

Achieving multiple socio-economic targets: The equity dimension

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The views expressed are mine and may not be regarded as stating an official position of the European Commission.



Towards a Fair Green Transition

Energy transition brings challenges...

- Higher **energy prices** due to carbon pricing
- Shift in **skills** needed and job losses in some industries

... and opportunities:

- **Revenues** from carbon pricing
- **New jobs** for deployment of green infrastructure

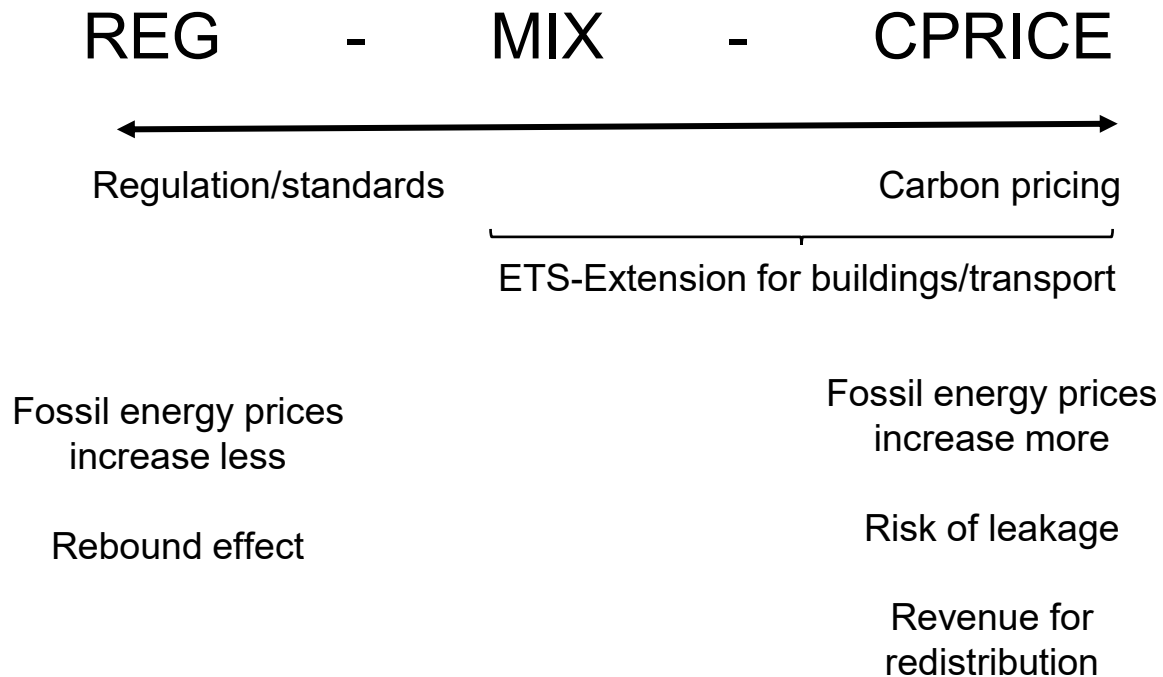
Heterogenous impacts for different parts of the sectors, regions, groups of the population

- Understand drivers, who wins – who loses?
- Role for policy to ensure fair transition
- Role for research to inform policy making

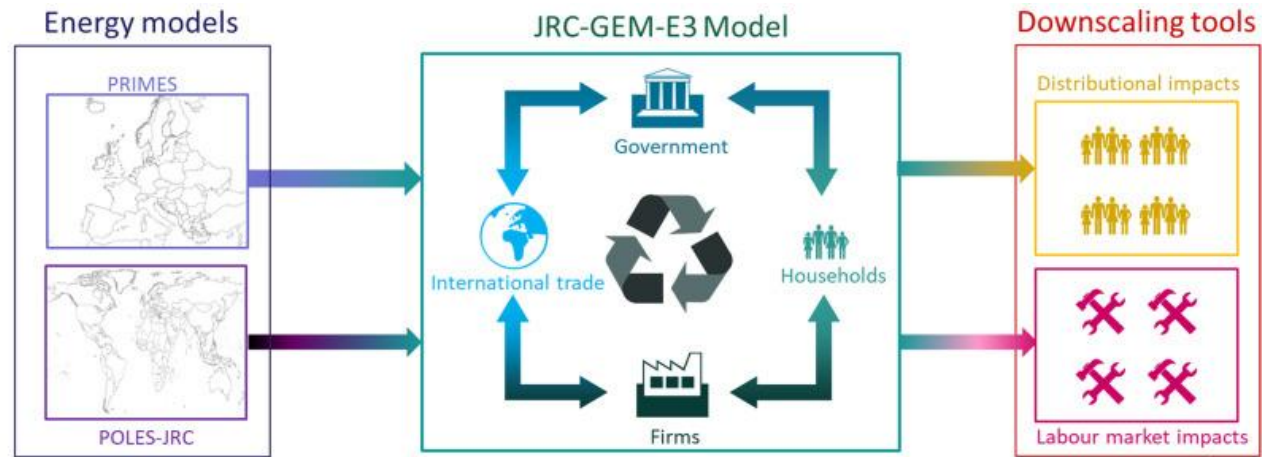


Economic modelling to support policy design

3 policy scenarios to reach the EU's 2030 climate target



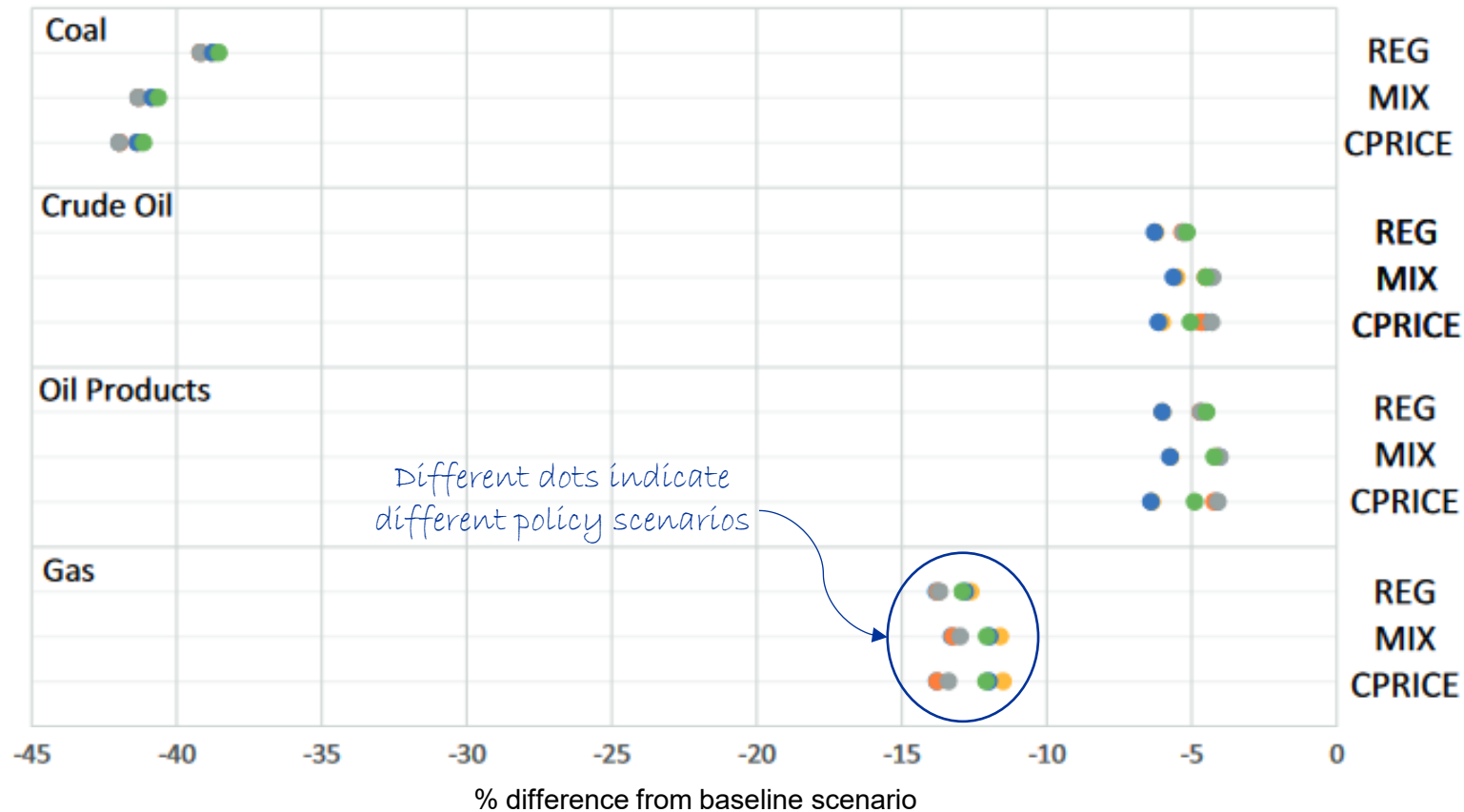
Using a toolbox approach combining different models:



Source: Adapted from Weitzel et al. (2023). A comprehensive socio-economic assessment of EU climate policy pathways. *Ecological Economics*, Volume 204, Part A



Sectoral impacts: Fossil fuels

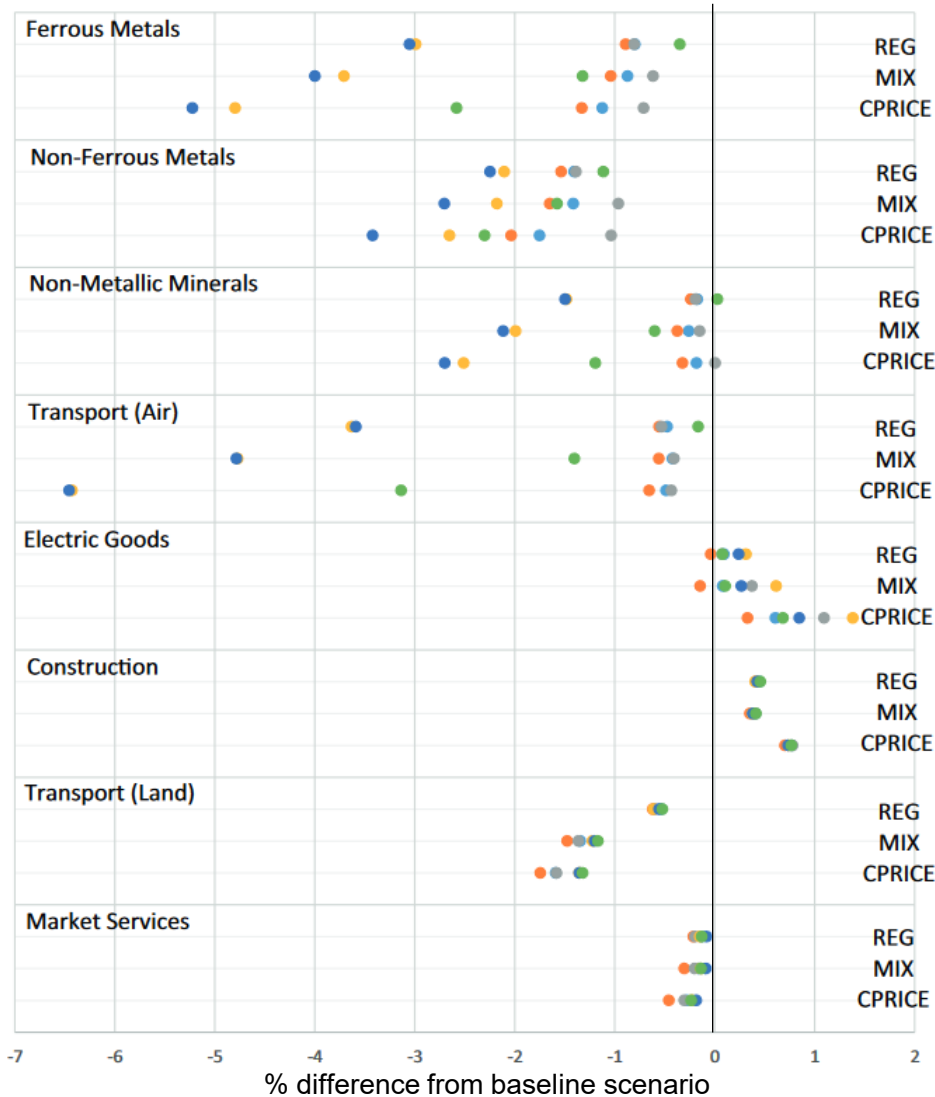


- Reductions in fossil fuel regardless of policy options
- Decarbonization of power sector main driver in the near term, but trend also holds beyond 2030

Source: Weitzel et al (2023)



Sectoral impacts: Other sectors










Large heterogeneity for different policy options

Some sectors benefit – increased investments for clean technologies

Services account for large share of the economy – overall impact <0.5%



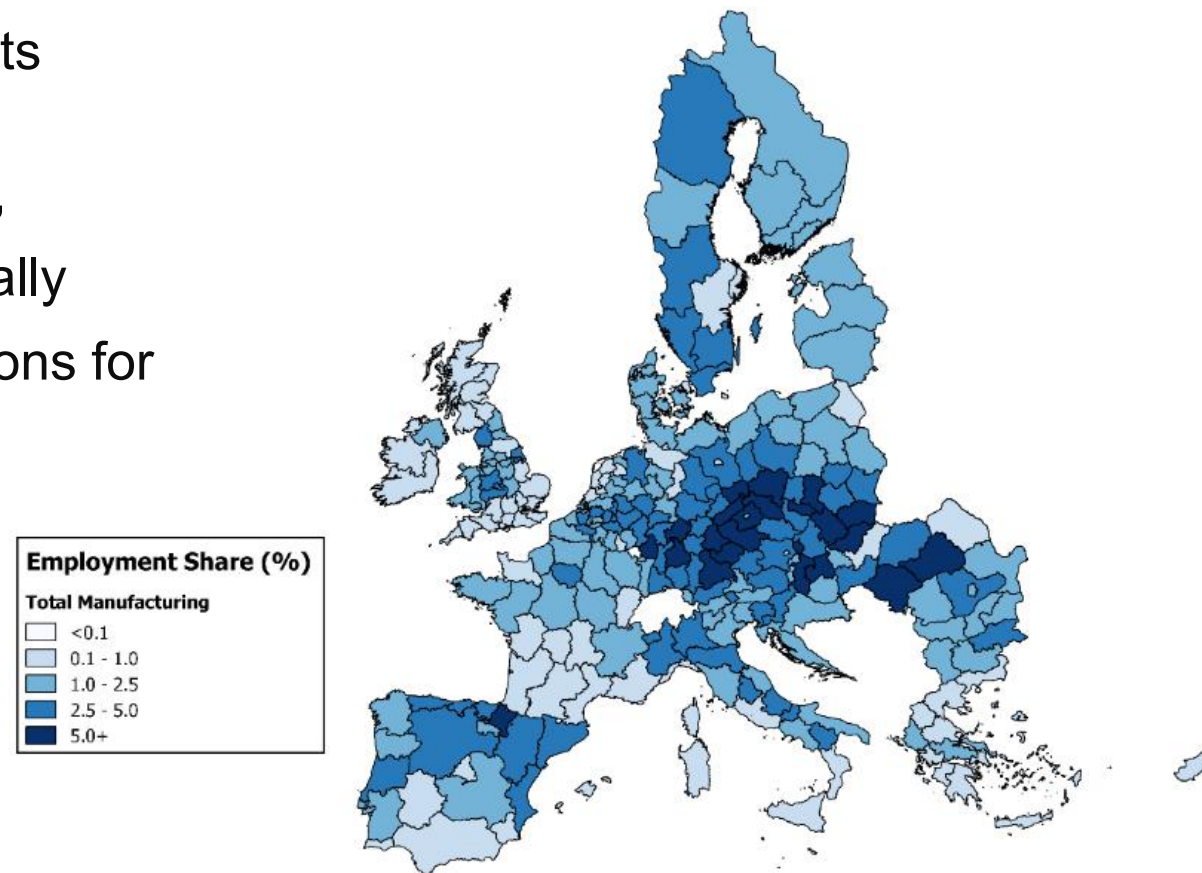
Concentrated Impacts

Sector	Share of total jobs in 2015	Range of change in jobs by 2050 compared to baseline
Construction		↗
Power generation		↗
Agriculture		↗
Services		⇒
Manufacturing (energy-int)		⇒
Other manufacturing		⇒
Mining & extraction		↘

Employment impacts concentrate

- in some sectors,
 - and geographically
- which has implications for a just transition.

Employment shares in energy intensive industries and automotive manufacturing



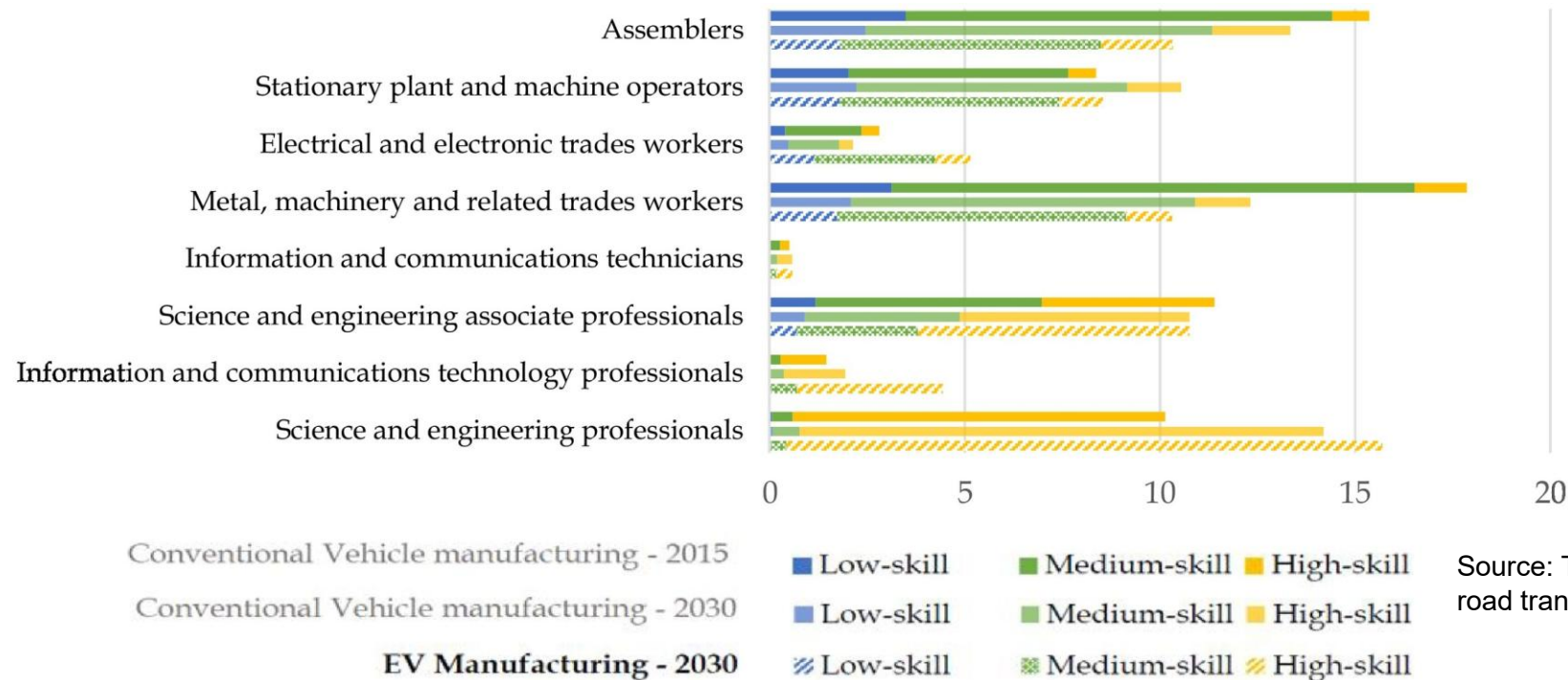
Source: JRC (2021). The future of jobs is green.

Table adapted from:
In-depth analysis in support of
COM(2018) 773



From sectors to skills & occupations

- Little aggregate changes from growth/decline of individual sectors, especially when comparing with other trends (demographic shift, digitalization/automation trends, ...)
- **Within-sector transitions** can be important (automotive industry):



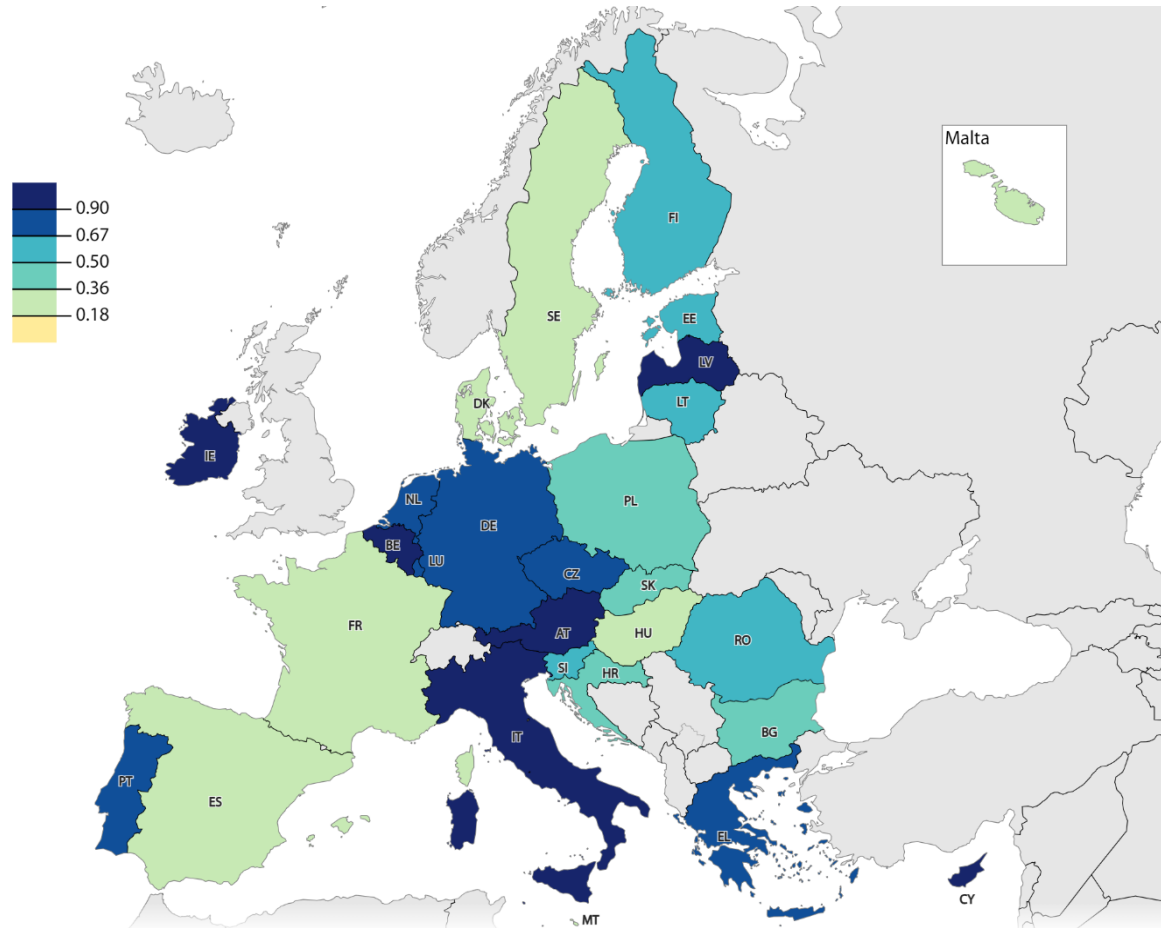
Source: Tamba et al. (2022). Economy-wide impacts of road transport electrification in the EU

- Labour shortages in key sectors (e.g. heat pump installers)



Additional jobs from renewables

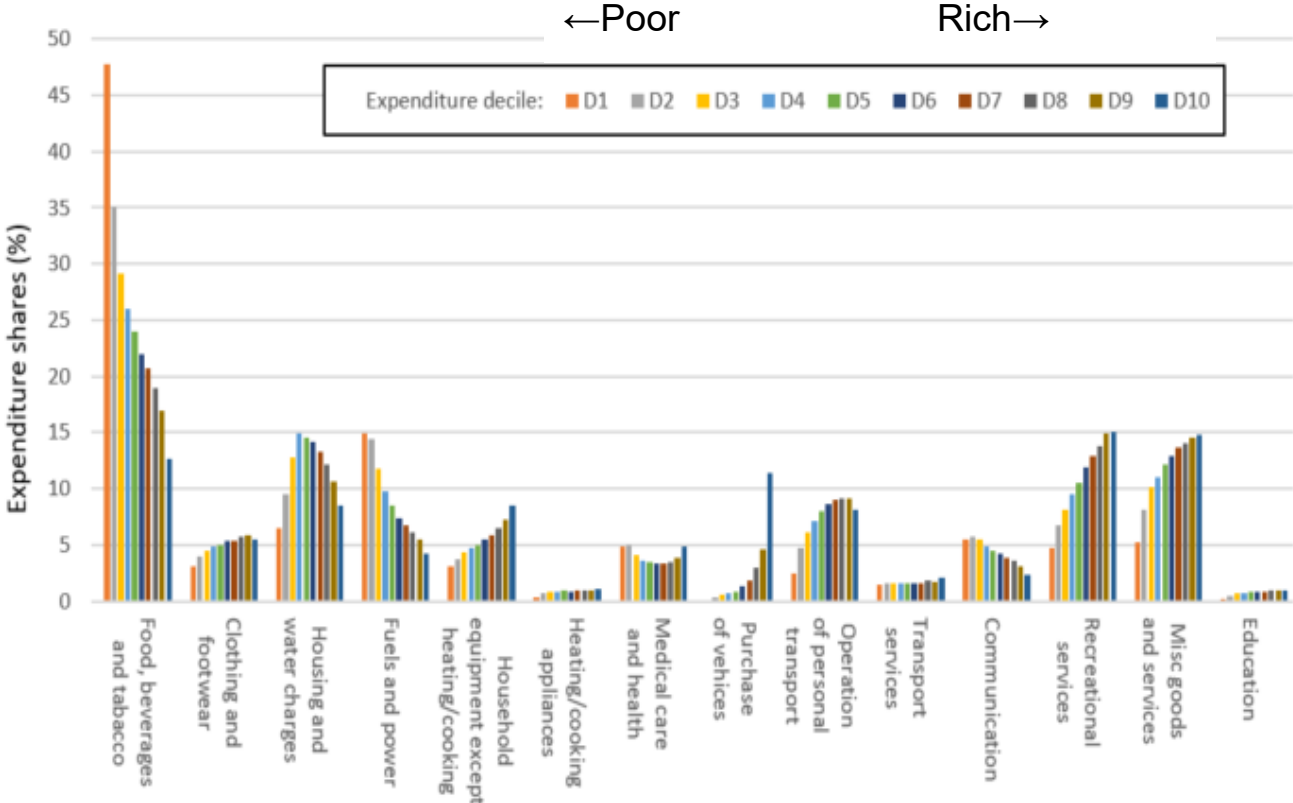
Job creation per thousand people in the labour force for the deployment of wind and solar power generation by EU27 Member State (in 2030)



- 130.000 – 145.000 additional workers needed for wind and solar deployment by 2030
- Utilize potential for renewables, e.g. in the EU's coal regions
- Provide necessary training to ensure skilled workers are available.

Source: Fulvimari et al (2025). Estimating labour market transitions and skills investment needs of the green transition.

Distributional consequences



Data from household budget survey

+

Price changes:														
REG	0.1	0.1	2.1	1.2	0.1	0.1	0.1	0.4	-0.9	0.2	0.1	0.1	0.1	0.1
MIX	0.1	0.1	1.5	3.8	0.1	0.1	0.1	0.9	1.4	1.1	0.0	0.2	0.0	0.0
CPRICE	0.1	0.1	0.1	9.9	0.1	0.1	0.1	0.9	2.8	1.6	0.0	0.2	0.0	-0.1

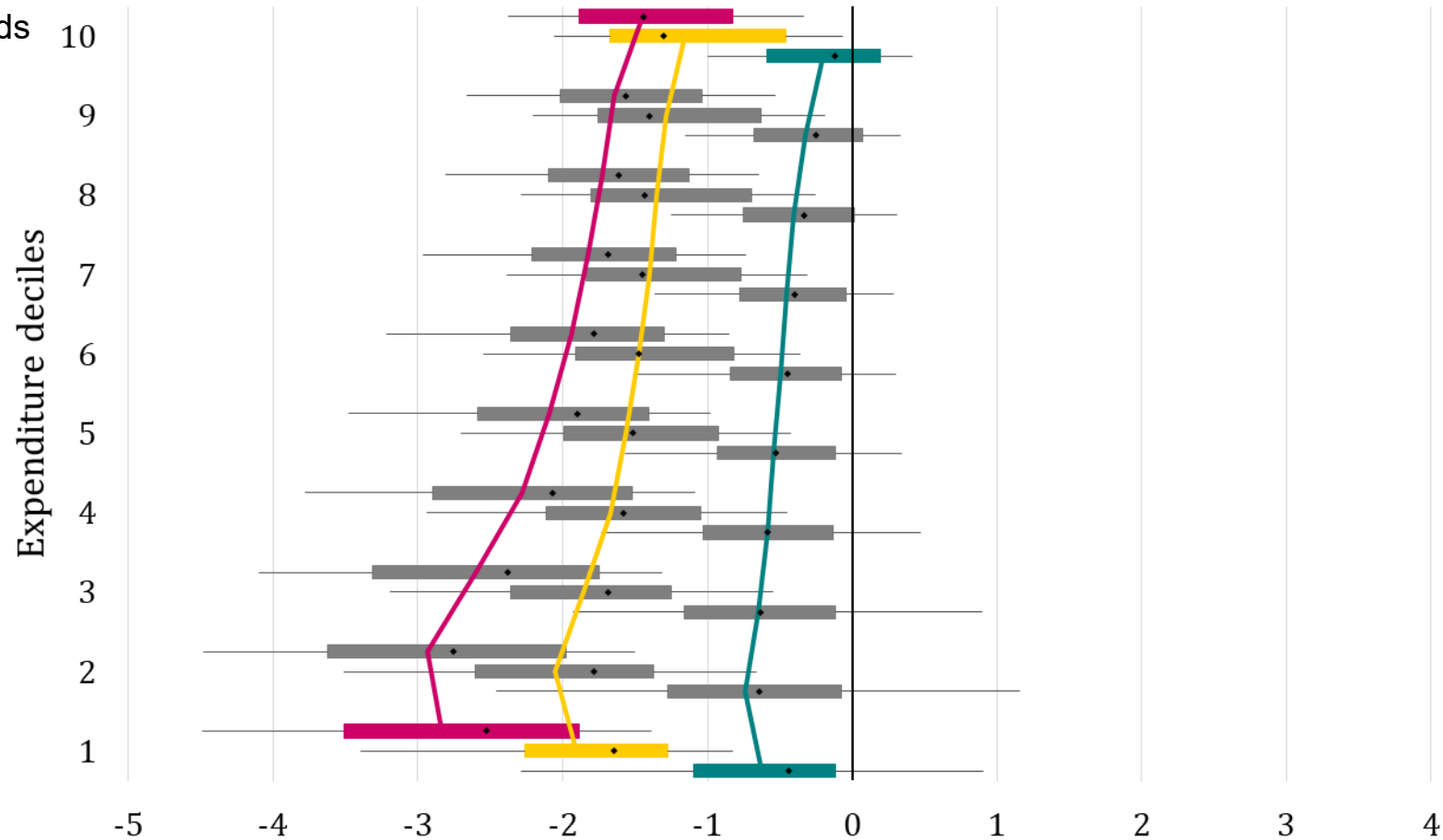
Price changes from economy-wide model

Weitzel et al. (2023).

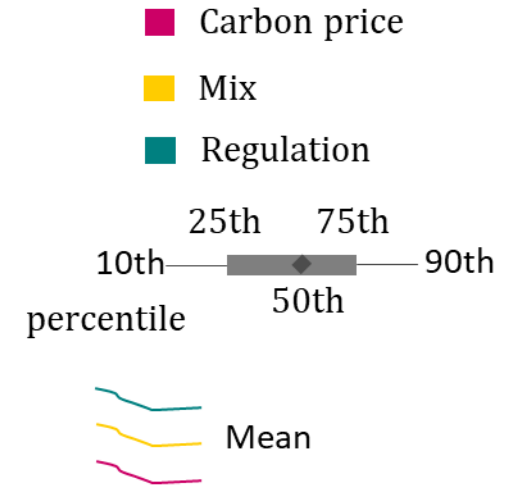


Effects on different social groups

Rich households



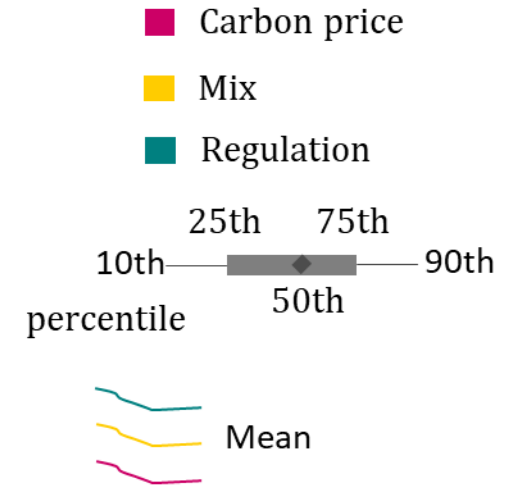
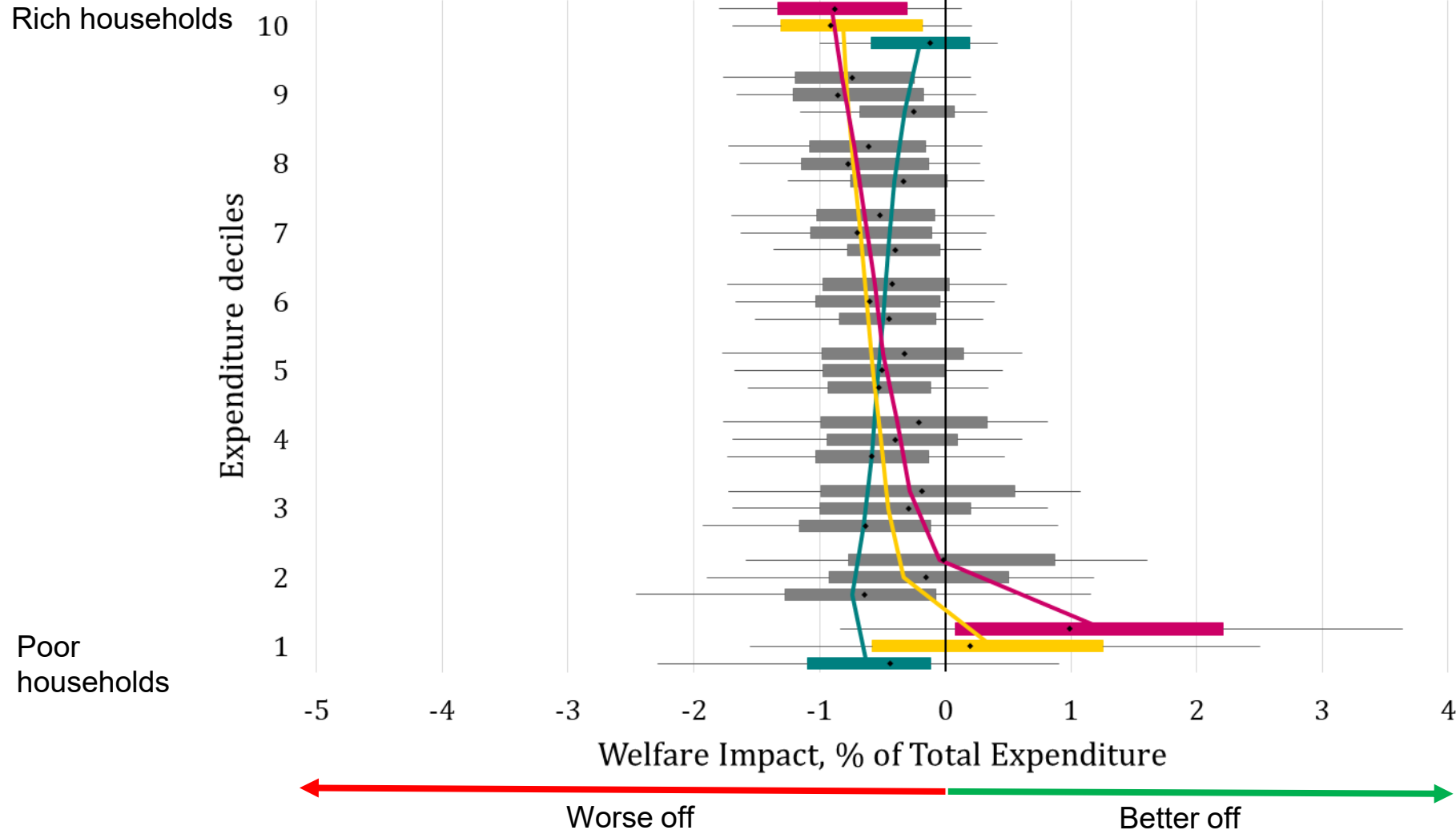
Poor households



Carbon pricing is regressive in the EU and leads to wider variations within income groups.



Effects on different social groups



Carbon pricing is regressive in the EU and leads to wider variations within income groups. Carbon revenues can offset regressive outcome.



Conclusions

- Need to **acknowledge and manage the equity implications** of the green transition
 - Anticipate **labor market shifts**, support re-skilling / up-skilling
 - Understand **distributional impacts** from regulations and carbon pricing
 - Use carbon pricing revenues with targeted recycling
- Paradigm shift over the last decade:
 - From **labour tax reductions** (efficiency considerations) to
 - lump sum **recycling** (distributional impacts) and
 - support **targeted investments** (addressing the root cause for lasting change)
- **Tailored approach** needed (differences across regions, sectors, income groups, ...) to ensure fair transition



Thank you



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