

# Policy entry points to close the gap to 1.5°C

Accelerating climate action towards a rapid and just transition

Insights for EU and international climate policy

Brussels, October 10<sup>th</sup> 2023



## Motivation

- Current climate policies are not consistent with the 1.5°C limit
- Carbon pricing is not comprehensive and not sufficient, and an extension and increase of emission pricing to a level compatible with 1.5°C is debated.
- Can additional policies close the gap between well-below 2°C and 1.5°C without increasing the carbon price?



# Early policies can target all sectors

- **Industry and energy supply:** rapid decarbonisation of electricity generation; push for more direct and indirect electrification in all sectors; significant deployment of CCS
- **Energy consumption:** efficiency improvements; faster buildings renovation and better insulation for new constructions; lower floorspace per capita; shift in setpoint temperatures; reduced passenger and freight transport; transport modal shifts

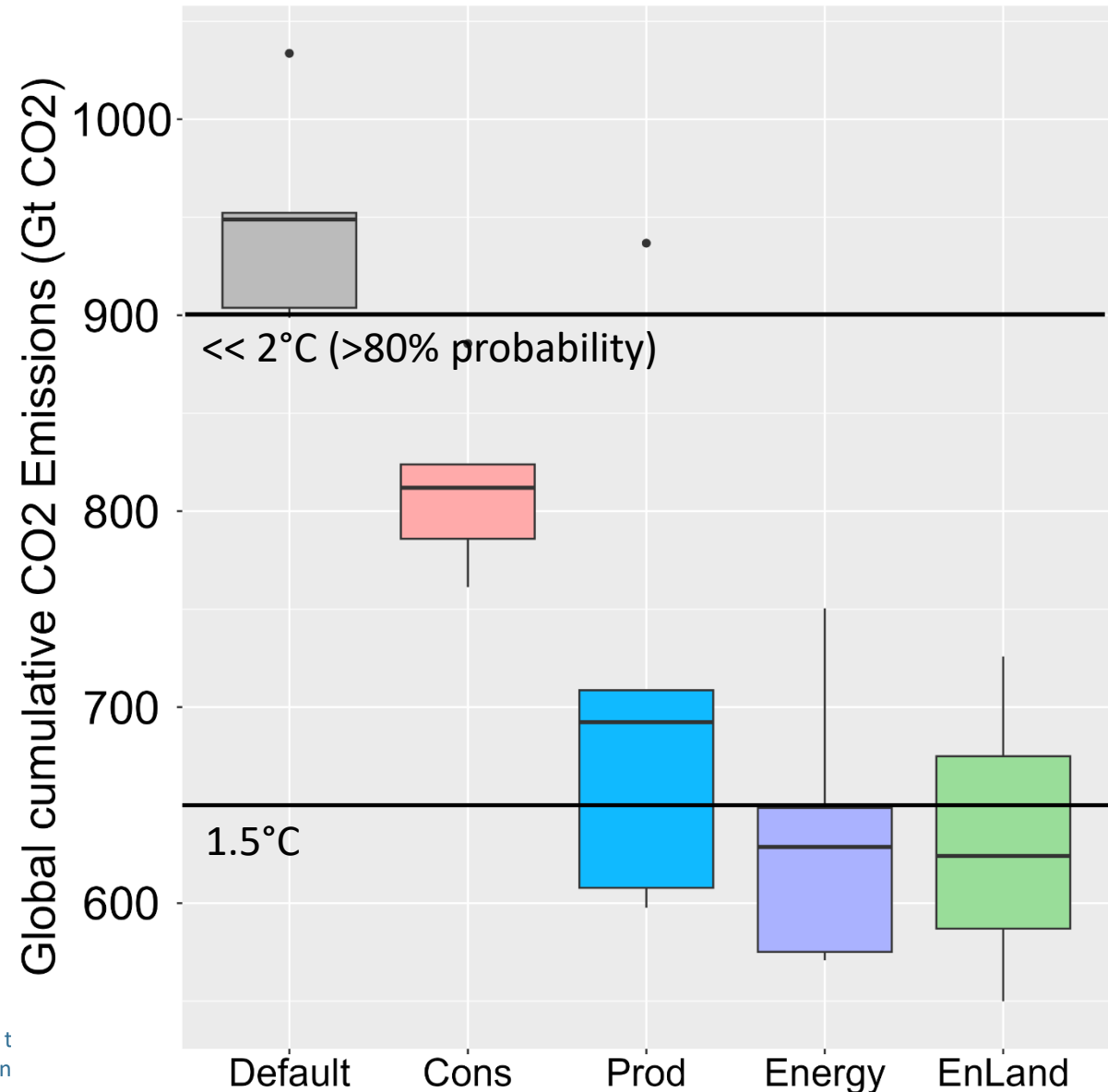
- **Land-use:** advanced measures in reducing non-CO<sub>2</sub> GHG emissions; peatland protection and restoration; additional land-sharing CDR methods; dietary changes; reduced food waste both at household levels and farms or processing retail

		Default Industry & Energy Supply	Advanced Industry & Energy Supply	Advanced Industry & Energy Supply & Land
Default Consumption	Energy	Default	Prod	
Advanced Transformation of Energy Consumption		Cons	Energy	
Advanced Transformation of Energy Consumption and Land				EnLand

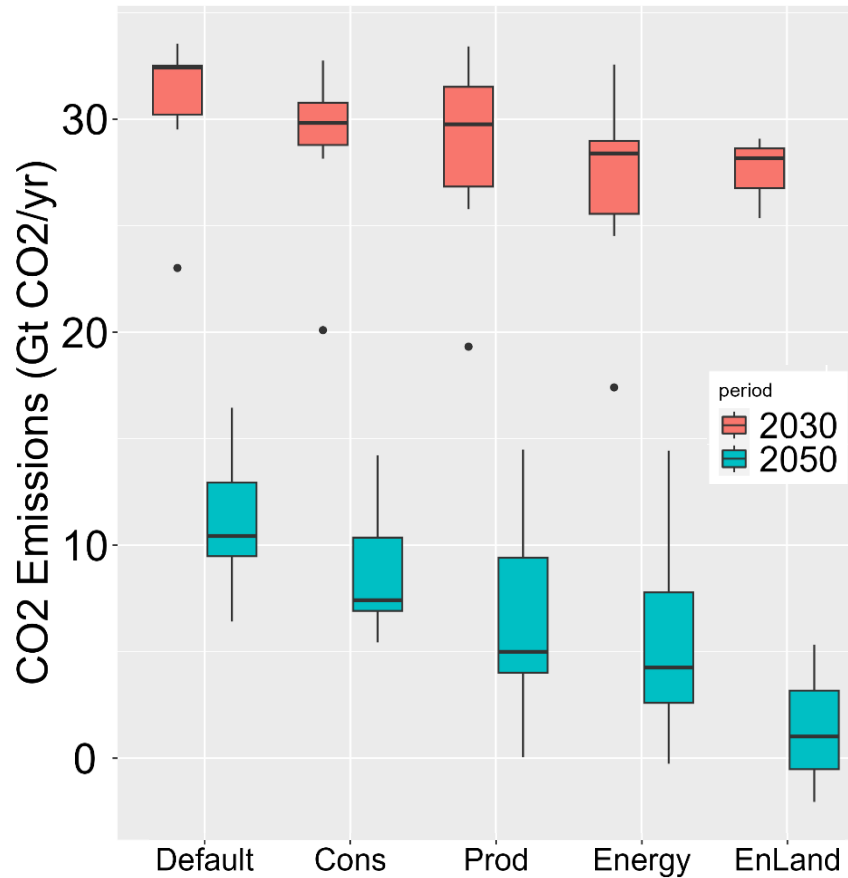


# Global CO<sub>2</sub> budget

- Only the **combination of all Energy** system measures reduces global cumulative CO<sub>2</sub> emissions to a level **compatible with the 1.5°C limit**
- **Land policies** can contribute to enhanced carbon storage on land, thereby **further reducing cumulative CO<sub>2</sub> emissions**. In addition, land policies are the most effective option for reducing non-CO<sub>2</sub> GHG emissions, leading to a further **reduction of peak warming and overshoot of 1.5°C by 0.03-0.12°C**.



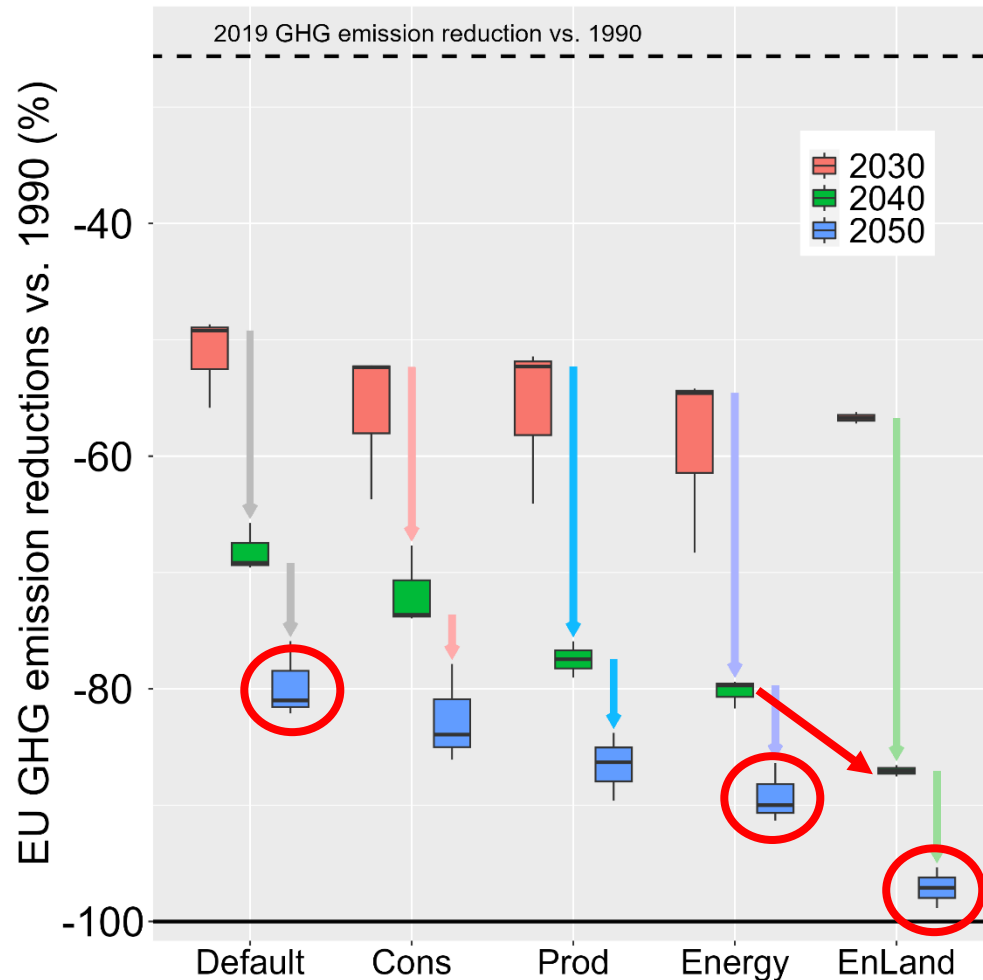
# Total global CO<sub>2</sub> emissions



- Producer-oriented policies (Prod) are necessary in the transformation of the energy system in the long run to enable the achievement of the Paris target.
- Consumer-oriented policies (Cons) can help to reduce emissions stronger especially in 2030, enabling lower short-term targets.
  - lower cumulative emissions
  - lower peak temperature
- Additional land policies are necessary to reduce emissions towards net-zero in 2050.



# Reductions in annual EU GHG emissions

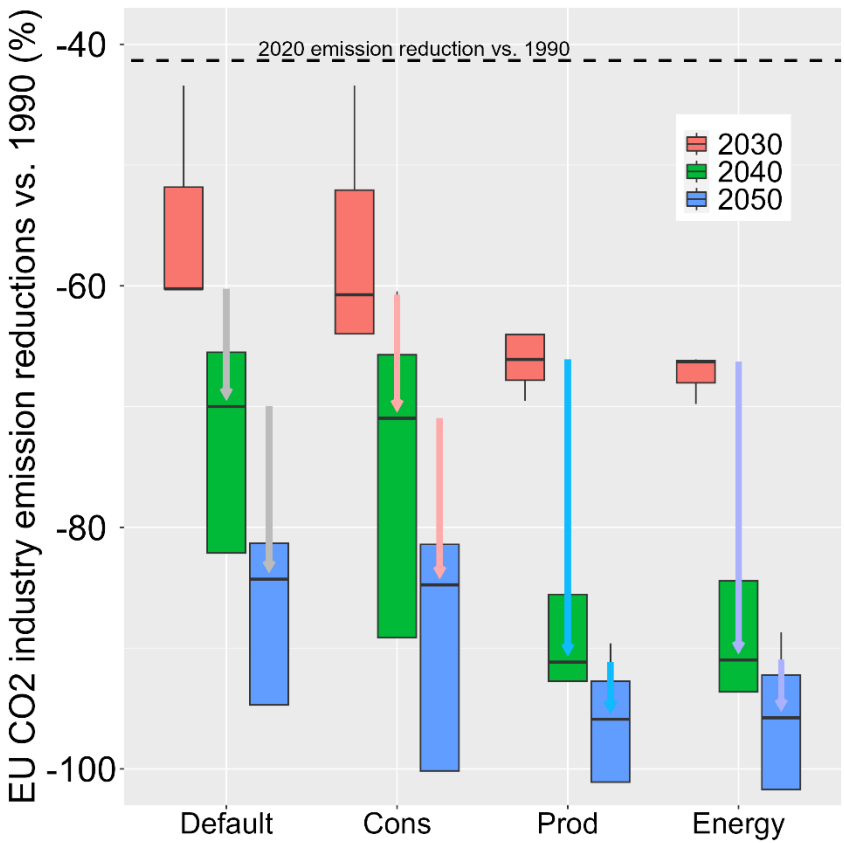


- The combination of all energy system and land use measures can almost close the gap to achieving greenhouse gas neutrality in the EU by 2050.
- Consumer- and producer-oriented policies complement each other, with the combination enabling emission reductions of around 90% in 2050 compared to 1990.
- Advanced land use measures are crucial to push EU GHG emissions reductions towards 100% in 2050
- The inclusion of land use measures is already crucial for more ambitious 2040 targets.

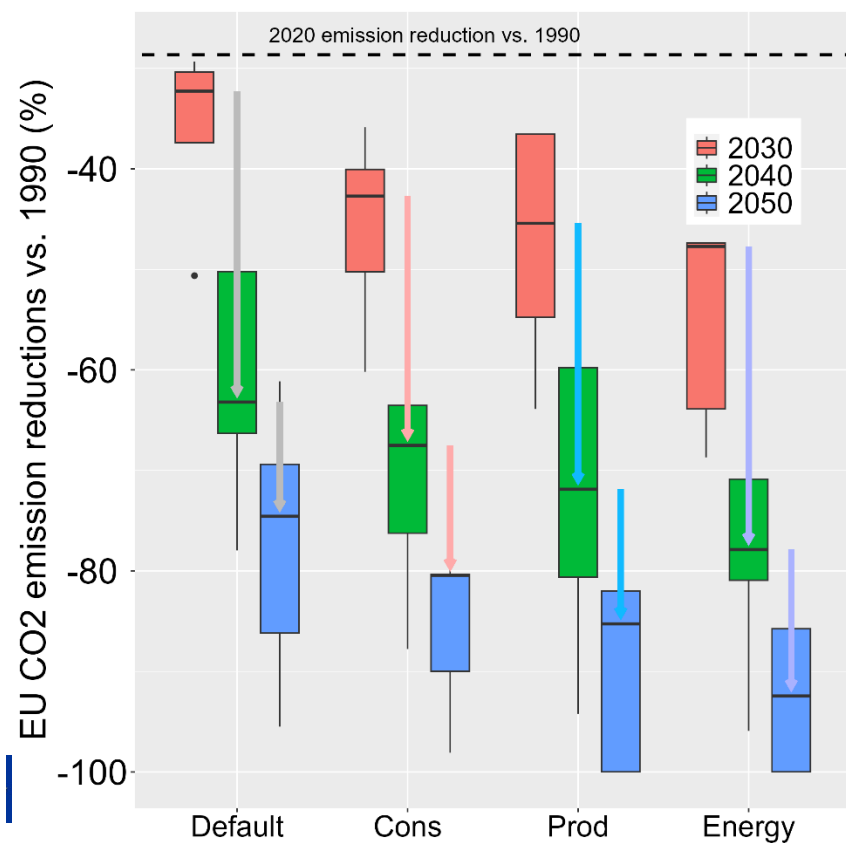
# EU CO<sub>2</sub> emissions across sectors

**Both producer- and consumer-oriented policies are needed to realise the full emission reduction potential in all sectors**

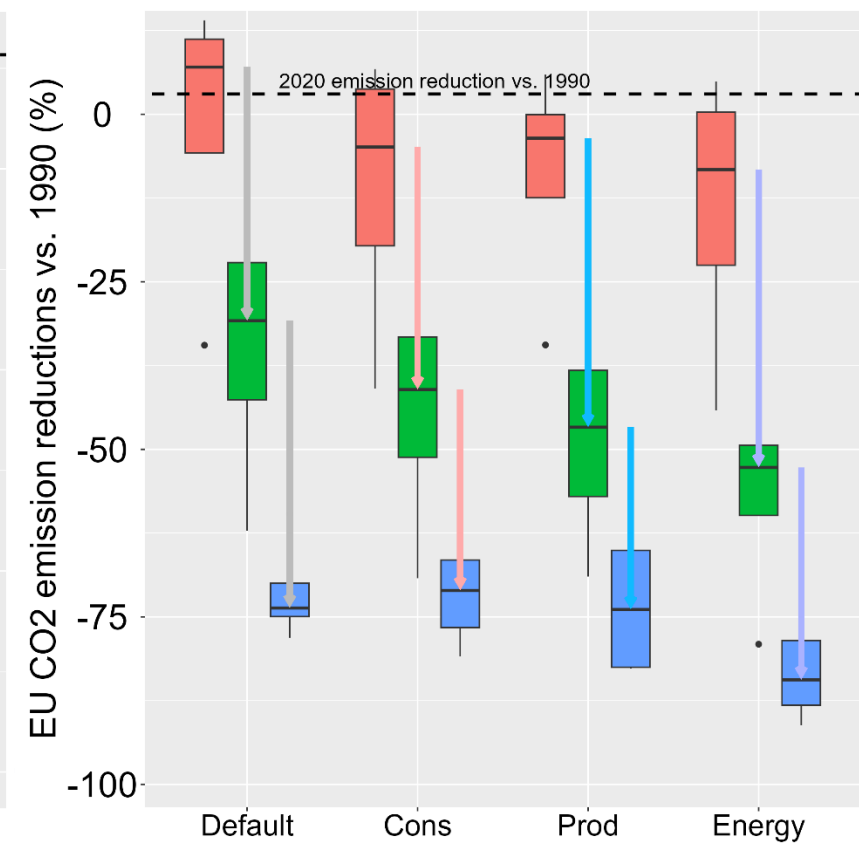
## Industry



## Buildings



## Transport



## Summary

- Key policy entry points exist for targeting greenhouse gas emissions by producers and consumers. Their immediate use can close the gap between a pathway limiting warming to well below 2°C and a pathway compatible with limiting warming to 1.5°C with low overshoot.
- The combination of all energy system and land use measures can almost close the gap to achieving greenhouse gas neutrality in the EU by 2050. The inclusion of land use measures is already crucial for more ambitious 2040 targets.
- Both producer- and consumer-facing policies are needed to realise the full emission reduction potential in all sectors.





## Conclusion

- On the industry and energy supply side, early policies are important to drive investment in direct electrification and the scale-up of technologies such as CCS.
- On the consumption side, policy can support consumption choices through structural changes and political action to enable the uptake of low-carbon choices, for example by reducing barriers such as lack of information. Yet, individual consumer choices are difficult to influence at sufficient breadth across society through policy, and behavior can be very inert.
- To ensure a successful land use transformation, a process to gain support of affected farmers as well as consumers needs to start now.

