MEDEAS

MODELING THE RENEWABLE ENERGY TRANSITION IN EUROPE

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 691287

MEDEAS main outcomes

EMP-E 2019
Brussels 8/9-10-19

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ICM-CSIC

MEDEAS scenarios

•MEDEAS developed transition scenarios towards a low-carbon economy based on available global carbon budget in order to limit global warming to 2°C and the EU target to reduce absolute annual emissions by 80%.

•Three scenarios are run using the model (for EU geographical level):

1. **Business as Usual:** extrapolating current trends. In this scenario all the variables follow the historical trends (from 1995). e.g. annual growth of wind onshore: 8.7%, wind offshore: 25%, solar PV: 9.5%, CSP: 3.6%.
2. **Optimal Transition:** moderate increase of RES. Annual growth of wind onshore: 17.4%, wind offshore: 25%, solar PV: 19%, CSP: 7.2%.
3. **TRANS**: **maximum effort to increase RES** starting in 2020 with the aim of reducing drastically de GHG emission by 2050. Annual growth: wind onshore: 80%, wind offshore: 80%, solar PV: 60%, CSP: 50%.

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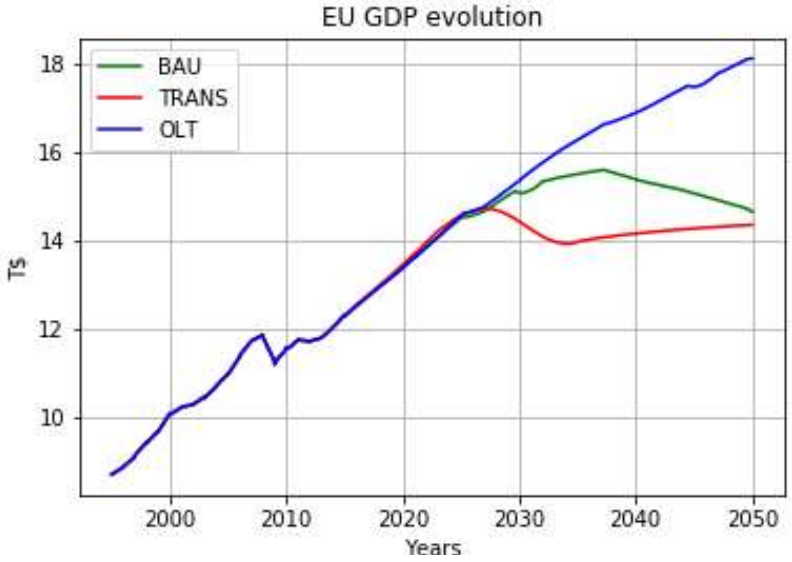
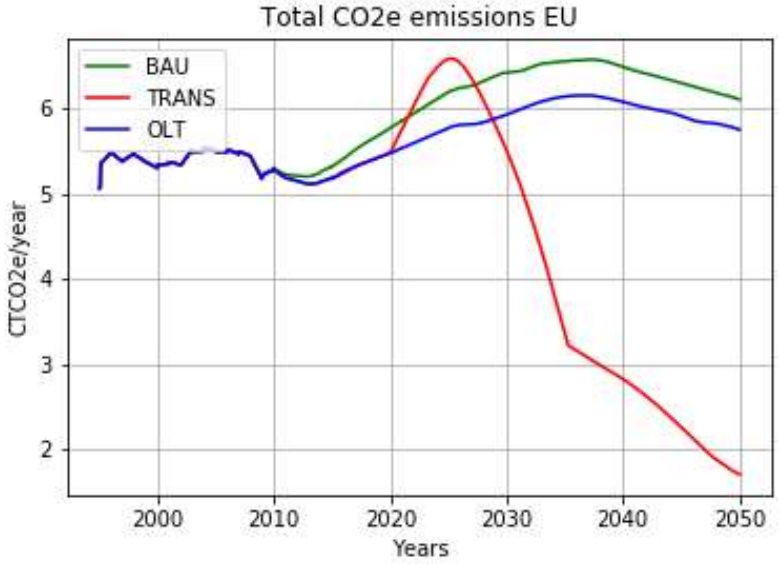
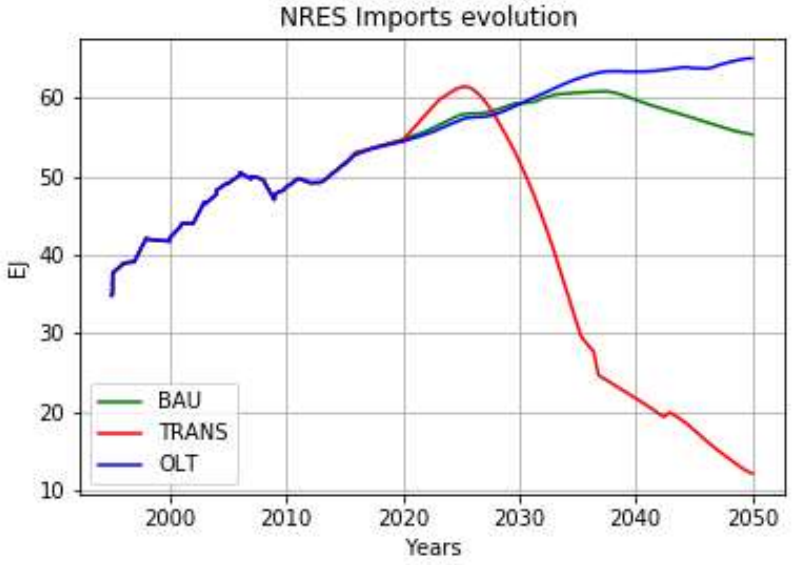
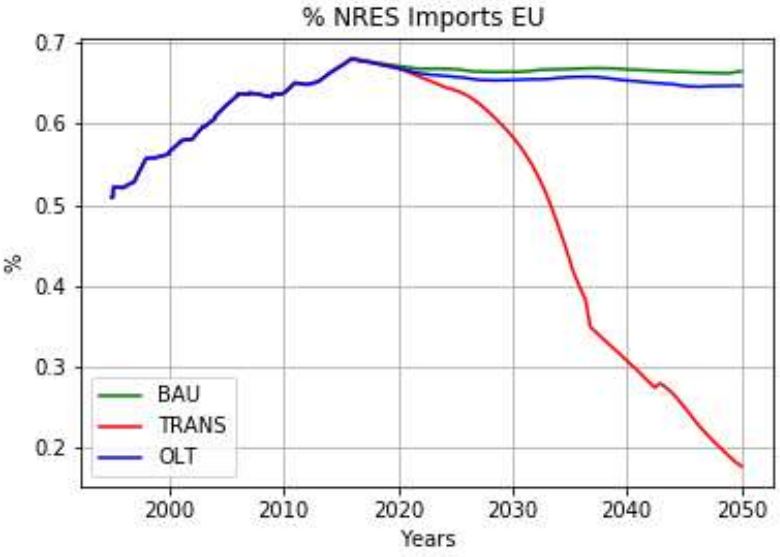
MEDEAS simulation results









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MEDEAS outcomes

- BAU scenario conducts to a greater emissions and at permanent recession after 2035-2040.
- OLT assures GDP to grow but isn't able to reduce GHG emissions.
- TRANS stabilizes the economy and shows at the end of the period a drastic reduction of emissions.
- Model projections show that, if no new RES technologies (storage and PtX) are rapidly developed, then economic stabilization (no-growth) will be the unique option for decarbonizing economy.

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