

Policy issues of ocean-based CDR methods: Accounting

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Visions and Pathways for Carbon Dioxide Removal in the EU
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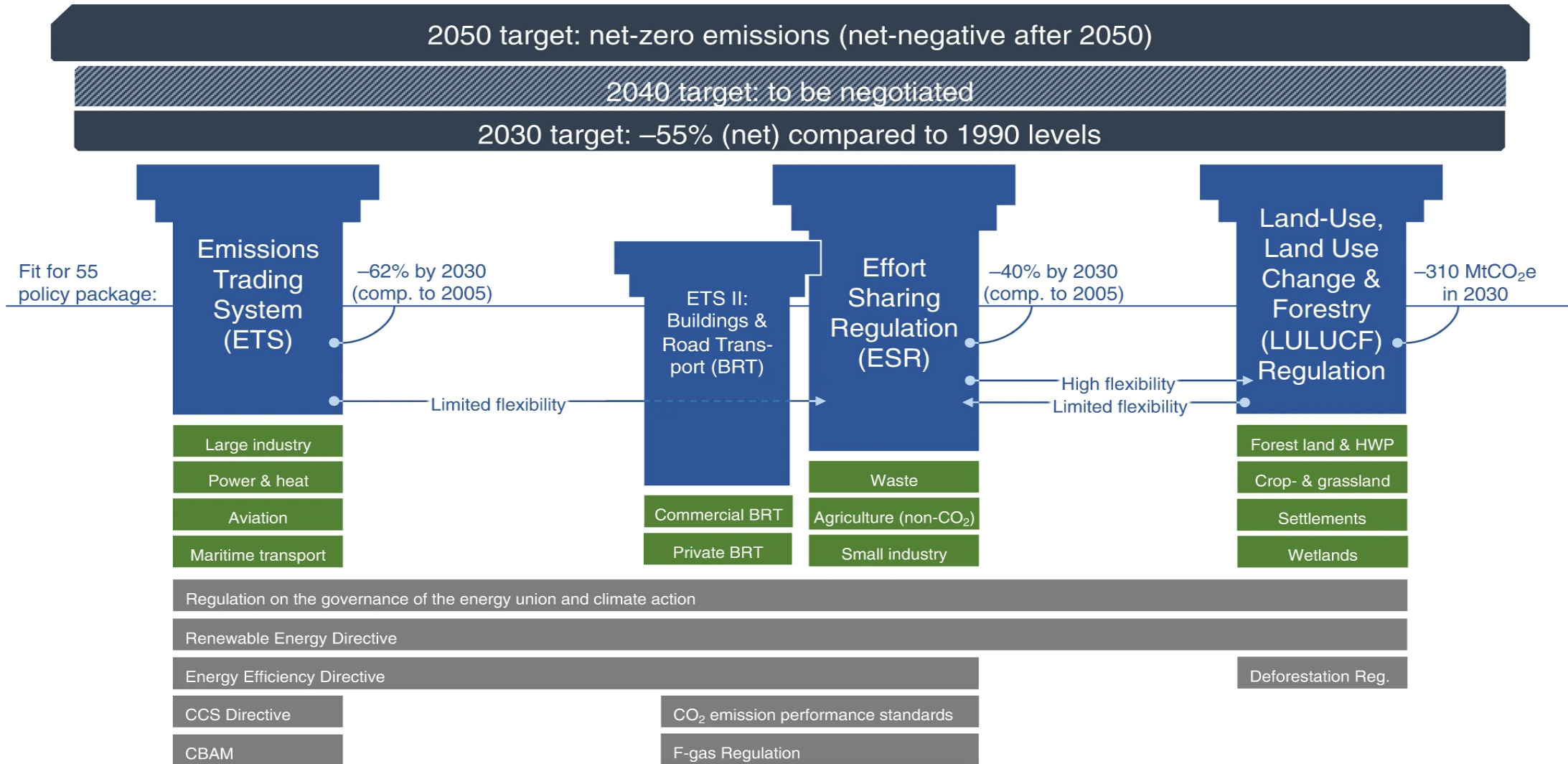
Ocean-based carbon removal in EU climate policy

- ▶ Ocean-based carbon dioxide removals (CDR) are not yet included in (EU) climate policy
- ▶ Fundamental challenges exist for
 - ▶ monitoring, reporting, verification (MRV) (measuring what happens)
 - ▶ carbon removal accounting (determining how CDR compares to emission reduction, i.e. determine the value)
- ▶ OceanNETs: Review and assessment of various accounting methods (for example ton-year accounting) in their appropriateness for the application to ocean CDR (WP1, Deliverable D1.1 and D1.2)

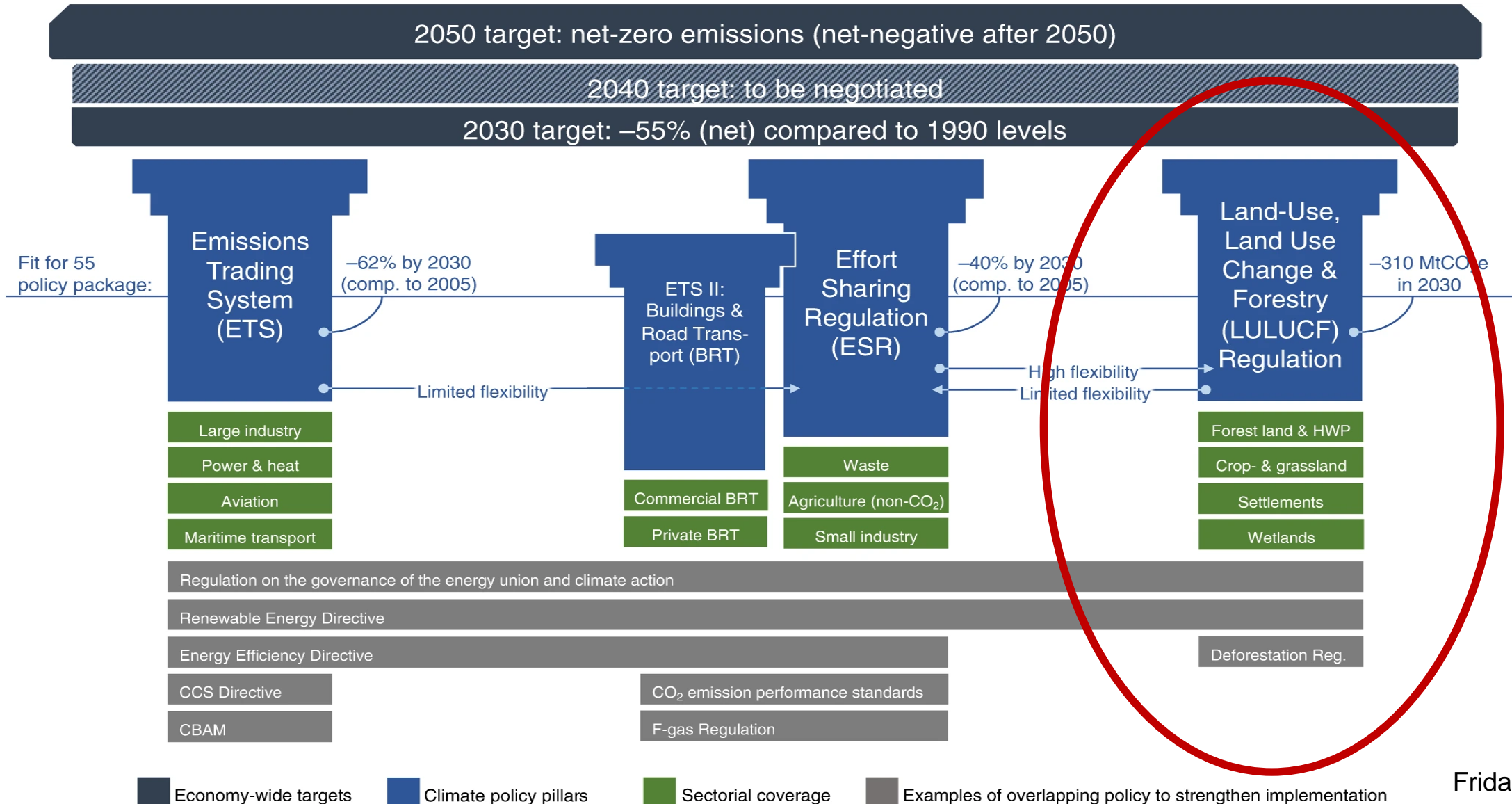
Key Findings

- ▶ There exist no ideal accounting method which fits all ocean CDR methods across different policy frameworks
 - ▶ For example, MRV and accounting challenge different for seagrass restoration (blue carbon) compared to ocean alkalinity enhancement (additionality, benchmark, etc)
- ▶ Challenge: Align (international) credits derived under cost-benefit framework to a compliance system like EU climate policy, requires most likely an impermanence reserve (buffer account), ideally with active carbon portfolio management
- ▶ Assessment of carbon accounting needs to take into account the liability and governance framework

The EU climate policy framework



The EU climate policy framework



Implications of (marine) Carbon Removal in EU

- ▶ ETS2 supposed to cover transport and housing emissions from 2027/2028 onward; however, ESR reduction targets remain in place
 - ▶ National deficits arising from ETS2 need to be compensated by reductions in ESR sectors outside ETS2, by intra-country emissions trading, and by LULUCF flexibilities
- ▶ ETS2 includes price triggers which would induce additional release of allowance and in turn increase in emissions beyond targets
 - ▶ Stabilizing ETS2 prices at 45 EUR/tCO₂ (in 2022 prices) would require in aggregate (across member states) about 415 MtCO₂ additional allowances (40 percent target exceedence); not likely/possible to cover by sectors outside ETS2 or LULUCF flexibility (Rickels et al. 2024)

Implications of (marine) Carbon Removal in EU

- ▶ Utilization of LULUCF flexibility into ESR requires that removals are additional to LULUCF targets which by itself very ambitious (increase of about 43 MtCO_{2equiv} in removal to be achieved by 2030 anyway)
 - ▶ Extreme cases: surplus or deficit of full LULUCF flexibility would lower ESR CO₂ price by 21 percent or increase ESR CO₂ price by 23 percent, respectively (Rickels et al. in preparation)
- ▶ Expanding LULUCF basis might be required to manage ETS2/ESR for 2030
 - ▶ implicit liability framework provided (member state trading)
 - ▶ suitable for including blue carbon removal projects (seagrass and saltmarshes)
 - ▶ with 2030 target fulfillment mechanism in principle possible to include further methods (delta in removal is determined by 2032 submission, i.e. average of 2016/2017/2018 could be corrected to include the historical blue carbon removal; absolute target is determined by average of 2016/2017/2018 in 2020 submission)
 - ▶ Implicitly imposing preservation mandate since reduction in blue carbon removal would emerge as deficit