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Deutsches Institut für
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ANNEX: Examples of Environmental Taxes: Objectives, Details, Impacts and Political Economy Aspects

**Annex to Studies 93:
Environmental Tax Reform in Developing, Emerging and Transition Economies**

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Country measure	Time-frame	Objectives/targets	Details of measure, tax rates, exemptions	Impacts (environmental, economic, fiscal, social)	Political economy aspects (costs, feasibility, revenue use)	Sources
Energy taxes						
Denmark Carbon tax and energy tax	1999 and 2011	<ul style="list-style-type: none"> - CO₂ tax on households. - Cuts in labour taxation and increase in carbon tax on industry. - Cuts in income tax subsequently partially reversed. 	<ul style="list-style-type: none"> - First carbon tax was introduced in 1993 on household energy. - Measures in 1996 and 1998, including an extension of carbon taxation to business, with lower rates for energy-intensive industries on condition of the signing of energy efficiency agreements. 	Env. <ul style="list-style-type: none"> - CO₂ emissions in affected sectors down by 6% in the context of economic growth of 20% between 1988 and 1997. - 5% reduction in emissions in one year in response to tax increase. - In the 1990s, 23% reduction in CO₂ from business as usual trend, and 26% increase in energy efficiency. - Subsidy to renewables may have accounted for greater proportion of emissions reductions than tax. - Energy intensity had decreased 22% from 1990 to 2008. 	<ul style="list-style-type: none"> - 20% of the additional tax revenue was used for subsidies for investments in energy efficient solutions and in corporate owned combined heat and power plants. - Financial crisis: revenue from energy taxes was reduced by €1.3 bn per year in 2009 compared to 2001 because of the tax freeze – corresponding to about 25% of the total annual revenue of the green taxes. - Competitiveness has been the main catalyst for the various political twists. But still a positive drift to pro-EFR proposals by left and right-sided parties. - The Danish government reports concluded that the CO₂ tax has helped to make Denmark one of the most competitive and energy efficient economies in the world. 	Hewett & Ekins (2014), p. 18f. Andersen (2013) Green Budget Europe and the Danish Ecological Council (2014)
				Ec. <ul style="list-style-type: none"> - Business sector's energy costs were increased by approx. 0.2% of GDP. Overall, the sector's cost was not affected significantly by the increased energy taxes for the very reason that the additional tax revenue was returned to the sector. - Reform was slightly underfinanced and had an overall positive effect on employment, especially in labour-intensive sectors. - Some enterprises were hit harder on competitiveness than anticipated, especially in the food and beverage industry as well as the chemical and plastic. - Environmental taxes positively influence competitiveness. - Additionally, competitiveness depends on three other factors: 1) Other price factors such as energy prices, transmission and distribution tariffs as well as exchange rates. 2) Non-price factors such as production methods, infrastructure and education. 3) It is necessary with a detailed analysis of the tax burden versus the recycling measures introduced as part of an ETR. 		

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					<ul style="list-style-type: none"> - Investments in energy efficient technologies are of great importance. So Denmark is one of the most energy efficient economies in the world, because of an economy structure with few energy intensive enterprises, and because high energy and emissions taxes have given a strong incentive to invest in energy efficiency. Industry and whole economy are less sensitive to energy prices, which is a competitive advantage. The competitive advantage is bigger in periods with high or increasing energy prices. In times of low energy prices there is a need for environmental taxes to maintain the incentive to invest in energy efficiency. 		
				Fisc.	<ul style="list-style-type: none"> - Green tax shift the overall multiplier for employment is +0.2, -0.2 due to increased energy taxes in the business sector and a multiplier of +0.4 due to reduced income taxes. 		
				Soc.	<ul style="list-style-type: none"> - Healthcare payments and the lowest tax rate were reduced in 2009. - Increase personal tax allowance, as the Danish government did in 2012, when single mothers were given an additional allowance. 		
Sweden CO ₂ tax	1991	<ul style="list-style-type: none"> - Initially: tax shifting - Today: environmental protection 	<ul style="list-style-type: none"> - Both energy and CO₂ taxes are levied on all fossil fuels for heating purposes, motor fuels and electricity use. - National producers and importers are subject to the tax. - No energy or CO₂ taxes are applied to electricity production. - The rate at which the CO₂ tax is set is relatively high; complex system of exemptions granted to several industry sectors, in order to protect national competitiveness (which are due to be phased out in 2015). 	Env.	<ul style="list-style-type: none"> - CO₂ emissions decreased by 9% between 1990 and 2007. - Average GHG emissions further decreased in the 2008-2011 period to 12.6% below 1990 levels. - Emissions reductions of 0.5 million tonnes per annum. - It is assumed that without the introduction of the CO₂, the average CO₂ emissions would be 20% higher. - Sweden's total final consumption of energy has remained stable since the early 1970's as a result of improved energy 	<ul style="list-style-type: none"> - Political economy considerations have resulted in reduced CO₂ tax rates for industry, to reduce impacts on competitiveness. - The achievement of the Swedish EFR, which is almost unique in Europe, is the degree of political consensus that has allowed governments of left and right to support EFR and a gradual increase in CO₂ tax rates over 20 years. The 	<p>Hewett & Ekins (2014), p. 18f.</p> <p>Annex to Withana et al. (2014), p. 62</p>

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			<ul style="list-style-type: none"> - The tax was reformed in 2009, with a view of reducing exemptions and favouring the participation of non-EU ETS sectors. - 1991: Households and service sector: €27/ton CO₂. Sectors subject to international competition: €7/ton CO₂. - 2014: households and service sector: €125/ton CO₂. Sectors subject to international competition: €34/ton CO₂ (sectors outside EU ETS). 		<ul style="list-style-type: none"> - efficiency across the economy, and the effect of CO₂ and energy taxes in place. 	<ul style="list-style-type: none"> - foundations for this appear to be that the country started this period with a higher overall tax burden. EFR has therefore taken place against a backdrop of falling taxes, thus taking a lot of the political heat out of the argument. - Revenues from the CO₂ tax have been used to partly offset losses cause by the reduction of income tax rates and have been relatively constant over time. The most recent data show total tax revenues of approx. €3 bn (SEK 25.4 bn) in 2011. More than one third of the total revenues come from the household sector (almost €1 m, SEK 9 bn), while energy production industry accounted for a very small portion (€154,000; SEK 1.4 bn). 	
			Ec.	<ul style="list-style-type: none"> - The low CO₂ tax rate did not provide sufficient incentive for industry to invest in energy efficiency technology. - Development of the use of biomass in the district heating system. This is mostly due to the lower heat production costs for biomass-based plants compared to fossil-fuel based plants. - Since carbon-energy taxation was introduced in 1991, GDP and CO₂ emissions have decoupled in absolute terms, i.e. the emissions have decreased in absolute terms at the same time as GDP has increased. 			
			Fisc.	<ul style="list-style-type: none"> - See Political Economy Aspects 			
			Soc.	<ul style="list-style-type: none"> - Low income households are likely to be more affected by the tax. Thus the Swedish Government has foreseen the option of using increased tax revenues to support low income households in the future should such a situation arise. No evidence found. 			
Netherlands Energy tax	1996	<ul style="list-style-type: none"> - Explicit environmental purpose of reducing energy consumption - Main purpose today: to raise revenue Secondary purpose: reduce energy consumption 	<ul style="list-style-type: none"> - Regulatory energy tax - Designed as a 'downstream' tax that applies to energy products used for heating and electricity generation by households and small businesses covering mineral oil products for non-transport applications, natural gas and electricity. - The rates are partly based on the carbon content of the fuels. - Revenues raised under the tax are entirely recycled back to the economy - Exemptions: - Large industrial electricity consumers (>10 million kWh/year) receive a refund 	Env.	<ul style="list-style-type: none"> - 3.5% lower emissions than BAU over 1999-2007. - Low tax rates may have resulted in limited impact. - Reduction in the residential use of natural gas and electricity. - Energy intensity improvement in the Dutch industry over 1990 to 2000 of 10-15%. 	<ul style="list-style-type: none"> - In 2011, total revenues from environmental taxes amounted to 3.9% of GDP, with total revenues from energy taxes amounting to 2% of GDP. - The (regulatory) energy tax alone makes up over 20% of total revenue from environmental taxes; its revenue increased from €400 m when it was introduced to €4.2 bn in 2010. - Energy tax revenues are recycled back to the economy, i.e. the tax was designed to be revenue neutral. Specifically, 	Hewett & Ekins (2014), p. 18f. Annex to Withana et al. (2014), p. 50
				Ec.	<ul style="list-style-type: none"> - No evidence on significant negative impacts on competitiveness could be found. - Some evidence for positive impacts on investments in clean technologies. 		
				Fisc.	<ul style="list-style-type: none"> - See Political Economy Aspects 		

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			<p>if they have entered long-term agreements on energy efficiency as long as they pay on average more than the European minimum rate.</p> <ul style="list-style-type: none"> - Horticulture sector (greenhouses) benefits from reduced natural gas tax rates on the condition of participating in energy efficiency agreements. - Refunds exist for religious and non-profit organisations. - Rebates and subsidies exist for energy distribution firms for deployment of CHP, energy-saving technologies, and renewable electricity. Electricity from renewable sources used to be exempted from the tax, giving it an additional regulatory purpose to promote the sourcing of renewable energy. 	Soc.	<ul style="list-style-type: none"> - No evidence for negative social impacts could be found. - Dutch energy tax as a good example of preventing potential negative social impacts of increased energy taxation. - Recycling of tax revenues to the economy as part of the Dutch ETR has led to a small, positive employment impact of 9000 new jobs (or ~0.1% of the Dutch workforce). 	<p>households benefit from lower income tax rates and higher tax free allowances (especially for pensioners). Industry benefits from a reduction in the employers' social security contributions, an increase in tax free allowances for SMEs, and a reduction of corporate tax rates. There is also a tax credit in the form of a lump sum refund on households' electricity bills of currently around €319. A smaller share of RET revenues of around 15% used to be earmarked for an energy premium system rewarding the purchase of energy-efficient appliances.</p> <ul style="list-style-type: none"> - In order to ensure a stable tax income over time, tax rates for all energy taxes in the Netherlands have been indexed to inflation since 1999, a relatively rare feature of energy tax design in the EU. 	
United Kingdom industrial energy tax	2001	<ul style="list-style-type: none"> - Climate change levy (CCL) - Climate change agreements (CCA) 	<ul style="list-style-type: none"> - CCL: A tax on the use of energy in industry, commerce and the public sector. The full rates from 1 April 2012 are £5.09/MWh for electricity, £1.77/MWh for gas, £11.37/tonne for LPG and £13.87/tonne for coal. - CCA: These agreements allow eligible energy-intensive businesses to receive a discount on the Climate Change Levy (CCL) in return for meeting targets for energy efficiency or carbon saving. From mid-2013, the discount is 65% for gas and 90% for electricity. 	Env.	<ul style="list-style-type: none"> - UK CO₂ emissions reduced by 2% in 2002 and 2.25% in 2003. - Cumulative savings of 16.5 million tonnes of carbon up to 2005. - Reduction in UK energy demand of 2.9% estimated by 2010. 	<ul style="list-style-type: none"> - Announcement effect / awareness effect of the CCA. This effect is said to have a bigger impact on emission reductions than what only a CCL might have generated. - Costs/revenue: ~£600 m (in 2012/2013) 	<p>Hewett & Ekins (2014), p. 18f.</p> <p>UNESCAP (2012)</p>
				Ec.	<ul style="list-style-type: none"> - Increased innovative activity. - Increased patents regarding climate change and energy efficiency. - Businesses that were subjected to the full CCL were 16% more likely to innovate than their CCA counterparts. - CCL is the most widespread policy. CCL applied to approximately 900,000 organisations responsible for 187 million 		

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					tonnes of carbon dioxide emissions.		
				Fisc.	<ul style="list-style-type: none"> - Impact of the CCL and CCA on international competitiveness is currently inconclusive. - Rather CCL and CCA increased competitiveness because businesses were able to cost-effectively reduce their energy use. - Administrative costs of the levy have been small – an important characteristic for an efficient tax. 		
				Soc.	<ul style="list-style-type: none"> - CCL had no discernible impact on employment. 		
United Kingdom Carbon Price Floor (CPF)	2013	<ul style="list-style-type: none"> - The CPF sets a 'floor' to the EU ETS carbon price, i.e. a minimum carbon price to be paid by UK power generators participating in the EU ETS. 	<ul style="list-style-type: none"> - The floor price is set at £16/tCO₂ in 2013, increasing to £30/tCO₂ in 2020 and £70/tCO₂ in 2030. If the EU ETS carbon price is expected to be below this target, carbon price support rates (CPSRs) for the CCL and Fuel Duty are imposed on fossil fuels used for electricity generation. These are set to bridge the gap between the price of EUAs (estimated on two-year-ahead future traded prices) and the CPF, and are announced two years in advance. - The CPSRs for 2013-14 and 2014-15 are, respectively, £4.94/tCO₂ and £7.28/tCO₂. 	Ec.	<ul style="list-style-type: none"> - Type of business affected: Power generators. - Number of business affected: 80 firms (in 2013). 	<ul style="list-style-type: none"> - Costs/revenue: ~£740 m (in 2013) 	Bassi et al. (2013)
United Kingdom Carbon Reduction Commitment Energy Efficiency Scheme (CRC)	2010	<ul style="list-style-type: none"> - A carbon levy imposed on electricity and gas, targeting emissions from large public and private sector organizations not already covered by the EU ETS or the CCA. 	<ul style="list-style-type: none"> - Between 2010 and 2014 the tax rate has been £12/tCO₂. 	Ec.	<ul style="list-style-type: none"> - Medium/large companies consuming more than 6,000 MWh/year are affected; Approximately 2,100 participants in 2012. 	<ul style="list-style-type: none"> - Costs/revenue: ~£700 m (in 2012/2013) 	Bassi et al. (2013)

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Germany Energy tax	2006	<ul style="list-style-type: none"> - Energy tax charges fossil fuels (as mineral oil, natural gasoline, liquid gas, coal), renewable energy sources (veg-oil, biodiesel, bioethanol, synthetic hydrocarbon out of biomass). - Electricity tax: consumption of electricity, so all used resources: fossil fuels, nuclear power, renewable energy. 	<ul style="list-style-type: none"> - Coal, petroleum coke and gases are calculated in €/unit of energy (GJ, MWh). Tax rates: <ul style="list-style-type: none"> - Coal: €0.33/GJ - Natural gas (heating): €5.50/MWh - The current electricity tax is levied on the withdrawal from the grid and is in the statutory tax rate €0.0205/kWh. - In the context of ETR in Germany between 1999 and 2003 a tax on mineral oil was increased in five steps and a tax on electricity was established to strain environmental harmful behaviour and to unburden labour. - Higher tax rates on traffic fuels and electricity than heating fuels and energy-intensive production lines. For example: <ul style="list-style-type: none"> - Natural gas (CNG): €13.90/MWh - Natural gas (heating): €5.50/MWh - Diesel: €470.40/m³ - Light fuel oil: €61.35/m³ - Liquid gas (LPG): €180.32/t - Liquid gas (heating): €60.60/t - ETR is designed as revenue neutral. Beside its environmental goals it has the function to make the tax system fair and efficient (double dividend) - Further tax rates (excerpt): <ul style="list-style-type: none"> - Gasoline: €654.50/m³ - Kerosene: €654.50/m³ (use for commercial aviation is exempted) - Heavy fuel oil: €25/t 	Env.	- Energy tax (including electricity tax) saves 74 PJ in 2013 (around 20.5 TWh). That's around 0.8% of the total energy use of Germany.	<ul style="list-style-type: none"> - In 2003: ETR brings additional receipts of €18.7 bn per year. €16.1 bn are used for statutory pension insurance €200 m for Retirement Savings Act and €100 m for subsidies renewable energy. Rest in general budget. 	Bach (2005)
				Ec.	- Reduction of the carbon emissions and improvement of the job situation achieved.		Bach (2009)
				Fisc.	- Tax revenue of the energy tax in 2012: €39.3 bn. Electricity tax 2012: €7 bn. In total €46.3 bn. That's 1.8% of the GDP and 18% of the inland revenue.		Knigge & Görlach (2005)
				Soc.	- Majority of population got motivated by ETR to save energy (shutdown heating, environment-friendly car driving).		Kohlhaas (2005)
Transport taxes							

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France Car registration tax (Bonus-malus system)	2008	<ul style="list-style-type: none"> - Encourage the purchase of low-emitting cars. - Discourage the purchase of the high-emitting vehicles. - Stimulate technological innovation in new vehicles. 	<ul style="list-style-type: none"> - The tax entails a system of price reductions (bonus) and fees (malus) depending on the level of emissions of each new private and company vehicle: <ul style="list-style-type: none"> - Premium: <91g CO₂/km - Penalty: >131g CO₂/km - Neutral: 91-130g CO₂/km - Taxpayers receive a bonus of €1000 for <160g CO₂/km, when scrapping an old vehicle (>10years). - 2009: additional yearly fee of €160 for vehicles consuming >240g CO₂/km (2012: 190g CO₂/km). - For families with more than two children: deduction from the fee of 20g/km per child. - Vehicles with E85 fuel: deduction in the fee due (40% better class). - Hybrid vehicles: specific bonus of €4,000 if <110g/km. - Thresholds are raised by 5g/km every two years. - Vehicles used by people with reduced mobility are not subject to a fee. - Maximum bonus (<20g): +€6.300 (2014). - Maximum fee payable (>200g): -€8.000 (2014). 	Env.	<ul style="list-style-type: none"> - Average CO₂ emissions of new registered passenger cars in France decreased from 149.4gCO₂/km in 2007 to 130.5gCO₂/km in 2010. - Decreased fuel consumption in led to a saving of 1.9 million tons CO₂ in 2008 and 3 million tons in 2009. - Bonus-malus system led to a 6g reduction of CO₂ emissions per kilometre of newly registered vehicles. 	<ul style="list-style-type: none"> - Rebound effects: <ul style="list-style-type: none"> - Increased purchase of vehicles (+13% in 2008), - More drivers on the roads who are encouraged to travel more given the fuel efficiency of their new vehicles. - The scheme focuses on the reduction of CO₂ emissions only. France has one of the lowest rates of CO₂ emissions per capita; thus, the regulation of other emissions produced by vehicles (i.e. particles and NO_x) would produce increased environmental benefits. - The system is supposed to be neutral on public finances. However, due to the success of the system, it caused a financial deficit of €1.46 bn between 2008 and 2011 (WSP, 2013). Recent estimates indicate losses worth around €2 bn. (Expert input, April 2014). - Another study reports that the 'Bonus-Malus' system raised about €0.8 m in 2012. 	Annex to Withana et al. (2014), p. 15 ADEME (2013a) ADEME (2013b) ASP (2013) D'Haultfoeuille X. et al. (2012) Jareño & Rodríguez (2011)
				Ec.	<ul style="list-style-type: none"> - Increase of market share of fuel- and CO₂-efficient vehicles (30% 2007, 45% 2008, 56% 2009). - Increase of the oil price and the effects of the economic crisis from mid/late 2008 have contributed to a reduction in the purchasing power of consumers, who have directed their choices to smaller and lower emitting vehicles. - Indirect way of subsidizing fossil fuels, reduction in the use of public transport. - French automobile market has grown (+5.5% 2009). - Encouraged production of increasingly low emitting vehicles. 		
				Fisc.	<ul style="list-style-type: none"> - Data indicate a positive balance from the bonus-malus system to society of €158 m in 2008 and €276 m in 2009. 		
				Soc.	<ul style="list-style-type: none"> - It has been suggested that the success of the 'bonus-malus' system in increasing the overall number of small vehicles purchased may lead to a reduction in the use of public transport. - Cost of the increased circulation of vehicles is estimated to be around €9/km, summing up to a total of €108 and €178 million, respectively, in 2008 and 2009. - Beneficial for low-income households, who can benefit from governmental 		

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					support when purchasing low-carbon emitting vehicles. A negative effect of the system has not been envisaged on the purchasing power of low-income households.		
Germany Air Passenger Duty	2011	<ul style="list-style-type: none"> - Include aviation in wider transport taxation. - Incentivise more environmentally-friendly behaviour. - Raise revenues and contribute to fiscal consolidation. 	<ul style="list-style-type: none"> - Rates vary depending on which of three zones the final destination falls within. - Rates currently range from €7.50 to €42.18. - Revenues from the air passenger duty and European Union Aviation Allowance (EU-ETS) are limited. If combined revenues exceed €1 bn, rates are adjusted. - Exemptions from the duty (i.a.): <ul style="list-style-type: none"> - Flights for pure military or other sovereign purposes as well as medicinal purposes, - Sightseeing flights with identical points of departure and arrival, - Passengers flying to and from North Sea islands where no tidal-independent road or rail access exists, - Passengers less than two years old and not occupying their own seat. - The duty is not levied on flights in transit and on stop-over flights passing through Germany. 	Env.	<ul style="list-style-type: none"> - Net reduction of 0.6% of total emissions from the German aviation sector in 2011. 	<ul style="list-style-type: none"> - Revenues raised since the adoption of the duty have been as follows: <ul style="list-style-type: none"> - 2011: €965.4 m - 2012: €941.5 m - 2013: €949.6 m - Revenues from the duty go into the federal budget without any earmarking. - Rates are to be reduced following increases in auctioning revenues over time so as to meet the €1 bn threshold and contain the burden on the aviation sector; at the same time a side effect is that this ensures a stable duty income over time. 	Annex to Withana et al. (2014), p. 27
				Ec.	<ul style="list-style-type: none"> - Two million less passengers in 2011 than BAU. - INFRAS: the duty has had no impact on passenger growth rates. - Passenger numbers have not been negatively affected in the sense that no reduction in passenger numbers was observed from one year to the next. - Domestic (inner-German) flights, for which alternatives such as road or rail travel are more readily available, were more affected than international flights. - Reduction of the negative external costs of aviation to the environment from €35 to €25 per passenger. 		
				Soc.	<ul style="list-style-type: none"> - Estimated employment losses are 13,500 or 14,500 jobs. - One aspect worth noting are the regional impacts mentioned above, with airports primarily served by low-cost airlines more affected by the duty. These airports are often located away from major cities in less economically active regions. Thus the airports are seen to offer important local and regional opportunities including for employment (both direct and indirect). 		
				Fisc.	<ul style="list-style-type: none"> - It is worth noting the concern expressed by BUND (2012) on the €1 bn revenue target stipulated in § 11(2) of the Luftverkehrsteuergesetz, for which EU ETS auction revenues are also to be taken 		

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					into account.		
United Kingdom Company car tax (CCT)	2002	- An employees' benefit-in-kind taxation, reformed in 2002 to take into account the environmental impact of company cars.	- Employees are liable to pay income tax on the taxable value of a company car they receive as a benefit. - The taxable value ranges between 15% and 35% of a car's price, depending on its carbon dioxide emissions. - Discounts are granted to cars running on lower emission fuels.	Env.	- Average CO ₂ emissions from company cars in 2004 were 15g/km less due to the reform. - Average CO ₂ emissions on all new cars sold in the UK dropped from 174.7g/km in 2002 to 144.5g/km in 2010. - The cut in business kilometres saves 25,000-35,000 tonnes of carbon emission per annum. - The new system cut CO ₂ emissions from cars by 0.2-0.3 MtC per annum for 2005, growing to 0.35-0.65 in 2010 and expected to be between 0.4-0.9 MtC in the long run to 2020 per annum.	- Shifting to an electric car would save even more tax. But it appears there are currently other barriers to companies buying electric cars (initial cost, risk, suitability, range, residual value).	Bassi et al. (2013) Potter and Atchulo (2012) Valsecchi (2009)
				Ec.	- Most cost effective and easiest way has been to shift to best in class and diesel cars. - Diesel car purchases have surged since 2002. - 60%+ of company car purchases are now diesel (30% in 2002).		
				Soc.	- Business mileage by company cars is now 45% lower than under old system. - 1997: 13800 km; 2009: 7600 km - An indirect effect is that many drivers are opting out of Company Cars: dropped from 1.6 million in 2001 to 1.2 million in 2005. - 2010 registration of new company cars was 29% lower than in 2005.		
				Fisc.	- Revenue loss: £120 m net revenue loss (lower tax Rate for environmentally friendly cars, lower company cars, lower fuel use, higher revenues from income tax from cash option).		

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United Kingdom Air Passenger Duty (APD)	1994	- An excise duty on passengers being carried from a UK airport on a chargeable aircraft.	- Began with three bands. - Two bands since April 2015: - Band A (0 – 2,000 miles): o Lowest class available on aircraft: £13 o Other classes: £26 - Band B (Over 2,001 miles): o Lowest class available on aircraft: £71 o Other classes: £142			- Tax revenue in 2014 totaled around £3.2 bn, which is an increase of almost 100 times the amount of revenue from 1994. (2005: £896 m; 2008: £1,876 m; 2011: £2,605 m).	statista (2016) airportwatch
Pollution and resource taxes							
France General Tax on Polluting Activities (TGAP)	1999	- Implement the polluter-pays principle. - Provide a price signal to discourage polluting activities. - Supporting the fund for financing employers' social security contributions.	- Tax on polluting activities in proportion to the level of pollution generated from these activities. - If the tax is lower than €450 it is not due. - It is levied on: - Disposal of waste - Atmospheric industrial pollution - Air traffic noise - Detergents (2000) - Insecticide products for agricultural use - Storage of waste - Incineration (2009) - Single use plastic bags (2014) - The tax has modest rates overall: reduced rates apply to about 90% of wastes landfilled and 97% of wastes incinerated.	Env.	- The 2009 reform led to an increase in the TGAP tax rate applied on landfilling of waste and the introduction of a tax on the incineration of waste with the aim of shifting towards more environmentally friendly waste management methods. All recent assessments of the TGAP focus primarily on the impacts of the TGAP in the area of waste management.	- Between 2008 and 2009, the amount of money dedicated to waste management policy by the Agency doubled from €57 m to €107 m and continued to increase to reach €229 m in 2012. Thus, the 2009 reform of the TGAP has allowed additional spending of €515 m on the Agency's waste program.	Annex to Withana et al. (2014), p. 22
				Ec.	- The 2009 reform of the TGAP on waste has resulted in an additional taxation of local authorities amounting €222 m, on average €74 m per year. Compared to the recurrent costs associated with the management of household waste for local authorities (about €7.80 bn in 2010) this represents an increase in the fiscal burden by about 1%.		
				Fisc.	- From a budgetary perspective, the balance between the increase in the waste related revenues from the TGAP and the support to public authorities is within reach as the increase of the TGAP represents about €340 m and the measures of ADEME amount to about €514 m (of which €343 m is additional budget compared to the budget before 2009). Local authorities are the primary beneficiaries of the support from ADEME with about 71% of the projects relating to the wastes they are responsible for (i.e. municipal waste).		

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				Soc.	- The per capita amount of waste in France has increased with about 10% over the last decade.		
Norway CO2 and SO2 taxes	1991			Env.	- About 55% of Norway's CO ₂ emissions are effectively taxed. Emissions not covered by a carbon tax are included in the country's ETS, which was linked to the European ETS in 2008. - 21% reduction in CO ₂ from power plants by 1991-1995. - 14% national reduction in CO ₂ in 1990s, 2% attributed to carbon tax. - 12% reduction in CO ₂ emissions per unit of GDP.		Hewett & Ekins (2014), p. 18f. World Bank (2014)
				Ec.			
				Soc.			
				Fisc.			
Czech Republic Air pollution charges	1967	<ul style="list-style-type: none"> - Reducing emissions of the major pollutants that affect air quality, especially VOCs. - Increasing energy efficiency by inducing fuel switching at pollution sources. 	<ul style="list-style-type: none"> - Charged on direct emissions. - Sources whose total emissions surpass a given threshold (around 16,000 installations). - The pollution charge rates have remained unchanged since their entry into force in 1992 until 2012, then reform. - To improve cost effectiveness, air pollution fees from medium and small sources were abolished. <p>Charges on:</p> <ul style="list-style-type: none"> - Particulate matter (CZK 4200/tonne) - Sulphur dioxide (CZK 1350/tonne – €53.8) - Nitrogen oxides (CZK 1100/tonne – €43.8) - Volatile organic compounds (excluding 	Env.	<ul style="list-style-type: none"> - GHG emissions reduced by 23% in the first 8 years. - In 20 years, air emissions decreased from 441 to 153.9 thousand tonnes for NMVOC, and from 1881 to 169.5 thousand tonnes for SO₂ and SO_x (in Gg). - SO₂ emissions decreased by 68% and NO_x emissions by 50% between 1987 and 1997. - Around 2000, air emissions levels stagnated, with the same emissions level until 2010. 	<ul style="list-style-type: none"> - In 2011, total revenue raised from this tax amounted to CZK 440 m (around €18 m), equivalent to 0.0048% of GDP. - The revenues related to sulphur dioxide charges were the highest, followed by PM related revenues. - As highlighted in Table 2, most of the revenues are allocated to the State Environmental Fund (SEF) and its purpose is to finance programs related to air pollution. The revenues have helped finance the reduction of emissions from smaller emission sources. - Revenues from non-compliance fees from large 	Annex to Withana et al. (2014), p. 5
				Ec.	- A study analysed the effects of environmental charges in the Czech Republic, concluding that, for the firms that paid the charge, the share of air pollution fees on total revenues was below 0.5%.		
				Soc.	- 23% of the population is exposed to air that does not comply with all quality standards.		

Country measure	Time-frame	Objectives/targets	Details of measure, tax rates, exemptions	Impacts (environmental, economic, fiscal, social)		Political economy aspects (costs, feasibility, revenue use)	Sources
			methane) (CZK 2700/tonne – €107.5)	Fisc.	<ul style="list-style-type: none"> - The administrative costs of air pollution charges for large emission sources are around 2.5-3% of revenues, but administrative costs from medium-sized sources exceed revenues by more than 40%, with a similar picture for revenues from non-compliance fees (high fixed costs). - To improve cost effectiveness, air pollution fees from medium and small sources were abolished. - The problem may be also explained by the local level where the charge is assessed, collected and enforced, and received for small and medium sources. 	and medium sources are also allocated to the SEF, while revenues from small pollution sources remain at local level.	
Denmark Water pricing	1992	<ul style="list-style-type: none"> - Enable a lowering of the income tax. - Encourage a reduction in water demand from households. 	<p>Water charges</p> <ul style="list-style-type: none"> - On water consumption - 0.842 EUR/m3 in 2011 <p>Water supply tax for households</p> <ul style="list-style-type: none"> - Only applied to households; it is refunded to industry and not levied on agriculture. - Tax on water consumption, 0.7337 EUR/m3 in 2011 - Contribution to drinking water protection, 0.09 EUR/m3 in 2011 - Water companies are required to cover part of the supply tax if water delivered to customers is less than 90% of the abstracted water. - The revenues are partly used for mapping, monitoring and protecting water resources. <p>Waste water tax</p> <ul style="list-style-type: none"> - Based on discharges of nitrogen, phosphorus and organic matter - Industries with high discharge loads can claim a rate reduction. <p>2011 tax rates:</p>	Env.	<ul style="list-style-type: none"> - Decreased urban water demand by 24%. - Urban water consumption in Denmark is one of the lowest in the OECD. - Water leakages in Denmark have been reduced to the level of 10%, whereas many EU cities have water leakages of between 30-40%. - Reduction of pollutant discharges of 3% per year for organic matter, 5% per year for nitrogen and 17% per year for phosphorus between 1997 and 2000. 	<ul style="list-style-type: none"> - Revenues from the charges on water consumption are allocated to municipal water supply companies. - Revenues from the water charge on sewage discharges were DKK 174.1 m in 2011 and decreased considerably since the first year of its introduction (2001), when they amounted to DKK 268.9 m. - This sharp decrease seems to suggest a reduction in pollution levels. These revenues are used to finance the costs of municipal wastewater treatment plants. - The water supply tax raised DKK 1,333 m in 2011 (0.07% of the GDP), which is well above most other schemes. When introduced in 1994, it raised DKK 294.5 m. - The wastewater tax raised DKK 174 m in 2011 and DKK 164 m in its first year (1997). 	Annex to Withana et al. (2014), p. 11
	1994			Ec.	<ul style="list-style-type: none"> - Tax created employment, in particular for sanitary engineering companies that were asked to renovate water installations. Also, new products have being marketed, such as new types of water saving sanitations, in particular low-flush toilets. 		
	1997			Soc.	<ul style="list-style-type: none"> - No social tariffs, as water pricing is based purely on metering; however affordability of water and wastewater services is ensured by income support through Danish social policy. The advantage of this approach is that the incentive element of water pricing is effective for all water users, irrespectively of their income. 		

Country measure	Time-frame	Objectives/targets	Details of measure, tax rates, exemptions	Impacts (environmental, economic, fiscal, social)	Political economy aspects (costs, feasibility, revenue use)	Sources
			<ul style="list-style-type: none"> - 2.6875 EUR/kg for nitrate content - 1.4780/kg for organic material content - 14.78 EUR/kg for phosphate content <p>Exemptions:</p> <ul style="list-style-type: none"> - Waste water which is discharged from spillways; - Direct emissions of remediation wells, groundwater cuts and other self-discharges of groundwater of surface water, when the water is diverted around the waste water treatment plant; - Surface water, rain water, etc. separately discharged from sewage disposal plants; - Process waste water which is discharged from sea-, salt- and freshwater fish farms. 	Fisc. <ul style="list-style-type: none"> - Investments in and operation of public sewerage and waste water treatment plants are financed by user charges on households and industries, which are based on water metering (there are no public subsidies). 	<ul style="list-style-type: none"> - Part of the increase in revenues can be explained by the 50% in the rate that was introduced in 2009. - The revenues obtained through both taxes go to the general government budget. 	
Iceland Fisheries resource tax, system of tradable fishing quotas	2002	<ul style="list-style-type: none"> - Attempt to allay criticisms that the public was not accruing any benefits from the privatisation of the resource (social rather than an environmental objective). - Lower the value of fishing rights (quotas) to make it easier for young entrepreneurs to enter the industry (increase competition). - Capture some of the profit derived from the exploitation of the resource. 	<ul style="list-style-type: none"> - Resource tax imposed on fisheries operations. - Standard fee collected to finance the cost of running the fishery (2004). - Special fee designed to capture part of the natural resource rent in Fisheries. - Tax is then set at 65% of the resource rent (determined in cod-equivalents). - Exemptions: the first 30 cod-equivalent tons have no special tax, and the next 70 tons are subject to half the fee, on order to protect the interests of smaller companies. 	Env. <ul style="list-style-type: none"> - Negative impact on the state of fish stocks, because it reduces the value of fishing rights and thereby lessens the incentives on fishers to manage and exploit the resource responsibly. - Nevertheless, the tax is a popular measure and has enabled the ITQ system, which was controversial since its introduction, to become more politically palatable. This indirect, political effect should be acknowledged, as the ITQ system has been highly successful in improving the state of fish stocks, and if it were to be abolished it could jeopardise the positive trends in stock biomass. - The 2013 ICES advice states that the spawning stock of Icelandic cod is increasing and 'is higher than has been observed over the last five decades'. In addition, the percentage of the fish stock removed each year by fishing (i.e. fishing mortality) has declined significantly since the early 2000's and is presently at a historical low. 	<ul style="list-style-type: none"> - The original resource tax revenues raised roughly 4.5 bn ISK per year (approximately equivalent to €52.5 m prior to the financial crisis and €28.6 m after the crisis), and it was estimated that the new special fee would raise roughly ISK 9 bn in 2013 (equivalent to approximately €55.5 m). - As the full rate of taxation will not be levied until 2016/2017, the revenues will be even greater than this in the future. - The revenues from the original tax went towards the costs of managing the fishery, such as monitoring and surveillance costs for example, and also towards the Icelandic fisheries fund used to support the sector and rebalance the fleet to bring it in line with available 	Annex to Withana et al. (2014), p. 34

Country measure	Time-frame	Objectives/targets	Details of measure, tax rates, exemptions	Impacts (environmental, economic, fiscal, social)		Political economy aspects (costs, feasibility, revenue use)	Sources
				Ec.	<ul style="list-style-type: none"> - The effect of the resource tax is difficult to disentangle from other factors. - The high yields that have resulted from improved stock management (a result of the ITQ system primarily) were arguably less important to the sector economically than the high prices obtained for their catches on the export market. Following the crisis in 2008, the depreciation of the Icelandic krona led to great increases in profits from exports, and so even though landings were being kept under control the prices obtained were very competitive. In addition to increases in productivity and prices, technological innovations in the sector were also responsible for increasing profits. 	<ul style="list-style-type: none"> - resources. - The revenues generated from the new tax are to go towards reducing the national deficit. 	
				Soc.	<ul style="list-style-type: none"> - In theory, the resource tax should lower the value of fishing quotas, which should increase the opportunities for outsiders to enter the sector by reducing their capital costs, and thereby increase competition. It is also supposed to redress the imbalance in wealth distribution. Whether this has materialised in practice is not clear. The effectiveness of the tax would depend on the level at which the tax has been set, and there are suggestions that until the recent reform the tax rate was not high enough. It is too early to determine whether the new tax rate has been pitched the right level. 		
Ireland Plastic bag levy	2002	<ul style="list-style-type: none"> - Reduce consumption of disposable plastic bags by influencing consumer behaviour. - Reduce the visual presence of plastic bags in the 	<ul style="list-style-type: none"> - Revenues are earmarked to an environment fund used to cover the administrative costs of the levy and to support waste management initiatives. - Merchants that do not introduce the levy can be fined (a minimum of €1.950) or receive a prison sentence. - The plastic bag levy was introduced at a rate of €0.15 per bag in March 2002 and increased to €0.22 from July 2007. 	Env.	<ul style="list-style-type: none"> - Plastic bag use fell from an estimated 328 bags per capita before the introduction of the levy in 2002 to 21 bags per capita at the end of 2002. - Slight increase in plastic bag usage to 33 bags in 2007. - Usage dropped to 14 bags per capita in 2012. - The number of areas in which there was no evidence of plastic bag litter increased by 	<ul style="list-style-type: none"> - 2012, a total of €196 m of revenue had been collected from the levy. - In 2008 revenues were approximately €27 m, which can be seen to indicate that the higher rate in 2007 has led to increased revenues. In 2009 revenues were €23 m, in 2010 €17 m, and in 2011 they went 	<ul style="list-style-type: none"> Annex to Withana et al. (2014), p. 39 Eunomia et al. (2009) Ecorys et al. (2011)

Country measure	Time-frame	Objectives/targets	Details of measure, tax rates, exemptions	Impacts (environmental, economic, fiscal, social)		Political economy aspects (costs, feasibility, revenue use)	Sources
		landscape - Increase public awareness of littering.	<ul style="list-style-type: none"> - In 2011 a provision was made in national legislation that sets a ceiling for the tax at €0.70 and enables the levy to be amended once in any financial year. - Exemptions from the levy are applied to plastic bags used with fresh meat, fresh fish and fresh poultry, plastic bags for fruits, nuts, sweets, ice cream, cooked items, milk products on board an aeroplane or ship, and to reusable bags charged at a minimum of €0.70. 		21%. <ul style="list-style-type: none"> - The number of areas without “traces” of plastic bags increased by 56% . - The amount of plastic bags dumped decreased from 24.000 tons to 2.400 tons. - The share of plastic bag litter in national litter composition dropped from 5% before the introduction of the levy to 0.25% in 2010. 	<ul style="list-style-type: none"> - down even further, to €16 m. - Revenues from the plastic bag levy are earmarked to cover administration costs and for an environmental fund. - The fund has supported, amongst other things, schemes to prevent/reduce waste, waste recovery activities, research & development into waste management, development of producer initiatives to prevent/reduce waste arising from their activities, implementation of waste management plans, enforcement of the provisions of any enactment relating to waste management, prevention of litter or protection of the environment, partnership projects, that involve local authorities, to improve the quality of the environment for particular local communities, promotion of awareness of the need to protect the environment and education and training to support this; and initiatives undertaken by community groups and others for protection of the environment. - Due to the success of the levy in reducing the use of plastic carrier bags, annual revenues from the levy were around one tenth of the amount initially expected. In 2011 a provision was made in national legislation that sets a ceiling for the levy at €0.70 and enables the levy to be amended once in any financial year. 	
			Ec.	<ul style="list-style-type: none"> - In 1999, it was estimated that 79% of bags consumed were imported. The remaining share was produced by four domestic firms. One firm subsequently went out of business but it is not certain if this was caused by the levy - Retailers describe the effects of the levy as neutral or positive. 			
			Soc.	<ul style="list-style-type: none"> - Paper shopping bags have become more prevalent. - The levy is relatively high in order to discourage the use of plastic bags all together. The initial charge (€0.15) was set at more than six times the average maximum willingness to pay, which was about €0.024. - The plastic bag levy did not have strong implications for income distribution. 			
			Fisc.	<ul style="list-style-type: none"> - The costs of implementing the levy have been modest. One-off set up costs included €1.2 m. Advertising costs arising from the information campaign amounted to €358,000. Administrative costs for the levy represent approximately 3% of revenues. 			

Country measure	Time-frame	Objectives/targets	Details of measure, tax rates, exemptions	Impacts (environmental, economic, fiscal, social)	Political economy aspects (costs, feasibility, revenue use)	Sources	
Latvia Natural Resource Tax	1991	<ul style="list-style-type: none"> - Promote resource efficiency and the use of environmental friendly technologies. - Reduce pollutant substances related to the economic activity. - Support sustainable development. - Raise tax revenues. 	<ul style="list-style-type: none"> - Payment of the tax entitles a company to get a permit that can be traded. Moreover, fines may be attributed to firms with late payments or who conceal information. <ul style="list-style-type: none"> - Extraction of natural resources; - Waste disposal; - Environmental hazardous goods; - Emissions to air, products, fuels and water. - Firms that participate in environmental beneficial activities are given tax exemptions. - Tax rates for mineral products remained unchanged from 1996 to 2009. 	Ec.	<ul style="list-style-type: none"> - The unchanged tax rate from 1996 until 2009 may explain its ineffectiveness in decreasing mineral resource use. - The introduction of higher tax rates in 2010, 2011, 2012 and 2014 coincided with the recovery from the financial crisis. Therefore, the effect of an increased tax rate on resource extraction shows no clear or consistent causal effect. - Domestic material consumption (DMC) in Latvia increased by around 50% from 2000 to 2007. Moreover, DMC of chalk and dolomite, sand and gravel and limestone and gypsum, grew at a faster rate. The initial tax rates seem to have been too low to have any mineral resource reductions. However, during the same period, resource productivity improved from €0.24 per kg of DMC (2000), to €0.31 per kg (2007), one of the fastest EU improvements. At this level, the natural resource tax appears to have improved resource efficiency in Latvia. 	<ul style="list-style-type: none"> - Natural resource tax revenue equalled 0.11% of GDP in 2004 (GIZ 2013), LVL 8,195,000 in absolute terms, and revenues reached LVL 13,411,000 in 2013, with an increasing trend since 2009. - 40% of the tax revenues are currently transferred to the general budget, for state environmental protection (until 2003) and for Latvian Environment Protection Fund (from 2004 onwards). The latter is an entity under the direct control of the Environment Ministry. - The remaining 60% of the revenues are forwarded to the municipalities' special environment protection budget. The revenues have been reallocated to environmentally-friendly investments and have helped ease compliance with EU environmental targets upon Latvia's accession to the EU. - Overall, in Latvia, resource efficiency has increased and significant revenues have been raised, so the tax seems to have partly attained its objectives. - Despite successful implementation, the tax appears to have had limited impacts. The tax rate seems to be too low to have significant positive environmental impacts. - Compared to other EU countries, the natural resources tax rates in Latvia are below 	Annex to Withana et al. (2014), p. 44
				Env.	<ul style="list-style-type: none"> - The unchanged tax rate from 1996 until 2009 may explain its ineffectiveness in decreasing mineral resource use. The introduction of higher tax rates in 2010, 2011, 2012 and 2014 coincided with the recovery from the financial crisis. Therefore, the effect of an increased tax rate on resource extraction shows no clear or consistent causal effect. 		
				Soc.	<ul style="list-style-type: none"> - No data found on social impacts of the tax in examined literature and studies. Potential impacts could for example include health impacts from reduced pollution however no information on this was found in the literature. 		
				Fisc.			

Country measure	Time-frame	Objectives/targets	Details of measure, tax rates, exemptions	Impacts (environmental, economic, fiscal, social)		Political economy aspects (costs, feasibility, revenue use)	Sources
						the level that reflects the true environmental cost.	
Norway Pesticide tax	1988 1999	<ul style="list-style-type: none"> - Reduce the application of pesticide products, especially the most harmful ones. - Reduce the various risks related to pesticide use by 25% and to promote the usage of biological pest management measures instead of chemical pest management. - Raise revenues to finance a number of environmental initiatives. 	<ul style="list-style-type: none"> - The tax per kg or litre is calculated as follows: (base rate*factor)*1000/standard area dose). The base rate is the same for all products and was initially fixed at NOK 20 (around €2.4) per hectare and was increased to NOK 25 (around €3.4) from January 2005. - In addition to the pesticide tax a regulatory fee was also introduced in 1988. - A new taxation system was developed and implemented in 1999. - The new system is area-based and consists of seven tax bands based on the environmental and health related risks of the pesticide. 	Ec.	<ul style="list-style-type: none"> - Decrease in the sale of the pesticides - Significant variations throughout the years, effects of advanced warning of tax increase which leads to stockpiling. 	<ul style="list-style-type: none"> - Direct payments to Norwegian farmers as a share of farm receipts remain among the highest in the OECD. - Production-linked support creates incentives to increase pesticide use, which runs counter to the objective of the (well-designed) pesticide tax. 	Annex to Withana et al. (2014), p. 56 OECD (2011)
				Env.	<ul style="list-style-type: none"> - About 40% of farmers replied to a farmer survey that the banded tax system incentivised them to use pesticides in the lower tax bands. - Area-based approach helped to link the pesticide tax more directly to pesticide use - Pesticides have been subject to taxation since 1988. Until 1999, the same tax rate applied to all pesticides. The tax was levied as a percentage (11%) of the retail price. In 1999, three tax classes were differentiated by toxicity to encourage farmers to switch to pesticides with lower health and environmental risk. - An evaluation in 2003 of the National Plan for Pesticide Risk Reduction (1998-2002) revealed that farmers were shifting to less environmentally harmful pesticides. - Later, the Action Plan for Pesticide Risk Reduction (2004-08) increased the number of tax classes from three to five for better differentiation by health and environmental risk. - The pesticide tax rates were increased by about 25% in 2005, with no further changes since. 		
				Soc.	<ul style="list-style-type: none"> - In 1999, the tax basis was amended to reflect the health and environmental impacts of pesticides and was changed from an ad valorem tax to a tax per normal dose. - In 2003, evaluation of the 1998-2002 Action Plan for Reducing Risks Associated with Pesticide Use indicated that health and environmental risks both 		

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					<ul style="list-style-type: none"> fell by at least 25% over the plan period. The plan's overall objective was thus achieved. An extended action plan for 2004-08 was drawn up to reduce the risks further. 		
				Fisc.	<ul style="list-style-type: none"> The proceeds from the tax (NOK 65-70 million a year) were used to finance measures to further reduce pesticide use and address related damage under the 2004-08 Action Plan for Pesticide Risk Reduction. 		
United Kingdom Landfill tax	1996	<ul style="list-style-type: none"> Internalising externalities associated with landfill. Change behaviour to drive down the amount of waste landfilled. 	<ul style="list-style-type: none"> The tax to all waste that is disposed of at a licensed landfill site. Unless the waste is specifically exempt from the tax a lower rate applies to less polluting (inactive/inert) wastes. Exemptions include e.g.: <ul style="list-style-type: none"> Dredging from waterways, mining/quarrying waste, Burial of pets, Material from reclamation of contaminated land, Filling of quarries, Waste used for the restoration of landfill sites. In 2012, the standard rate for 'active' waste (substances that either decay or contaminate land, including household waste) increased from £56 to £64 per tonne, while a reduced rate of £2.68 applies to 'inert' waste (for example, bricks, concrete, etc.). 2013: tax increased to £72 per tonne. 	Env.	<ul style="list-style-type: none"> Reducing the percentage of MSW landfilled in the UK from around 86% of MSW generated in 1996 to around 36% in 2012. UK traditionally had a high rate of landfilling of municipal (household) solid waste (MSW) compared with its European neighbours. In 1995, only five of the EU27 landfilled more municipal waste than the UK. By 2012, 16 of the EU27 were landfilling more municipal waste than the UK. 	<ul style="list-style-type: none"> From 1 April 2012 – 30 March 2013, almost €1.4 bn (£1.1 bn) of cash receipts were collected through the landfill tax. Since the introduction of the tax in 1996, the total cash receipts from the landfill tax amount to almost ERU 14.3 bn (£11.5 bn). Landfill tax is widely regarded as a prime example of an effective environmental tax and has been credited as one of the driving forces behind the revolution in recycling that saw the UK deliver the fastest improvement in recycling rates of any EU country between 2001 and 2010. According to figures from the European Environment Agency, there was a reasonably strong correlation between the rise in landfill tax rates and the fall in municipal waste sent to landfill in the UK between 2001 and 2009. 	<ul style="list-style-type: none"> Annex to Withana et al. (2014), p. 68 Bassi et al. (2013) Businessgreen (2013)
				Ec.	<ul style="list-style-type: none"> Initial costs of compliance with the landfill were estimated as follows: for large operators: £25,000 – £50,000, and for small operators: £750. Ongoing costs were estimated as follows: for large operators: up to £10,000, and for small operators: £1,500. 		
				Soc.	<ul style="list-style-type: none"> The tax at its inception was designed to be revenue neutral so that it did not have a detrimental financial impact on businesses. The cost of the new landfill tax to business was therefore offset through a reduction in the higher rate national insurance contributions paid by employers. The landfill tax as a tax on waste in order to reduce the tax on jobs. 		
				Fisc.	<ul style="list-style-type: none"> The average small business will spend £375 this year through landfill tax costs, 		

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					contributing more than £1bn a year to the Treasury.		
India Coal cess	2010	<ul style="list-style-type: none"> - The Clean Energy Cess is a tax on coal. - The revenues are allocated to a National Clean Energy Fund that provides funding to clean energy technology deployment and R&D. - Some concerns have been raised about whether funding has been allocated in accordance with the original intentions of the fund, highlighting the need for strong governance. 	<ul style="list-style-type: none"> - The tax of INR 50 (€0.82) is applied per tonne of coal produced or imported into India. - Revenue is earmarked for the National Clean Energy Fund which supports research and innovation in clean energy technologies and environmental remedial programs. - India's 2014–15 budget doubled the rate of tax on coal from 50 rupees (US\$0.82) to 100 rupees (US\$1.64) per metric tonne. 	Env.		<p>The revenues collected will feed the equivalent of €2 bn annually into the “National Clean Energy Fund (NCEF),” which is to be used for renewable energy-based projects and initiatives.</p> <p>Over a period of about 5 years of its existence, NCEF has grown to about €6.7 bn.</p>	<p>Withana et al. (2014), p. 9</p> <p>Cottrell et al. (2013)</p> <p>eastasiaforum (2014)</p> <p>cleantechnica (2015)</p>
				Ec.	<ul style="list-style-type: none"> - The increased coal tax will funnel an additional 39 bn rupees (US\$645 m) into India's National Clean Energy Fund (NCEF). - The NCEF supports research and development initiatives for and the financing of renewable energy-based electricity generation. 		
				Fisc.			
				Soc.			
Canada (British Columbia) CO ₂ tax	2008	<ul style="list-style-type: none"> - Climate Action Plan was proclaimed due to trend of rising emissions and fuel production as well as extreme climate event. - Goal of the Climate Action Plan is the decrease of greenhouse gas emissions by 20% till 2020 and by 	<ul style="list-style-type: none"> - In the beginning the tax was related to ~77% of the GHG-emissions, dropped to ~70% in 2012 due to the increasing use of natural gas. - CO₂ price: 2008 at 10 CAD per ton CO₂. Till 2012 rising to 30 CAD (by 5 CAD each year) per ton CO₂. 	Env.	<ul style="list-style-type: none"> - Period between 2008 and 2012 fuel consumption reduced by 17.4% (whole Canada risen by 1.5%). - Reduction of GHG-emissions by 10% (whole Canada only 1.1%) - 9% lower GHG-emissions in affected sectors than other states between 2008 and 2012. Per capita fuel consumption even 20%. - Meta-analysis from 2015 shows positive effects for the environment: per capita reduction of GHG-emissions of between 5% and 9% and lower fuel consumption of between 7% and 18.8%. 	<ul style="list-style-type: none"> - Revenue recycling: Cuts in income and company taxes and tax credits for low income households to restrict regressive distribution effects. 	Annex to Withana et al. (2014)

Country measure	Time-frame	Objectives/targets	Details of measure, tax rates, exemptions	Impacts (environmental, economic, fiscal, social)		Political economy aspects (costs, feasibility, revenue use)	Sources
		80% till 2050 (compared to 2007). - Main measure is the CO2 tax.		Ec.	- No evidence for any disadvantages for the economy through CO ₂ tax. - GDP trend in the first four years is almost the same as in other states. However green investments in clean energy and hybrid cars doubled in that time. - BC has the lowest income and corporation taxes in Canada.		
				Fisc.	- Official forecast of the B.C. Ministry of Finance in 2014 speaks about revenues of 1.23 bn CAD.		
				Soc.	- The carbon tax is revenue neutral; all funds generated by the tax are returned to citizens through reductions in other taxes.		
Portugal CO ₂ tax	2014	- Link of climate and conservation and measures against financial crisis. - Approach to deal with emission issue, employment and amortisation. - As a part of a green tax reform Portugal charged a carbon tax.	- Different measures: - Carbon tax: €5 per ton of CO ₂ which isn't affected by the ETS, - Higher tax on petrol and diesel, - Incentives for electric and hybrid cars, - Incentives for car and bike sharing, - Tax on plastic bags. - Problem: the bill differs much from the suggestion of the Commission for Environmental Tax Reform. If it will not adapt in the future it will fail.	Env.		Portugal sees crisis as opportunity for green tax reform.	Governo de Portugal (2015)
				Ec.			
				Soc.			
				Fisc.			