

## The macroeconomic implications of climate-benign tipping interventions in energy-intensive industry

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Research field “Climate and environmental economics: Economic analysis of climate change impacts and mitigation policies”

Research question 1 | Cluster 1

### Background:

Climate-benign tipping interventions can be understood as those framework conditions within an economy which can lead to a fundamental shift – a so called tipping point – in the socio-economic system. If such a shift within the socio-economic system is achieved, accumulating and accelerating effects are expected with according impacts on the social-ecological system. These tipping interventions, hence, contribute to the achievement of global climate goals.

The thesis concentrates on the socio-economic dimension of energy-intensive industry as one of the largest emitters of greenhouse gas emissions. It investigates tipping interventions which enhance the transition to low-CO<sub>2</sub> technologies in the energy-intensive industry. In other words, it shows which economic, political and technological elements need to be transformed in order to reach a tipping point in regions characterized by energy-intensive industries.

In order to find climate-benign tipping interventions, two firm clusters in Austria, with their embedding in the European context, serve as case studies. For these regions, tipping interventions are assessed with respect to their macroeconomic impacts. This helps to find the most powerful climate-benign tipping interventions considering social and economic implications.

### Research Questions:

- What political, economic and technological framework conditions and instruments are needed to ensure that energy-intensive industry is led to socio-economic tipping points and contribute to the achievement of climate goals and circular economy goals?
- What would be the socio-economic implications in the short-, mid- and long-term in Austria and Europe?

**Method:** Computable General Equilibrium using the WEGDYN-model to examine impacts of climate-benign tipping interventions.