

# **Blueprint Germany**

## **– A strategy for a climate safe 2050.**

### **A backcasting exercise.**

**A study of Prognos AG, Öko-Institut & Dr. Ziesing  
for WWF Germany**

**BSEC**

**Dr. Felix Chr. Matthes**  
**Berlin, 6 May 2010**

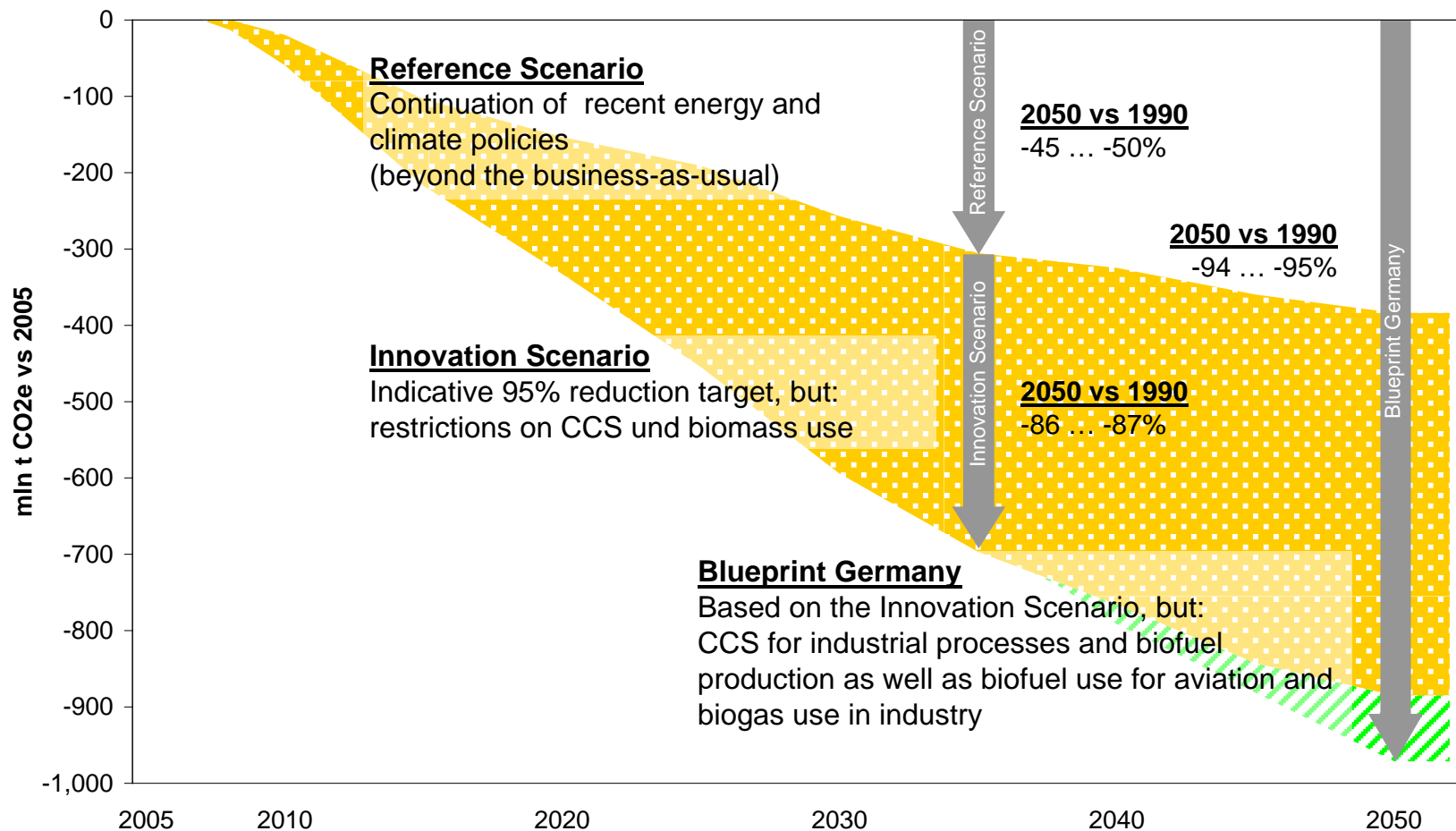
# The 'Blueprint Germany' project

## The project approach

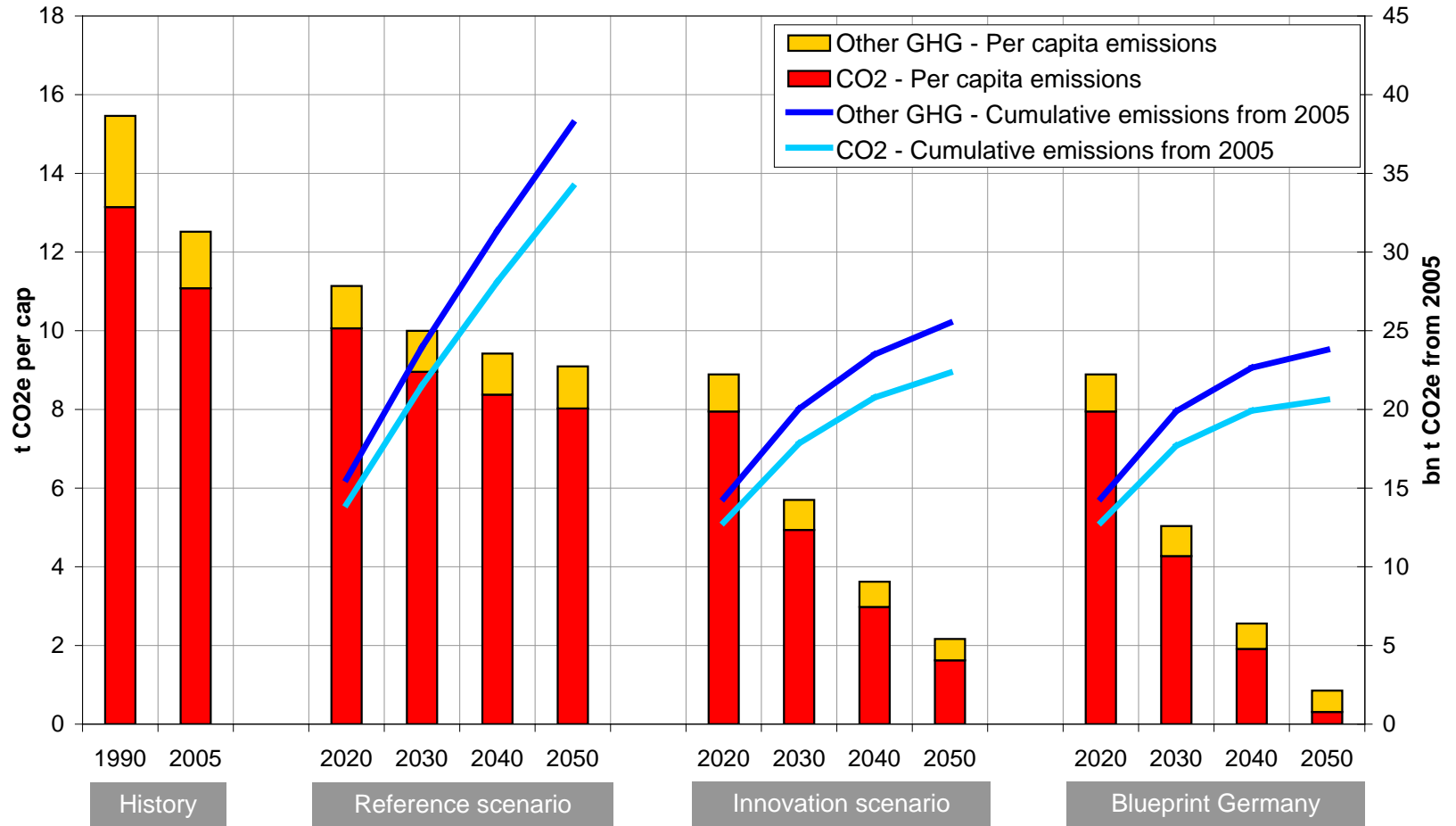
- **Bottom-up projections**
  - Energy sector and energy-related GHG emissions
  - Non-CO2 and non-energy GHG emissions (incl. LULUCF)
- **Top down components analysis (based on an extended Kaya identity)**
  - Emission reduction contributions
  - Sectoral targets
- **Key long-term strategies**
  - Technologies & infrastructures
  - Innovation
  - Policies and measures
- **A medium-term climate and energy package**

# The „Blueprint Germany“ project

## Outline of scenarios

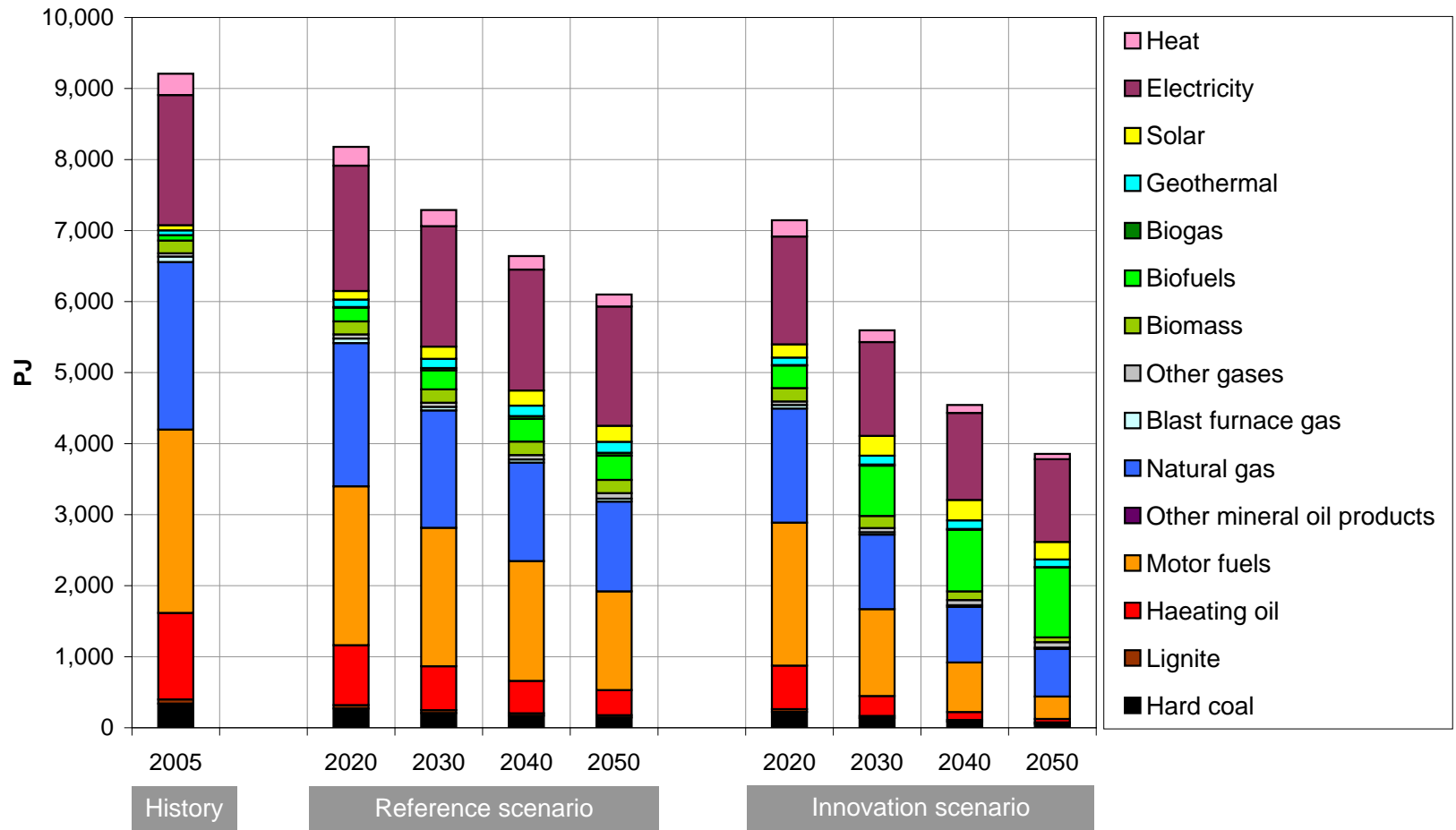


# Ambitious long-term climate policy Full de-carbonization & more will be needed

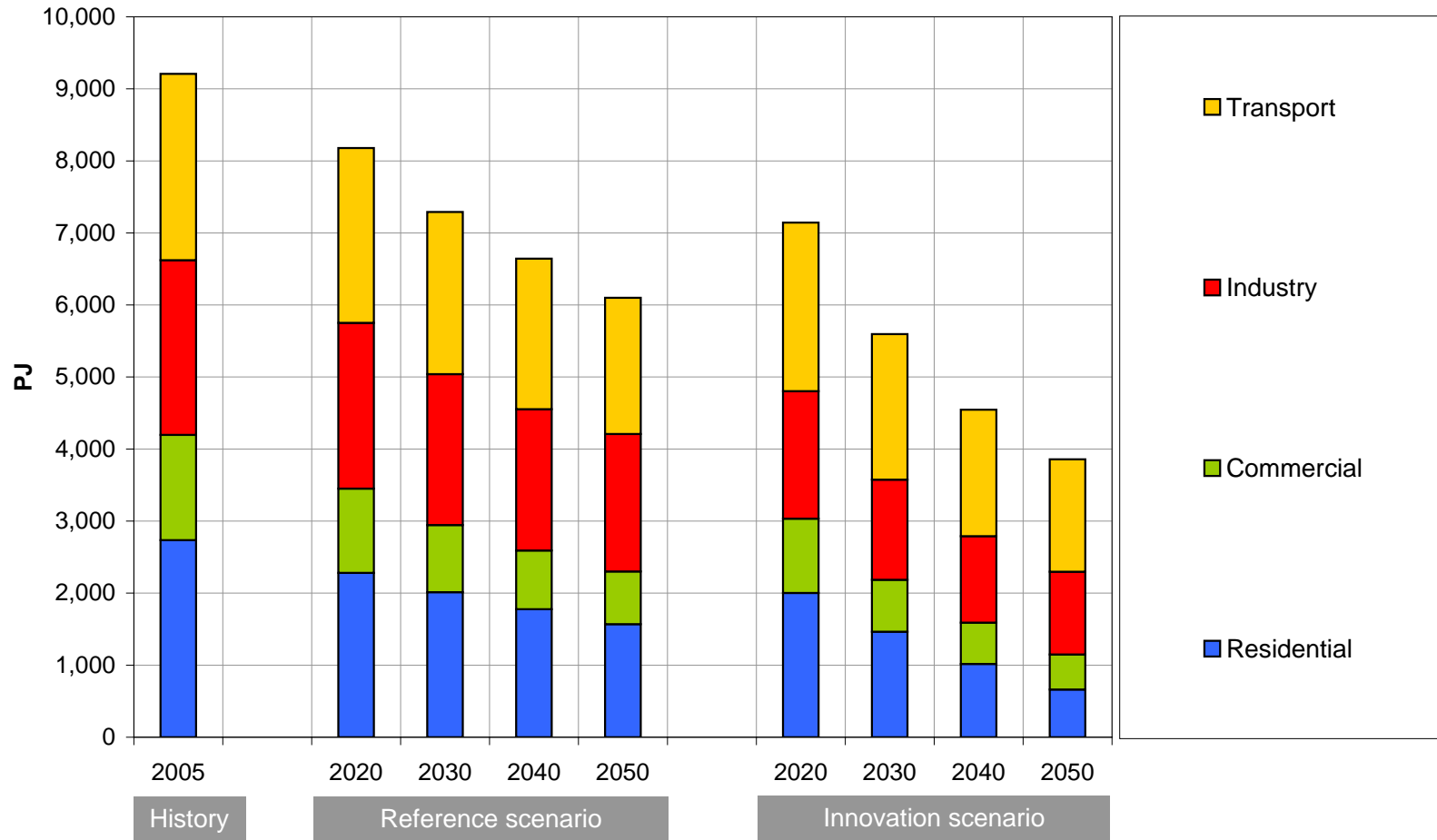


# Final energy consumptions

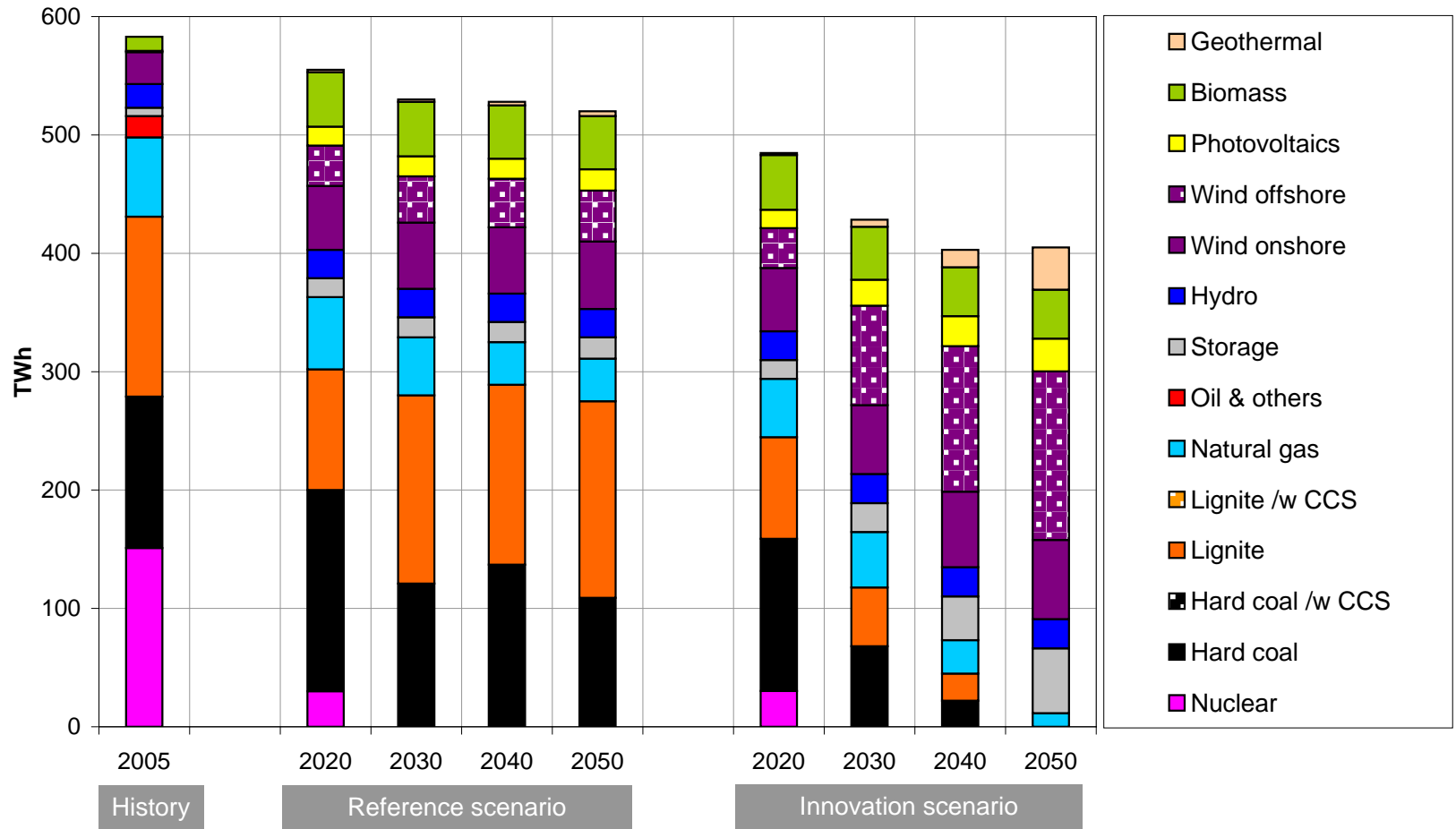
## Carbon-free energies for all sectors



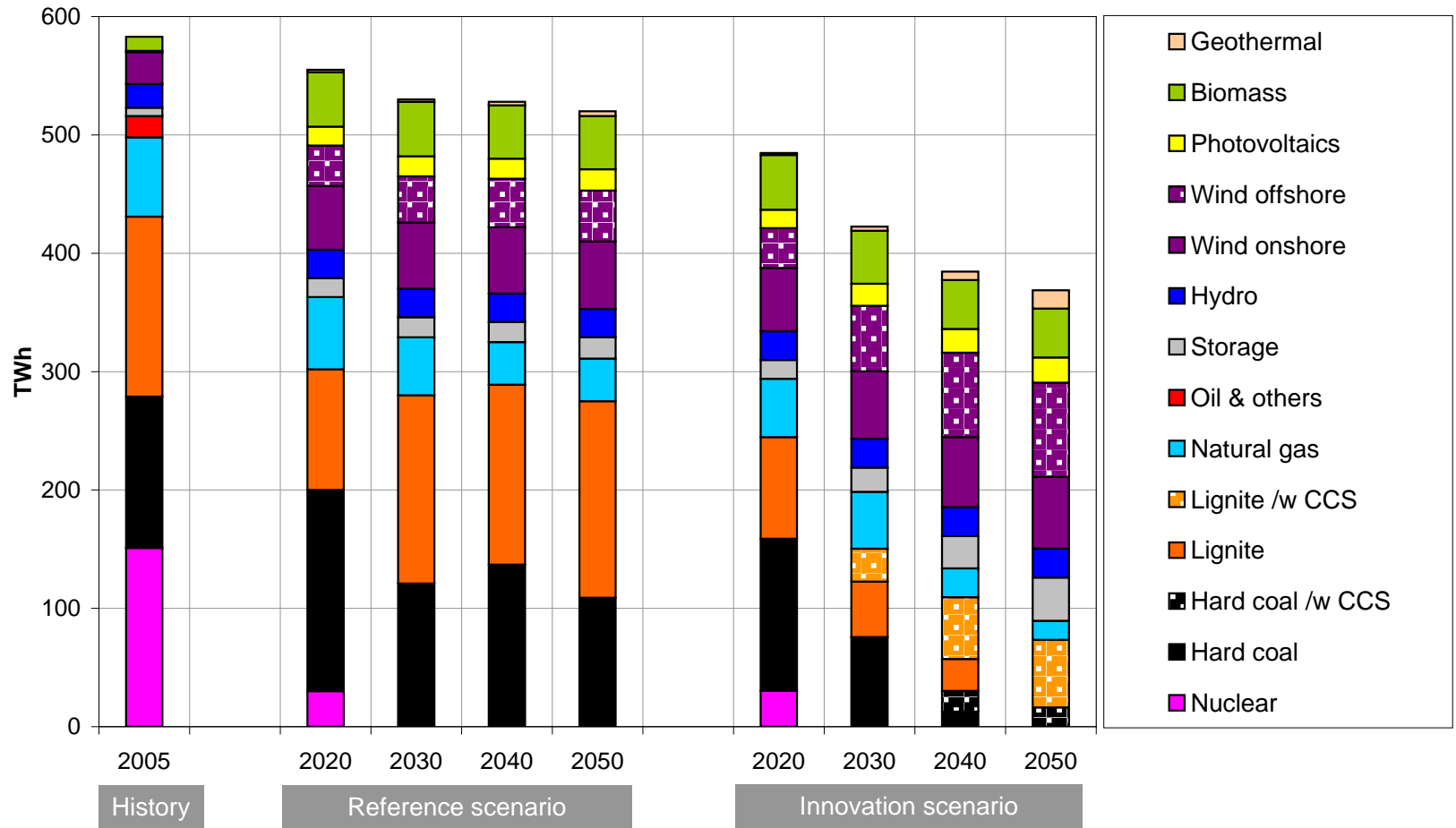
# Final energy consumptions Buildings & transport drive efficiency



# Net power production (w/o CCS) Renewables & storage



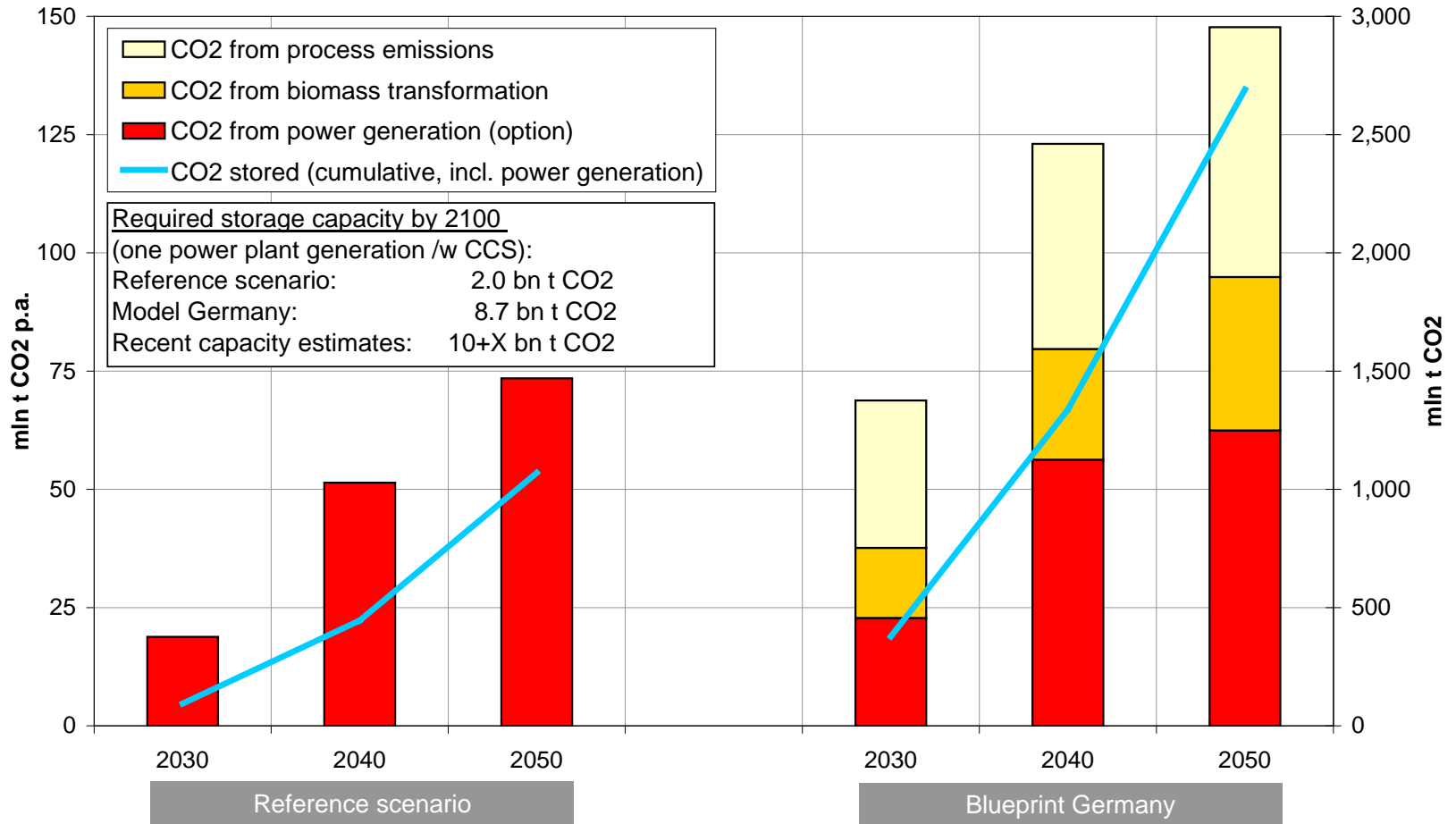
# Net power production (/w CCS) Renewables & CCS & less storage





# Long-term climate policies

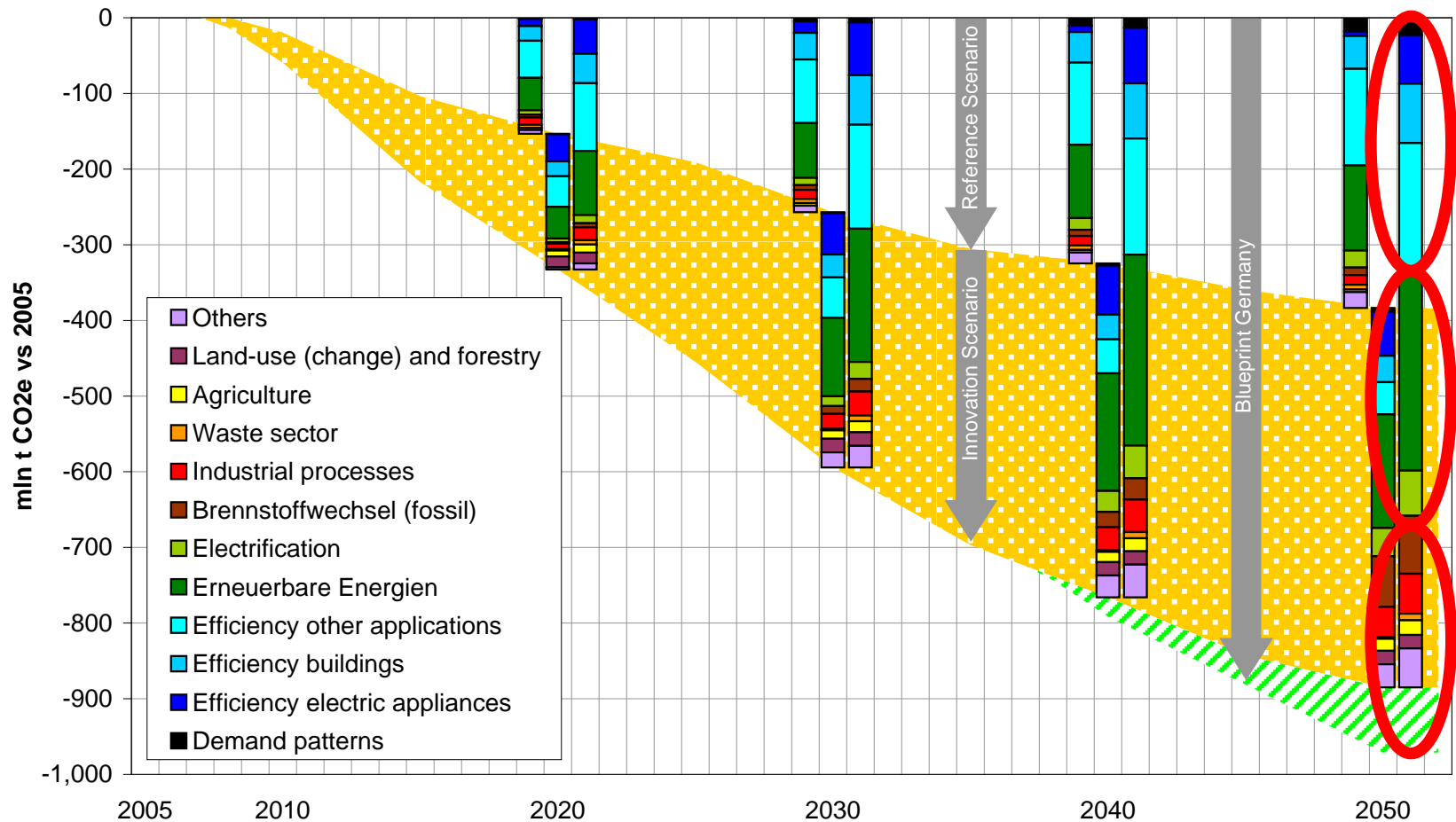
## The role of CCS



# Emission reduction contributions

## Energy efficiency, renewables & more

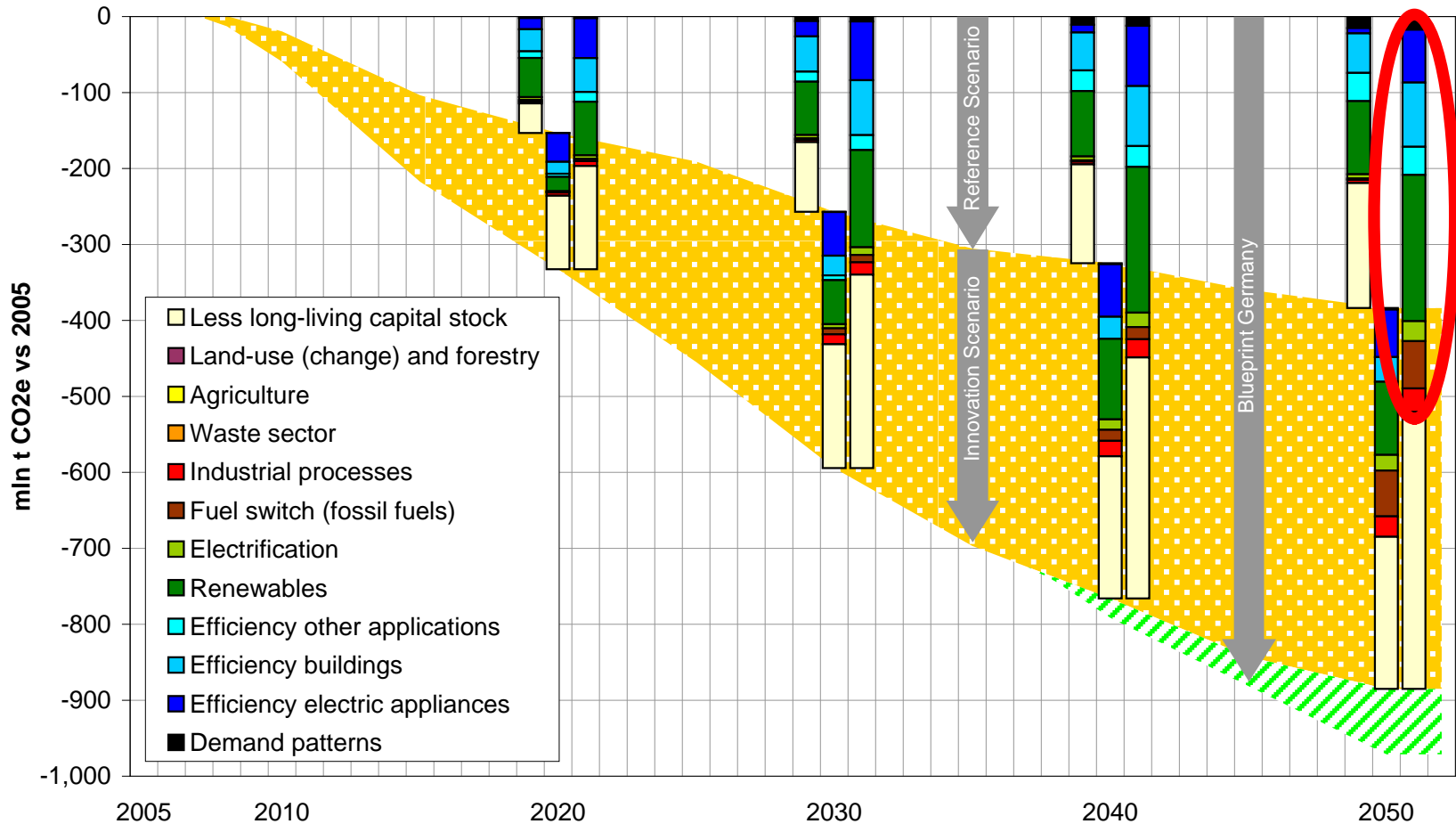
... are key pillars. Aggressive policies are needed for each of these major pillars.



# Emission reduction contributions

## A fresh look on priorities ...

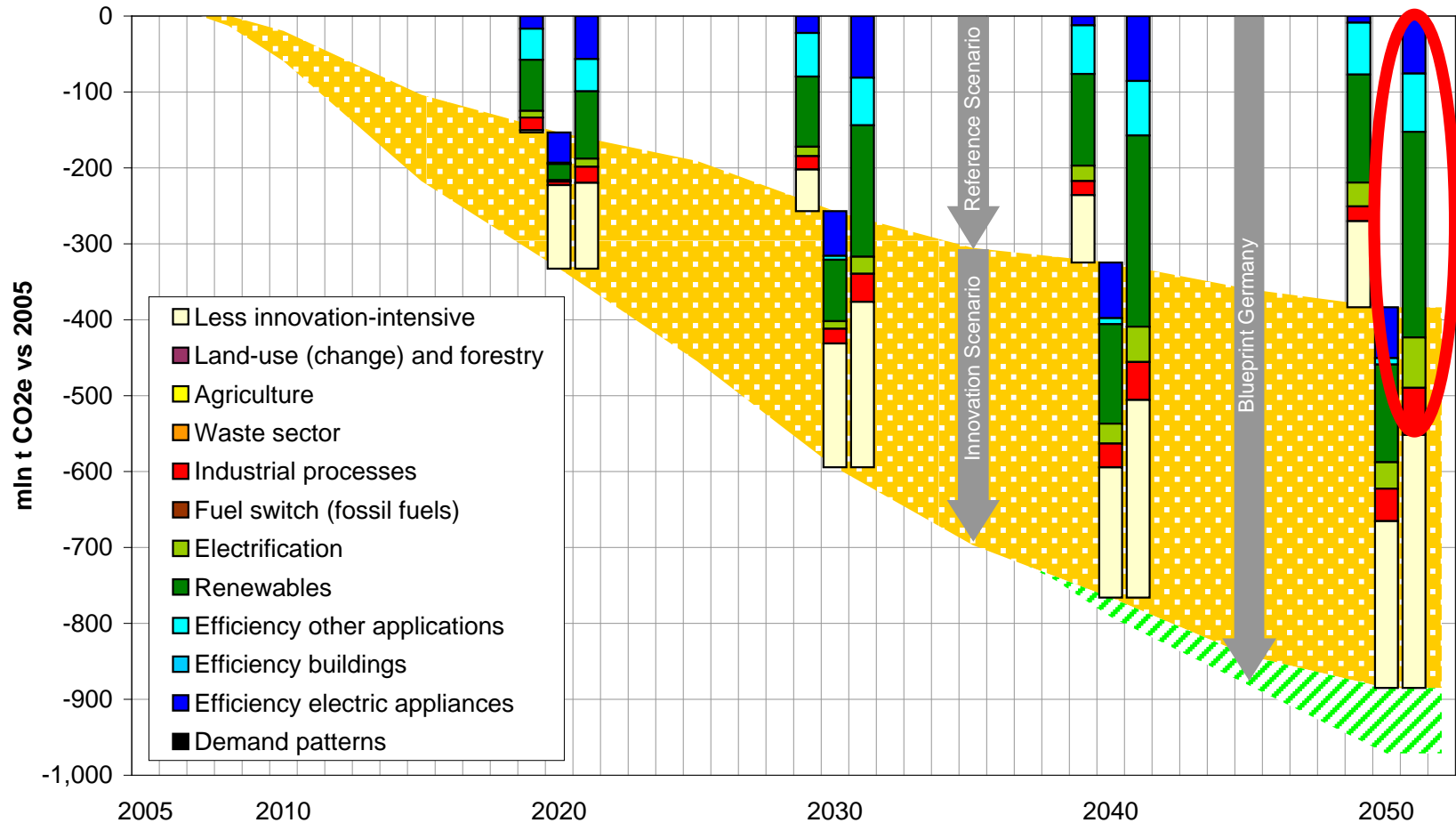
... is needed. The appropriate timing of modernization is key  
 - if one reflects the long-living capital stocks



# Emission reduction contributions

## A fresh look on priorities ...

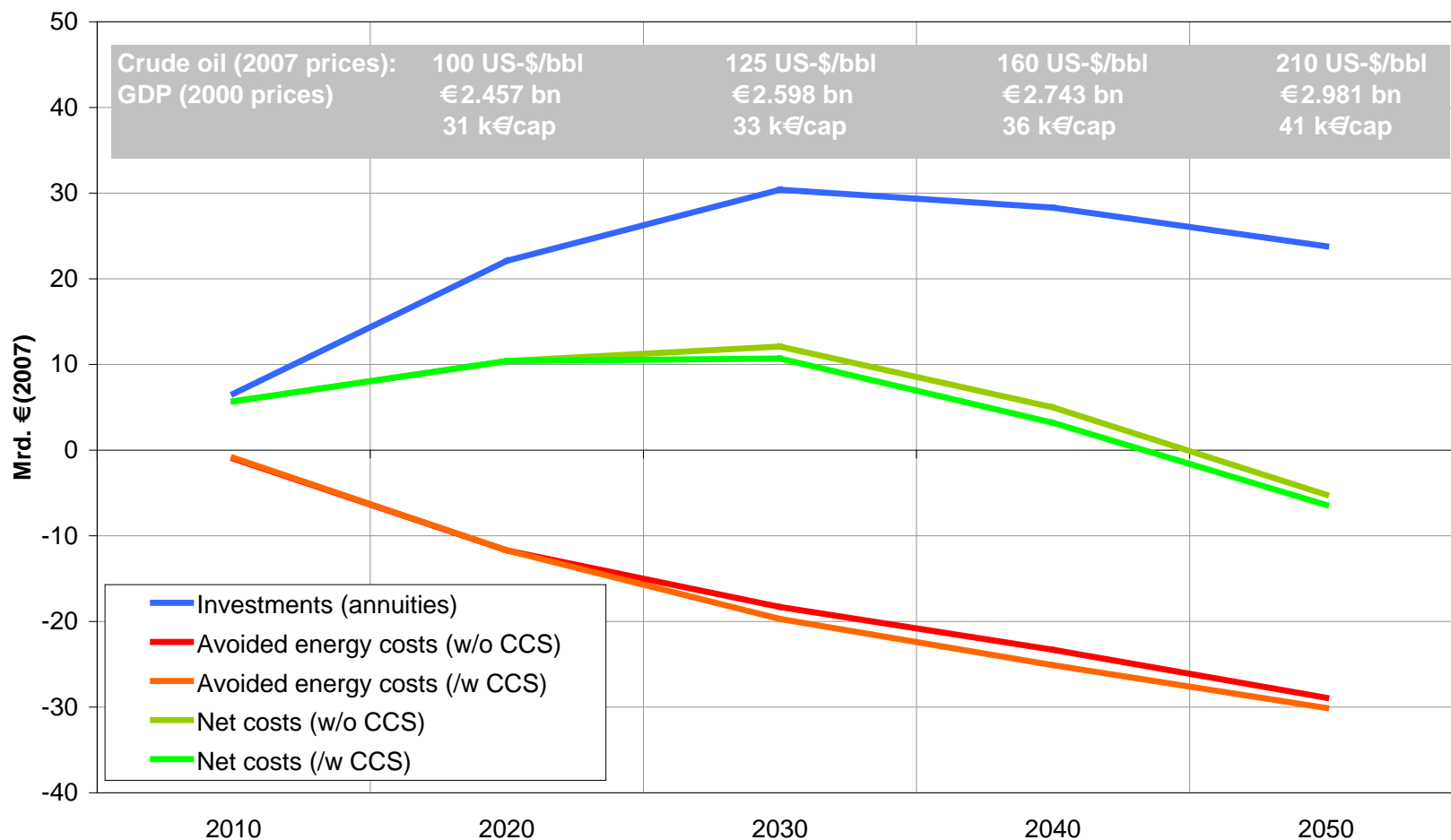
... is needed. Innovation is key and innovative greenhouse gas emission reduction options must deliver in time



# Costs of the transformation

## Massive investments will be necessary ...

... which also can lower the vulnerability of the economy and consumers towards high and volatile energy costs



### **The long-term vision should guide also medium-term policies (to ensure consistency & lock-in, etc.)**

- All sectors must deliver significant emission reductions (energy, industrial processes, waste sector, agriculture, forestry)
- Clear (sectoral) targets and priorities should be set
- Timely (!) and targeted innovation policy is indispensable
- Infrastructures and their long lead-times constitute a new challenge, in the end this will require technology-specific policies and measures, besides technology-neutral ones
- Approaching energy systems & strengthen market approaches
- Lock-in is an emerging issue
  - Technological dimension
  - (infra-) structural dimension
  - Regulatory dimension

### **The long-term vision should guide also medium-term policies (to ensure consistency & lock-in, etc.)**

- The issues of (non-) existing alternatives and windows of opportunity are high-ranking, in many cases they should rank higher than efficiency
- Challenging debates will emerge
  - biomass (without alternative for road freight transport and aviation)
  - the future of heat networks
  - CCS (as option for CO<sub>2</sub> from industrial processes and biomass as well as fallback-option for the power sector)
  - Infrastructure (key restriction, regulatory challenge, policy implications)

**Thank you  
very much**

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At the Internet:  
<http://www.oeko.de/aktuelles/dok/982.php>  
Full report will be available in English soon