Carbon pricing – soft price collar

Agenda

- INTRODUCTION - Laurent Michel, General Director for Energy and Climate, French Ministry of Environment, Energy and Sea

- RECOMMENDATIONS FROM THE MISSION CARBON PRICING- Gérard Mestrallet - Chairman of the Board, ENGIE

- OECD REPORT « EFFECTIVE CARBON RATES: PRICING CO2 THROUGH TAXES AND EMISSIONS TRADING SYSTEMS”
- Richard Baron - Principal Advisor, Round Table on Sustainable Development, OECD

- FEEDBACK SESSION FROM CALIFORNIA
- Emily Wimberger - Chief Economist, California Air Resources Board

- PERSPECTIVE FROM A CLIMATE ECONOMIST
- Benoît Leguet – Directeur Général I4CE

- ROUND TABLE DISCUSSION

Ministère de l'Écologie, du Développement durable et de l'Énergie

INTRODUCTION

Laurent Michel

General Director for Energy and Climate, French Ministry of Environment, Energy and Sea

Ministère
de l'Ecologie,
du Développement
durable
et de l'Energie

RECOMMENDATIONS FROM THE MISSION CARBON PRICING

Gérard Mestrallet

Chairman of the Board, ENGIE

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Ministère de l'Écologie, du Développement durable et de l'Énergie

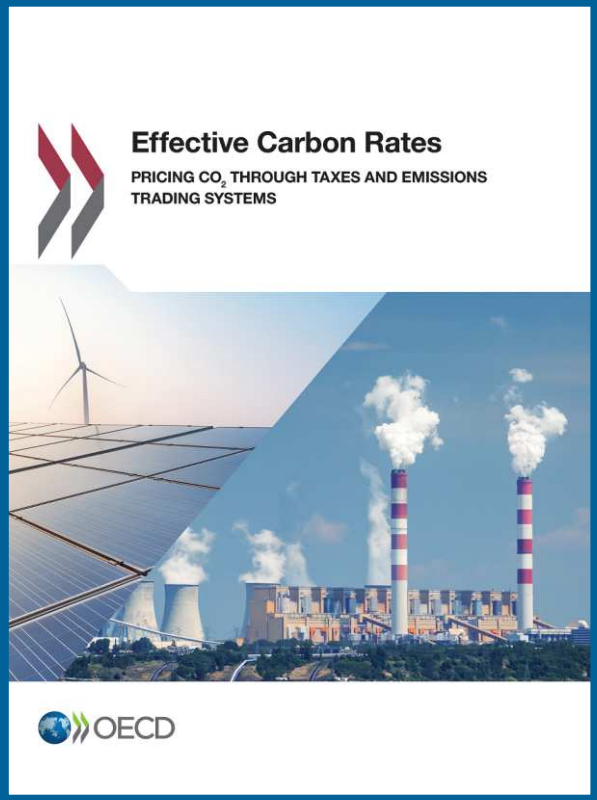
OECD REPORT « EFFECTIVE CARBON RATES: PRICING CO2 THROUGH TAXES AND EMISSIONS TRADING SYSTEMS”

Richard Baron

Principal Advisor, Round Table on Sustainable Development, OECD

Effective Carbon Rates

Pricing CO_2 through taxes and emissions trading systems



Richard Baron, OECD

“Pricing Carbon”
COP22 - Marrakesh - 16 November
Pavillon Français

BETTER POLICIES FOR BETTER LIVES

Carbon pricing is a key component of climate policy

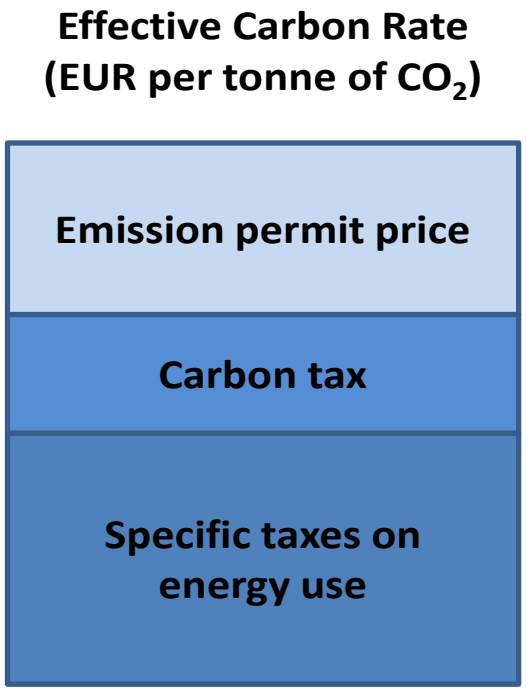
- Climate policy to become more ambitious if global temperature increases are to be limited to well below 2°C

- Carbon pricing is a key policy for the low carbon transition
  - It effectively reduces emissions
  - Emissions reductions are achieved in the least costly way
  - It steers investment and innovation towards low-carbon technology
  - It can provide co-benefits (reduce local air pollution, encourage broader tax reform, foster long-term competitiveness)
  - Particularly if embedded in a set of well-aligned policies

→ What use is currently being made of carbon pricing?

“Effective carbon rates” report summarises use of carbon pricing policies for the first time

- Effective carbon rates (ECRs) are the total price on CO_2 emissions from energy use as a result of market-based policy instruments.
- Estimated for six economic sectors in 41 OECD and G20 countries, representing 80% of global carbon emissions from energy use

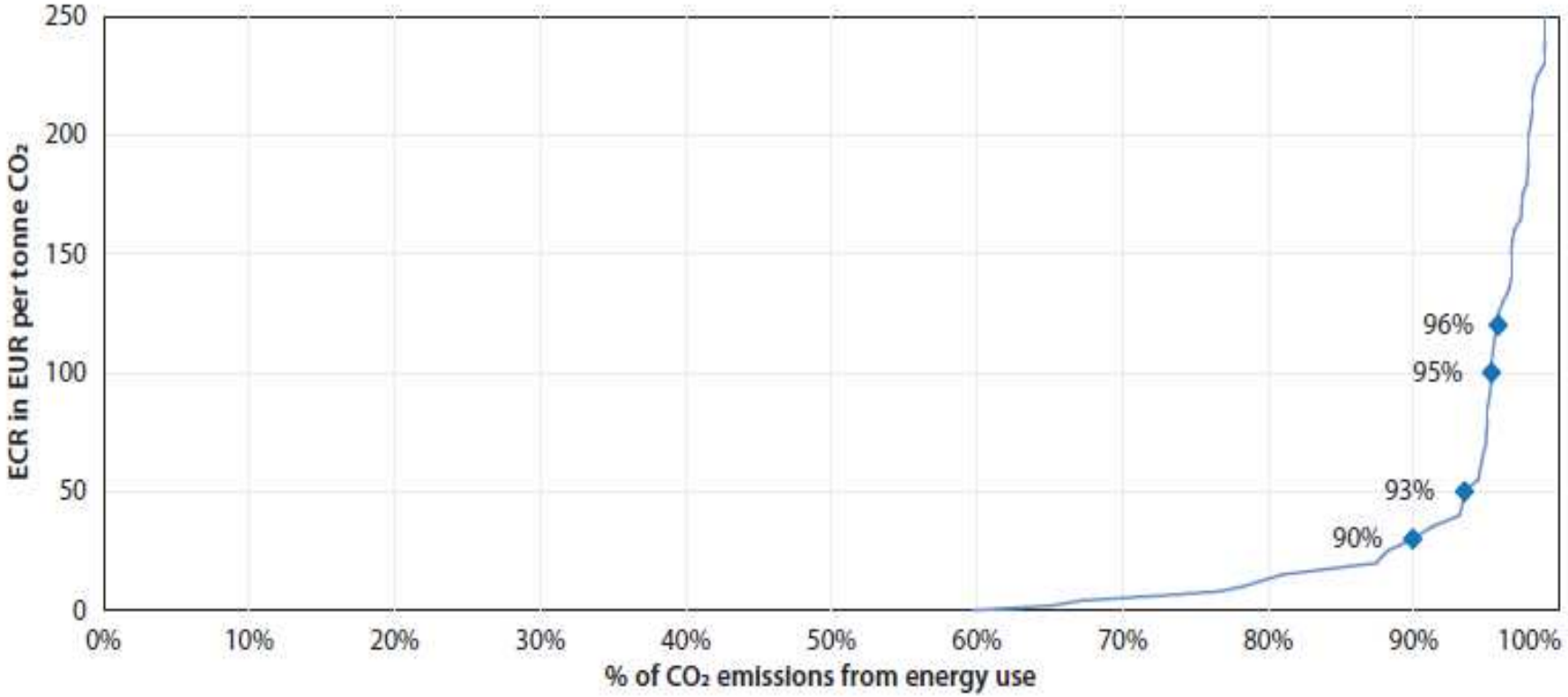


Effective Carbon Rates

Aggregate results for the 41 countries

BETTER POLICIES FOR BETTER LIVES

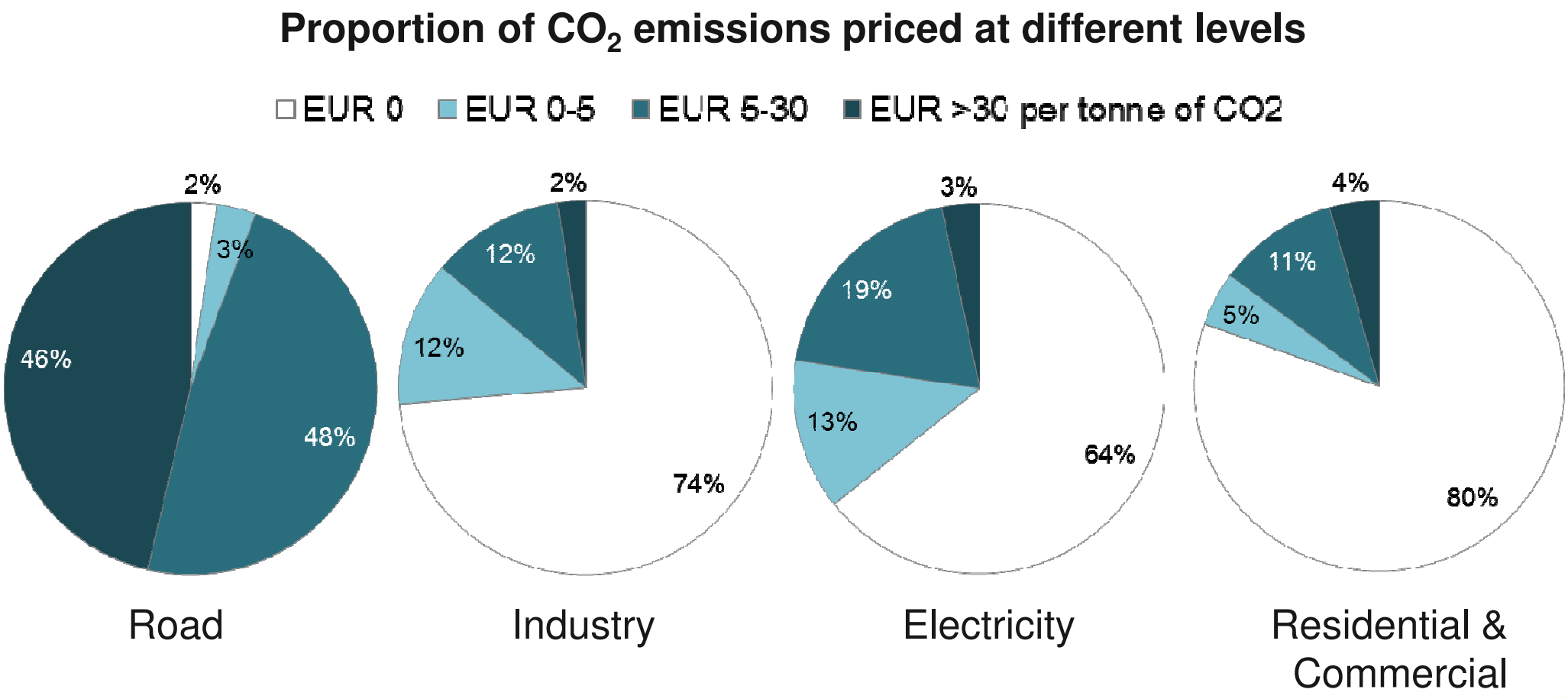
60% of zero ECRs, 10% at EUR 30 or more



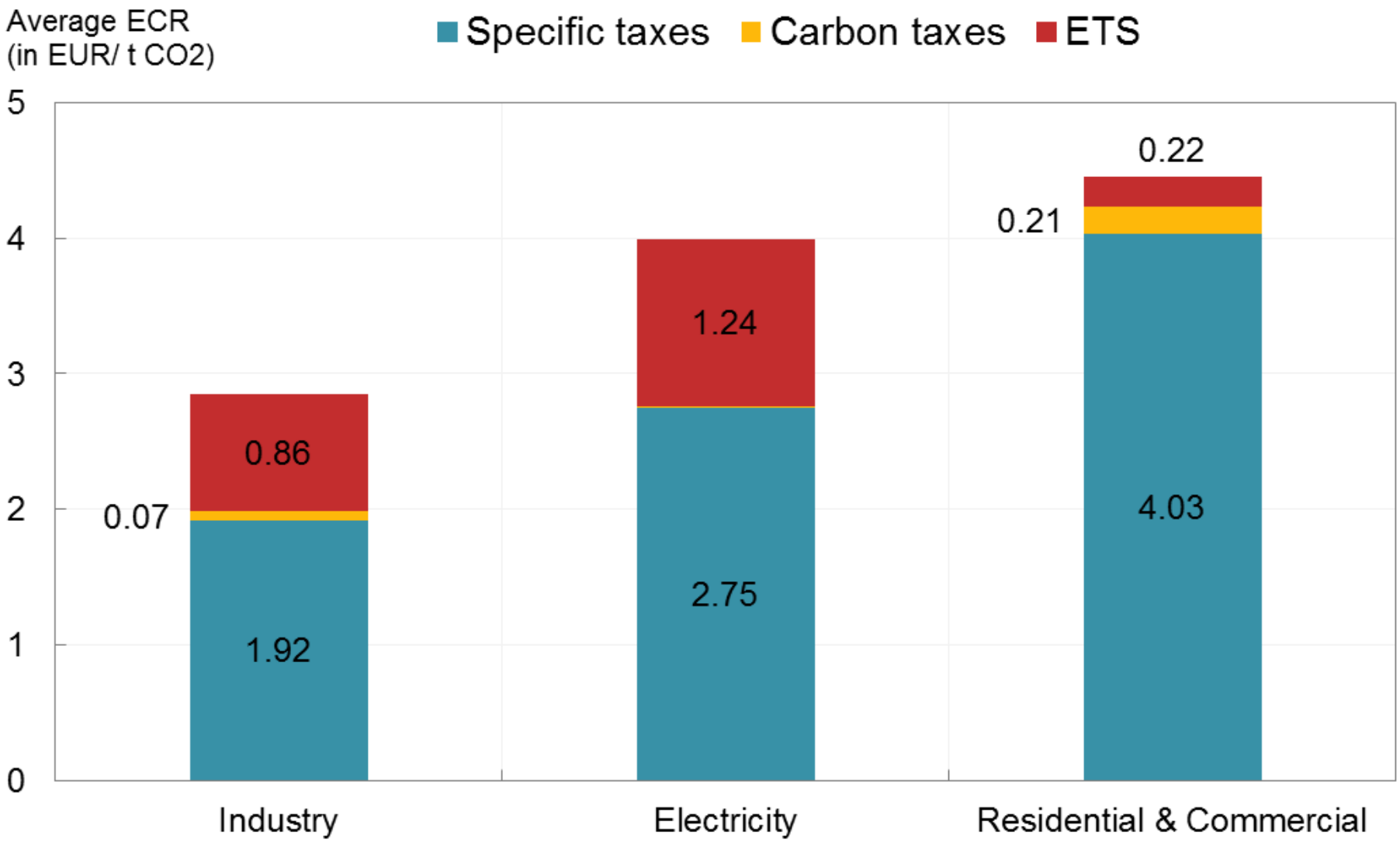
Conservative estimate of social cost of carbon: EUR 30 per tonne

Source: OECD (*forthcoming*), Effective Carbon Rates: Pricing CO_2 through taxes and emissions trading systems

Higher rates in road transport

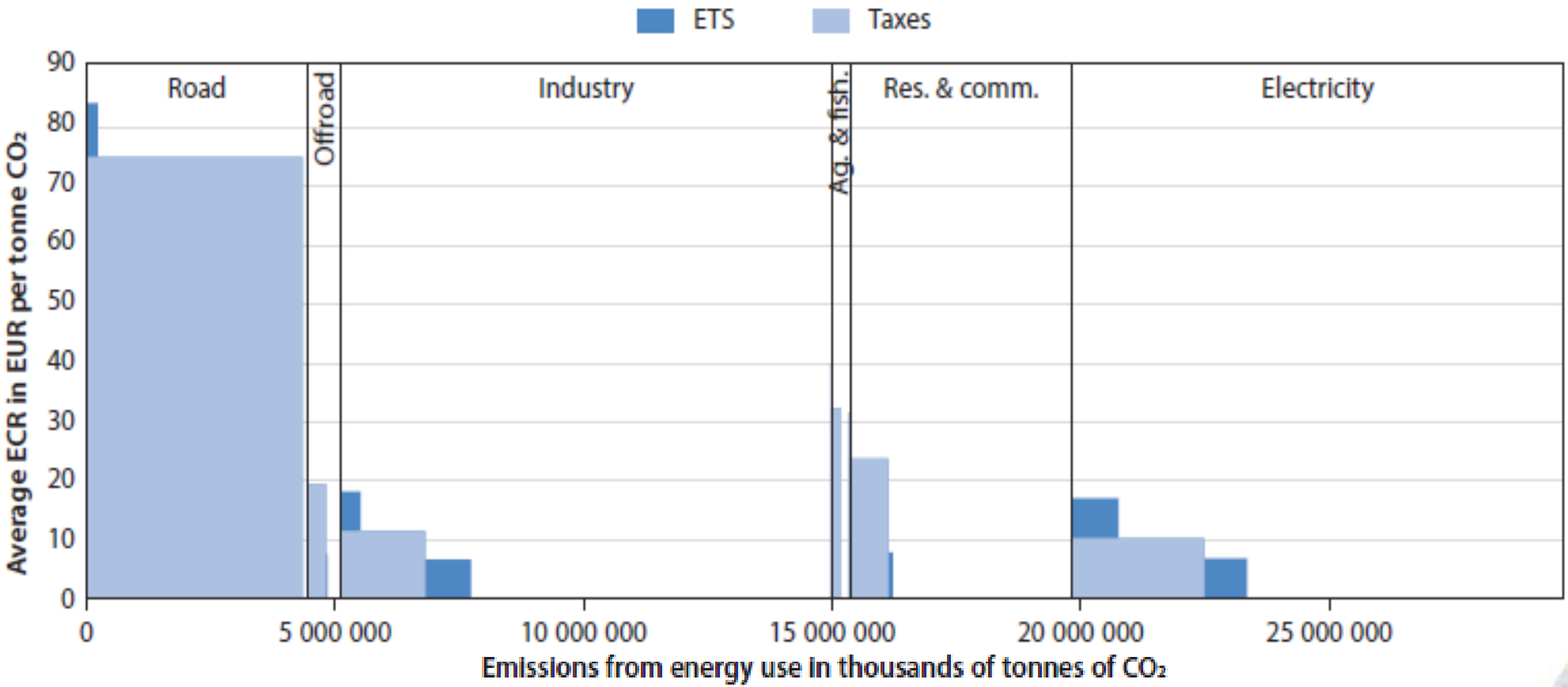


Specific taxes dominate Effective Carbon Rates



ETS and tax partly overlap

Average ECRs across 41 countries by sector, showing ETS and Tax component

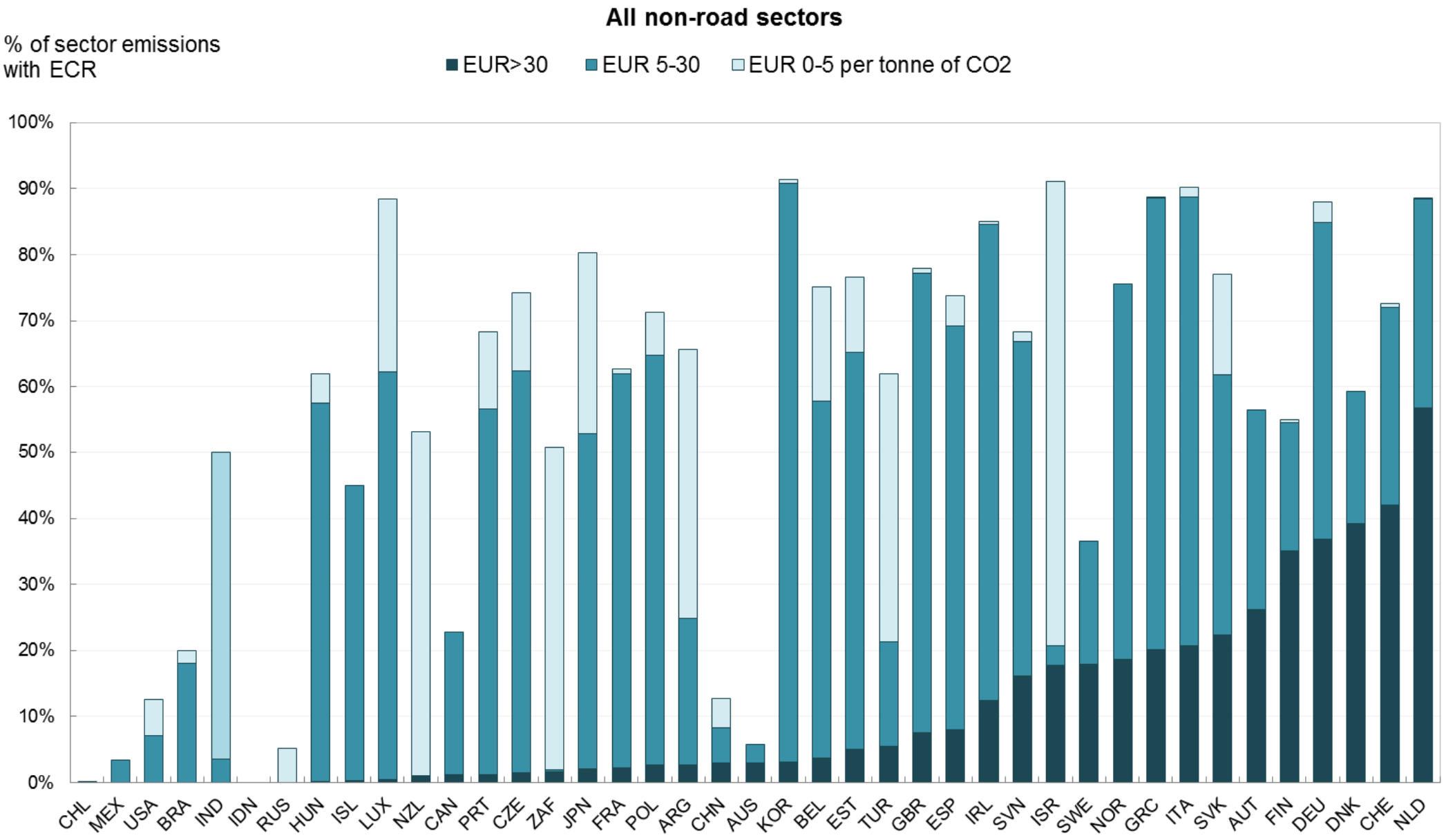


Effective Carbon Rates

Country results

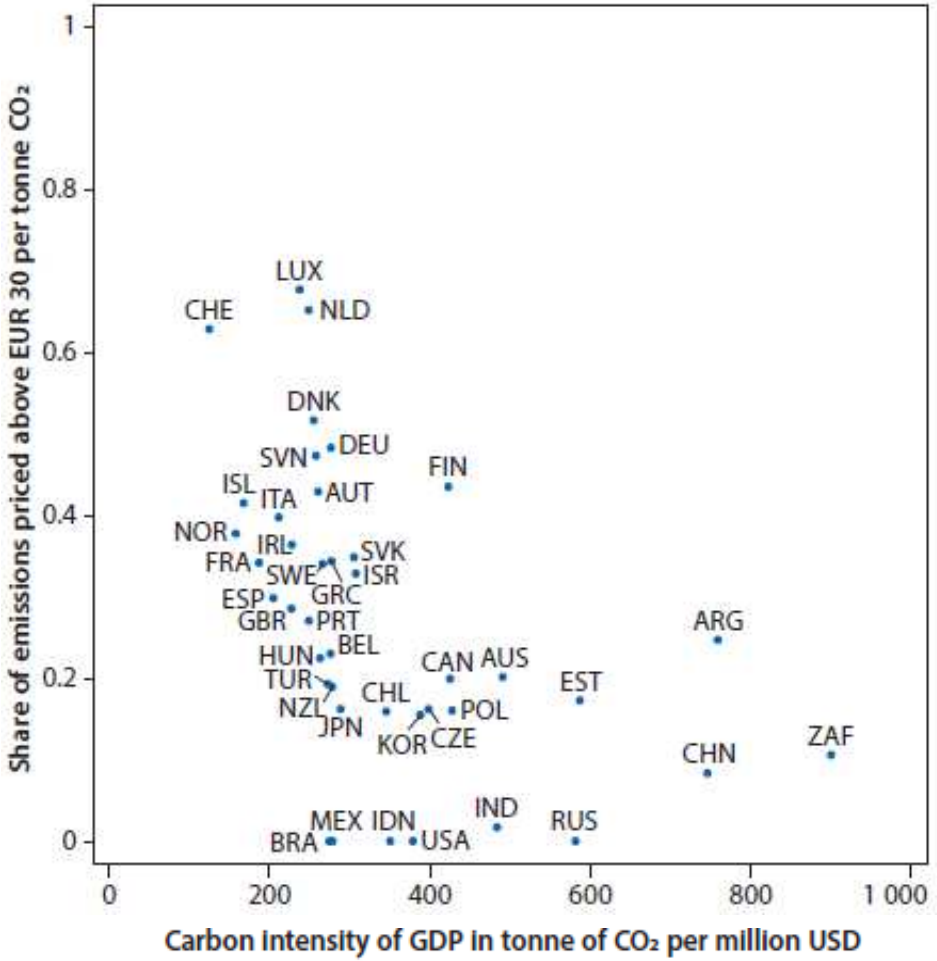
BETTER POLICIES FOR BETTER LIVES

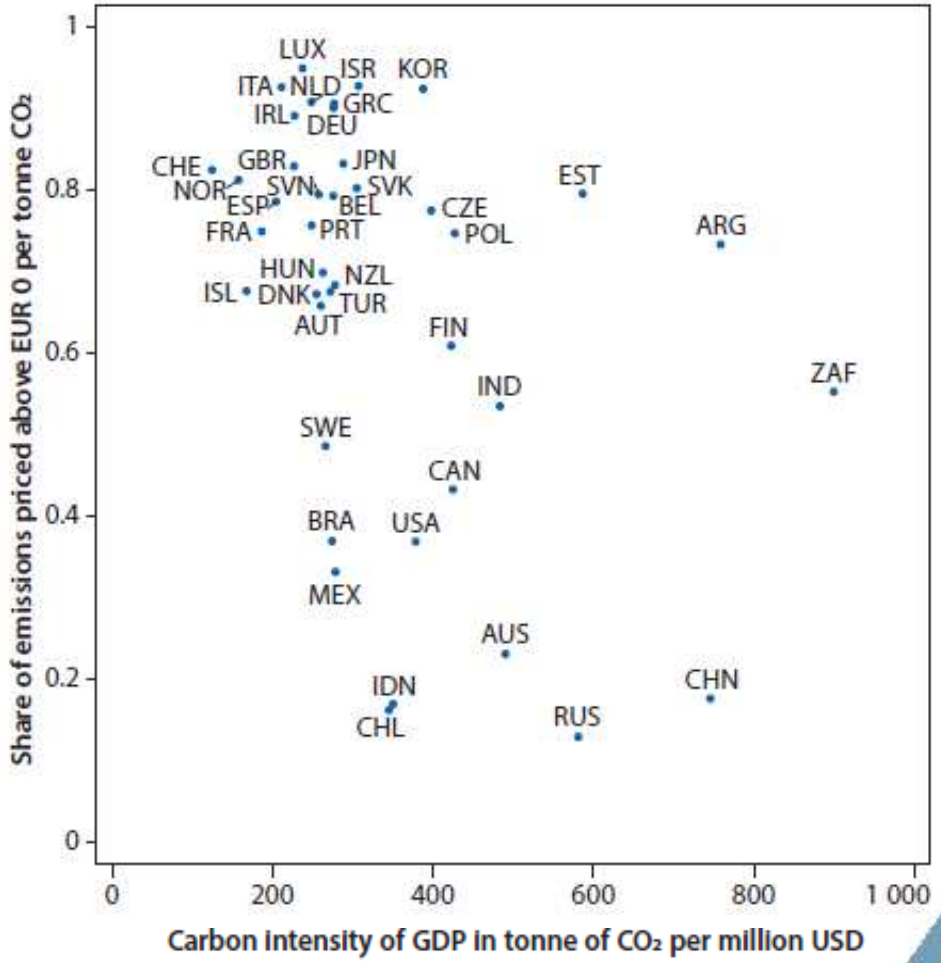
Effective carbon rates by country, excluding road transport – strong inter-country variation



Countries with higher ECRs tend to have a lower carbon-intensity of GDP

Proportion of CO_2 emissions priced above EUR 30 (left) and EUR 0 (right) per tonne of CO_2 relative to the carbon intensity of GDP





Carbon pricing is anything but universal.

Effective carbon rates…

… are particularly low in sectors outside road transport.

- In non-road sectors, 70% of emissions are unpriced, just 4% are priced at or above EUR 30 per tCO_2.
- Emissions from road transport are priced at much higher rates.

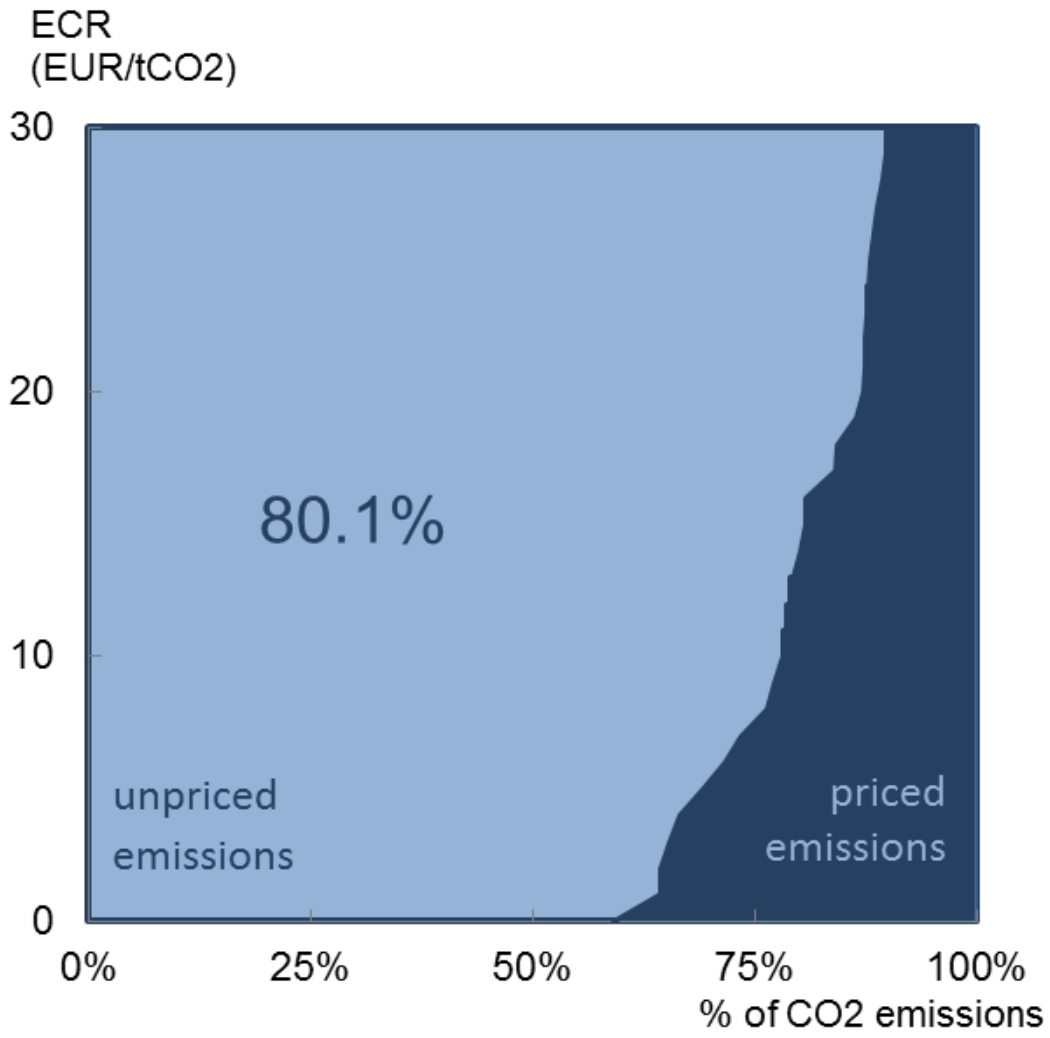
… are dominated by specific taxes on energy use.

- Emissions trading systems raise average rates in industry and electricity.
- Carbon taxes only have a marginal impact on ECRs.

… differ strongly between countries.

- The 10 countries with the highest ECRs represent 5% of the 41 countries' carbon emissions, the 10 countries with the lowest rates account for 77%.
- Countries that price a higher share of emissions above EUR 30 per tCO_2 tend to have a lower carbon-intensity of GDP.

ECRs fall short of pricing emissions at low-end estimate of carbon costs



Moderate collective action can deliver significant progress

ECRs fall short of pricing emissions at the low-end estimate of the cost of carbon.

- The carbon pricing gap is at 80.1% across the 41 countries

Moderate, but broad and collective increase in carbon prices would be a leap forward towards the low-carbon transition.

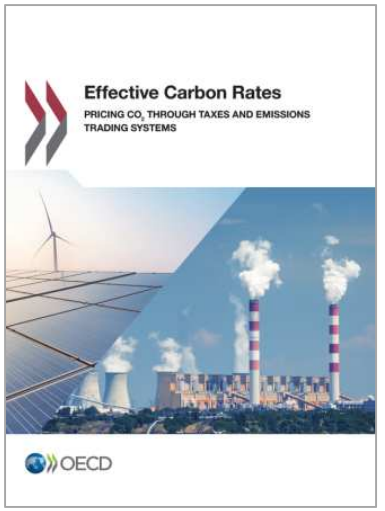
- Increasing carbon rates and their coverage to that of the median country in each sector reduces the carbon pricing gap to 53.1%

Cost-effective climate policy action should focus on

- Increasing price levels where they are currently low;
- Introducing pricing instruments where prices are currently zero.

For more information on this report, we invite you to consult:

- Report-specific webpage: http://oe.cd/ECR
  - Full set of results
  - Country specific information on ECRs and beyond



- David Bradbury, Head of Division, Tax Policy and Statistics Division, OECD's Centre for Tax Policy and Administration (+33 1 45 24 15 97)
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Background slides

Effective Carbon Rates

The Carbon Pricing Gap

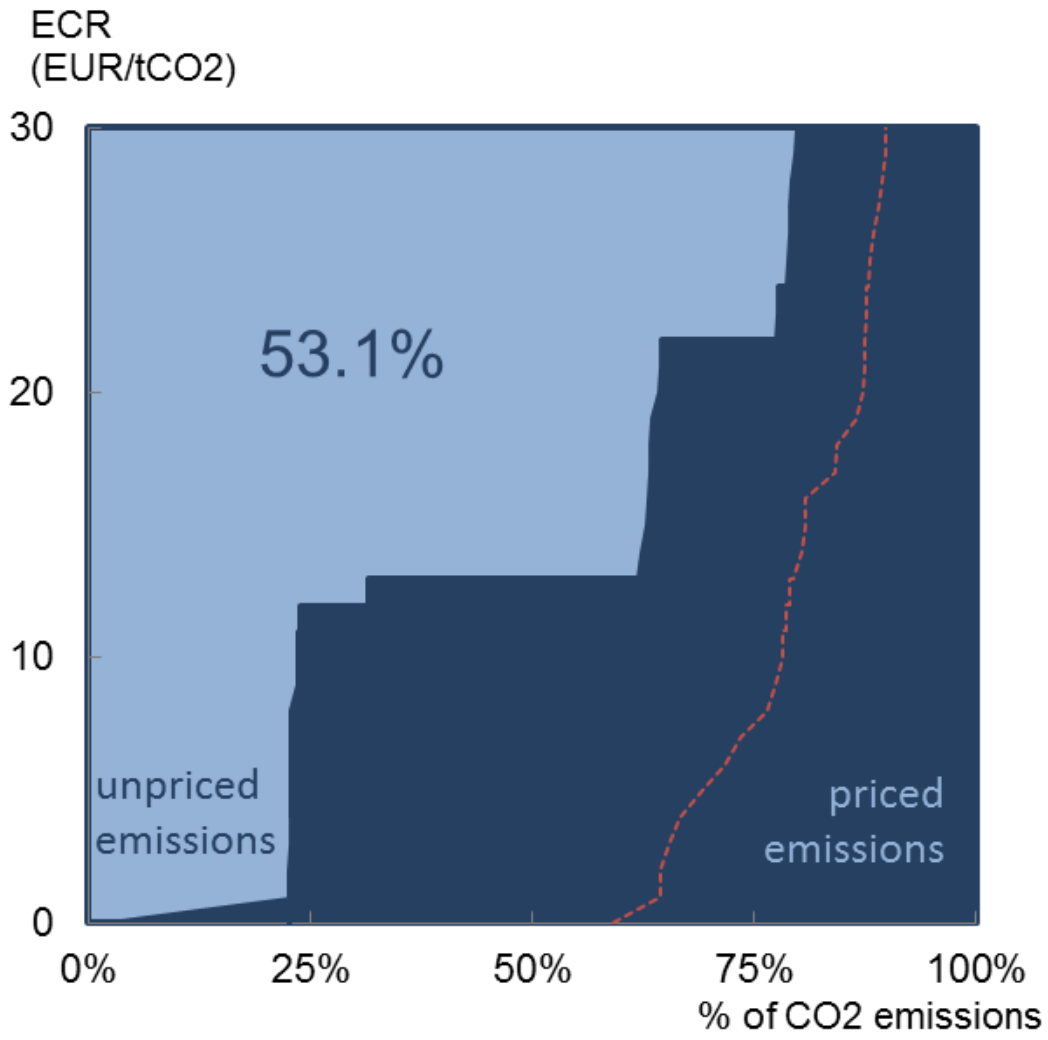
BETTER POLICIES FOR BETTER LIVES

Carbon pricing gap: the extent to which carbon is priced at less than EUR 30 per tonne

- ECRs are compared to a lower-end estimate of climate cost, EUR 30 per tCO_2
- The extent to which emissions are priced at less than EUR 30 per tCO_2 is called the “carbon pricing gap” from market-based policy instruments
- The carbon pricing gap would decline to zero if all emissions were priced at EUR 30 per tCO_2 or more, and it would be at 100% if the ECR was zero throughout
- If carbon pricing is to play a more significant role in climate policy, the gap needs to decline

Modest collective action can deliver significant progress

Carbon pricing gap under counterfactual scenario of **median prices and coverage**



FEEDBACK SESSION FROM CALIFORNIA

Emily Wimberger

Chief Economist, California Air Resources Board

Cost Containment in California's Cap-and-Trade Program

Emily Wimberger
California Air Resources Board
November 16, 2016

Cap-and-Trade Program 101

- One of a suite of measures to reduce greenhouse gas (GHG) emissions under AB 32
- The economy-wide cap limits annual GHG emissions from all regulated sources, and it declines each year
- Covered entities must purchase and surrender allowances and offsets to match their emissions at the end of each compliance period
  - This places a price on emissions and incentivize reductions
- Participants are allowed to trade State-issued GHG emissions allowances
  - Trading provides flexibility and reduces compliance costs

California Cap-and-Trade Program Stats

- Program began in 2013
- Bilateral linkage with Québec in 2014
- Bilateral linkage with Ontario planned in 2017
- 17 auctions (last one November 15, 2016)
- 98% compliance at first compliance event in November 2015
- Expanded to cover fuels in 2015 (85% of California GHGs)

Cap-and-Trade by the Numbers

- Approximately 400 covered entities
- Approximately 260 voluntary entities
- Approximately $850 million compliance instruments are held in accounts
- Approximate market value of compliance instruments in circulation is $10.8 billion
- State-owned allowances for sale in 2016: 167 million
- Approximately $4.04 billion placed into the Greenhouse Gas Reduction Fund

Cost Containment Features

- Allowance banking
- Multi-year compliance periods
- Broad program scope
- Emissions reduction by direct regulation
- Administrative allocation of allowances
- Emissions offsets
- Auction price floor
- Allowance Price Containment Reserve

The Auction Floor

- Rises 5% each year + inflation
- Harmonized each auction with floor price in Québec
- Example from November 15, 2016 auction notice:

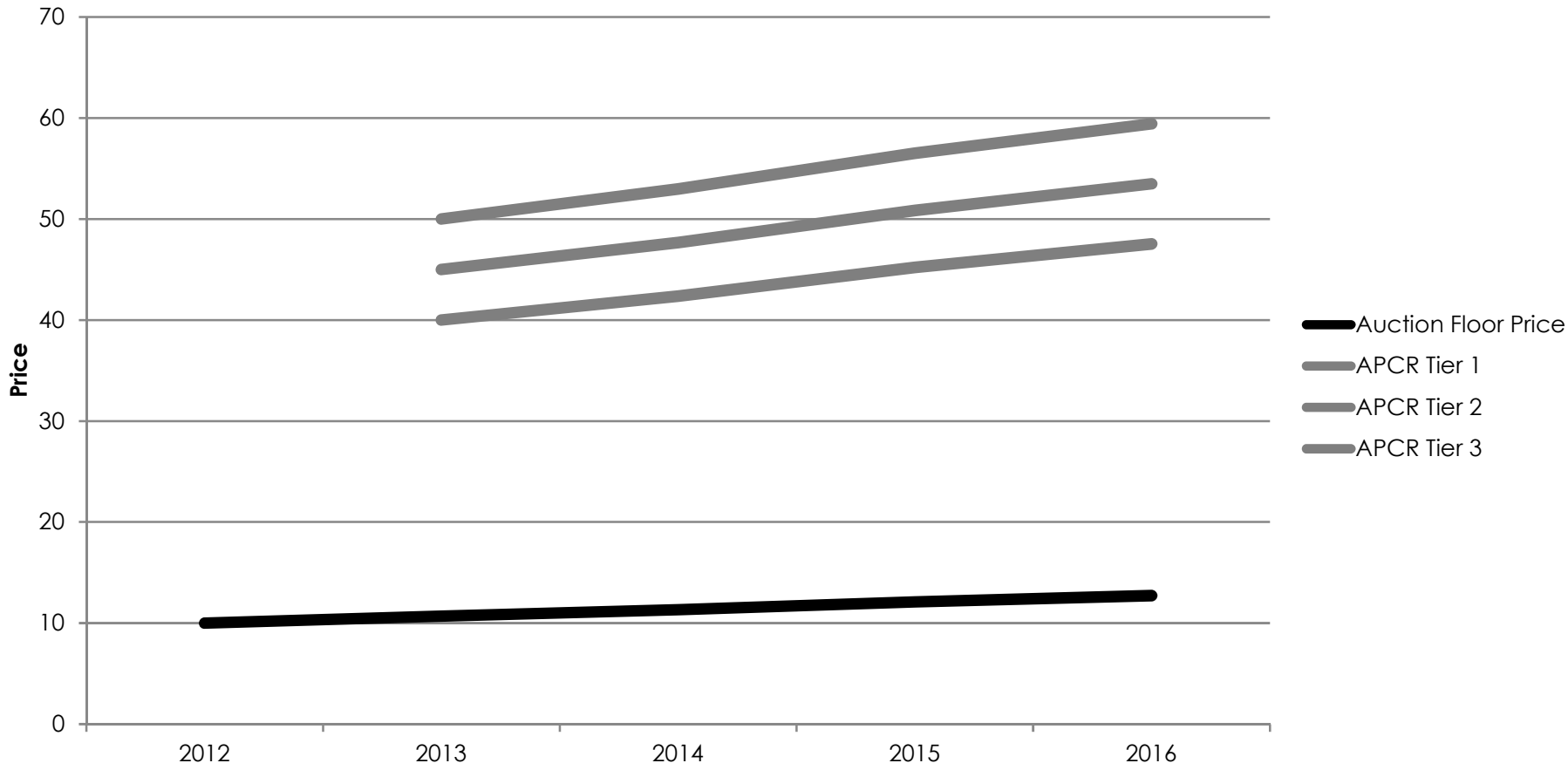
Table 3: 2016 Annual Auction Reserve Prices

Auction	CA Annual Auction Reserve Price (USD)	QC Annual Auction Reserve Price (CAD)
Current Auction	12.73	12.82
Advance Auction	12.73	12.82

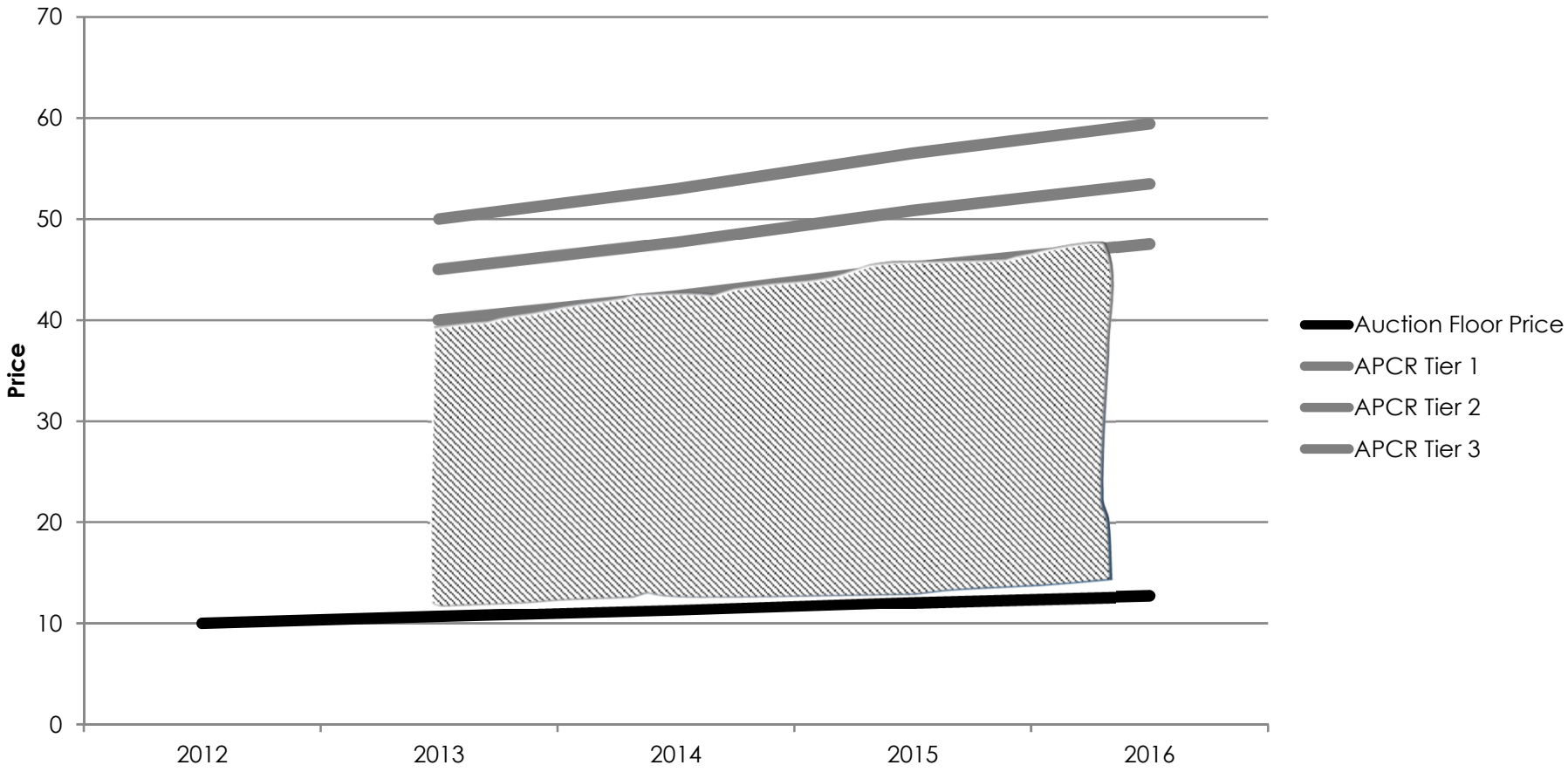
The Current Reserve

- Pool of approximately 141.8 million allowances
- Available for purchase by compliance entities at three pre-established price tiers
  - Price tiers rise at 5% + inflation each year
- Four Reserve Sales can be held each year
- Reduces the likelihood that allowance prices exceed the highest price tier of the Reserve
- If needed Reserve can be augmented by allowances from future years available for sale at Reserve Sales at the highest price tier
  - Limited to 10% of each future budget year

Cap-and-Trade Auction Floor and Reserve Price



‘Soft Price Collar’



PERSPECTIVE FROM A CLIMATE ECONOMIST

Benoît Leguet

GENERAL DIRECTOR

I4CE

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Ministère de l'Écologie, du Développement durable et de l'Énergie

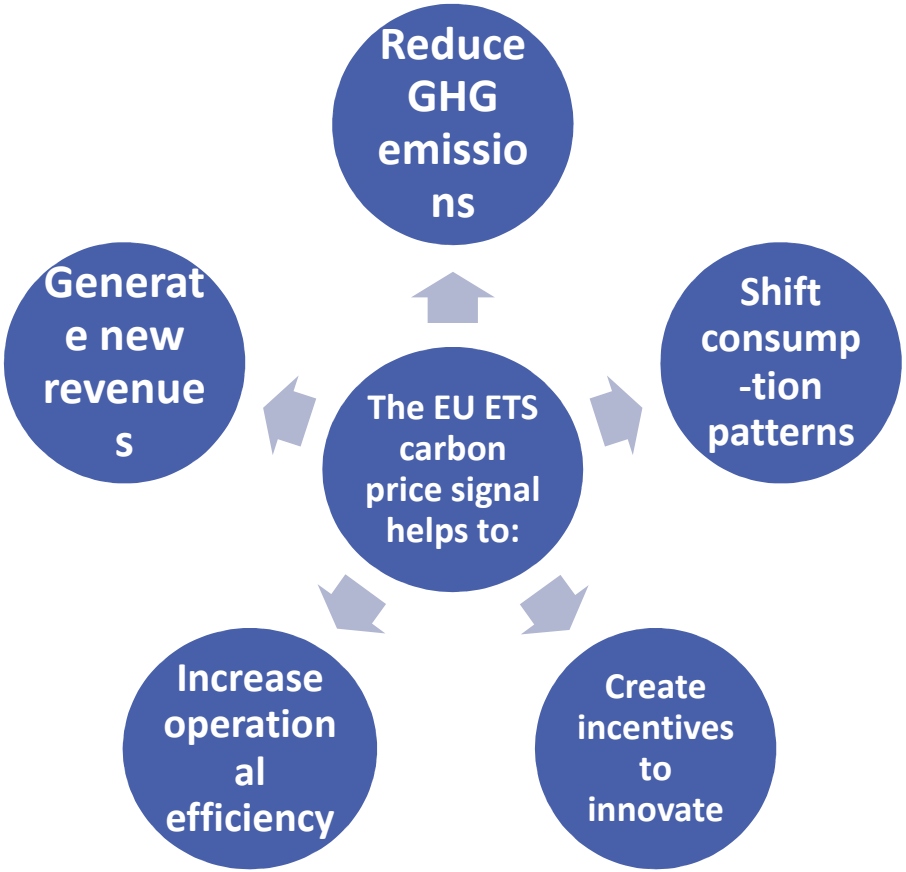
Carbon Pricing uncertainty: Stabilisation for more innovation

16/11/2016

Benoit LEGUET, Managing Director

Side-Event « Carbon Pricing »
French Ministry of Environment, Energy and Sea
French Pavillon | COP22

In EU, the ETS is supposed to be the key tool to enable the achievement of climate-energy targets.



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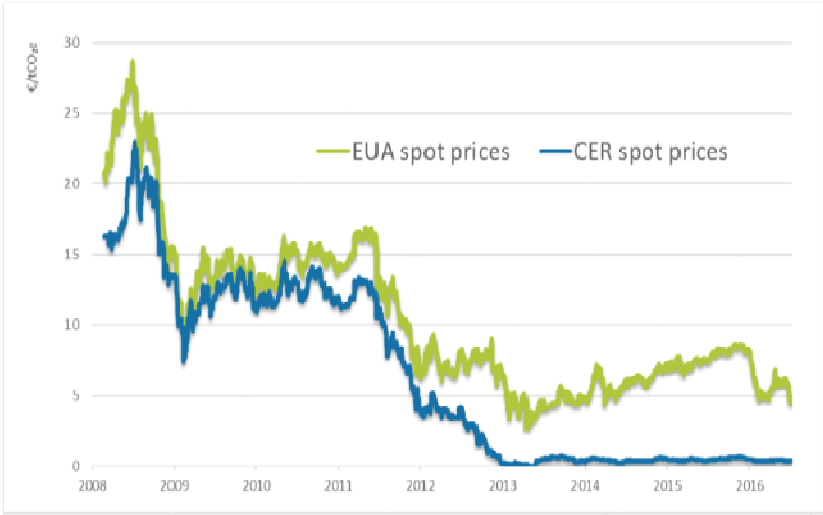
Complementary measures remain necessary to drive low carbon investments.

What we've learned about the impact of a modest EU ETS carbon price since 2008

- **A modest/sub-optimal carbon price can:**
  - Lead to some fuel-switching in existing operations
  - Make near-to-market low-carbon technologies cost-effective
  - Backstop other low-carbon support policies
- **While an optimal carbon price could:**
  - Drive the impetus for low-carbon investments
  - Force early retirement of high-carbon assets
  - Give strong signal for electrification of heat and transport

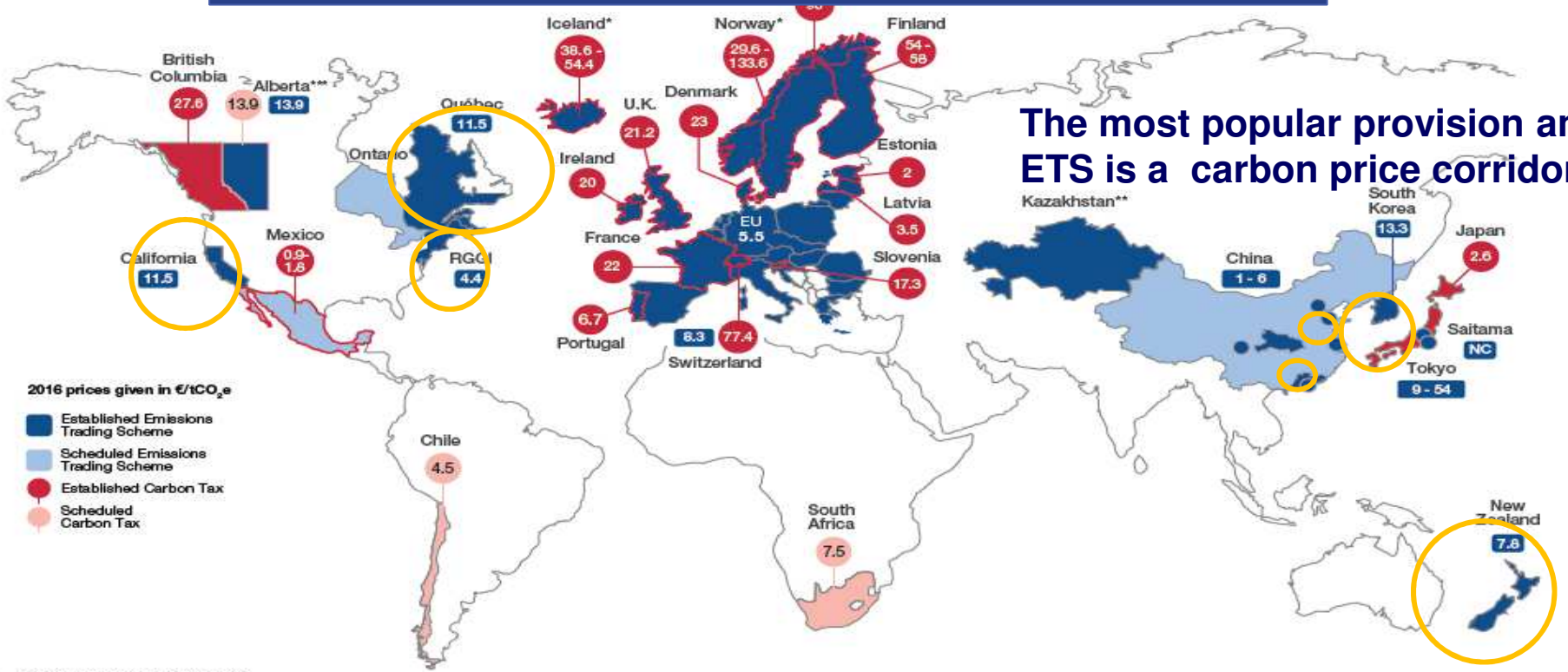
FIGURE : THE EUA AND CER PRICES



Source: ICE Futures Europe, 2016

Price stabilisation provisions are a common feature of Emissions Trading Systems around the world

Wold map of carbon pricing mechanisms



The most popular provision among ETS is a carbon price corridor

* Rate varies by sector/energy product
** ETS suspended until 2018
*** The 2015 Specified Gas Emitters Regulation (SGER) price is the fee paid into the Climate Change and Emissions Management Fund, set at €10.9/tCO_2e. The Carbon Competitiveness Regulation (CCR) will replace the SGER in 2018, at which point, an economy-wide carbon price of €21.8/tCO_2e will be set

Note: All prices are nominal values. ETS prices have been calculated as an average of prices between 1 January and 30 June 2016. Prices were calculated using exchange rates provided by XE.com on 8 July 2016.

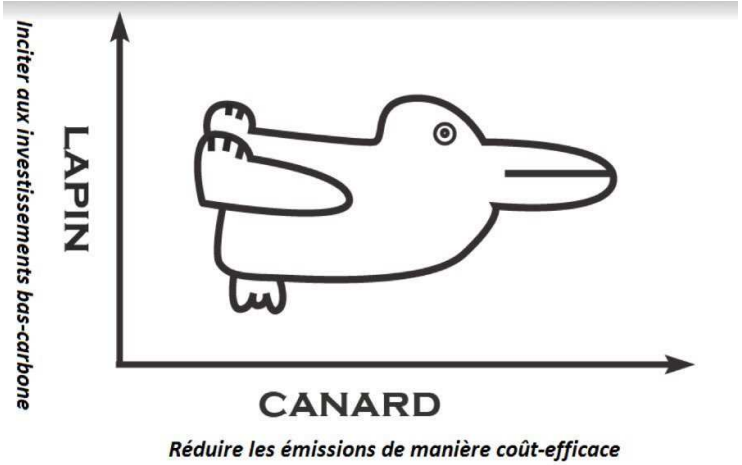
Source: I4CE - Institute for Climate Economics, September 2016

In Europe, stabilizing the EU ETS would require more explicit objectives and targets

- **MULTIPLE OBJECTIVES ?**

With a clear and well defined objective, the EU ETS could be a stronger driver of the low-carbon transition :

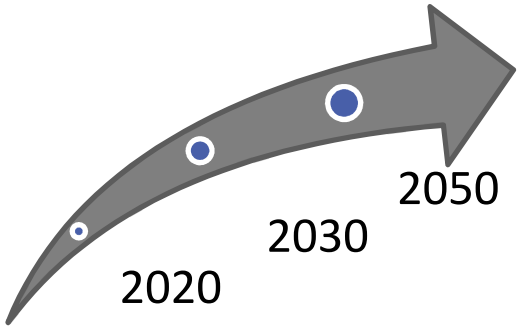
  - Delivers cost-effective emissions reductions
  - Channels investment towards low-carbon initiatives and projects



- **TOWARDS A LONG TERM GHG TARGET?**

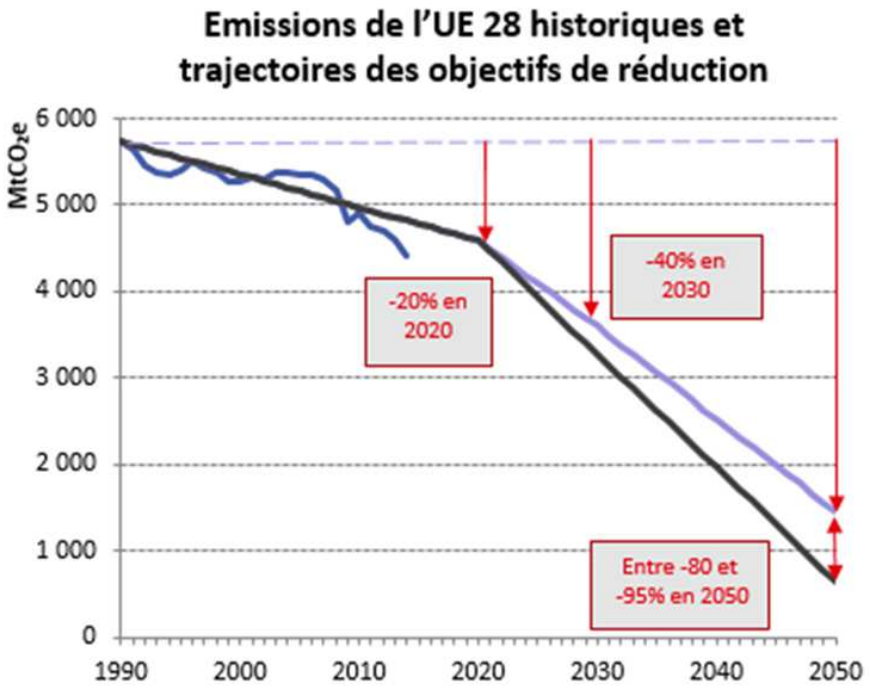
Reforming the EU ETS to support low-carbon investments will require to give more materiality of its (expected) long term ambitious

  - Challenge 1 > How to fix the EU 2050 climate ambition before 2020?
  - Challenge 2 > How can its EU 2050 climate ambition be reflected in the EU ETS by 2030 ?



Challenge #1 – How to fix the EU 2050 climate ambition before 2020?

- EU considered on track to achieve its 2020 targets. However, **the 2030 GHG target is only consistent with the low pathway of the 2050 GHG ambition.**
- **Measures to enhance materiality of the EU long term GHG ambition :**
  - **Increasing the credibility of the 2050 GHG ambition** by publishing a 2050 EU roadmap towards a low carbon economy before 2018.
  - **Addressing on how net-zero emissions will be achieved** (CCS technologies, LULUCF).
  - **Aligning EU 2030/2040 targets to be on the most ambitious 2050 pathway.**
  - **Defining a EU long term shadow carbon price** for reducing the uncertainty for economic players.



Sources: I4CE, Institute for Climate Economics d'après données de l'Agence européenne de l'environnement, 2016

Challenge #2 – How can EU 2050 climate ambition be reflected in the EU ETS?

There are several options to enhance the EU ETS to meet ambitious 2050 targets :

- Decreasing the annual linear reduction factor of the ETS cap
- Managing ETS interactions with other energy and climate policies using regular assessments:
  - Ex-ante assessment of complementary policies abatements to update the ETS cap
  - Centralised and automatic management e.g. through defining new thresholds under the MSR review > scheduled in 2023.
  - Decentralised and discretionary management > through the voluntary cancellation of allowances by Member States (e.g. proposal by Sweden)
- Introducing a carbon price floor or corridor
- Breaking the tragedy of the horizon by defining GHG targets for 2035 before 2020 (for 2040 before 2025, for 2045 before 2030)

2050

Conclusion | The Paris Agreement: a new booster for the EU climate strategy

- **The EU should take advantage of the Paris Agreement calendar and the momentum it has built for the exploration and adoption of ambitious policies that are in line with global goals.**
  - A facilitative dialogue scheduled in 2018
  - A global stock take in 2023
  - A review of NDC in 2025

Thank you for your attention

Further reading…

Download our report -

Exploring the EU ETS beyond 2020

http://www.i4ce.org/download/copec-report/

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ROUND TABLE DISCUSSION

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