

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

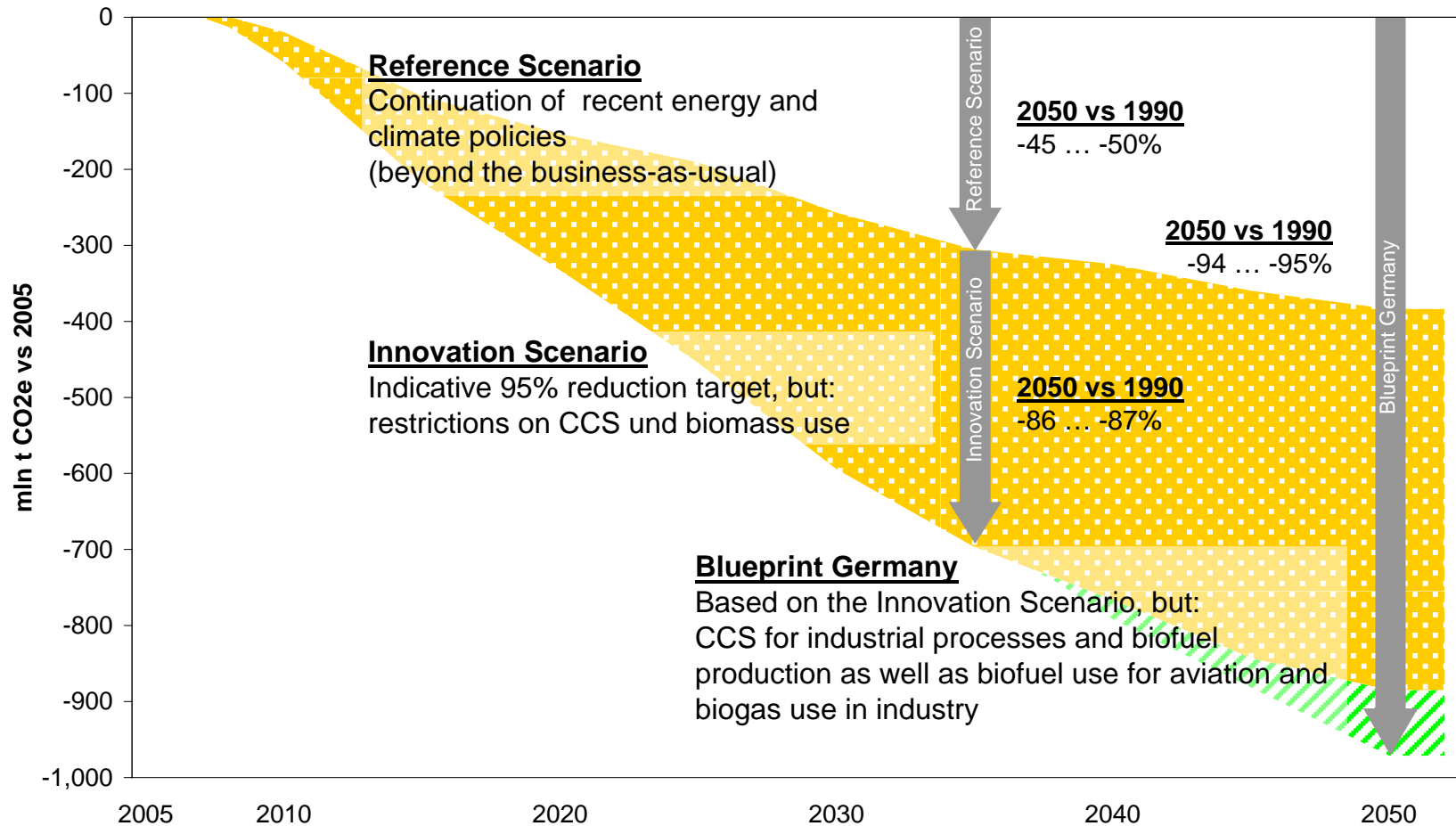
The 'Blueprint Germany' project

The project approach

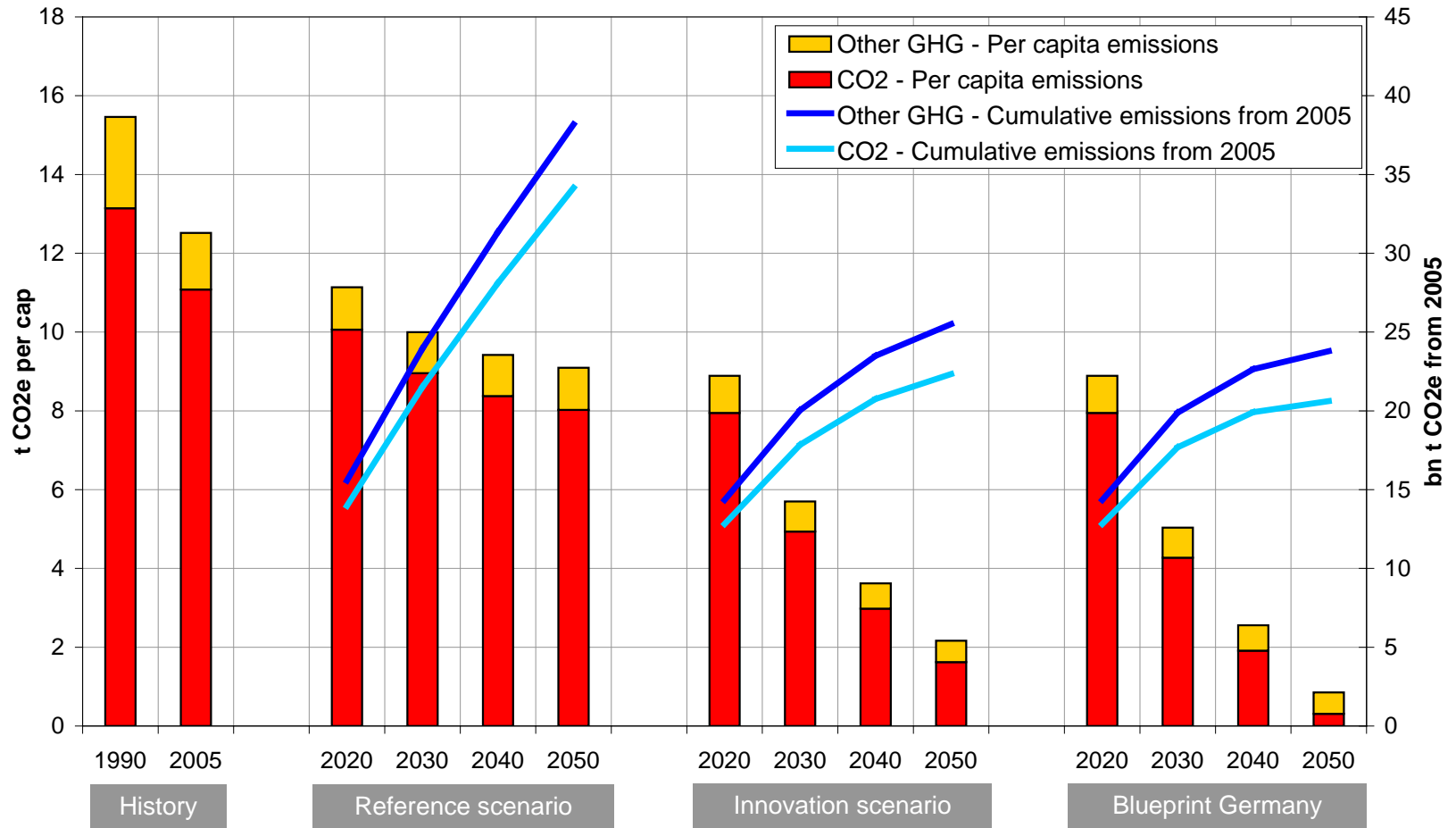
- **Bottom-up projections**
 - Energy sector and energy-related GHG emissions
 - Non-CO2 and non-energy GHG emissions (incl. LULUCF)
- **Top down components analysis (based on an extended Kaya identity)**
 - Emission reduction contributions
 - Sectoral targets
- **Key long-term strategies**
 - Technologies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

The „Blueprint Germany“ project

Outline of scenarios

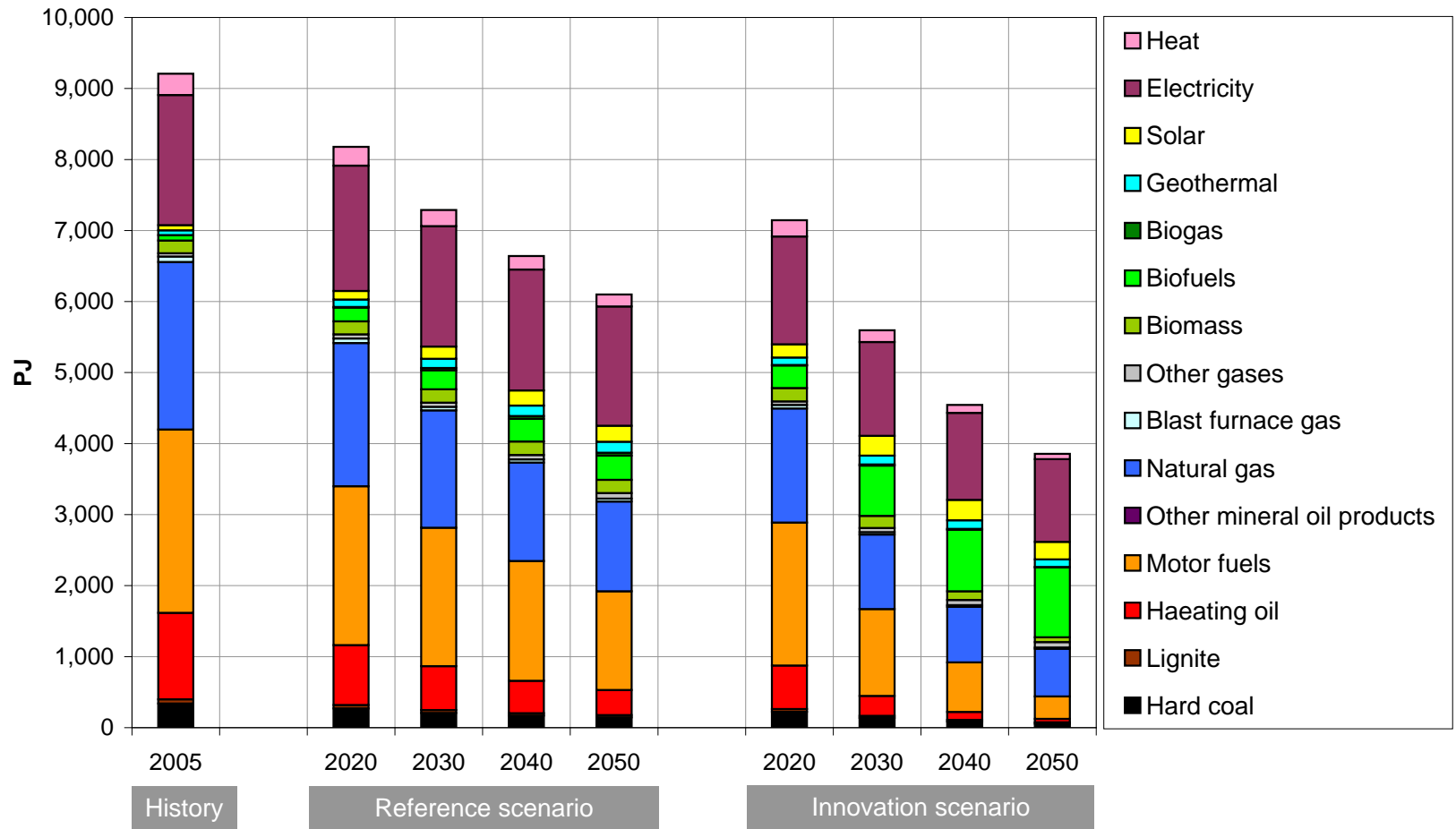


Ambitious long-term climate policy Full de-carbonization & more will be needed

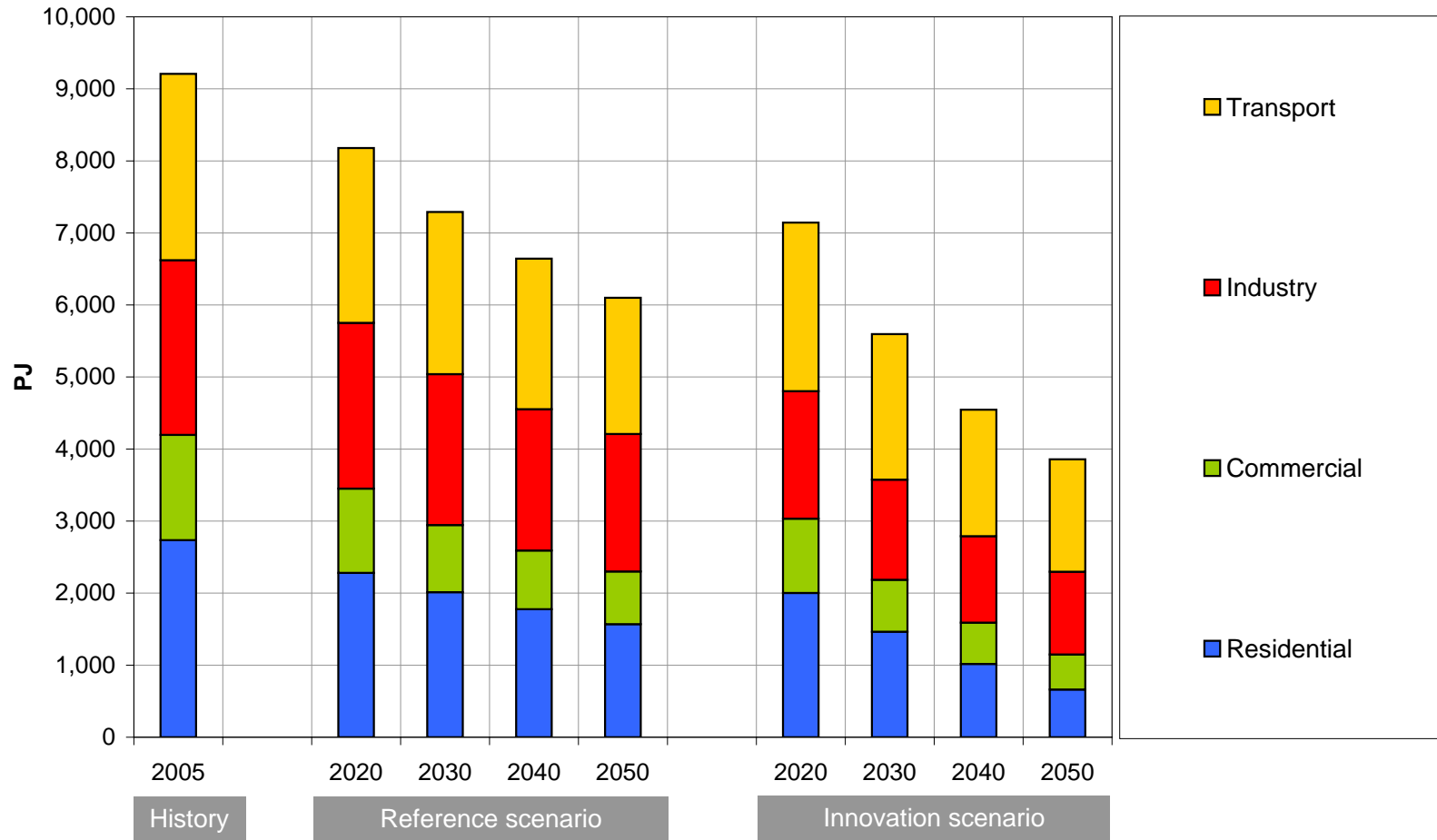


Final energy consumptions

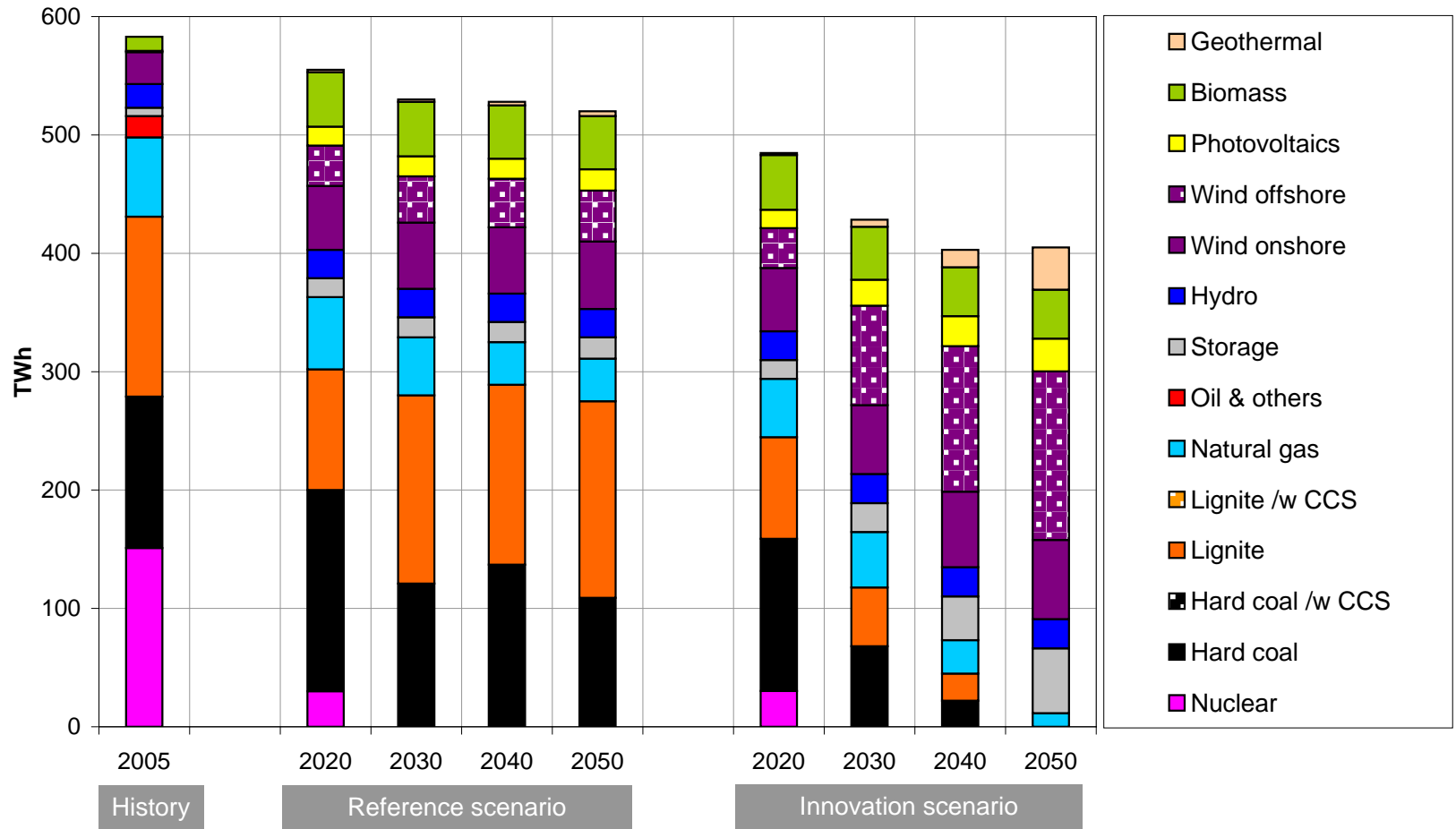
Carbon-free energies for all sectors



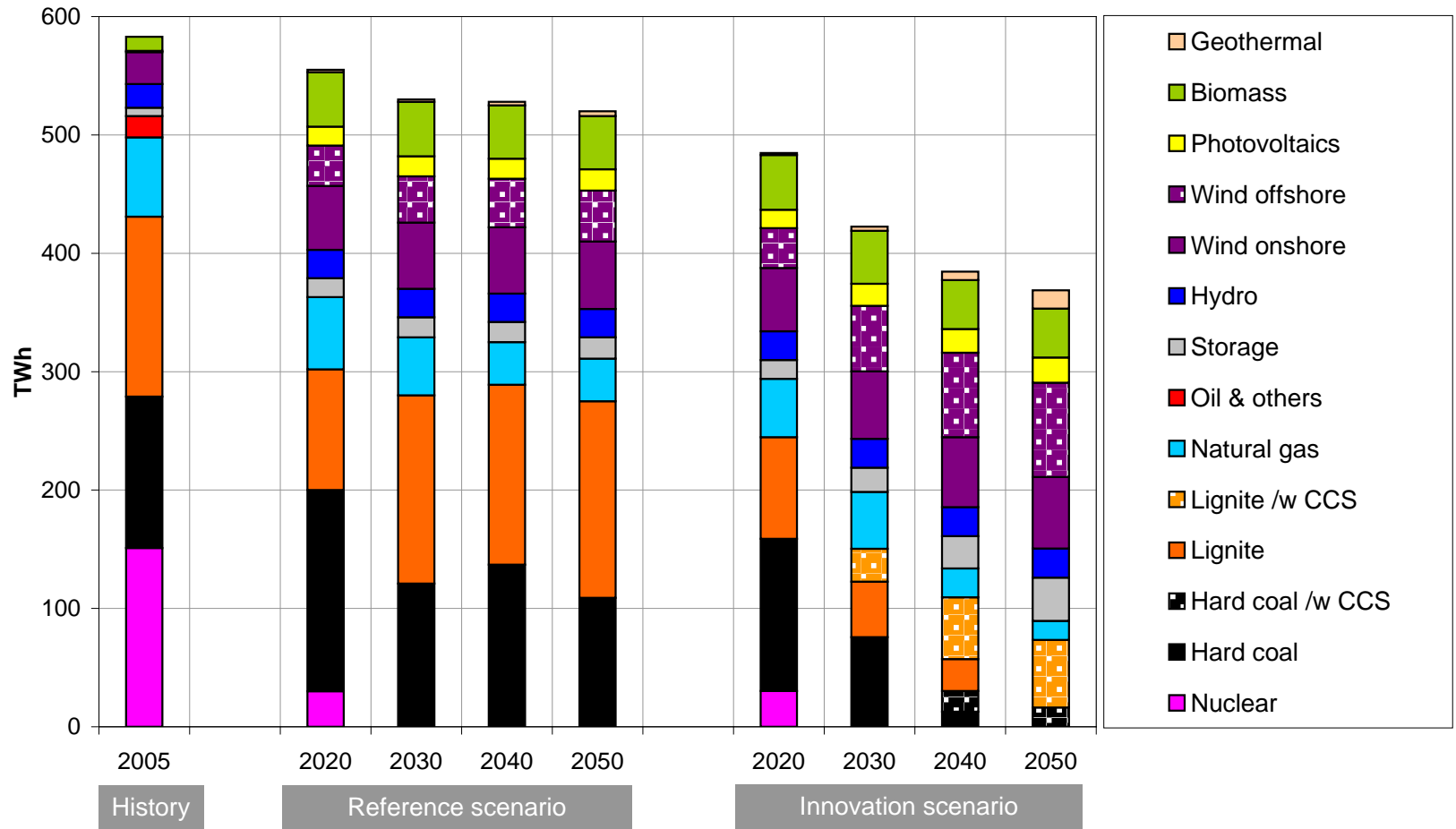
Final energy consumptions Buildings & transport drive efficiency



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

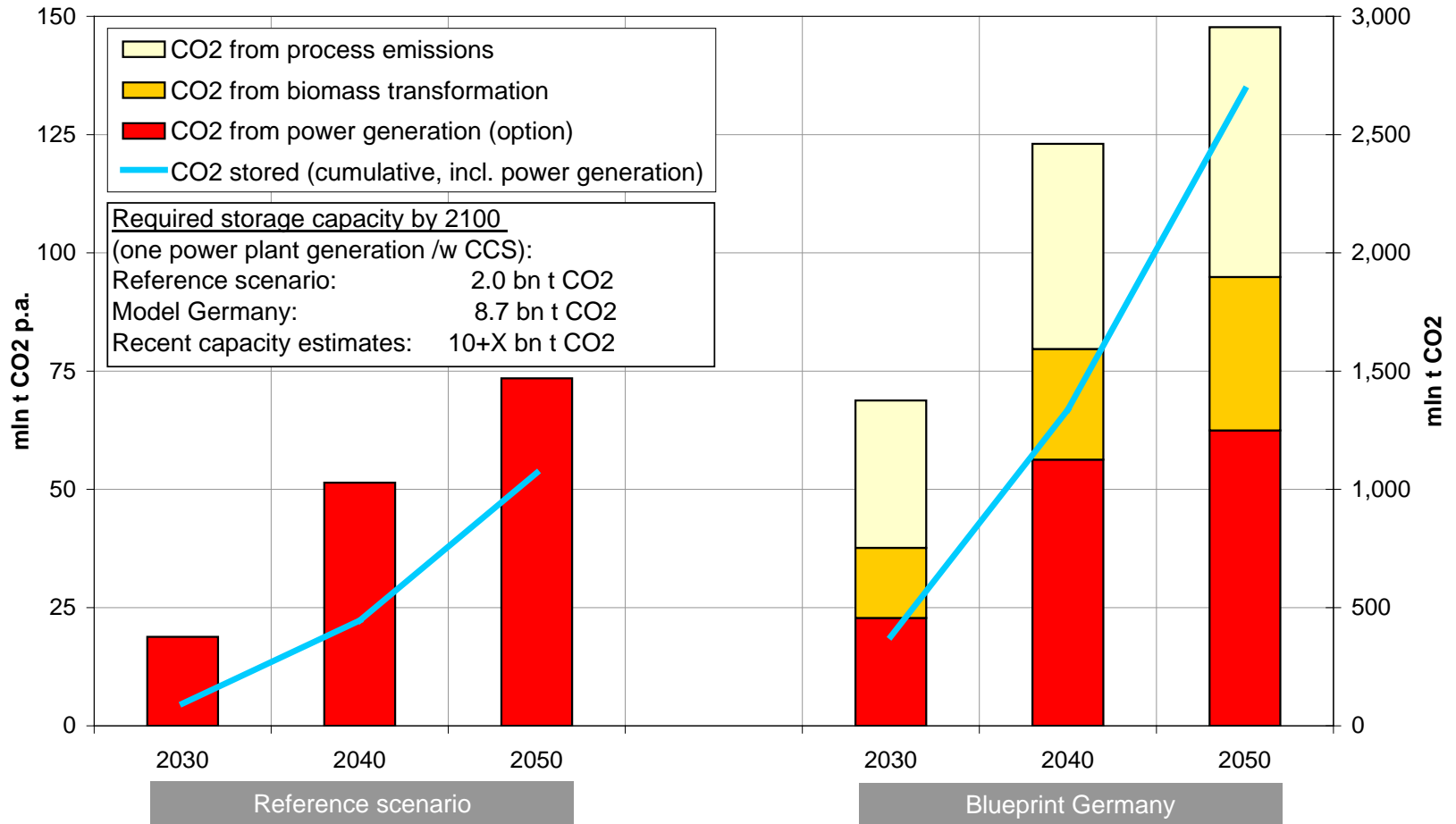


Net power production (/w CCS) Renewables & CCS & less storage



Long-term climate policies

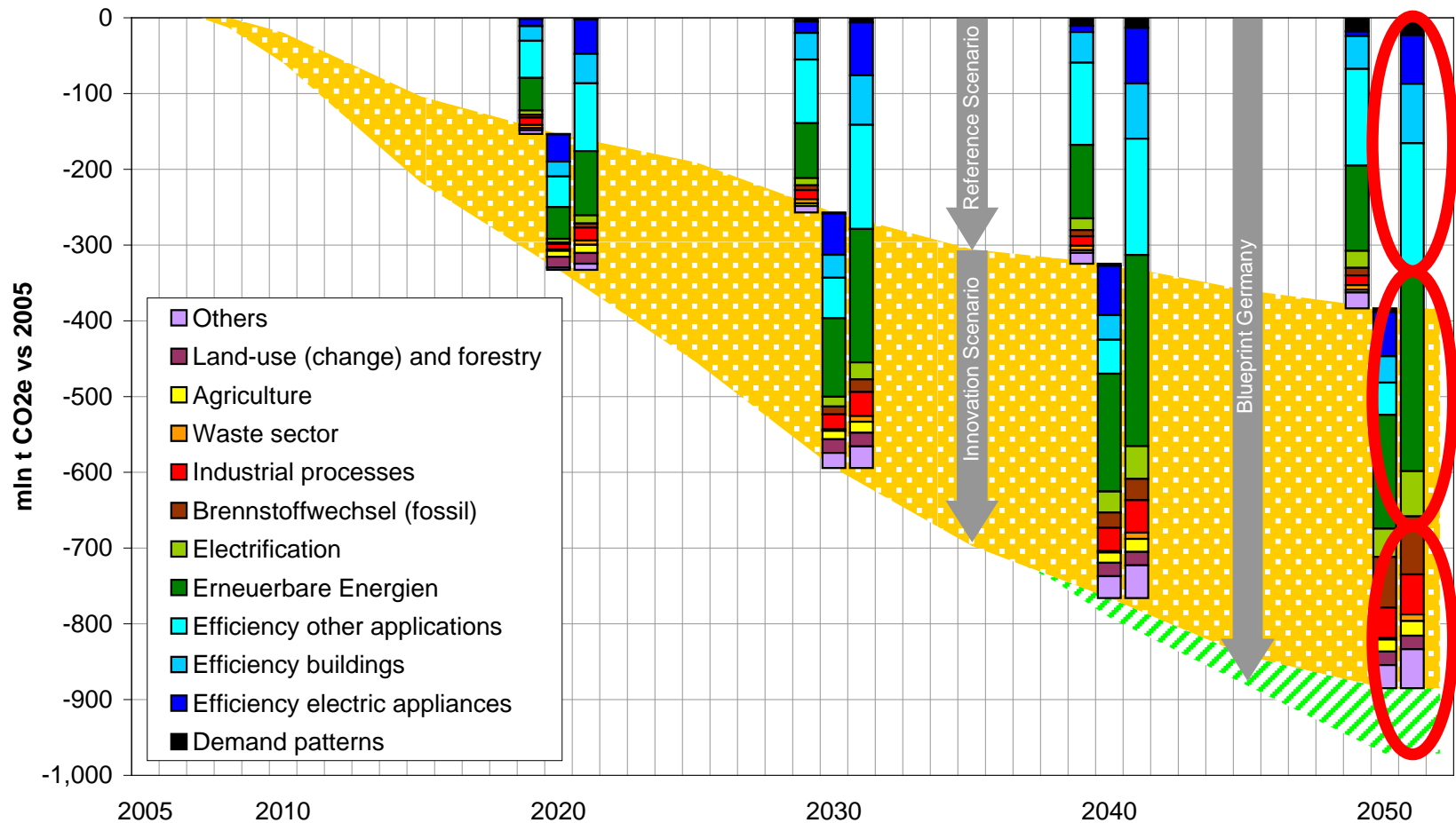
The role of CCS



Emission reduction contributions

Energy efficiency, renewables & more

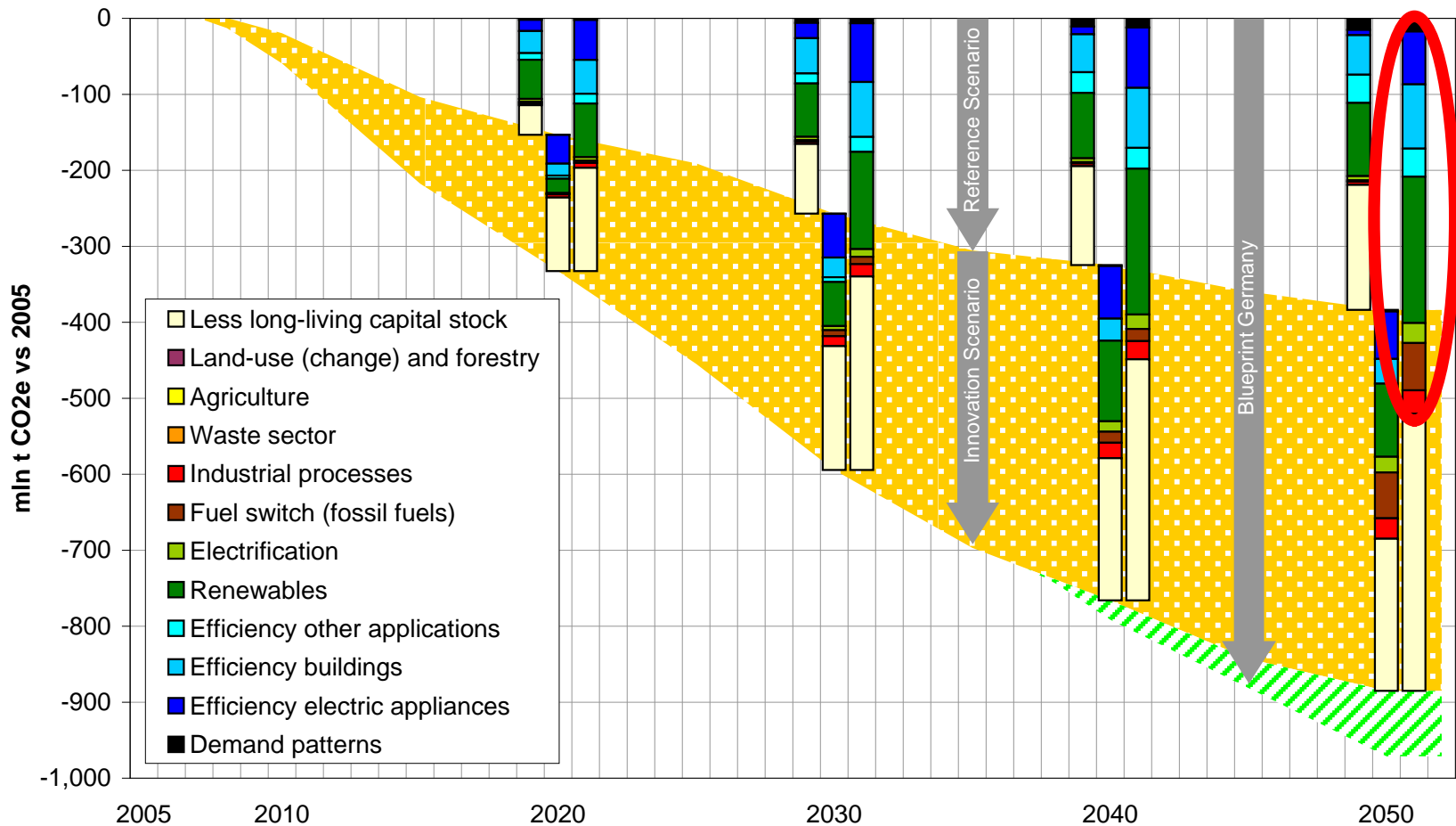
... are key pillars. Aggressive policies are needed for each of these major pillars.



Emission reduction contributions

A fresh look on priorities ...

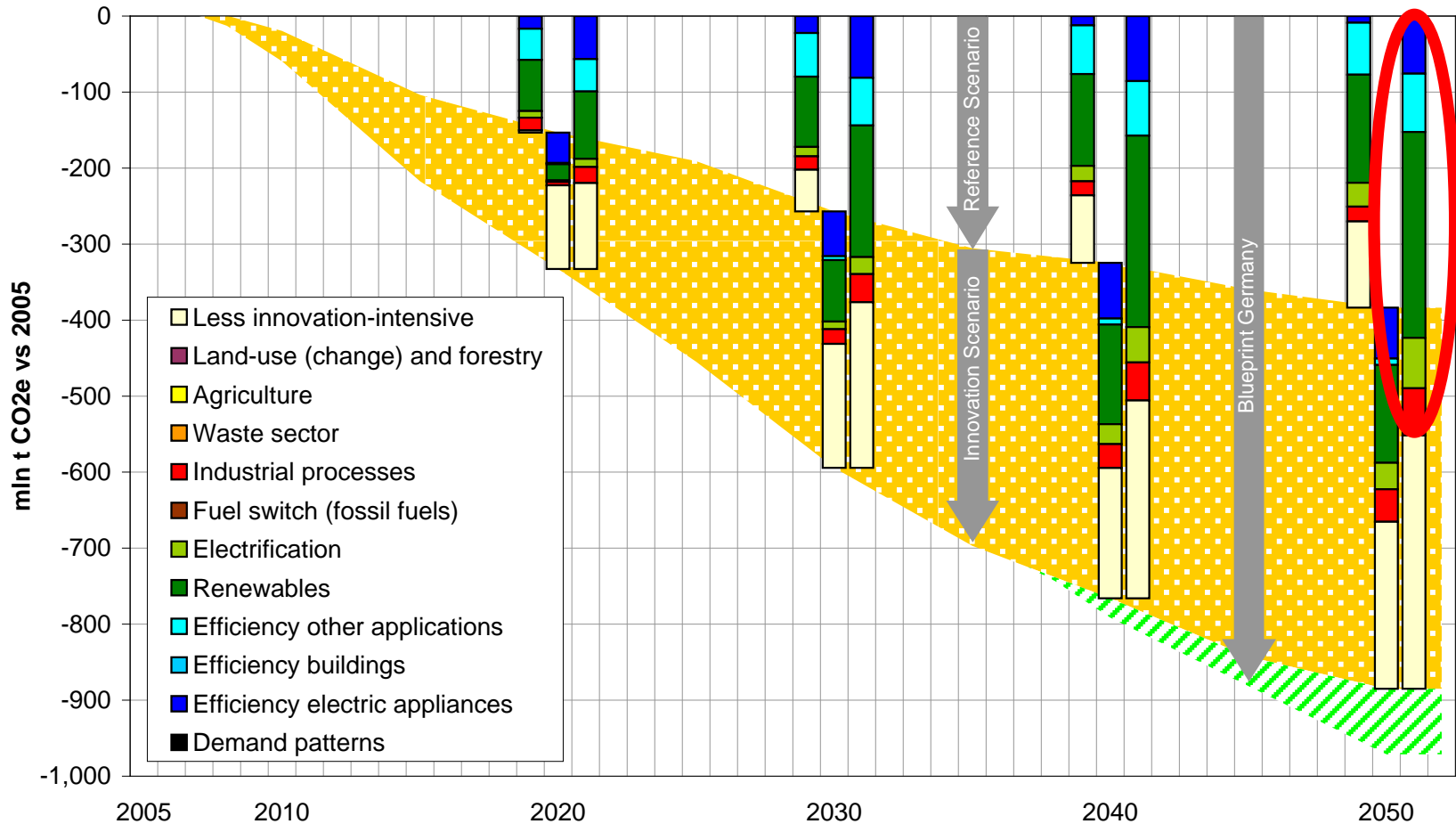
... is needed. The appropriate timing of modernization is key
 - if one reflects the long-living capital stocks



Emission reduction contributions

A fresh look on priorities ...

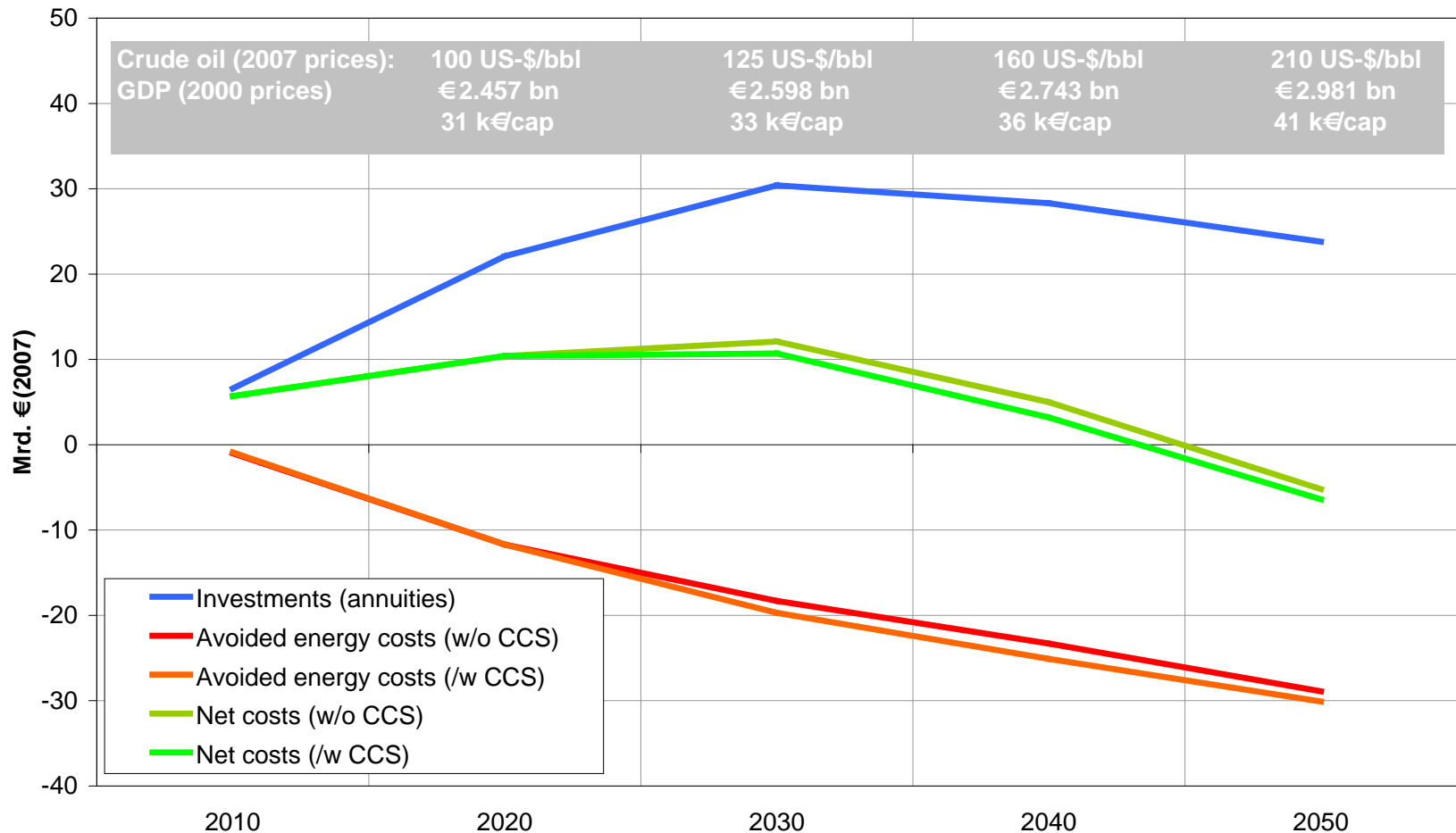
... is needed. Innovation is key and innovative greenhouse gas emission reduction options must deliver in time



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 CO₂ 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