30 September 2021

# EU ETS 2: Exploring its role in decarbonising transport and buildings

## Electrification Academy


Samuel Thomas
Senior Advisor
Regulatory Assistance Project

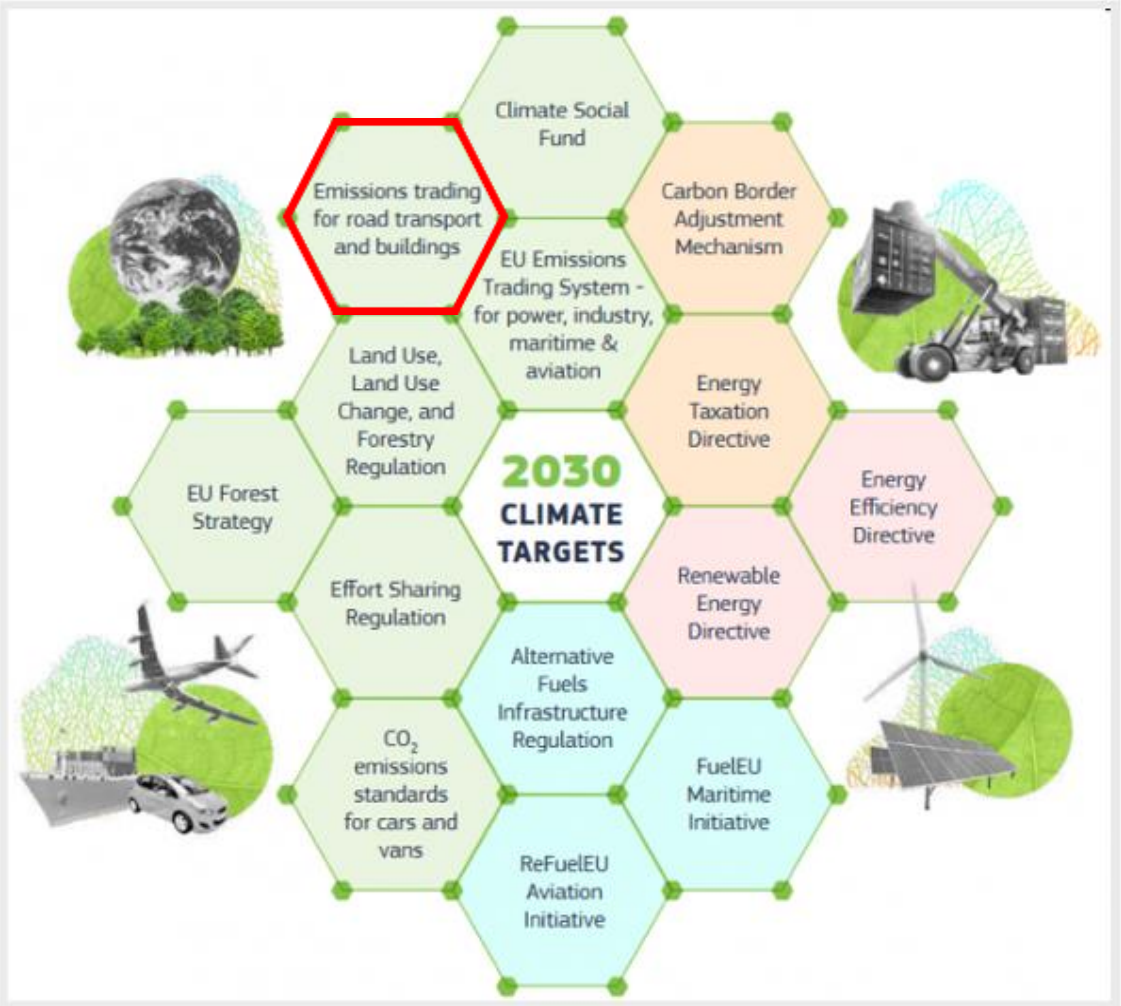
Sofie Defour
Climate Manager
Transport & Environment

# Outline

- The EU ETS2 proposal
- Implications for the transport sector
- Implications for the buildings sector
- Using the revenues and addressing equity concerns

# 1 The EU ETS2 Proposals

# The Fit for 55 Package






Source: EU Commission

# ETS 2 scope: Fossil fuel combustion in buildings and road transport

## Rationale

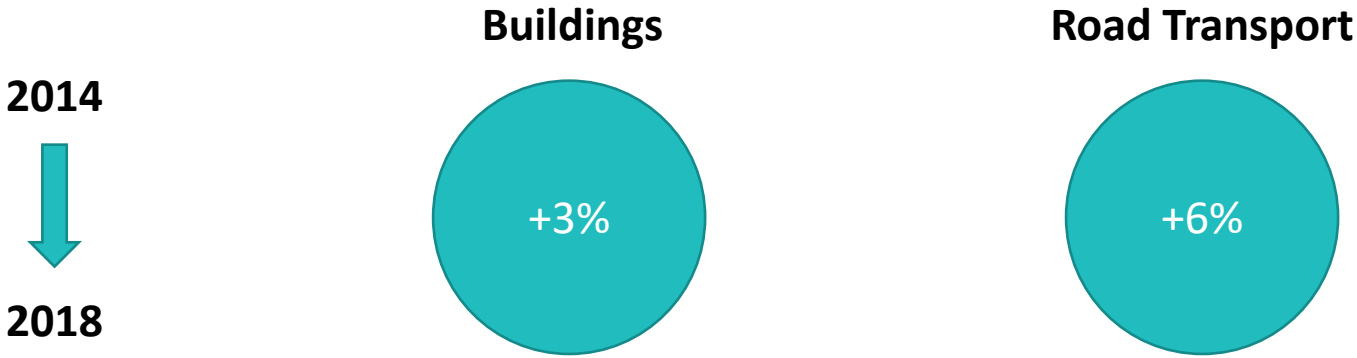
- Indirect emissions covered by ETS 1 (electricity, district heating)


Note: Sizes of boxes do not correspond with actual emissions

# ETS 2 scope: Fossil fuel combustion in buildings and road transport

## Rationale

- Emissions from buildings and road transport rising



# ETS 2 design: overview

- Regulated entities - **Upstream** fuel suppliers
- Emissions reduced to **43%** of 2005 levels by 2030
- Operational from **2026** (requirement to hold permit in 2025)
- **100% auctioning** of allowances
- Market Stability **Reserve** (600m allowances)

# ETS 2 design: “soft start”

- ETS 2 **carbon budget looser than expected** emissions
- **Front-loading** of allowances in 2026 (130% of cap)
- **Cap declines more slowly** until 2028

Source: Adapted from EU Commission

# ETS 2 design: revenues

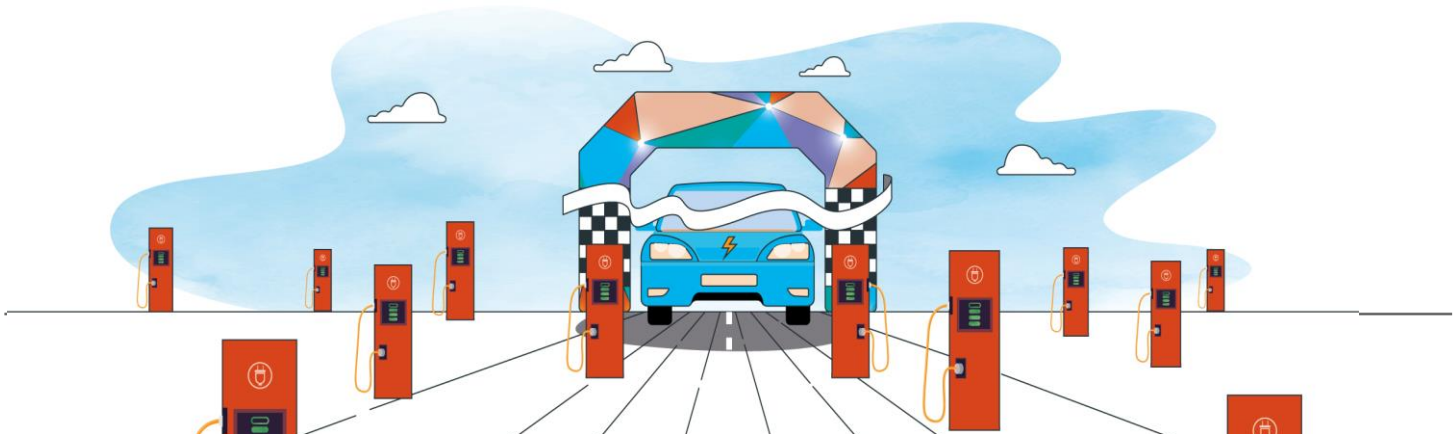
- Member States keep bulk of revenues
  - Shall be spent on decarbonization and/or social aspects
- Some revenues (c.20-25%) to Social Climate Fund
  - For vulnerable households and SMEs
- 150m allowances for the Innovation Fund

# 2 Road transport sector

# EU climate rules for road transport

Existing rules with extra ambition:

- National 2030 climate targets (road transport, buildings, agriculture, small industry and waste)
  - -40% by 2030 (2005 baseline)
- Car, van and truck pollution limits (CO2 standards)
  - ICE phase-out in 2035



TRANSPORT & ENVIRONMENT

# EU climate rules for road transport

Existing, but higher ambition:

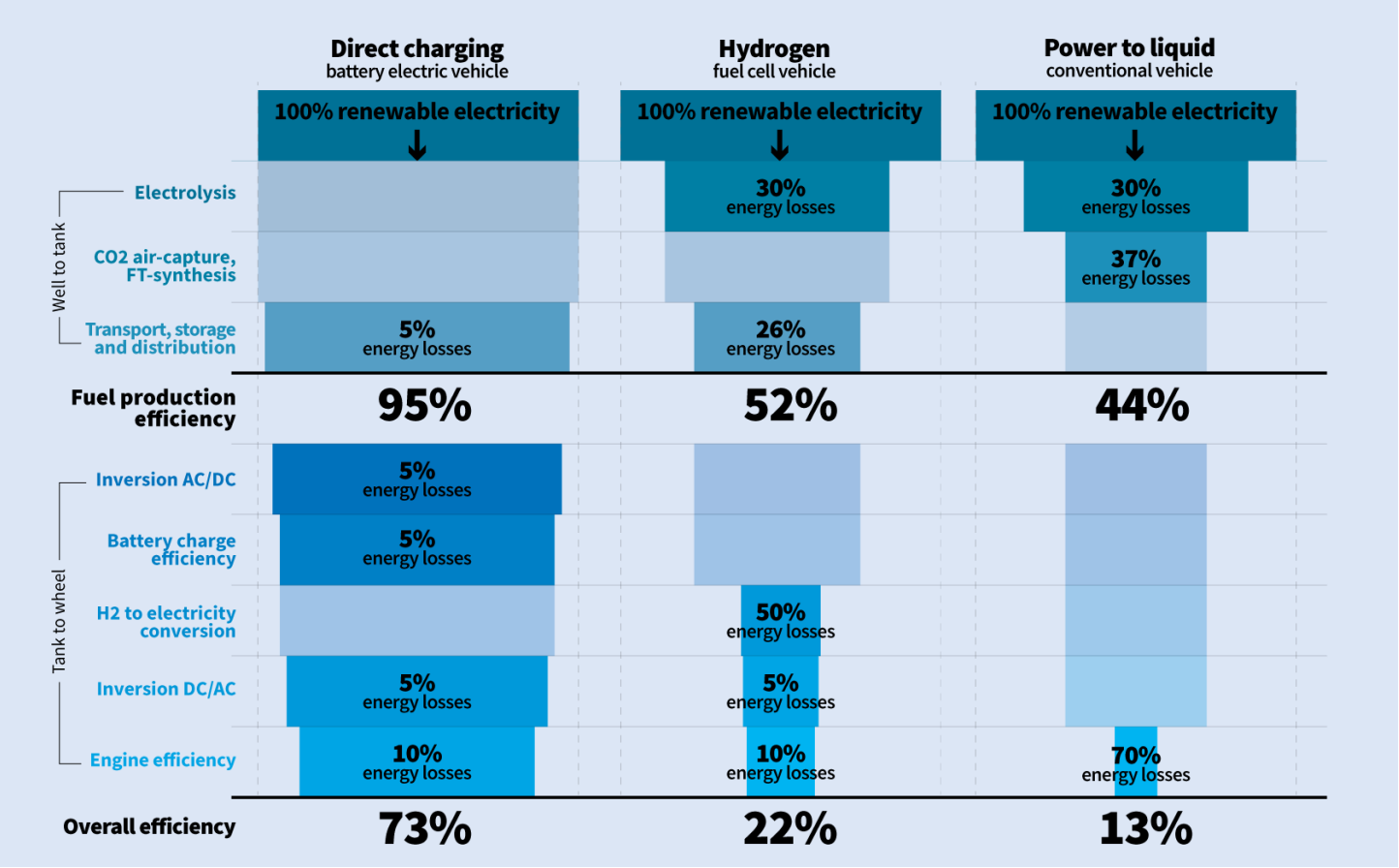
- National 2030 climate targets (road transport, buildings, agriculture, small industry and waste)
  - -40% by 2030 (2005 baseline)
- Car, van and truck pollution limits (CO2 standards)
  - ICE phase-out in 2035

New:

- EU separate emissions trading system (ETS2)
- EU Social Climate Fund

# Why electrification for cars?

## Battery-electric most efficient by far

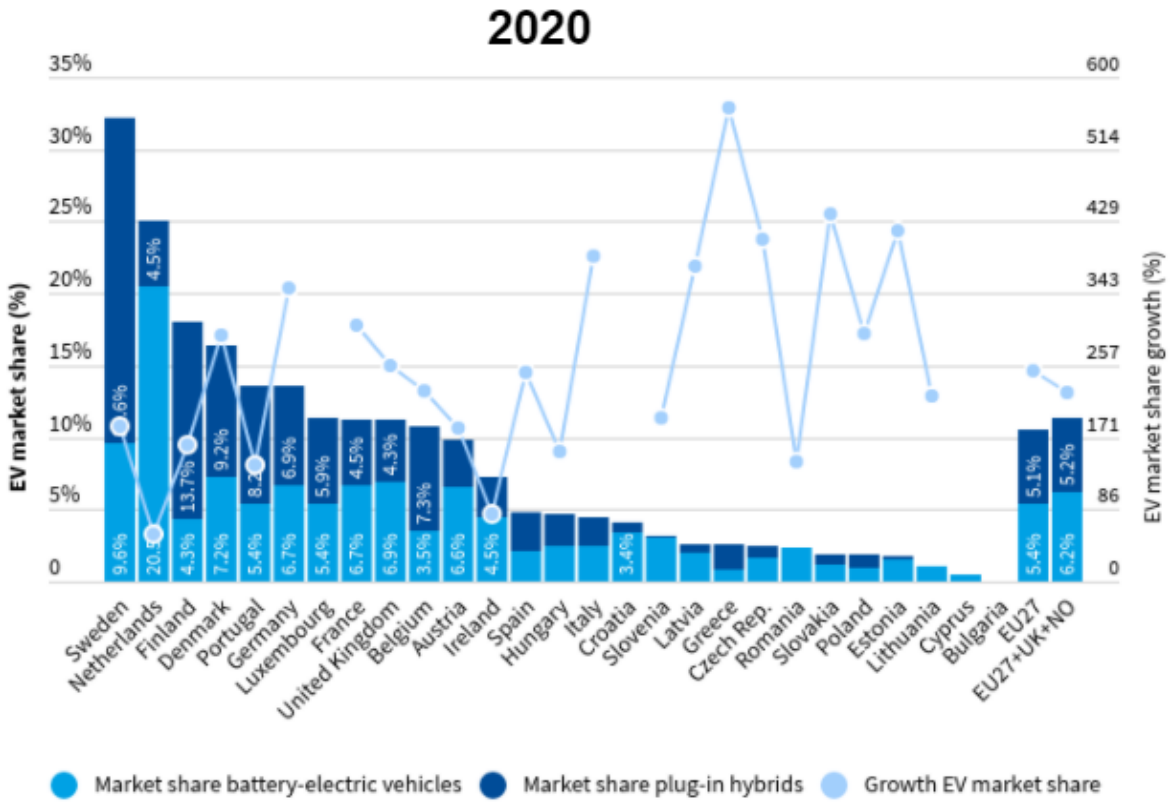





Source: WTT (LBST, IEA, World Bank), TTW, T&E calculations

# Where are we today?

## E-mobility market: impressive growth 2020-2021




**H1 2021**

Plug-in sales: **15.9% EU**

- Germany: 22.6%
- France: 15.7%
- Spain: 6.3%
- Italy: 8%

BEVs: 7.4%

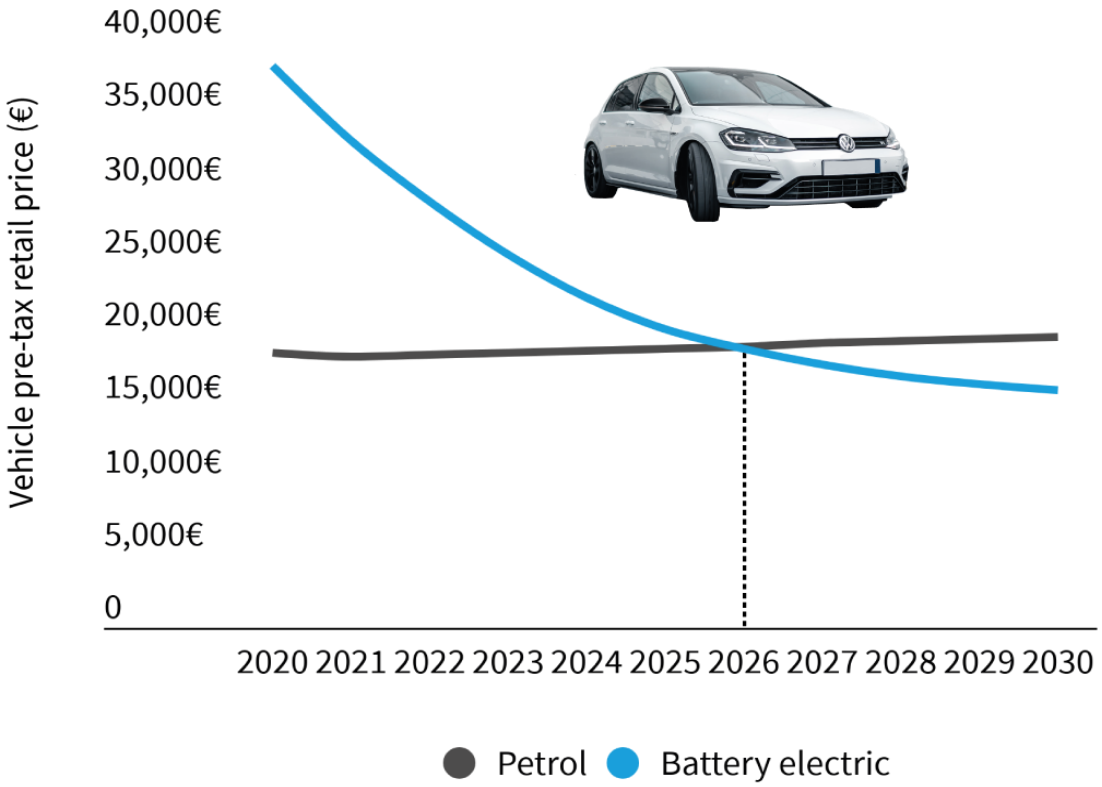
PHEVs: 8.5%



Source: T&E analysis of ACEA quarterly registration statistics

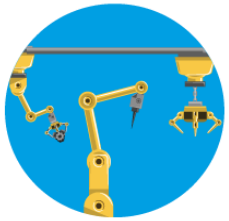
# Where are we going?

## Electric vehicles will reach price parity with petrols in 2025-27




**Main cost drivers:**

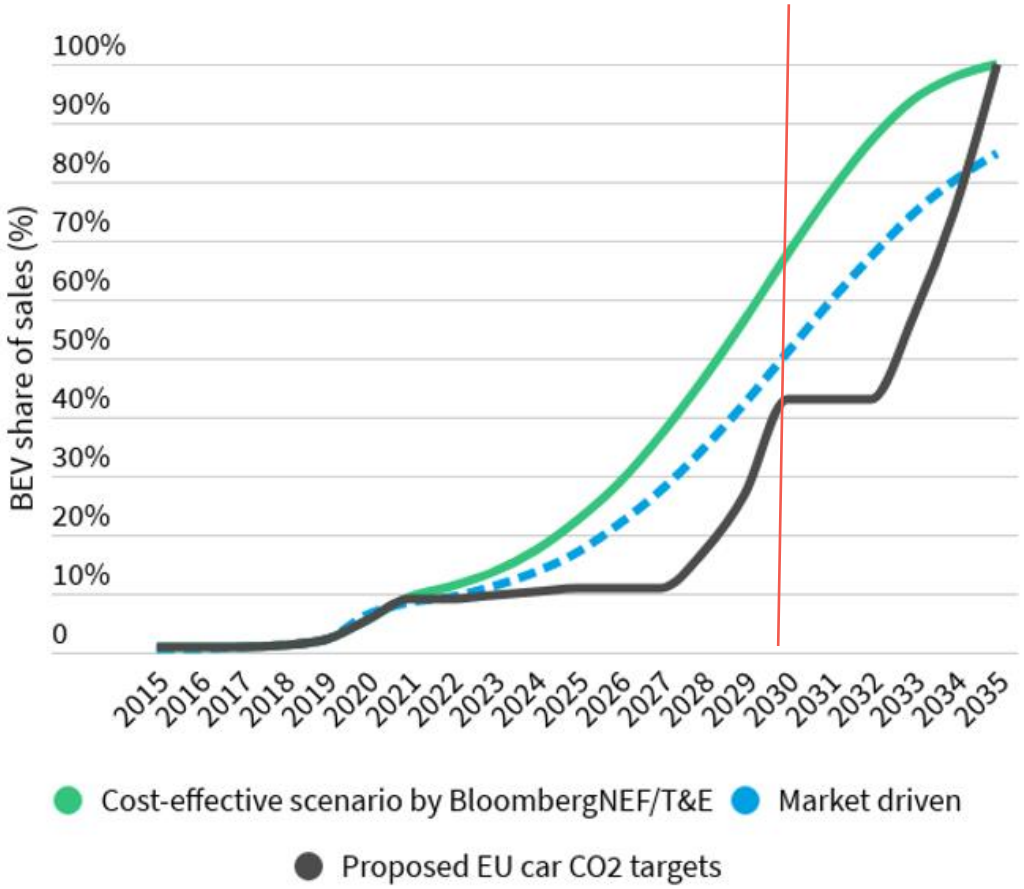
**Battery cost decrease**



**Electric vehicles dedicated production lines**

# Where are we going?

## Ambitious pollution limits needed for pre-2030 impact






Source: Bloomberg NEF (2021). *Hitting te EV Inflection Point.*
T&E modelling of the EU CO2 standards for cars.

# So why an ETS2 for transport?

- On top of CO2 standards, need to reduce demand and enable lowest incomes in transition
  - Prevent rebound effect from more efficient ICE cars
  - Phase-out legacy fleet more quickly

| CO2 price | Price increase (excl. VAT) | Long-term change in demand (and CO2 reductions) | Annual ETS2 revenues |
|---|---|---|---|
| €25/t | 6 cts | - 3.5% | |
| €44/t | 11 cts | - 6.5% | 42 bln |
| €60/t | 15 cts | - 9% | |

# So why an ETS2 for transport?

- On top of CO2 standards, need to reduce demand and enable lowest incomes in transition
- Need to reverse trend and ensure 2030 target

# So why an ETS2 for transport?

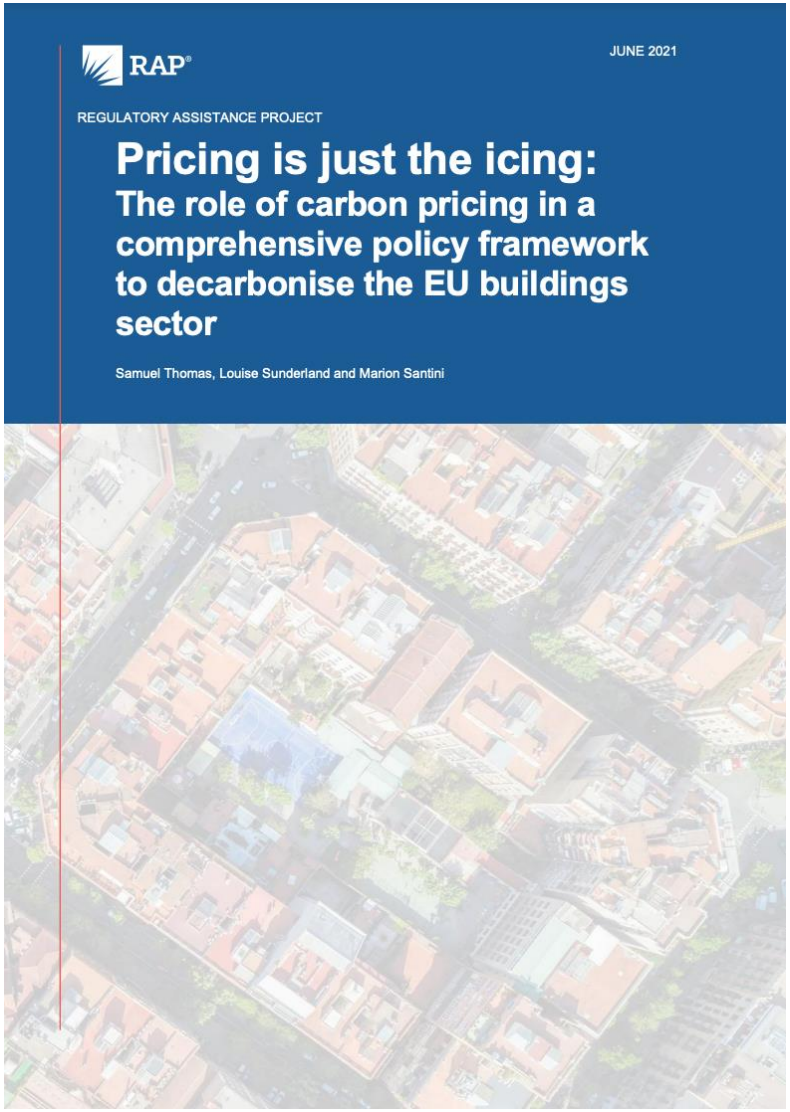
- On top of CO2 standards, need to reduce demand and enable lowest incomes in transition
- Need to reverse trend and ensure 2030 target
- Introduce polluter pays principle

# So why an ETS2 for transport?

- On top of CO2 standards, need to reduce demand and enable lowest incomes in transition
- Need to reverse trend and ensure 2030 target
- Introduce polluter pays principle

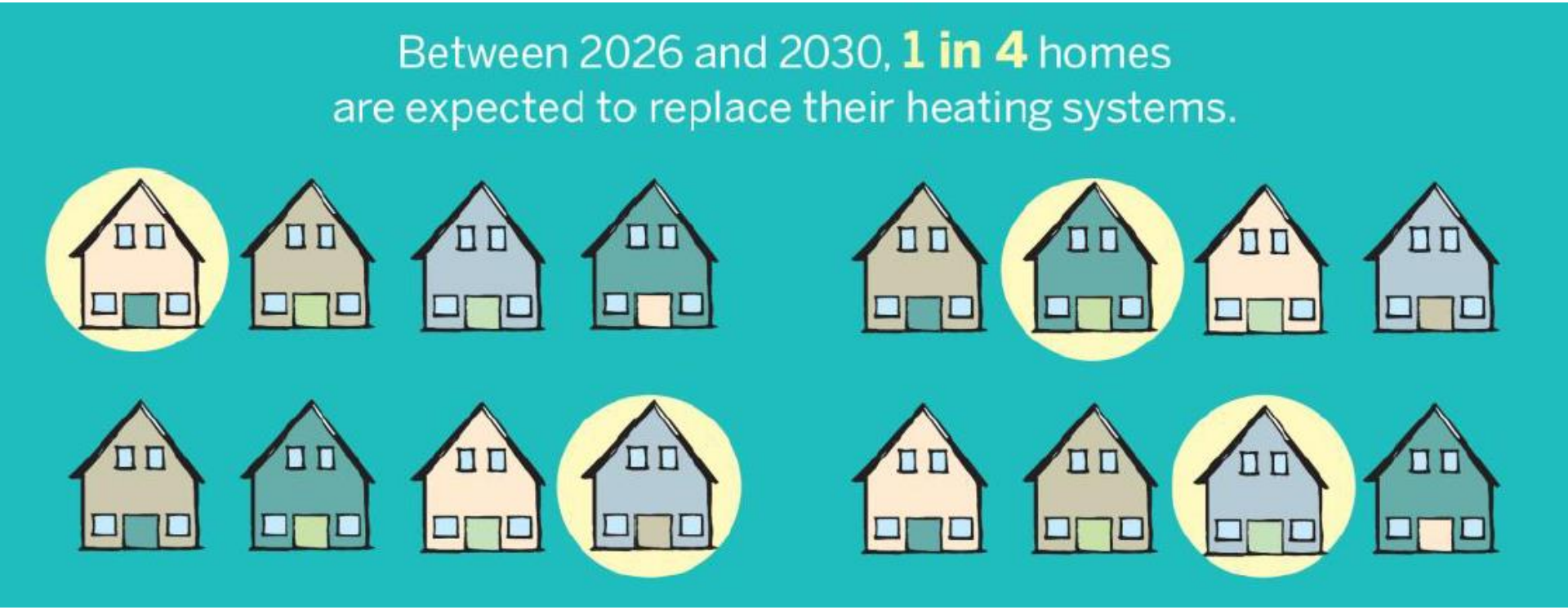
→ **But: needs to be done in a socially just way**

# 3 Buildings sector




https://www.raponline.org/knowledge-center/pricing-just-icing-role-carbon-pricing-comprehensive-policy-framework-decarbonise-eu-buildings-sector/

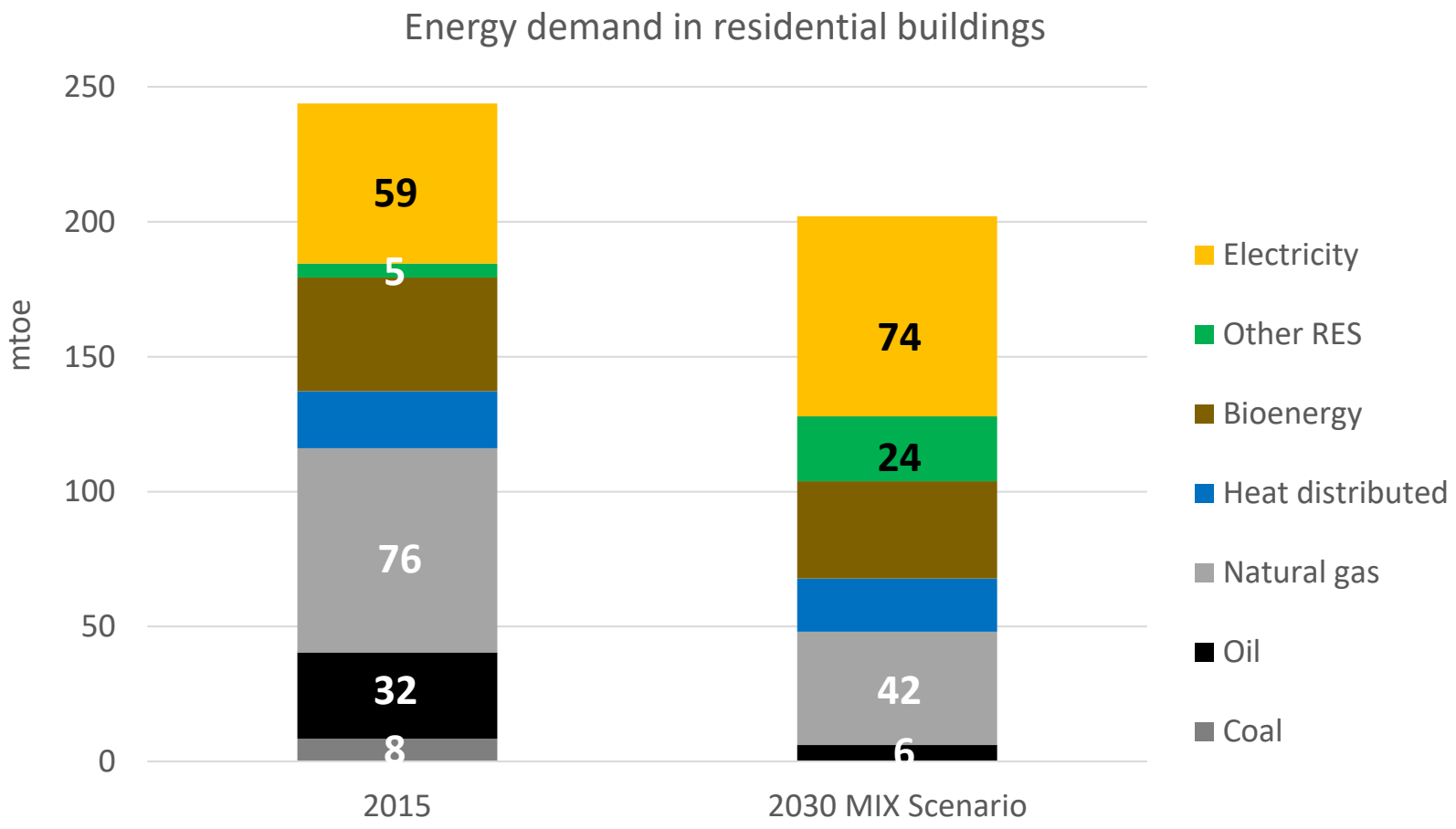
# Heat decarbonisation expected to play a big role in the 2020s






Source: RAP (2021) Pricing is Just the Icing.
Based on EU Commission Climate Target Plan Impact Assessment

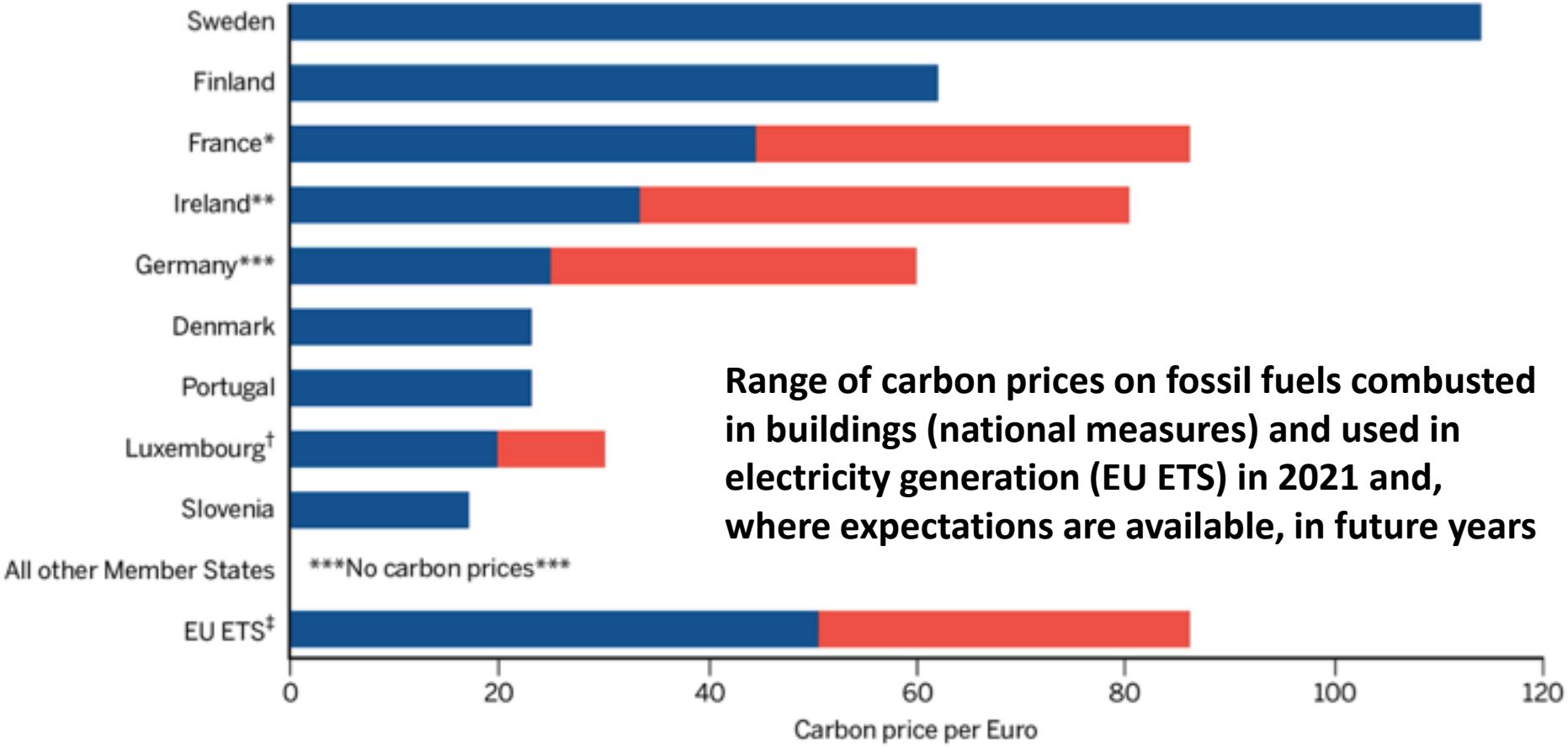
# Energy efficiency and heat pumps expected to lead the way






Source: Based on EU Commission Climate Target Plan Impact Assessment

# Carbon pricing patchy in the EU

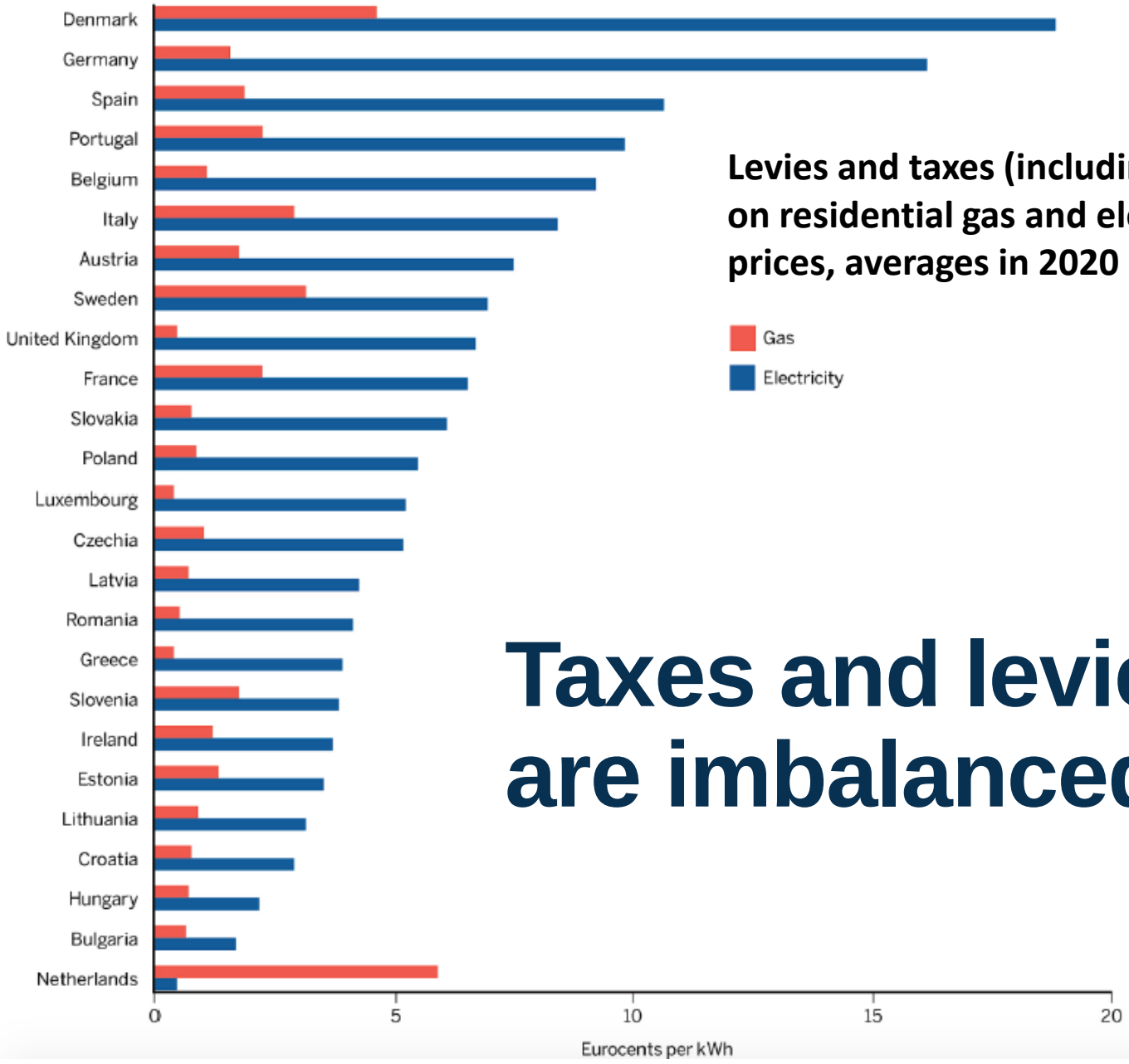



**Range of carbon prices on fossil fuels combusted in buildings (national measures) and used in electricity generation (EU ETS) in 2021 and, where expectations are available, in future years**

* Price announced for 2022 but now unlikely following freeze of carbon price at 2018 level. ** Price recommended by Irish Climate Action Committee for 2030. *** Middle of price corridor (euro 55-65) announced for 2026. †Price announced for 2023. ‡EU ETS allowance market price 24 May 2021; average 2030 price amongst range of independent experts, April 2021.[50] Note: Sweden and Denmark have been converted from national currencies to euros.



Source: RAP (2021) Pricing is Just the Icing




# Taxes and levies are imbalanced



Source: RAP (2021) Pricing is Just the Icing, based on Eurostat data

# Pricing alone will not drive investment in heat decarbonisation

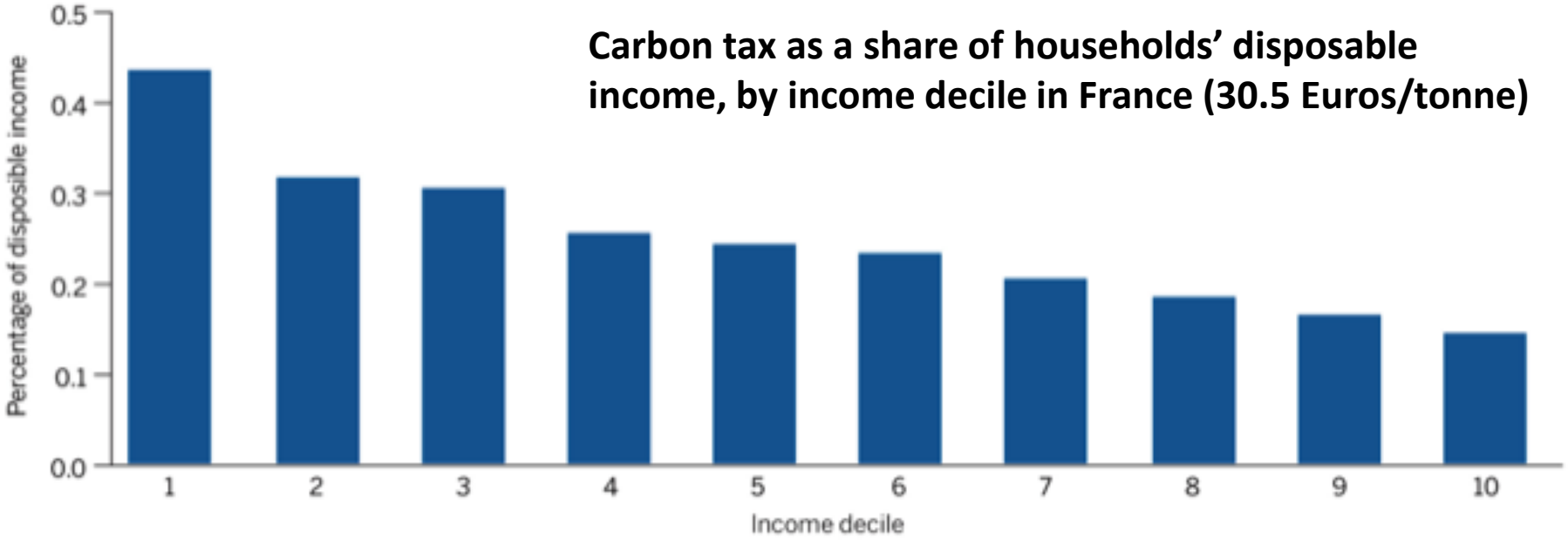
## Heating fuel demand is price inelastic

- Long-run price elasticity of demand for fossil gas for heating is between -0.025 and -0.32 (Europe Economics, 2016)


| | | |
|---|---|---|
| 25 Euros/tonne | 7-8% | up to 2.4% |
| 180 Euros/tonne | 53% | up to 17% |

# Carbon pricing is regressive

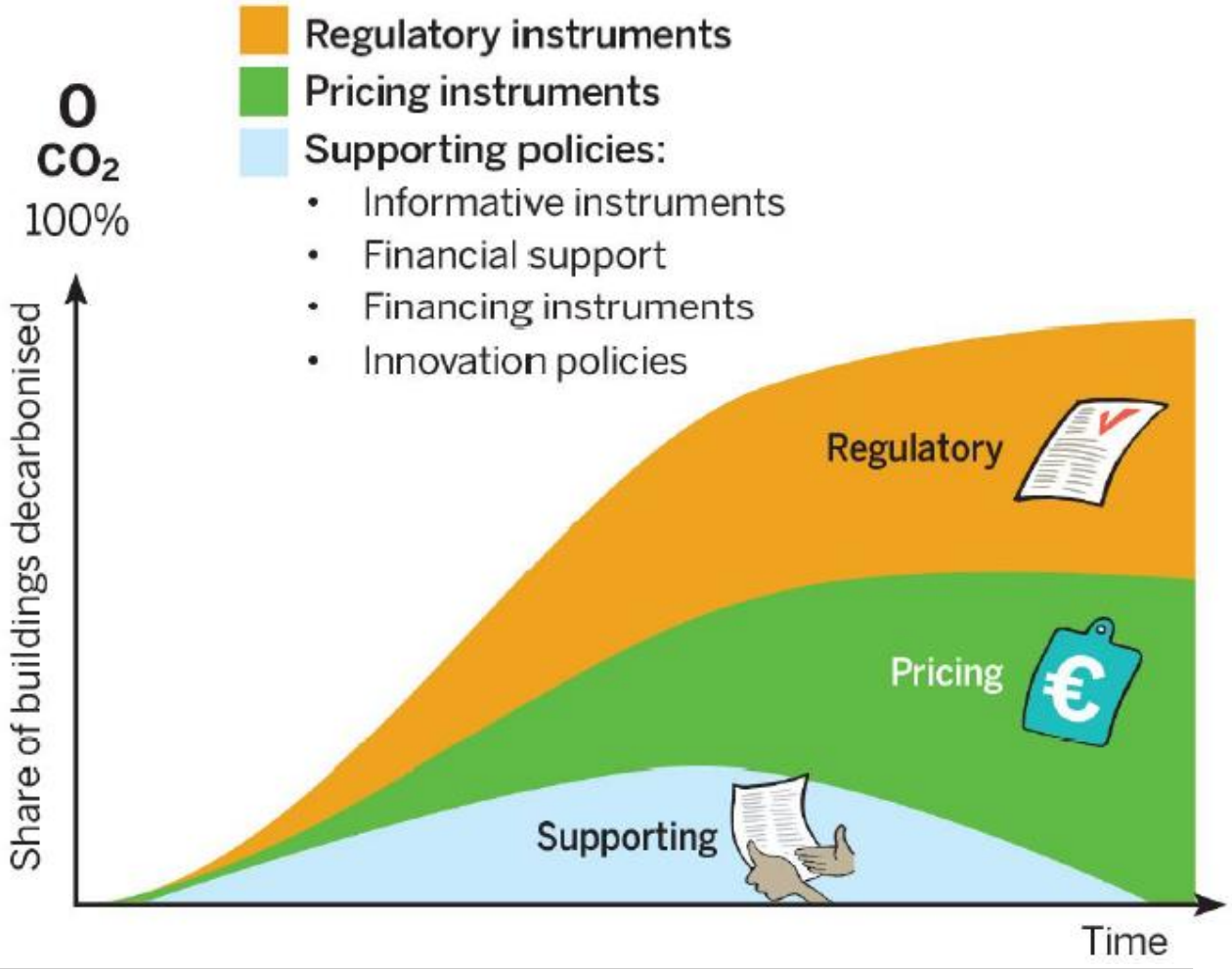
**Carbon tax as a share of households' disposable income, by income decile in France (30.5 Euros/tonne)**






Source: RAP (2021) Pricing is Just the Icing,
based on Berry, A. (2019). The distributional effects of a carbon tax and its impact on fuel poverty: A microsimulation study in the French context

# Mix of policy instruments needed






Source: RAP (2021) Pricing is Just the Icing,
based on van de Poll, et al. (2020). Zero carbon buildings 2050. CE Delft. Background report

# 4 Using the revenues and addressing equity concerns

# Options to ensure carbon pricing is not regressive

**2 pillars:**

- Direct financial compensation

- Projects

# Options to ensure carbon pricing is not regressive

**2 pillars:**

- Direct financial compensation (via member states)
  - Double dividend: lump-sum payments ('climate dividend') or offset electricity taxes/levies
- Projects

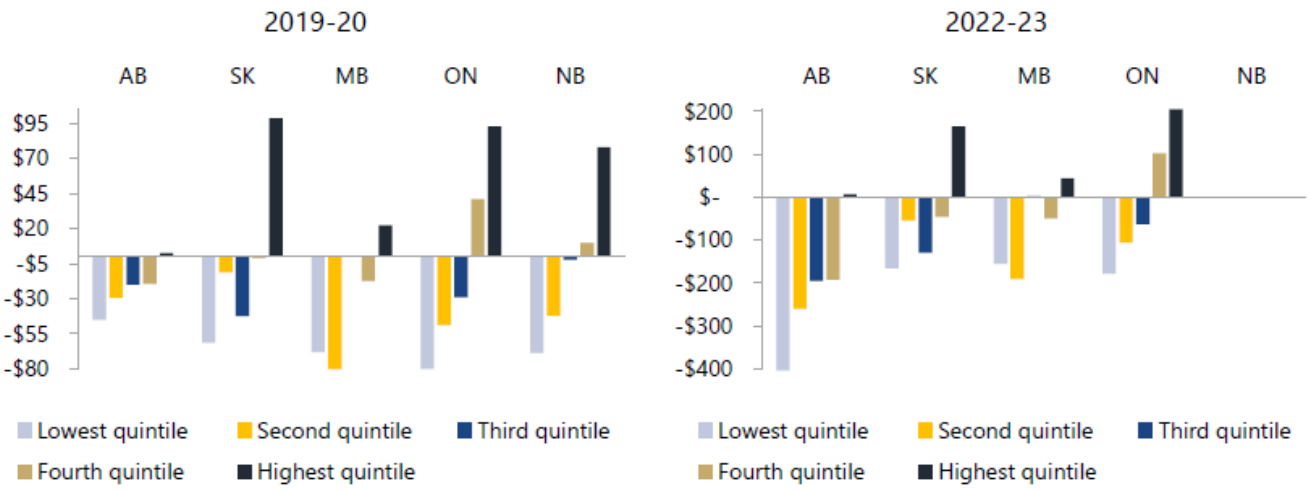
# Options to ensure carbon pricing is not regressive

**2 pillars:**

- Direct financial compensation (via member states)
  - Double dividend: lump-sum payments ('climate dividend') or offset electricity taxes/levies
- Projects (via EU Social Climate Fund)
  - Co-financed by ETS1 and additional national funds
  - Social Climate Plans outlining how countries will enable lowest incomes, including with own spending

# Options to ensure carbon pricing is not regressive

Summary Figure 2 Quintile distribution of household carbon cost net of rebate




Source: PBO calculations.

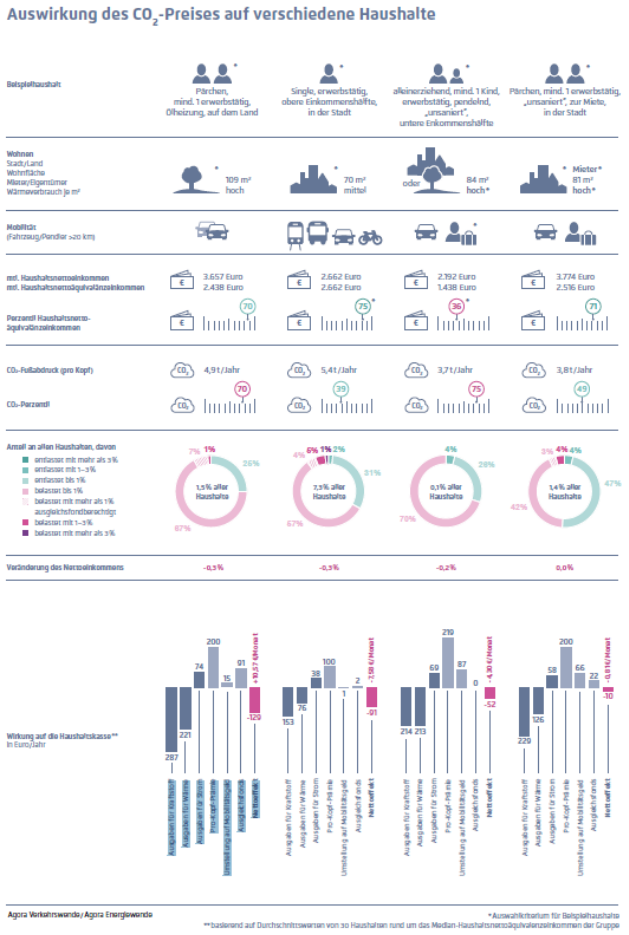
Notes: Negative cost means rebates exceed the gross household carbon costs.

New Brunswick's proposed fuel charge would replace the federal fuel charge in 2020-2021.

# Options to ensure carbon pricing is not regressive

One size does not fit all:

- €100 climate bonus / person / year
- 2cts/kWh electricity tax reduction
- Existing travel allowances transferred into income-neutral mobility allowance
- €300 mio fund for badly affected households






Source: Agora Energiewende, Agora Verkehrswende, Öko-Institut e. V. and Free University Berlin (2019). *Klimaschutz auf Kurs bringen*



TRANSPORT & ENVIRONMENT

# Options to ensure carbon pricing is not regressive

Compensation:

- Lowest incomes: fully compensate
- Higher incomes: feeling of compensation

Projects:

- ETS2 revenues will not solve full investment gap
- Additional public finance needed

# Conclusions

- To get to net zero we need a comprehensive policy mix, including carbon pricing
- Rebalancing energy prices is particularly important in the drive for buildings electrification
- Social aspects of the package need to be reinforced; opportunities are there for Member States & Parliament
- Investment needs in the 2020s, incl. electrification, go beyond the scale enabled by carbon revenues

# About RAP

The Regulatory Assistance Project (RAP)® is an independent, non-partisan, non-governmental organization dedicated to accelerating the transition to a clean, reliable, and efficient energy future.

Learn more about our work at raponline.org

Samuel Thomas
Senior Advisor
Regulatory Assistance Project

Sofie Defour
Climate Manager
Transport & Environment