



Fiscal Affairs Department

Refining Climate Policy in the EU: Assessing Some Options

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Policy Background

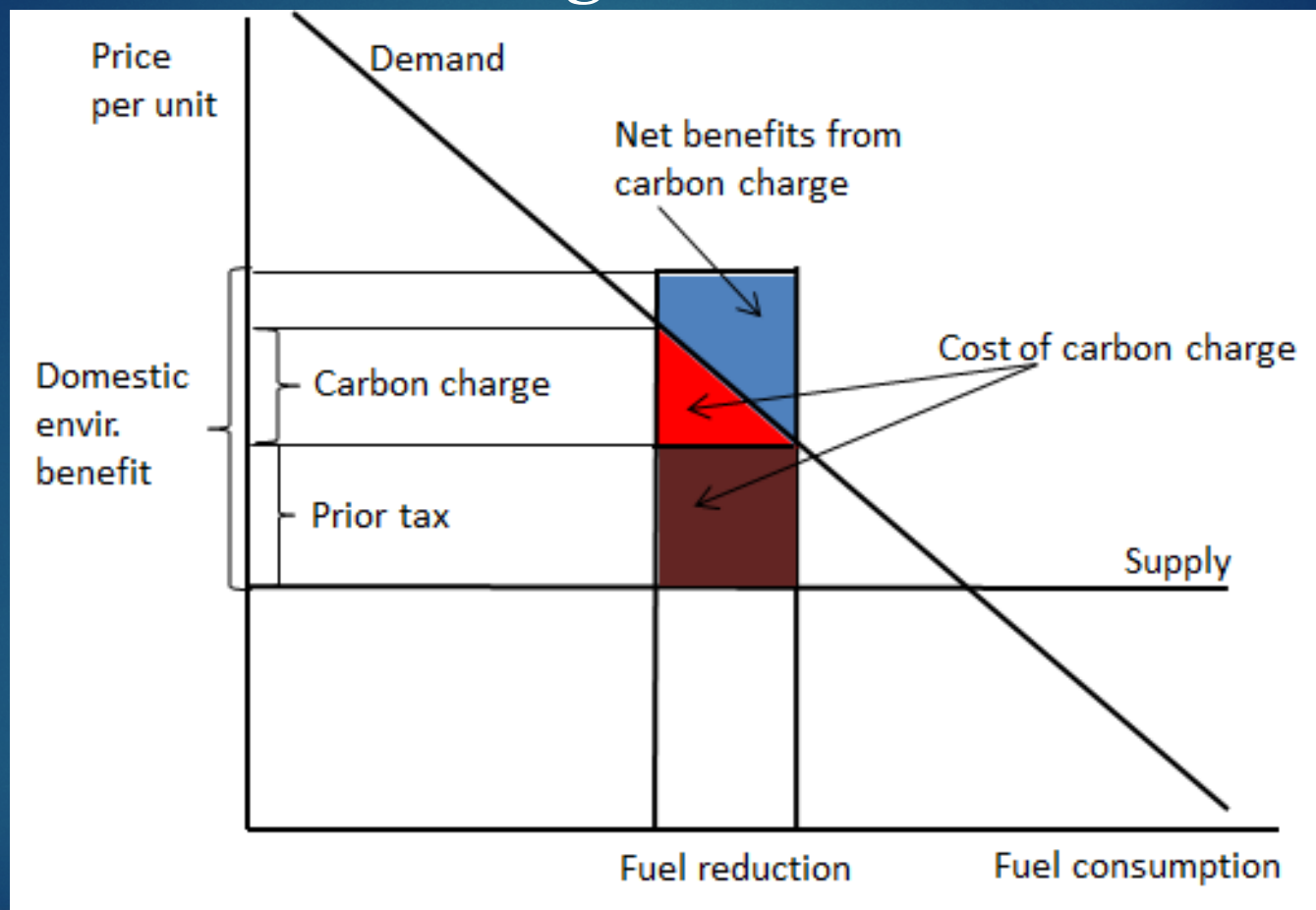
- ▶ EU is in the vanguard of climate mitigation policy
 - ▶ ETS in 2005
 - ▶ Aggressive emissions pledge (40 percent below 1990 by 2030)
 - ▶ Comprehensive policies
- ▶ May be scope for meeting Paris pledge with
 - ▶ Lower costs
 - ▶ Higher revenue
 - ▶ Greater domestic envir. benefits

(Complementary) Modelling Approaches

- ▶ Disaggregated ('structural')
 - ▶ EC has state-of-the-art model
 - ▶ Valuable for projections and emissions impacts of policies
- ▶ Aggregated ('reduced form')
 - ▶ Impacts of different policies/countries/parameters
 - ▶ Prioritize options worth further study
 - ▶ Welfare costs (to guide efficient policy design)



Measuring Economic Costs



Spreadsheet Model

- ▶ Previous applications: China, India
- ▶ Power, road transport, households/industry
 - ▶ Country projections using GDP, inc. elasts., tech. change, prices
- ▶ Effects of policies depend on elasticities
 - ▶ From empirical literature/other models
- ▶ Caveats
 - ▶ No trade, capital of different vintages, etc.
 - ▶ Preliminary (need more policies, countries, refine params.)

Two Exercises

- ▶ Start with business-as-usual projections
 - ▶ Introduce envisioned policies for 2030
- ▶ Consider emissions-neutral refinements

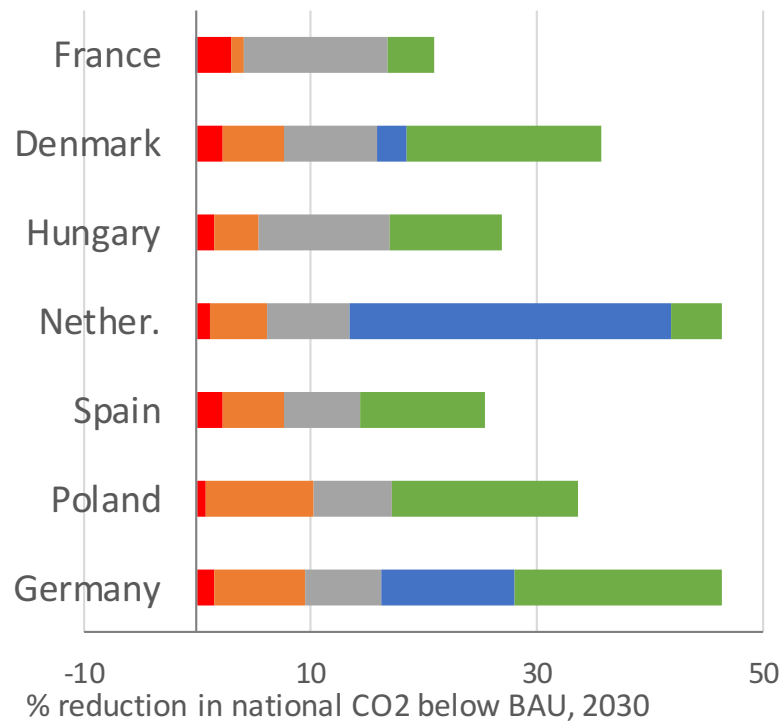


Assumed Policies for 2030

- ▶ Vehicle CO₂ regs (30 percent)
- ▶ Energy effic. regs for electricity (25 percent)
- ▶ Energy effic. regs for household/indust. (30 percent)
- ▶ Further regulations for non-ETS (meeting country targets)
- ▶ ETS emissions price (€56)

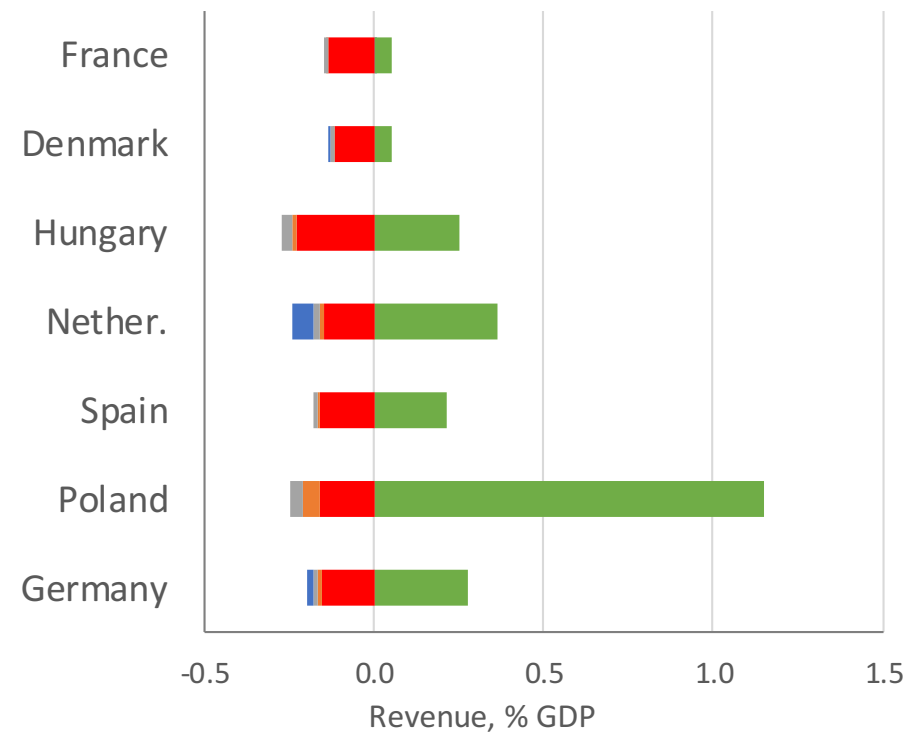
CO2 and Fiscal Impacts of Assumed Policies, 2030

CO2 Reductions



■ vehicle reg.
 ■ en. effic.--power
 ■ h/h, ind. regs
 ■ other non-ETS regs
 ■ ETS price

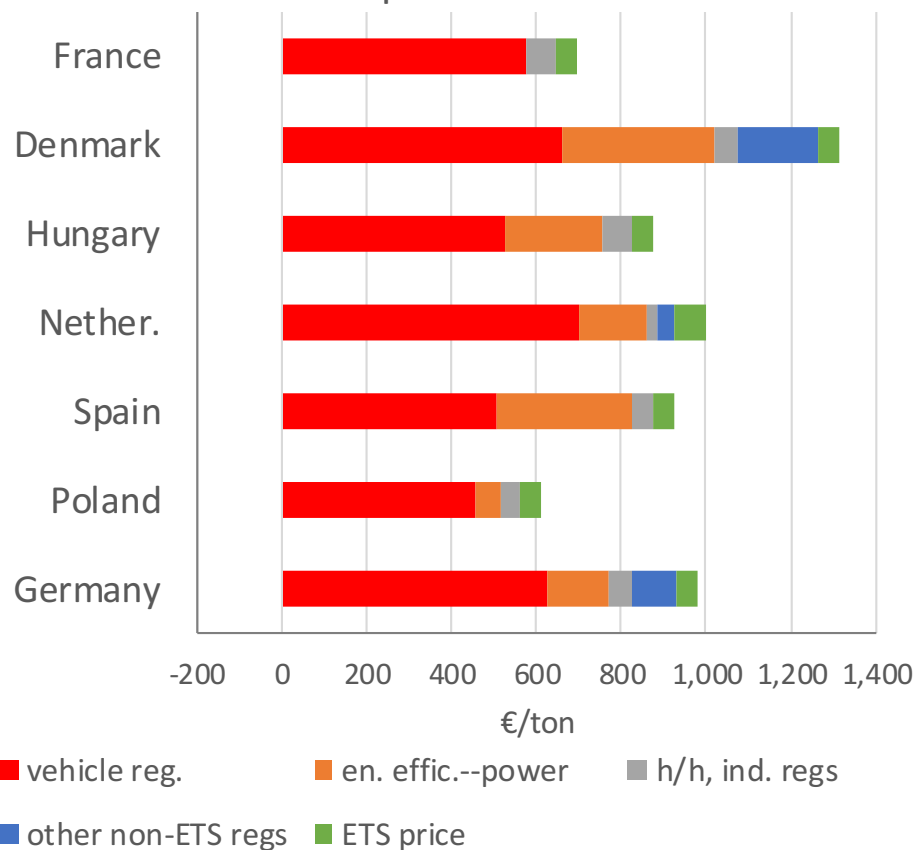
Revenue



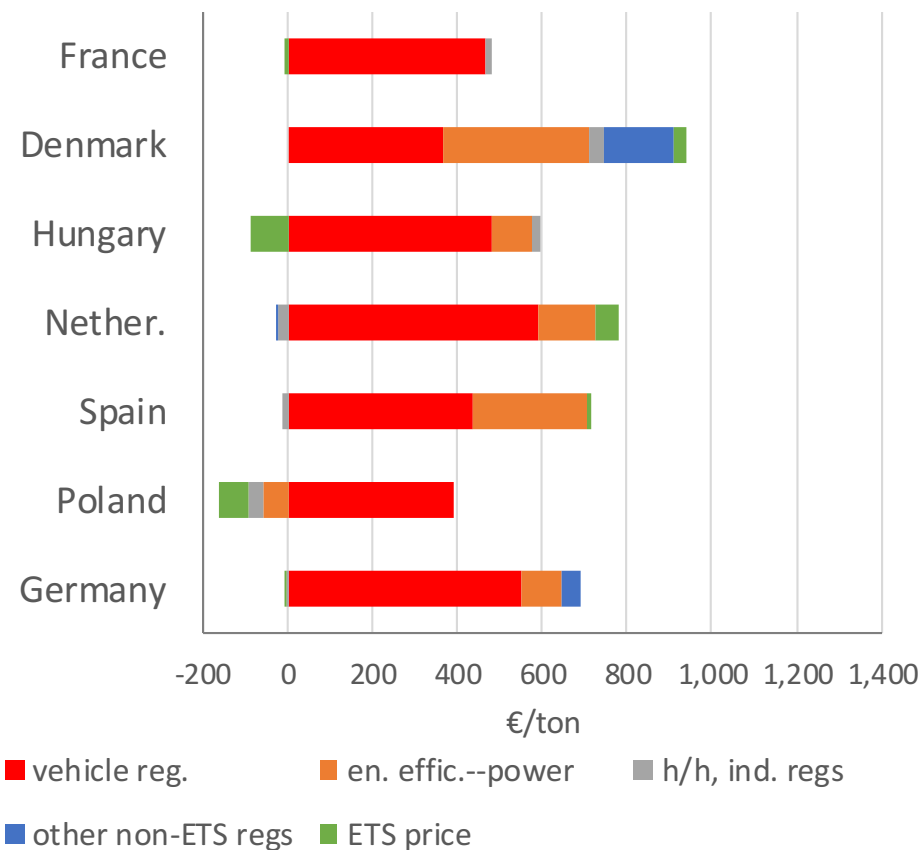
■ vehicle reg.
 ■ en. effic.--power
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 ■ other non-ETS regs
 ■ ETS price

Average Cost of Policies, 2030

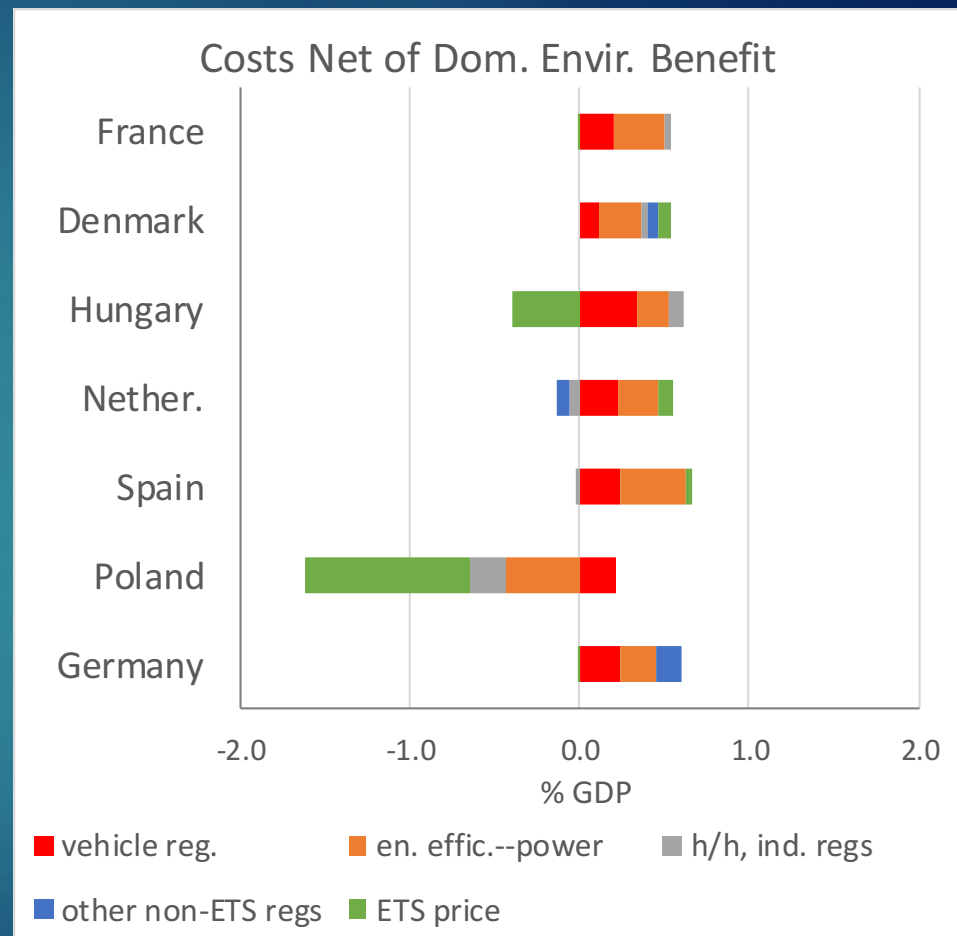
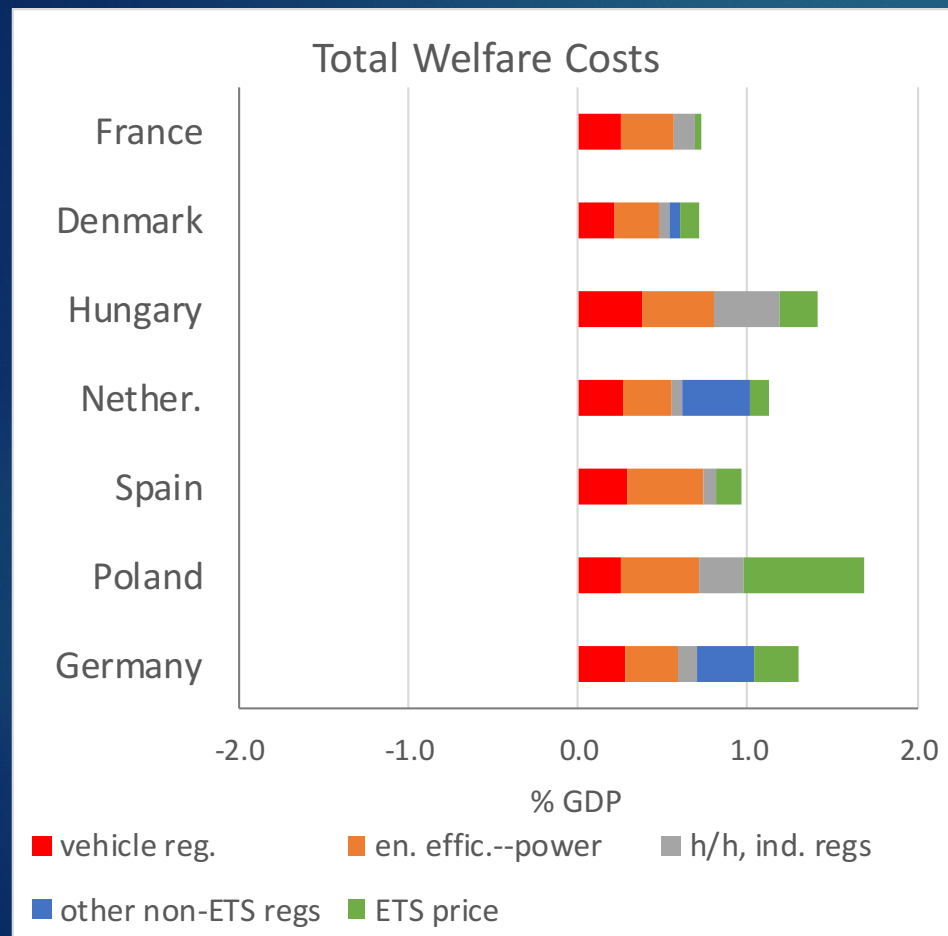
Av. Cost per ton Reduced



Av. Cost Net of Dom. Envir. Benefit



Total Welfare Costs of Policies, 2030

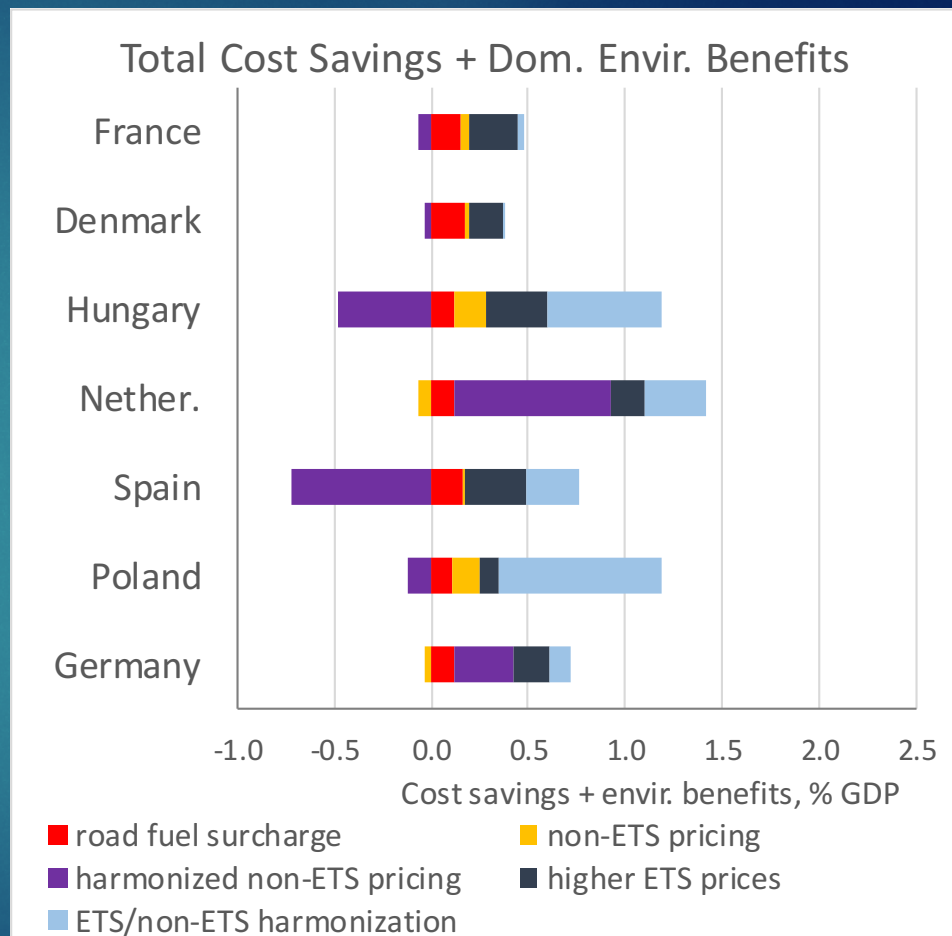
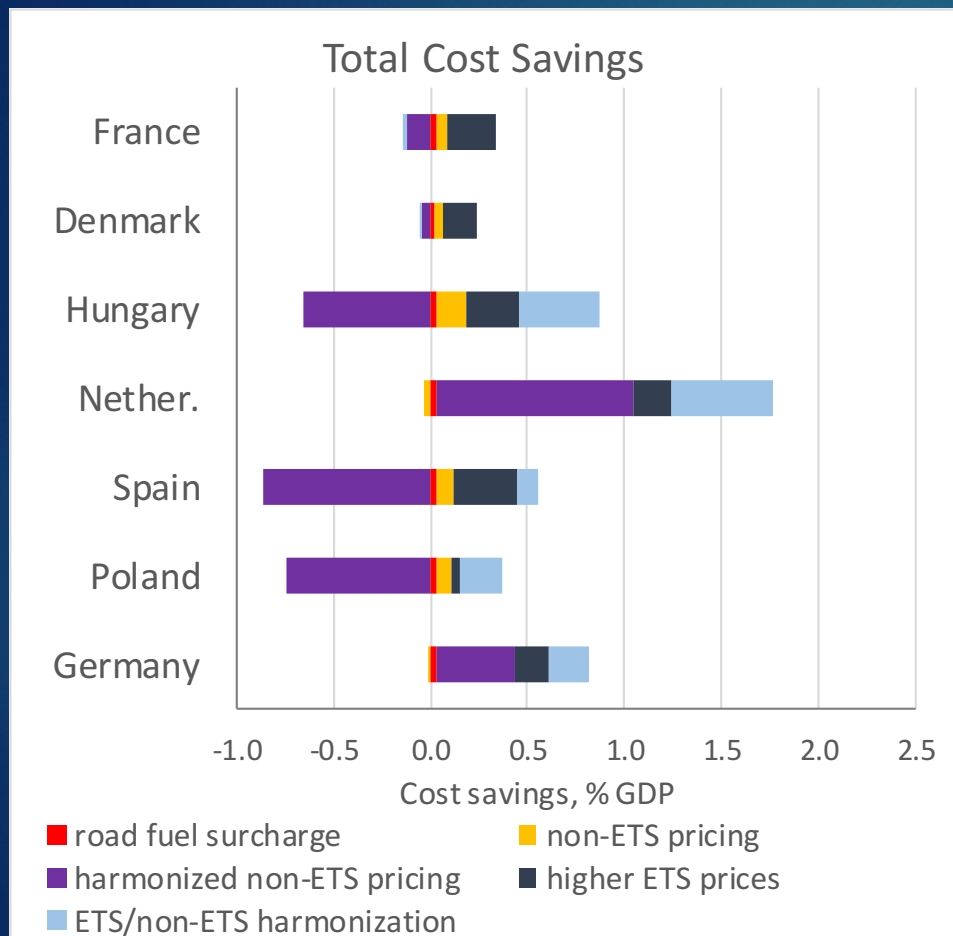


Sequential Policy Refinements

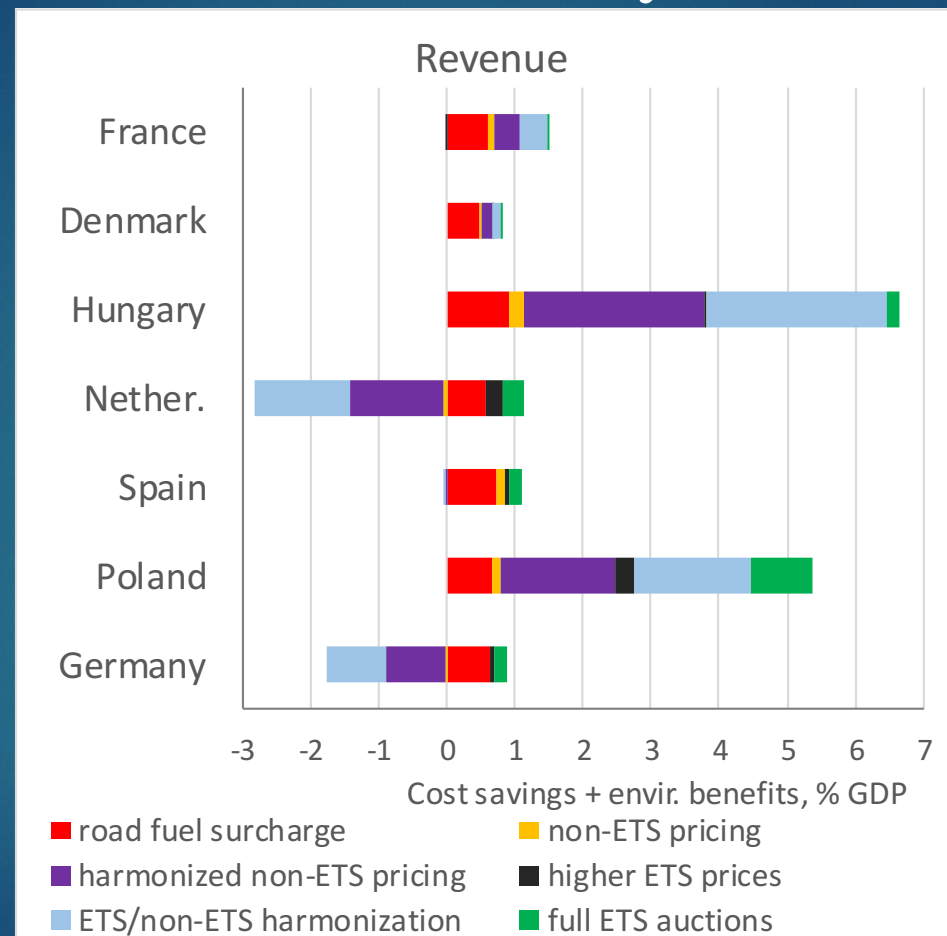
- ▶ Road fuel surcharge for vehicle standards
- ▶ Carbon pricing for non-ETS emissions
- ▶ Harmonizing non-ETS carbon prices across countries
- ▶ Raising ETS prices
- ▶ Harmonizing ETS and non-ETS prices
- ▶ Full ETS allowance auctions



Cost Savings from Policy Reforms, 2030



Revenue Gains from Policy Reforms, 2030



Concluding

- ▶ Significant econ./fiscal gains from greater domestic pricing
 - ▶ Relax regs. for countries meeting emissions targets with pricing?
- ▶ Significant distrib. impacts of harmonizing non-ETS prices
- ▶ Next steps: reconcile with EC modelling

