prices and subsequently lower labour costs led to a 0.6 per cent increase in employment and 4.4 per cent decline in CO₂ emissions. Likewise, the Quest (Quite Useful Ecosystem Scenario Tool) – an environmental sustainability model which does not account for energy in production – found that increased energy taxes led to a 1.3 per cent increase in employment and 8 per cent decline in CO₂ emissions over the period 1990–2010.”

IMF (2008) The Fiscal Implications of Climate Change.

(11) “It might be tempting to suppose that carbon pricing can thus yield a “double dividend” in the sense of not only mitigating CC but also improving the overall efficiency of the tax system—in which case it would be optimal to set the carbon price above the Pigovian level. But this is much less clear-cut. For in addition to the beneficial “revenue recycling” effect just described, there is a “tax interaction” effect: carbon pricing will affect the distortions caused by the pre-existing tax system. By raising the consumer price of energy-intensive goods, for instance, it would have effects similar to a reduction in the after-tax wage, and thus reinforce the distortionary impact of labor taxes—implying an optimal carbon price below the Pigovian level. Indeed if the initial tax system is well-designed (climate concerns aside) then the two effects must cancel out: tautologically, it is impossible to raise the same revenue in a way that (climate concerns aside) is better. In practice, however, initial tax systems may be less than perfect, and the political impetus behind carbon pricing may enable beneficial reforms that were previously unpalatable.”

IMF (International Monetary Fund) (2012) Belgium: Selected Issues Paper. IMF Country Report No. 12/56.

“The additional revenue should be used to reduce the labor tax wage. According to a number of illustrative estimations, the tax wedge could be reduced up to 10 percentage points to reach a level closer to that of the EU-15 without affecting the overall fiscal stance. To ensure that labor demand is boosted more effectively, the reduction in the tax wedge should target a cutback in employers’ social security contributions.”

“Estimations suggest that the impact on unemployment, per capita growth, and net exports can be significant. Abstracting from second-round effects, a partial equilibrium assessment of the long-run impact of such measures provides the following results: Drawing on standard estimations of elasticities for OECD countries, the reduction in the tax wedge could lead to a reduction in unemployment of up to 2.8 percentage points over the medium term depending on the extent of the tax wedge reduction.”

“Labor taxation in Belgium is currently about the highest in the OECD, thus suggesting the need for a sweeping reduction in labor taxes as a key mechanism to boost employment and growth.”

Kosonen, Katri, Nicodème, Gaëtan (2009) The role of fiscal instruments in environmental policy, Taxation Papers. Working Paper No 19 2009.

“Model-based simulations usually indicate that green tax reforms can improve employment and the quality of the environment at the same time, provided that the tax revenues are recycled in the form of reductions of the employers' social security contributions. The ex-post evidence for the EU countries, which have carried out environmental tax reforms, also indicates that green tax reforms can have favourable effects both from an economic and an environmental perspective.”

“The heavier taxation on labour appears indeed to have been a disincentive to the creation of additional jobs, especially low skilled jobs.”

“Can this revenue recycling then remove the negative welfare effect of environmental taxes? The answer of economic literature tends to be “no”: under plausible assumption the tax interaction effect is always bigger than the revenue recycling effect, and environmental taxes do not represent a win-win option, but always entail some economic costs. This is because replacing taxes with a broad base, such as labour taxes, with more narrowly-based taxes (environment) usually opens up more substitution possibilities and thus increases the excess burden of taxation. This implies that the strong form of “double dividend” associated with environmental tax reforms does not hold. The issue is controversial in economic literature, and some authors argue that in the presence of imperfect labour markets and involuntary unemployment green tax reforms could, under certain conditions, generate both a higher level of employment and cleaner environment thus reaping a double dividend.”

Labour Institute for Economic Research (2012) Essays on the Macroeconomic Effects of Taxation. [On Finland, ed.]

“a one percentage point rise in the value added tax that is compensated for the government by decreasing income taxes raises the output more than 0.5 per cent and the employment rate by 0.25 percentage points in the long run.”

Majocchi Alberto, Missaglia Marco (2002) Environmental taxes and border tax adjustments: An economic assessment, SIE, Working Paper No. 127/2002.

“Scenario D [there is an equal-yield border tax adjustment. This means that a reduction in labour taxes is allowed to exactly compensate the higher tax revenue accruing to the government from two sources: higher energy taxes (as in the other scenarios) and the border tax adjustment. More specifically, the tariff rate increase for imports of energy intensive goods is supposed to be higher than those for imports of non-energy intensive goods and energy] illustrates the tax border adjustment. First of all, from an environmental point of view they are substantially equivalent. But the double dividend – better

environment, less unemployed – is actually produced by the border tax adjustments. We find here an empirical confirmation of the hypothesis sketched.”

Metcalf, G. (et al.) (2003) A Note on Weak Double Dividends. Working Paper. Department of Economics, Tufts University, Medford, MA.

“We have shown in a simple analytic general equilibrium model that the weak double dividend does not hold unambiguously. Relative tax distortions play an important role in this result. Revenue recycling can be welfare worsening if it increases the relative distortion among goods even if it reduces an existing distortion. This suggests that a careful assessment of just which distortions to reduce is necessary or one can do worse than lump sum recycling.”

Metcalf, Gilbert (2007) A green employment tax swap: using a carbon tax to finance payroll tax relief. World Resources Institute, Policy Brief.

“An analysis of historic carbon emissions and payroll tax collections indicates that the GETS (Green Employment Tax Swap) reform will enhance revenue stability. This suggests that carbon tax collections should be even more predictable than payroll tax collections.”

“While a carbon tax may be regressive, a carbon tax reform can be designed to be distributionally neutral. The use of the carbon tax revenue to lower payroll taxes makes this distributional neutrality possible.”

OECD (2001) Environmentally Related Taxes in OECD Countries: Issues and Strategies.

“the existence of a double dividend depends on the relative size of the revenue recycling and tax interaction effects”. (...) “Key conditions for the realization of the double dividend: the initial structure of the tax system, the tax incidence, the degree of substitutability between factors of production, the mobility of production factors, wage rigidities and the environmental effectiveness of the tax.

OECD (2004) Environment and Employment: An Assessment. Environment Directorate ENV/EPOC/WPNEP 11/Final.

“Concerning an “employment dividend”, the strong double dividend thesis would imply that replacing some existing taxes with environmental taxes – in a way so that net public revenues remain unchanged – would lead to a net increase in overall employment”.

“A strong double dividend cannot occur if the existing tax structure is revenue-optimal. If, as is likely in practice, the existing tax structure is not revenue-optimal, a strong double dividend will occur if the environmental tax reform moves the tax structure in the direction of revenue-optimality”.

“The employment double dividend remains uncertain and small: when a double dividend exists, it appears limited and conditional upon a number of prerequisites”.

“The distortion of the labour market is still a major concern, as employment taxes tend to reduce the level of labour supply below the optimal level. Instead of a reduction in worker taxation allowing a lowering of labour costs and increased labour demand, the focus is now on the incentives to work. A shifting of the taxation from workers to other groups would increase the rewards to working and so increases labour supply, which – in a flexible labour market – leads to greater employment”.

OECD (2013) Water security for better lives. OECD studies on water.

“A further advantage of market-based instruments is the potential of a double dividend: first, by leading to environmental improvements; and second, by raising revenues for the government which can be used to reduce distortionary taxes thereby creating further efficiency gains, such as the United Kingdoms government’s use of revenue from waste taxation to reduce employer’s social security contributions. Whether or not this double dividend can be achieved in practice is a matter of debate, however, even without a double dividend, revenues raised from market-based instruments can be used to offset the direct impacts of the tax.”

Schöb, Ronnie (2003) The Double Dividend Hypothesis of Environmental Taxes: A Survey. Munich. CESifo Group Munich.

“the double dividend hypothesis. Tax revenues from environmental or green taxes can be used to cut other taxes. This can reap a second dividend as it reduces the distortion due to other taxes. The weak form of this hypothesis states that tax revenues from a revenue-neutral green tax reform can be used to cut distorting taxes thus lowering the efficiency cost of the green tax reform. The strong form of the double dividend asserts that a green tax reform does not only improve the environment but also increases non-environmental welfare.

Stern, Nicholas (2006) Stern Review on The Economics of Climate Change (pre-publication edition). Executive Summary. HM Treasury, London.

“Alternatively, revenue from carbon taxes can be used to reduce taxes elsewhere in the economy. In such circumstances, the revenue from the carbon tax is sometimes argued to generate a so-called ‘double dividend’ by allowing other distortionary taxes to be reduced”.

The Dutch Green Tax Commission (1998) A summary of its three reports 1995-1997.

“At the request of the Commission, CPB Netherlands Bureau for Economic Policy Analysis (CPB) made new calculations for the second report of the employment effects of further greening the tax system by a modest further step-up of the

small use energy tax by 1,000 million guilders on an annual basis. They were found to be negligible, as were the effects on all other macro-economic variables. Employing other models specifically tailored to evaluate tax measures, CPB argued that positive employment effects from tax greening schemes can only be created by recycling the revenue in a non-income neutral way, for instance by widening the gap between income from labor and income from social security benefits. The Commission felt that this would only undermine public support for tax greening efforts. It suggested not advocating tax greening with double dividend arguments, but primarily with environmental arguments, focusing on a strong single dividend, i.e., clear and demonstrable environmental benefits”.

The Income Tax and Benefits Committee (2012) Towards a more motivating tax system. Introduction and summary of the final report of the Income Tax and Benefits Committee.⁴⁵⁴

“In 2013, The Committee advised Dutch parliament to opt for an improved tax system with lower rates and a very long first bracket, fewer deductible items and simpler benefits. The proposed budget-neutral package of measures totals € 12,6 billion, including a single VAT rate and lower income- and payroll taxes.” “A calculation of the effect of the proposals in the interim report, made in October 2012 by CPB Netherlands Bureau for Economic Policy Analysis, shows that the number of jobs will increase by 2.1 percent. This corresponds with 142,000 full-time jobs.”

The World Bank (2012) Fiscal Implications of Climate Change. Policy Research Working Paper 5956.

“It might be tempting to suppose that carbon pricing can thus yield - a double dividend in the sense of not only mitigating climate change but also improving the overall efficiency of the tax system—in which case it might be optimal to set the carbon price above the Pigovian level. But in addition to this beneficial —revenue recycling effect is a —tax interaction effect: carbon pricing will affect, and possibly exacerbate, the distortions caused by the pre-existing tax system. By raising the consumer price of energy-intensive goods, for instance, it would have effects similar to a reduction in the after-tax wage, and thus reinforce the distortionary impact of labor taxes—implying an optimal carbon price below the Pigovian level, by perhaps 15–20 percent. In some circumstance, however, the tax interaction effect could act in the opposite direction: in some developing countries, for instance, a tax on fuel inputs may increase efficiency by levying tax more effectively on final operators.”

⁴⁵⁴ In Dutch: Commissie inkomstenbelasting en toeslagen (Dijkhuizen) (2012) Naar een activerender belastingstelsel Interimrapport.

Vermeend, Willem, van der Ploeg, Rick, Timmer, Jan (2008) Taxes and the Economy. A Survey on the Impact of Taxes on Growth, Employment, Investment, Consumption and the Environment.

"(...) Belgium has lowered employer SSC in the 1995-2000 period by on average €1,5 billion annually (or some 0.7 per cent of GDP), while the total labour tax wedge remained roughly the same. Joyeux and Stockman (2003) show that as a result, real wages decreased by 2.6 per cent and employment increased by 1.5 per cent in 2000."

"Empirical and theoretical studies and experiences in the OECD area confirm that lowering the tax burden on labour (that is, income tax and social security premiums) can stimulate employment and economic growth."

"According to the Commission, a reduction in income tax of 1 per cent of GDP together with an increase in consumption tax of 1 per cent of GDP could generate growth exceeding 1 per cent. This could be part of a broad strategy to change the financing of the social model (European Parliament, 2005)."

Vivid Economics (2012) Carbon taxation and fiscal consolidation: the potential of carbon pricing to reduce Europe's fiscal deficits. Report prepared for the European Climate Foundation and Green Budget Europe.

"Both ex ante and ex post studies analysing the impact of environmental tax reform with recycling tend to find positive impacts on employment and output. (...) For instance, Truger (2008) reports that most ex post studies of German environmental tax reform with recycling found positive employment effects of 0.15 to 0.75 per cent. For example, Kohlhaas (2005) found positive effects from environmental tax reform on Germany's output, with one example result indicating that gross domestic product was higher by 0.45 per cent in 2003, 0.3 per cent in 2005 and 0.13 per cent in 2010, and associated positive effects on net employment (in the order of 0.25 million additional jobs)."

Appendix 4: About The Ex'tax Project

The Ex'tax Project is a think tank on the tax system of the 21st century, inspired by the vision of the late Dutch entrepreneur Eckart Wintzen. Since the early 1990s, Wintzen promoted the shift of taxation from labour to natural resource use. He coined the term *Value Extracted Tax* (in short: *Ex'tax*) as a means to sustainable growth, based on the belief that humanity can flourish by saving natural resources and tapping into the abundance of human talents and capacities instead.

Taxes steer the economy and play a fundamental role in the development of consumption patterns. In general, natural resource use is hardly taxed, and therefore unrestrained. High labour costs, on the other hand, drive businesses to minimize the number of employees. The result of this tax system is over-exploitation of natural resources and unemployment.

A fundamental shift in taxation from labour to natural resource use is a crucial step towards an inclusive, circular economy and economic growth based on human capital rather than natural resources.

The Ex'tax Project foundation aims to help advance knowledge on the impact of this tax shift, by creating practical tools for policy makers, businesses and the general public. Also, the foundation aims at creating powerful alliances in favour of sustainable growth. The ultimate mission is to contribute to the implementation of Ex'tax in national and European fiscal systems.

No system changes overnight. But as the Chinese philosopher Lao Tse once wrote: *'A journey of a thousand miles starts with one step.'* The Ex'tax Project is optimistic about the future, as sustainable growth is within reach if we take the first steps to adjust the economic 'rules of the game'.

The Ex'tax Project is a non-profit foundation.

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“Sustainable development is only possible if we manage our environment according to sensible business principles. The goal of every corporation is to guarantee its own continued existence and economic growth in the interest of employees and shareholders.

Isn't it about time for us all, as shareholders of Earth, Inc., to secure the durability of our future prosperity? We shouldn't do so out of pie in the sky idealism or vague messianic incentives, but out of pure economic necessity, a source of inspiration that in the past has often lead to ingenious inventiveness.”

- Eckart Wintzen (Founder of BSO/Origin), 1996.