



Addressing distributional impacts of carbon pricing – an overview

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ICAP Webinar, 19 January 2022

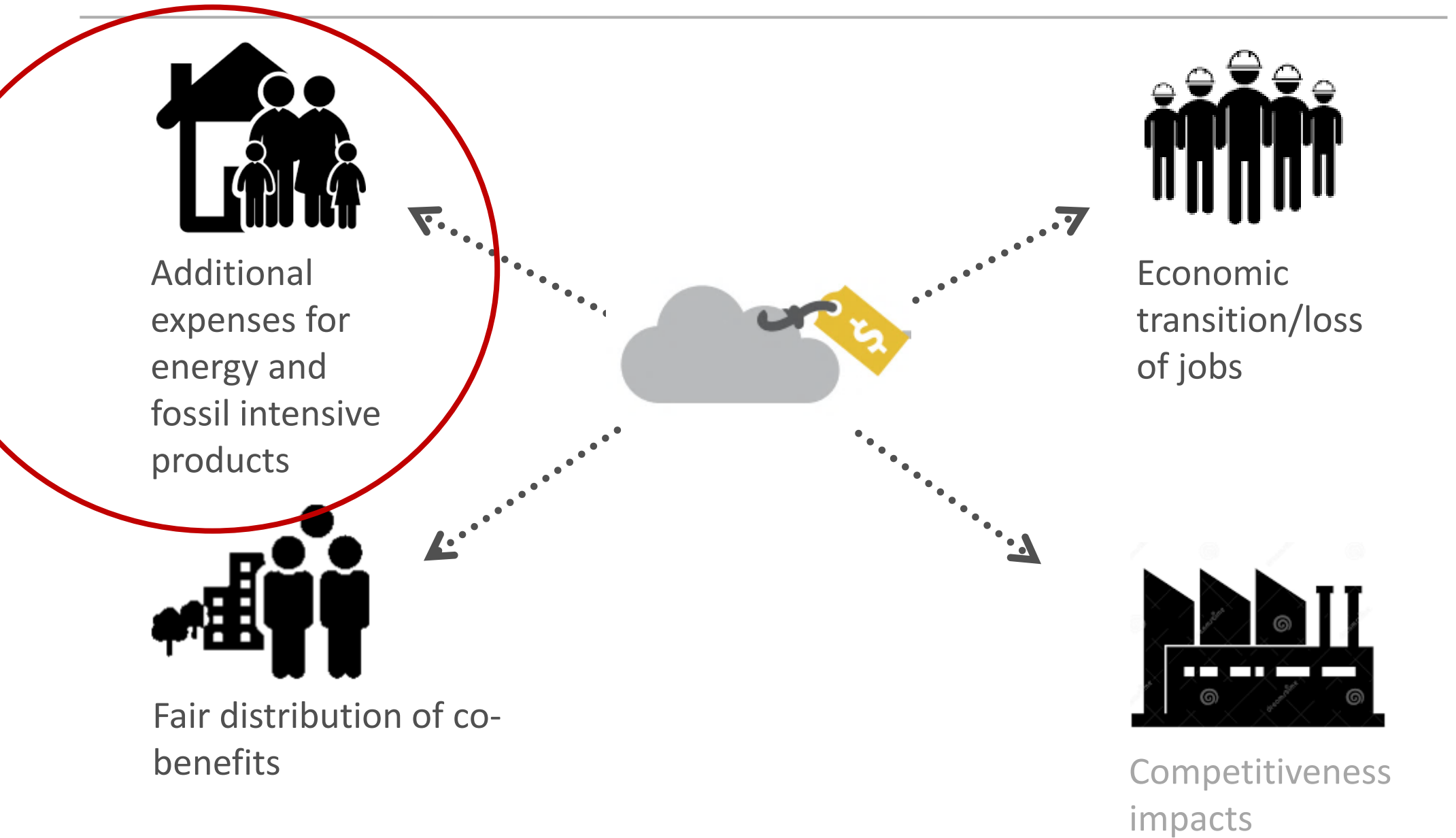


- Groups affected from carbon pricing /ETS
- Revenue recycling as central strategy for addressing distributive outcomes
- Concluding remarks



- **Groups affected from carbon pricing /ETS**
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Groups affected by carbon pricing



- ETS entities pass on carbon cost to consumers -> rising prices for energy (and depending on ETS coverage, fuel)



Effect of higher prices proportional to income

Regressive



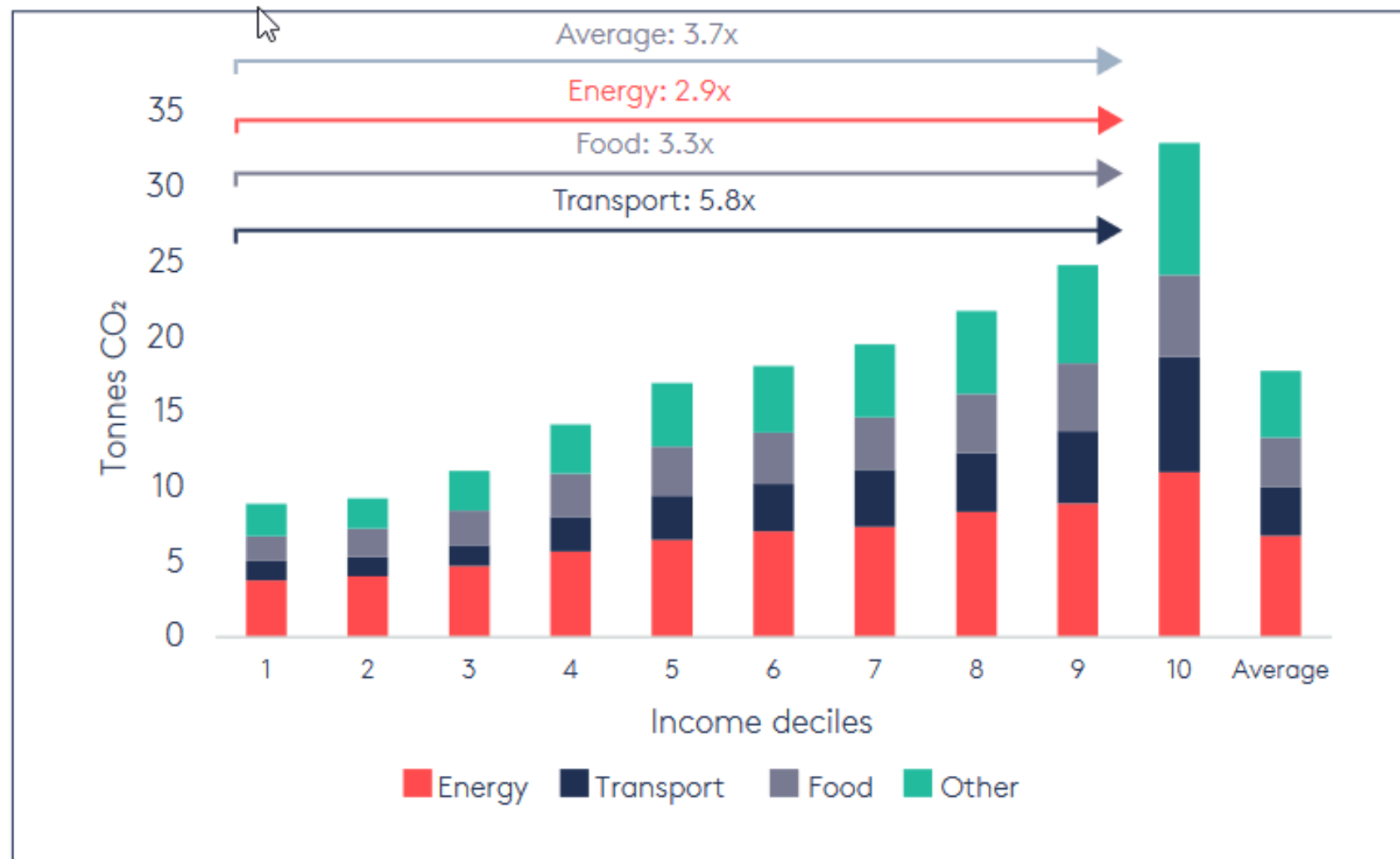
Progressive

Poorer households pay proportionally more than wealthier ones

Poorer households pay proportionately less than wealthier ones

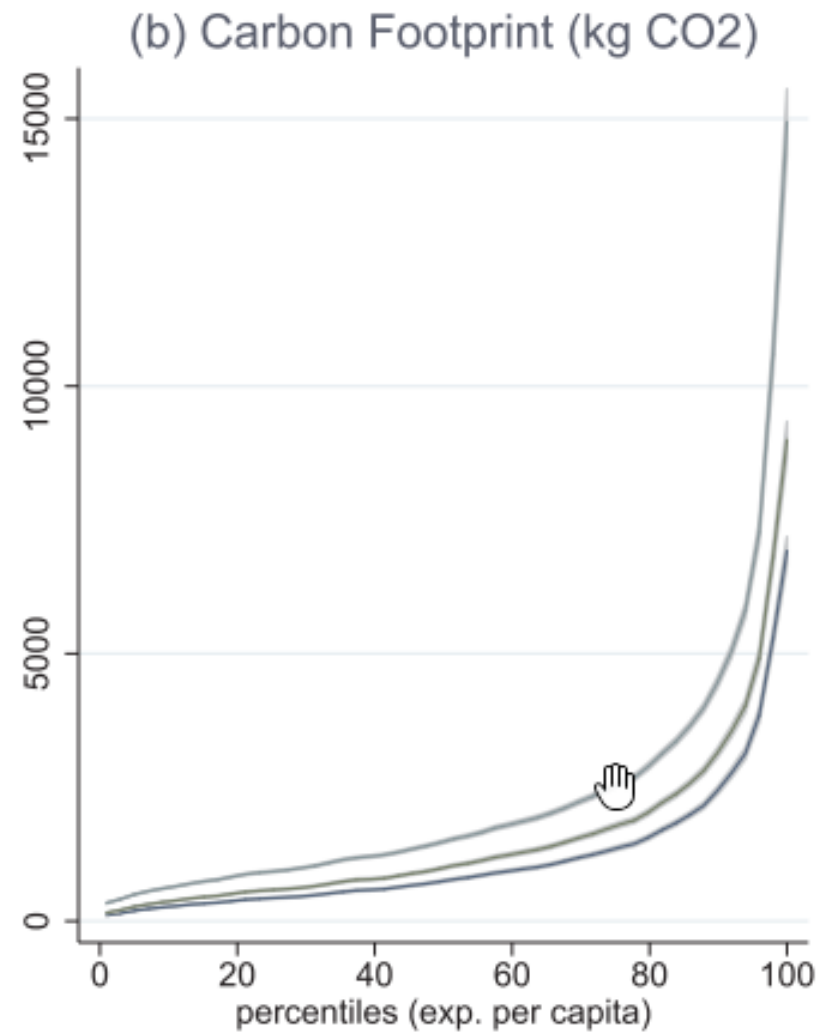
- While carbon pricing **in industrialized countries tends to be regressive**, it is generally found to be **progressive** in emerging economies and developing countries (e.g. Ohlendorf et al., 2021; Dorband et al., 2019)
- BUT: energy access and affordability challenges!**

Poor household have a lower carbon footprint...



Source: Burke et al., 2020

... and this effect is much more pronounced in the global South

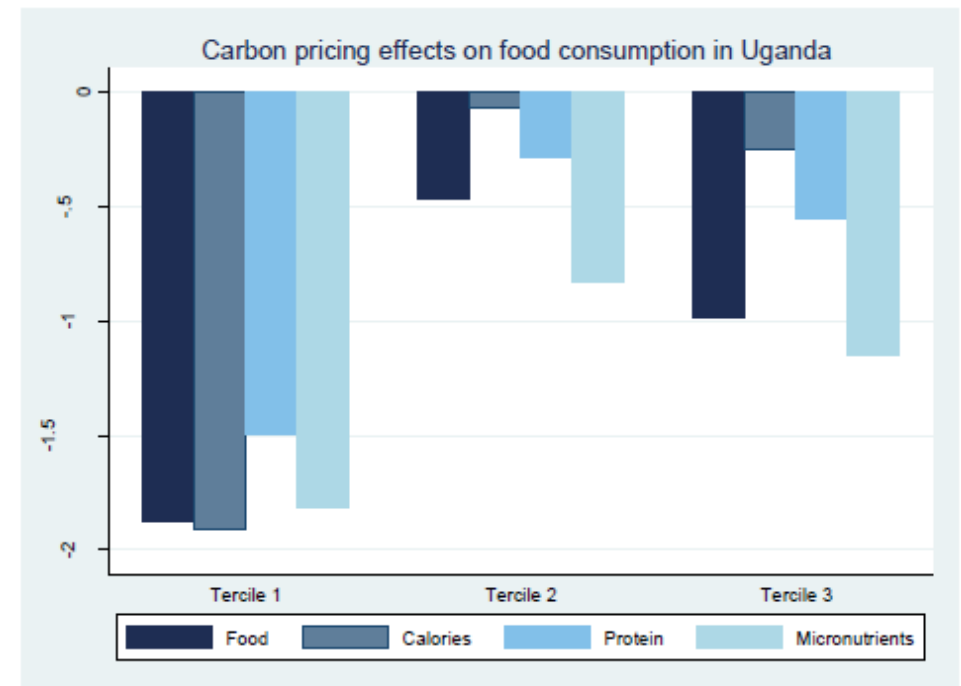


• Source: Renner, 2018

...but we still need consider potential development impacts of carbon pricing



- Rising fossil fuel prices may prompt switch back to cooking with biomass
- Carbon pricing can negatively affect diets -> poorest most affected (note: no revenue recycling)



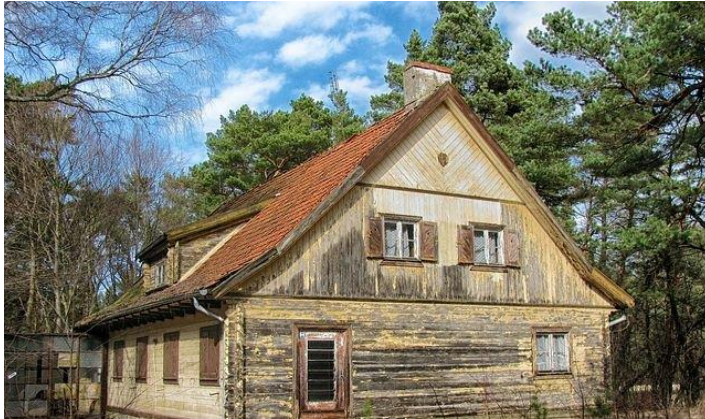
Source: Aggarwal, 2021

Carbon pricing can impact regions differently



Source: Renner, 2018

... as well as urban vs. rural populations

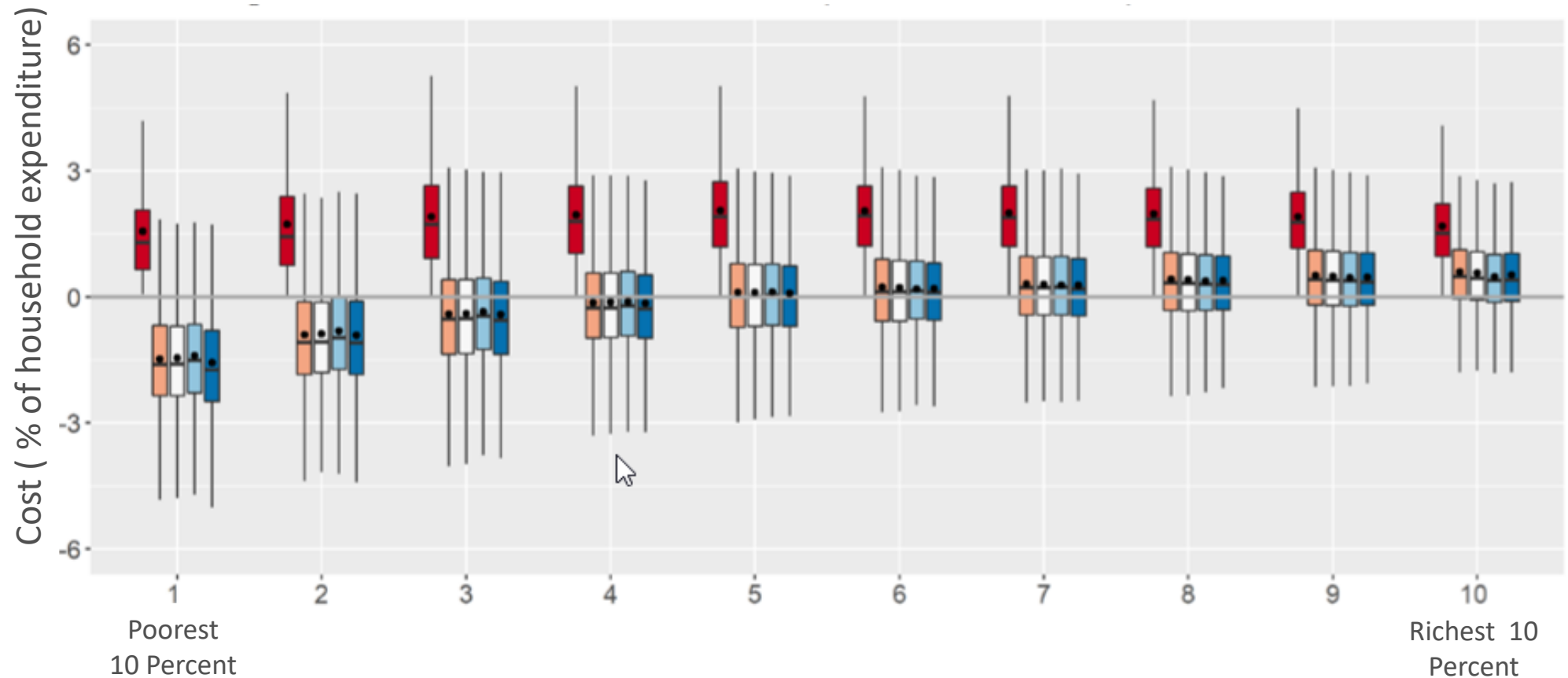


Pictures from pixabay.com and unsplash.com



- Groups affected from carbon pricing /ETS
- **Revenue recycling as central strategy for addressing distributive outcomes**
- Concluding remarks

Revenue recycling makes carbon pricing (even more) progressive



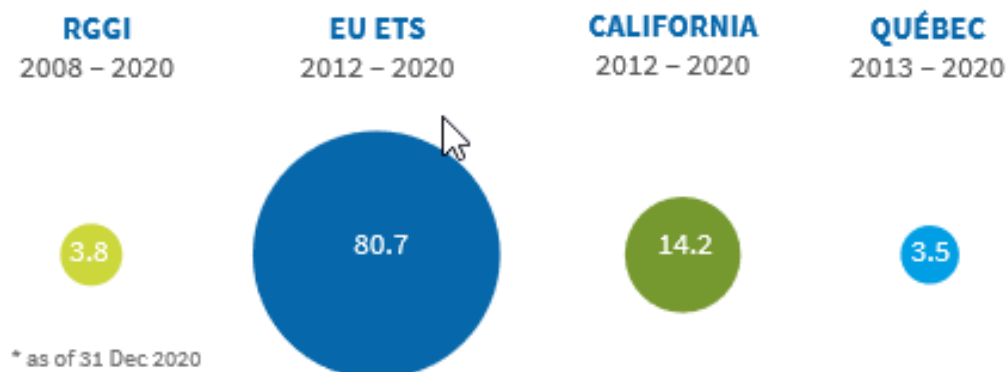
Source: Edenhofer et al., 2019

BUT: for ETS, this requires auctioning to generate revenue in the first place!

ETS revenue – the global picture

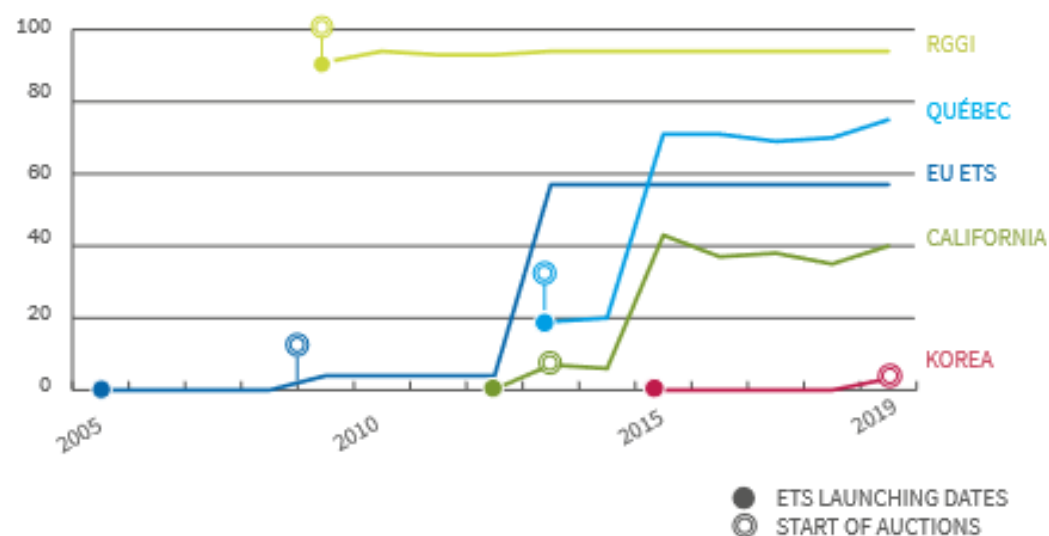


TOTAL AUCTION REVENUES, USD BILLION*



Korea (2016–2020) raised USD 509 million, Switzerland (2013–2020) USD 45 million, Massachusetts (2018–2020) USD 27 million, Nova Scotia (2020) USD 21 million and Chinese Pilots (2013–2020) USD 215 million in auction revenues.

PERCENTAGE OF TOTAL AUCTIONED PERMITS



Source: ICAP, 2021

Are they effective in...

- **redistributing cost of the policy away from low-income households?**
- preserving the carbon price incentive?
- increasing availability of low-carbon substitutes?
- (improving the efficiency of the tax system?)
- ... and not too complex/costly to administer?





Lump sum payments



- | | |
|--|---|
| <ul style="list-style-type: none">- Strongly progressive- (Can be) highly visible- Reinforces perception of atmosphere as a global public good | <ul style="list-style-type: none">- Potentially costly & complex to administer- No double climate dividend |
|--|---|

Applied in:





Lowering other taxes



- Increases efficiency of the tax system

- Only reaches tax payers
- Can be regressive

-> needs to **target low-income segment to be progressive**

Applied in:





Subsidies and transfers



- Increasing social transfers easy to administer & directly compensates price increases
- Subsidies for clean energy and mobility increase availability of low carbon substitutes
-> double climate dividend

- Only reaches transfer recipients
- Subsidies need to be means-tested to be progressive

Applied in:





Reduce cost of electricity



- Drives electrification and sector coupling

- Risk of rebound effects

Applied in:



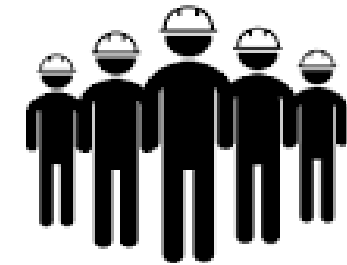


Options for using revenue to address inequalities



Lump-sum payments	Switzerland (California)	- Very progressive - Can be very visible
Lowering other taxes	Sweden British Columbia	- Increase efficiency of the tax system - Need to focus on low-income groups
Increasing social transfers	Germany	- Potentially easy to administer - Can be targeted to alleviate hardship cases
Subsidies / infrastructure investments in clean energy and mobility	California, France	- Double climate dividend - Subsidies need to be means-tested to be progressive

Complementary policies have a role in addressing potentially adverse social effects



Public investments in climate-friendly infrastructure

Mitigating energy cost for low-income households

Labour and skills policies for a just transition



- ✓ International experience shows: carbon pricing can gain and maintain public support if it **addresses adverse distributive outcomes and communicates this effectively**.
- ✓ Social impacts are more critical when covering some sectors (transport!) than others
- ✓ **Visible recycling of carbon revenues** effectively addresses adverse social impacts.
- ✓ This **requires auctioning** some share of ETS allowances, and also requires **trading off between different policy goals** when using carbon revenue.
- ✓ **Complementary policies** drive availability/competitiveness of climate-friendly substitution options and help cushion social impacts



REPORT

Addressing the distributional impacts of carbon pricing policies

Constanze Haug, Alexander Eden and Mariza Montes de Oca

<https://www.adelphi.de/en/publication/addressing-distributional-impacts-carbon-pricing-policies>



POLICY BRIEF

Tipping the balance

Lessons on building support for carbon pricing

<https://www.adelphi.de/en/publication/tipping-balance>

Many thanks for your attention

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<https://www.adelphi.de/en/publication/addressing-distributional-impacts-carbon-pricing-policies-0>

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