



Taxing Energy Use

Meeting of the Global Parliamentary Network

Paris, 10 October 2019

Pascal Saint-Amans, *Director,*
Centre for Tax Policy and Administration

Kurt Van Dender, *Head of Tax and Environment,*
Centre for Tax Policy and Administration, OECD



Outline

Taxing Energy Use 2019 – headline results

Overview of work on Tax and Environment

Taxing Energy Use 2019 – a closer look



Taxing Energy Use 2019 – headline results



Climate action is urgent

Keeping climate change at bay in line with the goals of the Paris Agreement will require deep cuts in emissions.

In the absence of decisive action, extreme weather events will become more frequent and severe, and rising sea levels will endanger coastal cities and entire island states.

Public pressure is mounting for action on climate change.

Yet: **energy-related CO₂ emissions reached an all-time high in 2018.**

Reducing the usage of carbon-intensive energies is critically important.

Taxes and emissions trading systems are a key policy lever.



Taxing Energy Use 2019



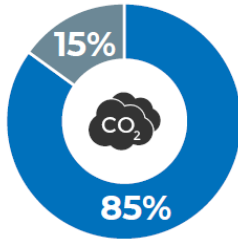
- » Brochure with summary of results was released in the run-up to the UN Climate Action Summit
- » Full report will be released on 15 October, accompanied by a Green Talk (4pm Paris time, <https://www.oecd.org/environment/green-talks-live.htm>)
- » Very detailed answer to a simple question: how are countries doing with the use of taxes on the consumption of energy from a climate policy perspective?
- » Summary answer: not great!



Outside road transport, the bulk of carbon emissions are completely unpriced

85% of energy-related CO₂ emissions take place **outside the road sector.**

Road emissions
fuel use by cars,
trucks and other
road vehicles



Non-road emissions
electricity generation,
manufacturing, heating,
aviation and maritime
transport

But **taxes only cover 18% of non-road emissions**, leaving a tax of zero for the remaining 82%.



Only 4 countries tax non-road emissions at more than EUR 30 per tonne on average, a low-end benchmark of the climate damage caused by CO₂.



Switzerland



Netherlands



Norway



Denmark

Emissions from **international** aviation and maritime transport are **not taxed at all.**



Fuels used in **domestic** aviation and navigation are **sometimes taxed**, but rarely reflect a low-end carbon benchmark.



Taxes are nowhere near their full potential

- » Taxes on polluting fuels remain too low to reduce the risks and impacts of climate change and air pollution
- » **Across 44 OECD and G20 economies, 70% of energy-related CO₂ emissions are not taxed at all**
- » Taxes provide too little incentive to move to cleaner energy
- » Broadening the scope to emissions trading systems does not change the conclusion
- » Policy reforms can improve environment and climate outcomes **and** boost the performance of the fiscal system to promote equity, well-being, competitiveness, and efficient tax policy



Overview of work on Tax and Environment



What role for taxes to reach environmental goals?

In modern economies, consumption and production decisions are guided by **prices**, among other factors.

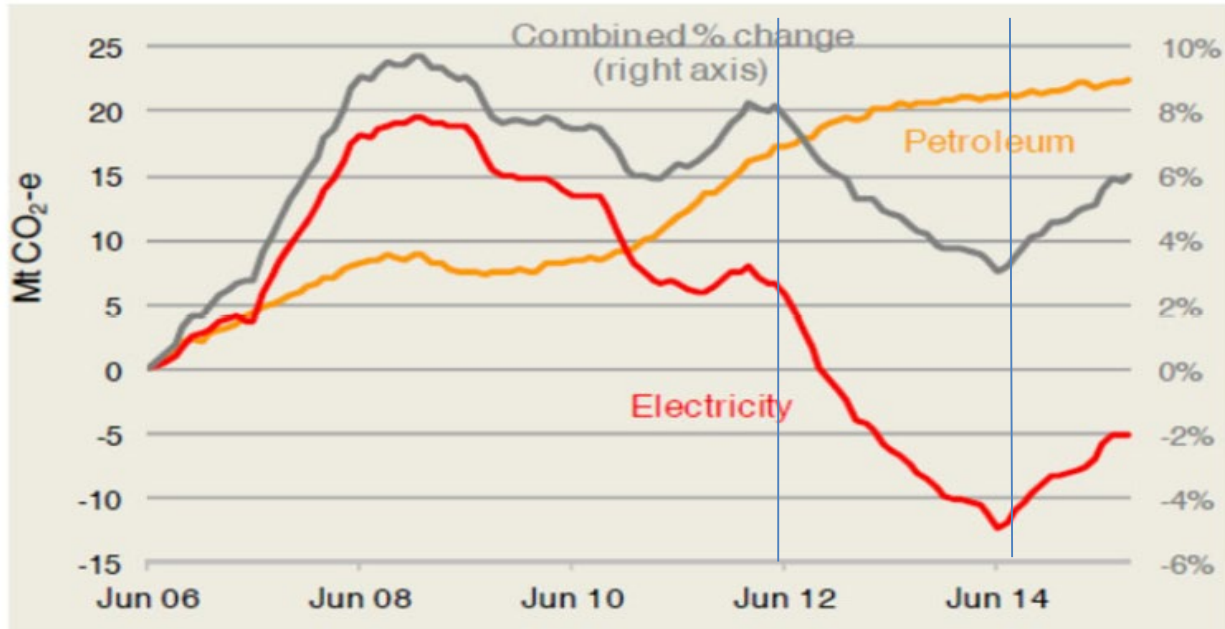
If prices reflect the **environmental costs** of consumption and production choices, excessive pollution will be avoided.

Taxes on consumption and production can ensure that prices play this role. Tradable permit systems can do the same.

Other goals of tax and fiscal policy! Revenue, equity, affordability



Australia's CO₂ emissions fell sharply with the introduction of the carbon tax



Australia introduced a carbon tax in June 2012 and removed it in July 2014. It applied to electricity generation but not to petroleum.



OECD work on environmental taxes – 1/3

To what extent are countries' tax systems used to ensure that producer and consumer prices include the costs of pollution?

- **Diagnostic indicators**
- Focus on **energy taxes** and **emissions trading systems**
- Focus on **climate costs**



OECD work on environmental taxes – 2/3

What reform options?

- Political economy: energy affordability, distributional impacts, competitiveness concerns, how to use revenues from environmental taxes, etc.
- Identifying pragmatic ways forward – environment policy, but also tax policy and broader structural and social policy – energy costs should not become unbearable



OECD work on environmental taxes – 3/3

Close collaboration between the Environment Directorate and the Centre for Tax Policy and Administration

Oversight by Joint Meetings of Tax and Environment Experts.



Taxing Energy Use 2019 and Effective Carbon Rates 2018

a closer look

Taxing Energy Use

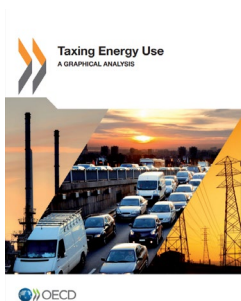
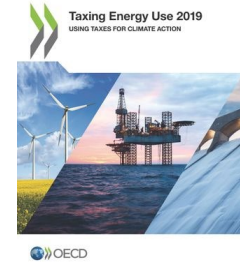
First released in 2013

Snapshot of where OECD countries stand in deploying energy and carbon taxes



First Update in 2018

Update of tax rates to 2015. Analysis of change from 2012 to 2015



Extension of country coverage in 2015

Inclusion of 7 OECD Partner Economies
Tax rates for 2012



Second Update in 2019

Tax rates for 2018.
Inclusion of international aviation and maritime transport
Now covers 44 OECD and G20 countries



Scope of Taxing Energy Use

- » Currently covers 44 OECD and partner economies plus International Aviation and Maritime Transport
- » Compares energy and carbon tax rates on all forms of energy use consistently
 - » Effective carbon taxes (EUR/tCO₂)
 - » Effective energy taxes (EUR/GJ), and
- » Shows tax rates and tax base by
 - » Country and country groups (OECD, partner economies),
 - » sector, and
 - » energy category



Overall taxes are not being used to provide meaningful carbon prices for any fuel, not least coal

	(1) Average fuel excise	(2) Average explicit carbon tax	(3=1+2) Average effective carbon tax
Coal and other solid fossil fuels	0.61	0.13	0.73
Fuel oil	3.50	0.46	3.96
Diesel	70.65	3.11	73.76
Kerosene	4.27	0.34	4.61
Gasoline	84.34	1.50	85.83
LPG	10.23	0.89	11.12
Natural gas	4.08	1.19	5.26

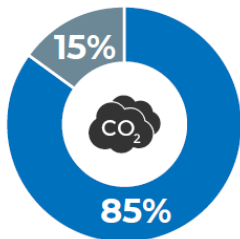
Emission-weighted average for 2018, in EUR per tonne of CO₂



Outside road transport, the bulk of carbon emissions are completely unpriced

85% of energy-related CO₂ emissions take place **outside the road sector.**

Road emissions
fuel use by cars,
trucks and other
road vehicles



Non-road emissions
electricity generation,
manufacturing, heating,
aviation and maritime
transport

But **taxes only cover 18% of non-road emissions**, leaving a tax of zero for the remaining 82%.



Only 4 countries tax non-road emissions at more than EUR 30 per tonne on average, a low-end benchmark of the climate damage caused by CO₂.



Switzerland



Netherlands



Norway



Denmark

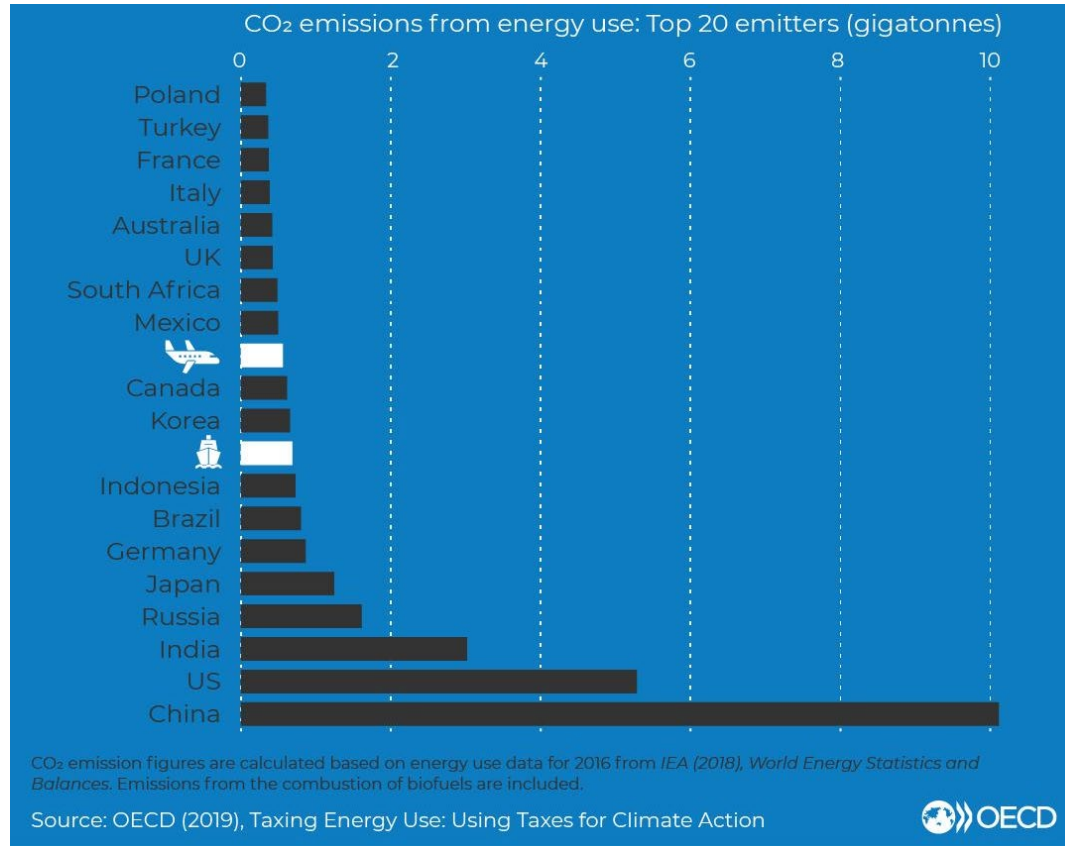
Emissions from **international** aviation and maritime transport are **not taxed at all.**



Fuels used in **domestic** aviation and navigation are **sometimes taxed**, but rarely reflect a low-end carbon benchmark.

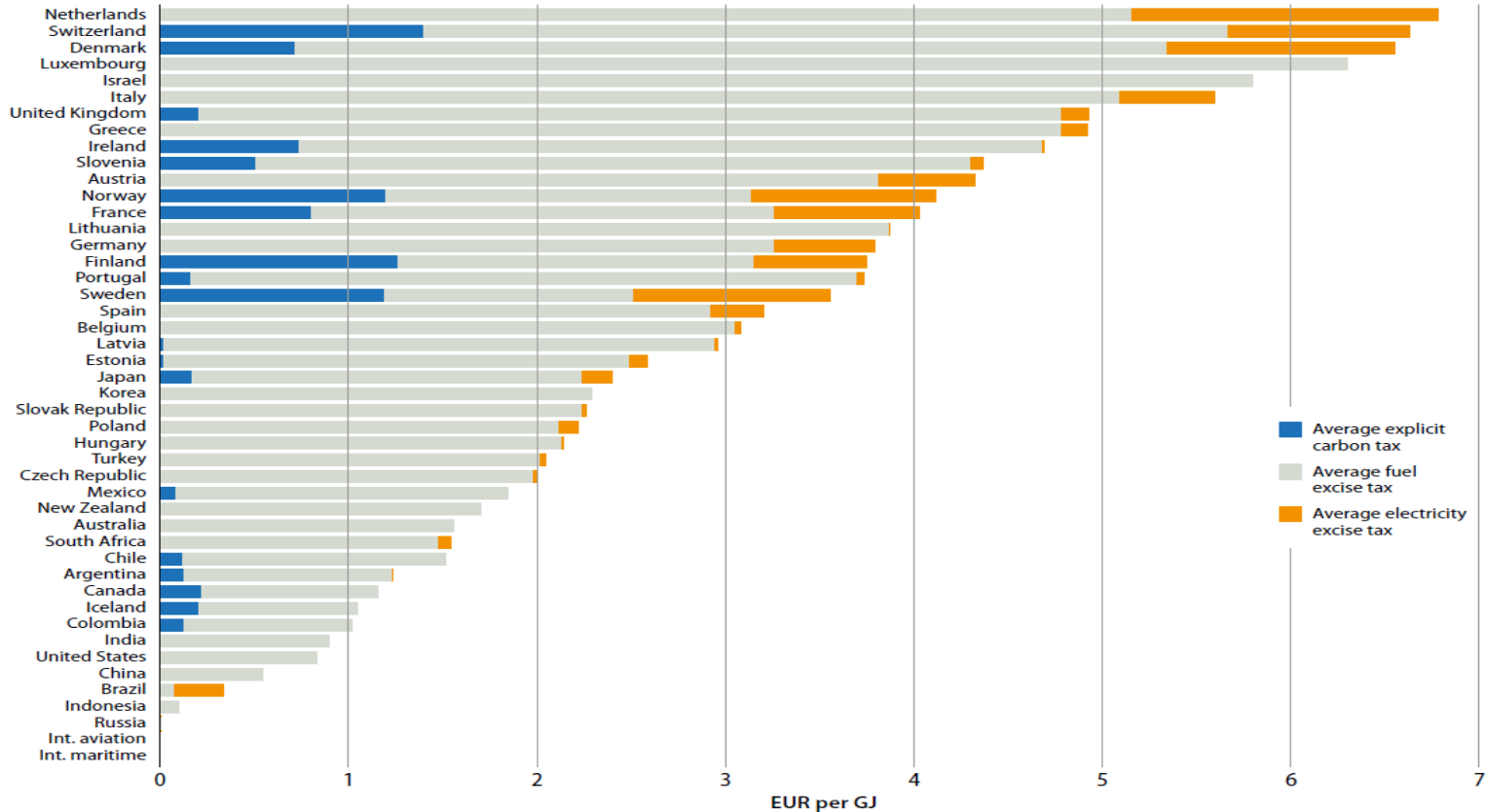


International aviation and maritime transport account for more emissions than most countries





Many countries do not only tax fuels, but also tax electricity, regardless of how it is generated





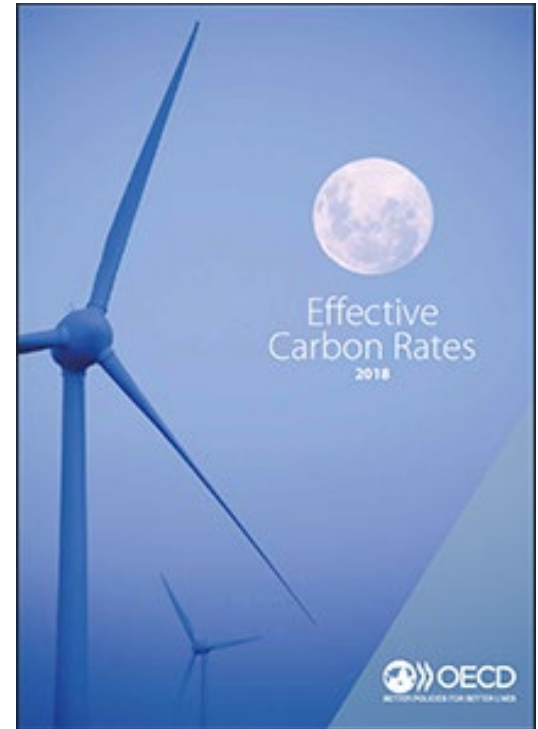
Key takeaways from Taxing Energy Use

1. Strengthening carbon prices will encourage citizens and businesses to take the climate costs of their actions into account and make cleaner investment and consumption choices.
2. Increasing carbon prices first they are currently lowest makes economic sense (coal, international aviation and shipping, etc.).
3. In some countries even revenue-neutral electricity tax reform could strengthen incentives to reduce emissions.



Taxing fuels is not the only way to price carbon

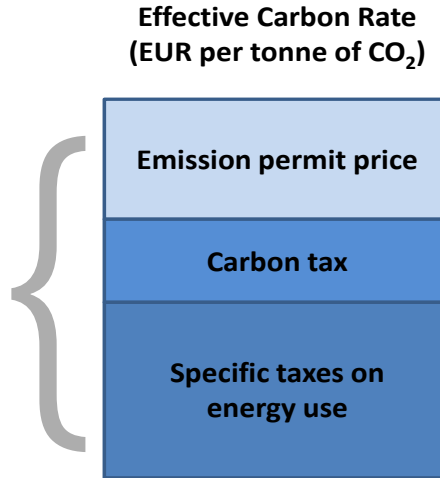
- Jurisdictions can use taxes to price carbon, or they can introduce emissions trading systems (e.g., EU ETS, California & Quebec,...).
- If we consider trading systems in addition to taxes, how is the diagnosis modified? “Effective Carbon Rates”





Effective carbon rates

Effective Carbon Rate (ECR)
in EUR/tCO₂



Effective Carbon Rates

Measure the strength of price-based incentives to reduce CO₂ emissions from energy use

Effective Carbon Rates

Economic definition, not nominal (carbon taxes, emission permit prices)



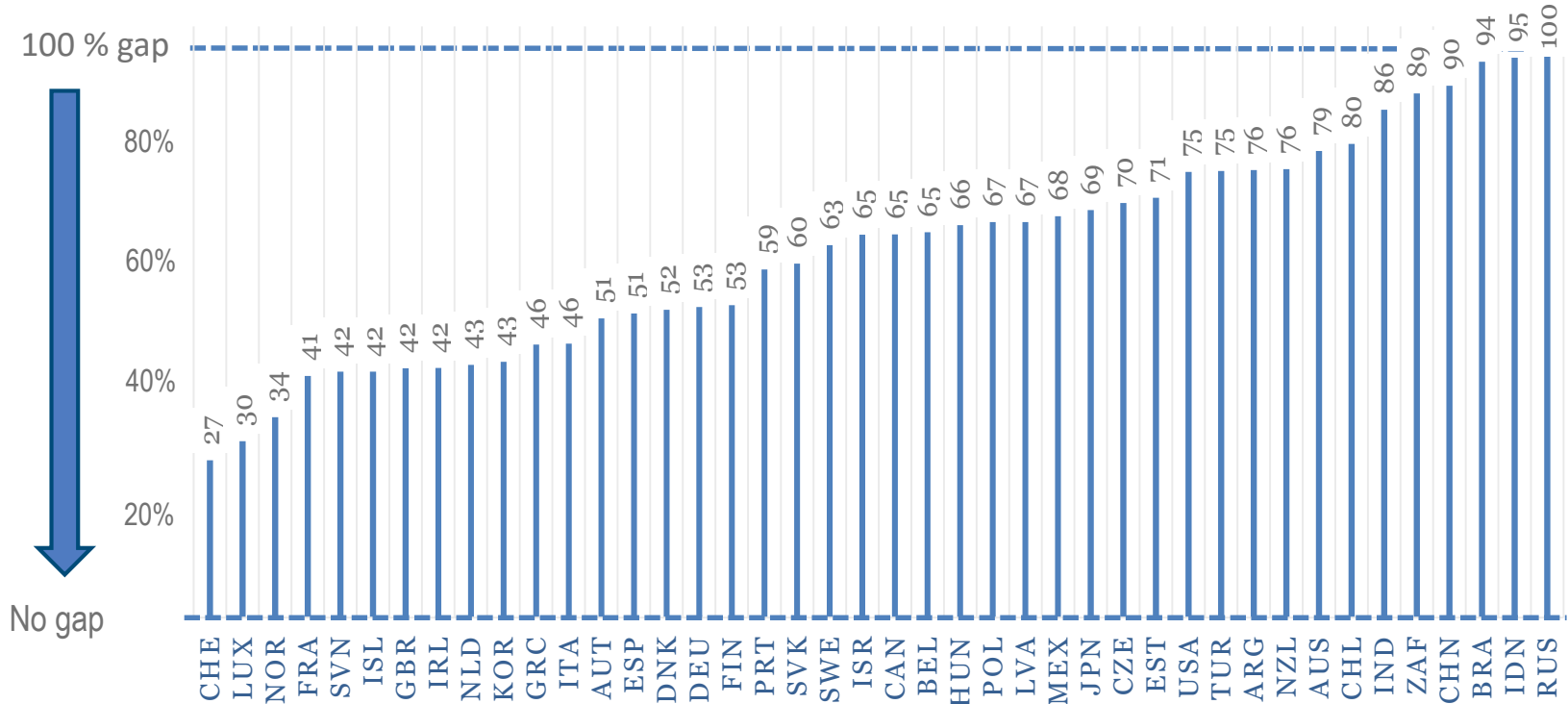
The carbon pricing gap

- The carbon pricing gap measures the **extent to which the effective carbon rates fall short of a benchmark value** (e.g., EUR 30/tCO₂), as a percentage
- It summarises the state of carbon pricing.
- The carbon pricing gap was estimated at **76.5% in 2018**, down from 83% in 2012.
- In other words, **if countries would seek to set a price floor for carbon emissions of EUR 30/tCO₂, they are only one quarter of the way there.**
- **ETS** play an important role in some places and some sectors, but on the aggregate don't strongly modify the carbon pricing picture.



The carbon pricing gap differs across countries

Gap in 2015 in %





Using taxes for climate action raises revenues – unlike most other climate policy instruments



The **revenue potential** from carbon pricing **is considerable**:

Raising effective carbon taxes to EUR 30 per tonne of CO₂ for all energy-related emissions would generate **1% of GDP worth of additional tax revenues** across the 44 countries covered in Taxing Energy Use.

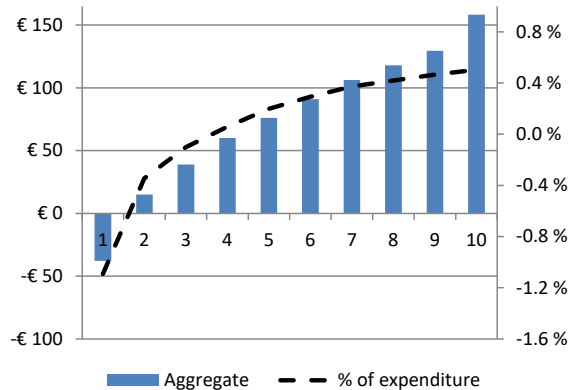


Energy tax reform and energy affordability

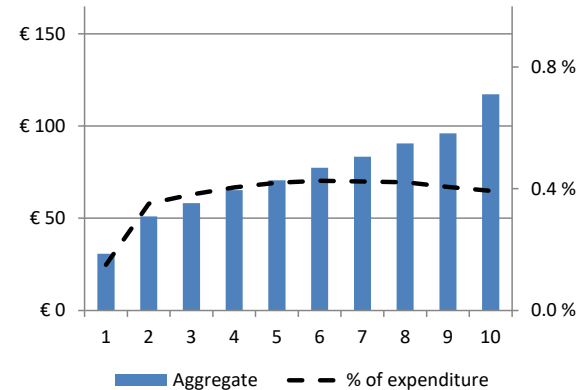
Recycling a third of the additional revenue from an energy tax reform that increases effective carbon rates of domestic fuels to poor households generally improves energy affordability

- Lump-sum transfers can make the reform proportional across income or expenditures deciles
- Targeted transfers (e.g. through the social welfare system) can make the reform progressive

Change in households' spending on energy with an income tested transfer



Change in households' spending on energy with a lump-sum transfer





Energy tax reform and competitiveness

- » **Short-run competitiveness:** At present price levels there is generally no measurable negative impact on competitiveness (e.g. Arlinghaus, 2015; Martin, Muûls and Wagner, 2016).
- » **Long-run competitiveness:** Only firms producing and using (net) zero-carbon technologies will be able to compete in a net-zero carbon economy.



Taxing Energy Use

Global Parliamentary Network
Paris, 10 October 2019

Pascal Saint-Amans, *Director,*
Centre for Tax Policy and Administration, OECD

Kurt Van Dender, *Head of Tax and Environment,*
Centre for Tax Policy and Administration, OECD