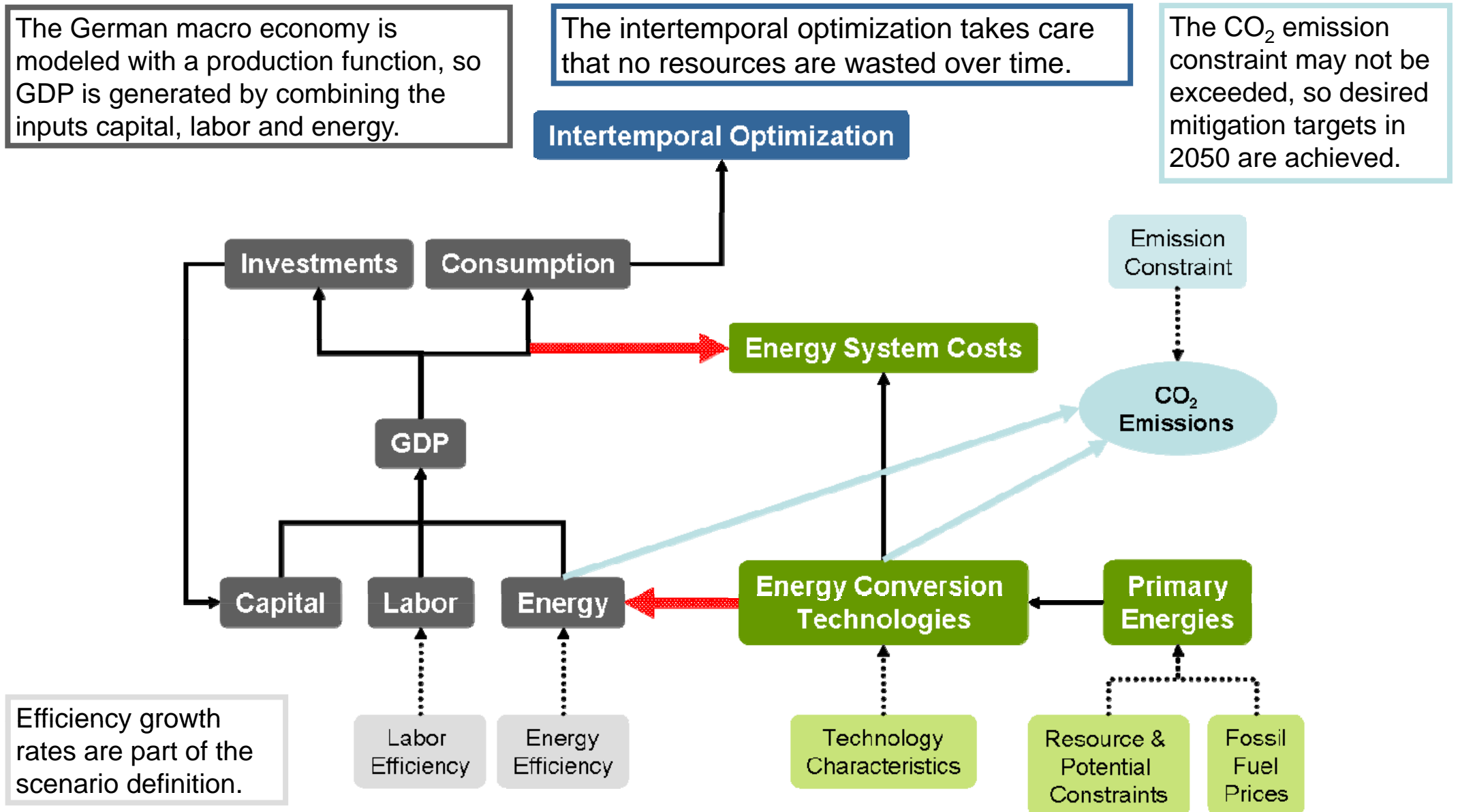




REMIND-D: An Energy-Economy Model for Germany

A Framework for Calculating and Analyzing Long-term Domestic Decarbonization Pathways



The German macro economy is modeled with a production function, so GDP is generated by combining the inputs capital, labor and energy.

The intertemporal optimization takes care that no resources are wasted over time.

The CO₂ emission constraint may not be exceeded, so desired mitigation targets in 2050 are achieved.

Efficiency growth rates are part of the scenario definition.

The red arrows show the connection between the macro-economic and the energy system module. They indicate monetary flows on top and final energy and energy service flows on the bottom.

The energy system module knows how much capacity of which technology was built in what year in the past (for electricity, heat, fuel etc.). When their lifetimes are over, they can be replaced by new technologies.

In this project, the scenario definition is conducted by involving German stakeholders, so the final long-term decarbonization scenarios are meaningful to the civil society.

The model can answer questions like:

- What is the cost of mitigation?
- Which sectors should decarbonize first?
- What if certain technologies are not available?
- What is the optimal technology mix in the future?

