



WP5 of AMPERE

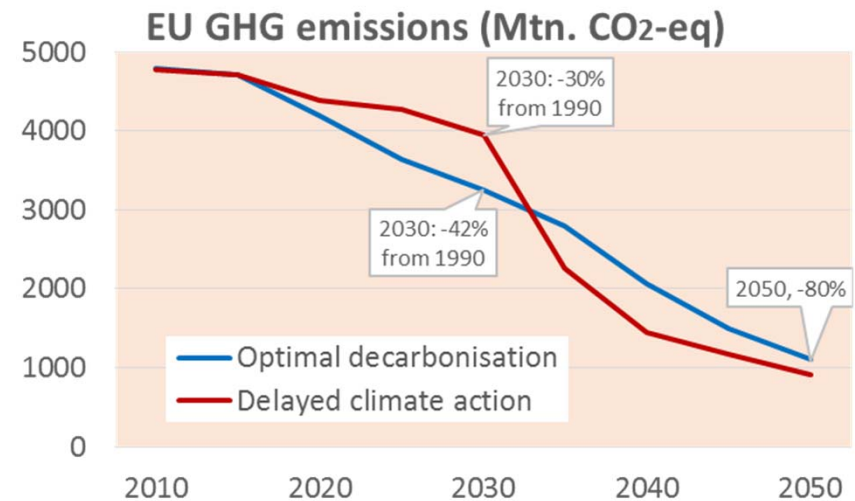
Focus on the EU using European Models

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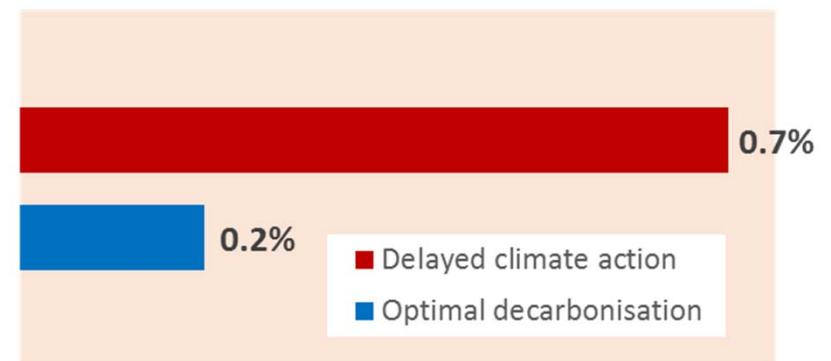


Update of the EU Energy Roadmap 2050 scenarios using multiple energy-economy models

- The findings confirmed the robustness of the EU Roadmap's priorities and conclusions:
 - Carbon-free electricity
 - Acceleration of energy efficiency
 - High RES deployment
 - Electrification of transport and stationary energy demand
 - Low energy system and GDP costs if all mitigation options available, including nuclear and CCS
- Delayed climate action until 2030 increases costs of decarbonisation:
 - Higher abatement efforts after 2030
 - Lock-ins in the energy sector and lack of infrastructure
 - Delays in learning progress for RES, CCS, batteries, etc.
- The findings suggest a 40% GHG reduction in EU emissions by 2030 as a cost-effective milestone



Additional energy system costs as % of GDP (cumulatively over 2010-2050)





Early climate action, even if unilateral, can bring economic benefits for Europe

- Decarbonisation in the EU replaces imported fossil fuels by domestically produced goods and services
- Europe is sufficiently large to allow for achieving a large part of the learning potential
- Assuming that RoW will join climate effort by 2030, Europe can get economic benefits from earlier and unilateral climate action until 2030:
 - Competitive advantage and increase in exports of clean energy technologies
 - Electric vehicles, CCS and RES are among the winners in EU exports
 - Lower compliance costs because of prolonged period of restructuring
- If the EU waits until 2030 to synchronise climate actions with RoW, cumulative decarbonisation costs increase threefold

