Fossil fuels subsidy removal and the EU Green Deal policy mix design

Alessandro Antimiani
Valeria Costantini
Elena Paglialunga

DG Trade - Chief Economist Unit
Roma Tre University - Department of Economics, and SEEDS
University of Urbino - Department of Economics, Politics, Society, and SEEDS

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Outline

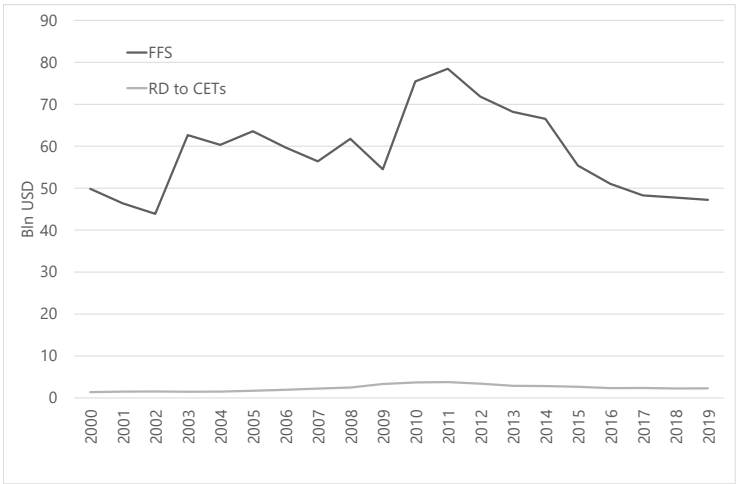
- The monetary value of fossil fuels subsidies
- The modelling approach and simulation design
- Main results for the EU
- Conclusions and policy implications

Fossil fuels subsidy removal

- Global fossil-fuel consumption subsidies are recognised as a barrier to reach ambitious low-carbon targets (Chepeliev et al., 2018; Chepeliev and van der Mensbrugghe, 2020)
- Large environmental negative impacts are provoked by subsidies (the coal case in China by Xiang and Kuang, 2020)
- Concerns are related to the risks of regressive impacts on low-income households (Reanos and Sommerfeld, 2018)
- Lack of confidence in the ability of governments to reallocate the resulting budgetary savings (Clements et al., 2013)
- Potential development opportunities from revenue recycling are large (Jakob et al., 2015)

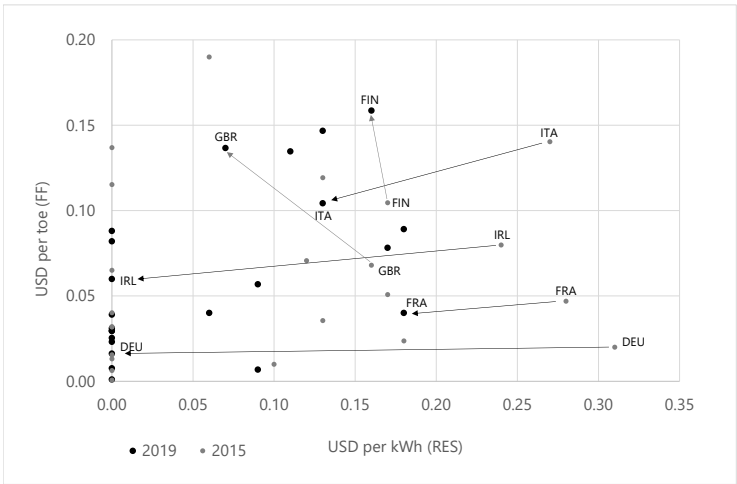
Monetary value of subsidies: fossil fuels vs renewables

Fossil-fuel and R&D to CETs subsidies in EU27 (const 2015USD)



Note: own elaborations on IMF and OECD database

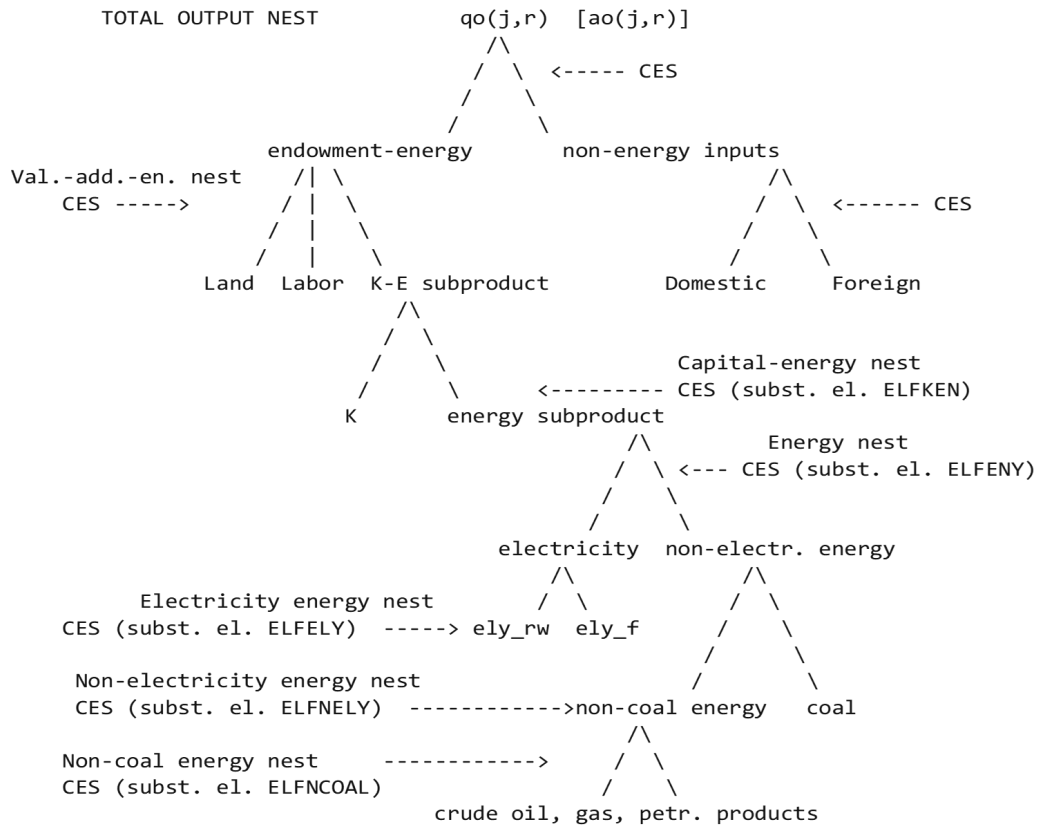
Unitary subsidy for RES and fossil fuels in EU27 and UK (2015-2019)



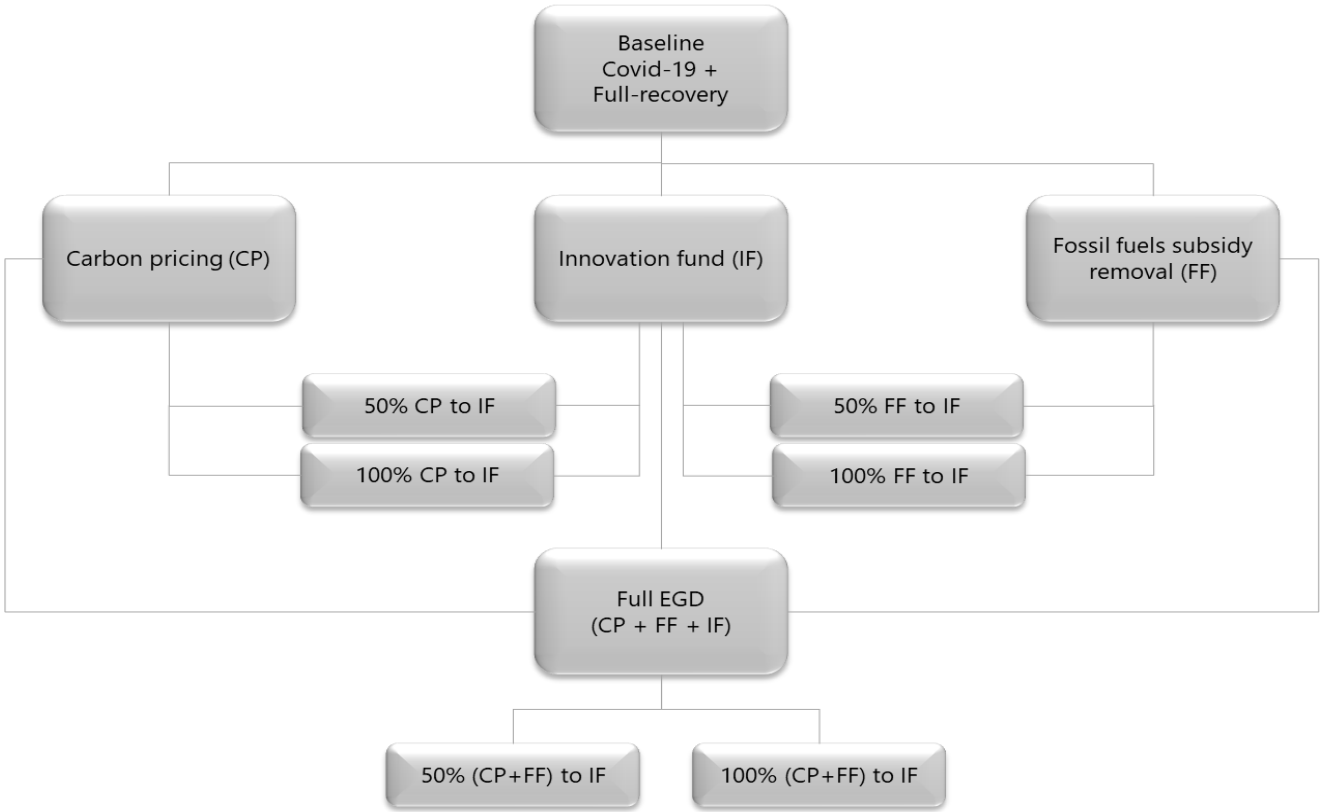
Note: own elaborations on IMF and OECD database

Substitution in the electricity nest

Nests in production output with GTAP Energy and Power data

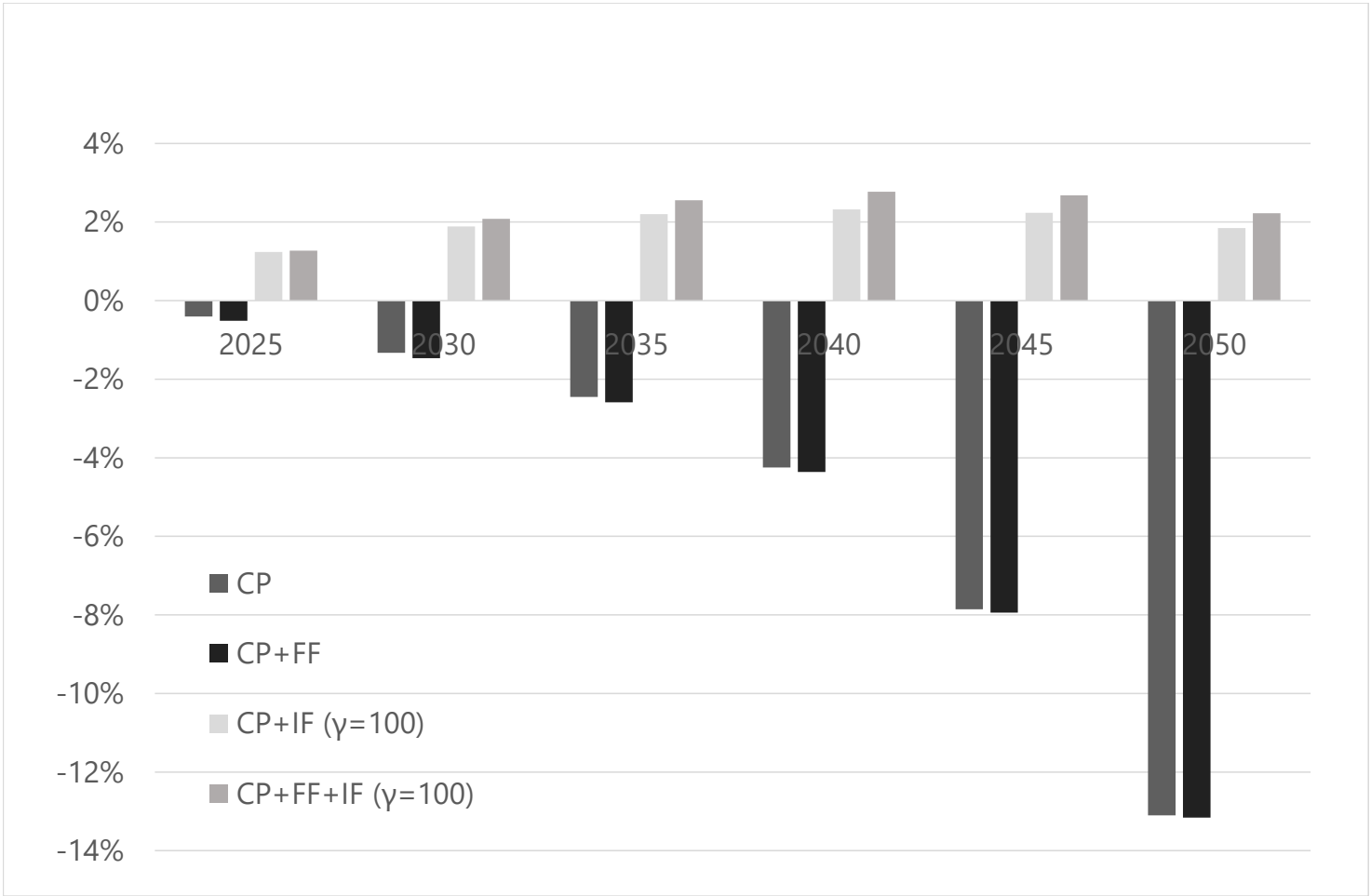


Linkages across different policy instruments



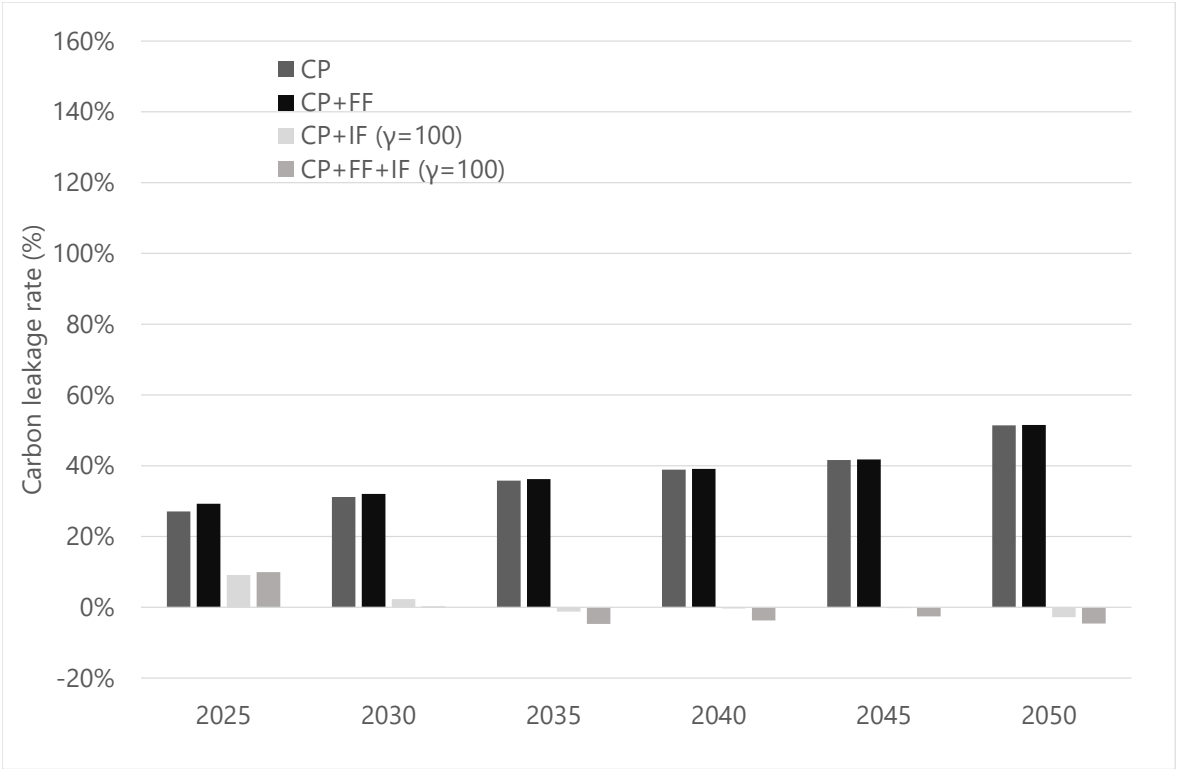
GDP impact under different scenarios

GDP for the EU27 (% change w.r.t. BAU)



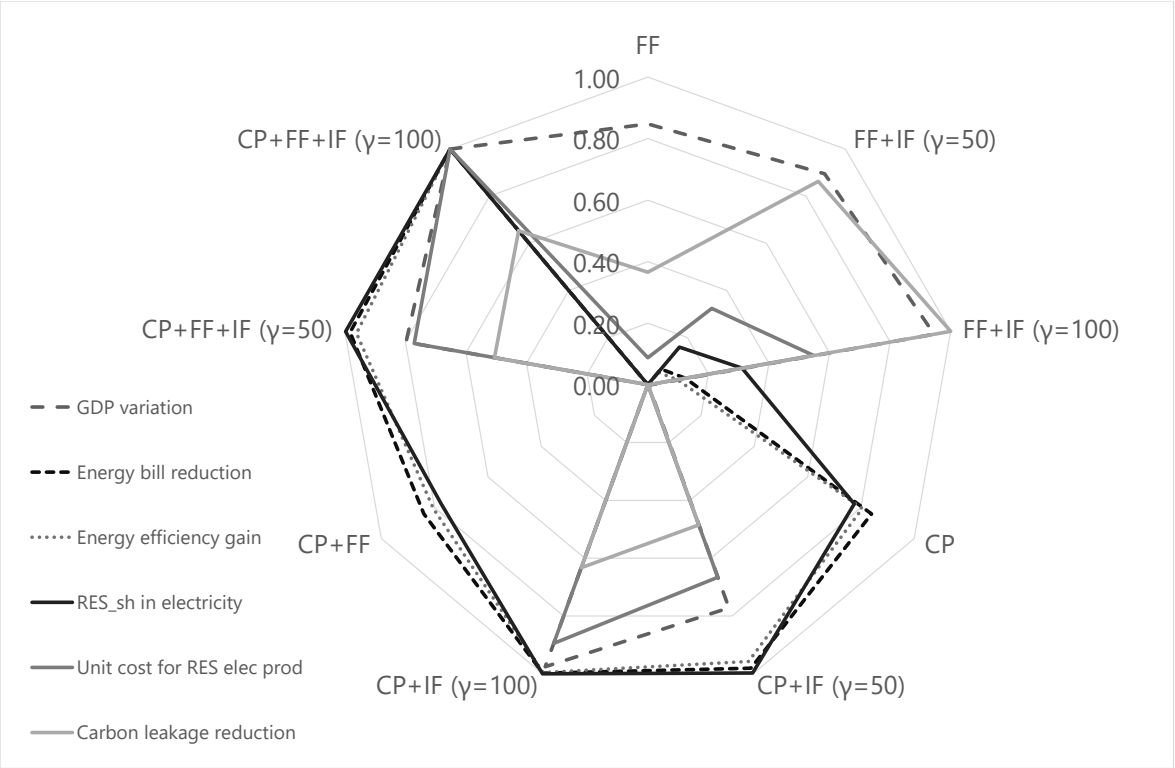
Carbon leakage effect

Carbon leakage rate (%)



Policy mix design

Policy complexity and optimal design (EU27 at 2050)



Optimal policy mix design with multiple instruments

- The European Green Deal must be evaluated with tools that allow for introducing complexity and non-linear interactions
- The multiple instruments addressed in the EGD should be analysed both separately and simultaneously
- By simply adding fossil fuels subsidy removal to carbon taxation might bring to further economic losses
- On the opposite collecting revenues to be recycled into innovative activities related to CETs is beneficial for the EU economy and reduces carbon leakage
- Under the Next Generation EU Fund (investing in a green, digital and resilient society) further resources could be directed to the sustainable energy transition
- Policy coordination is crucial for minimising resource waste and exploiting opportunities of positive spillover effects, with potential effects outside the EU borders

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