



Costs and Potentials of Greenhouse Gas Abatement in Germany

Bali, December 10, 2007



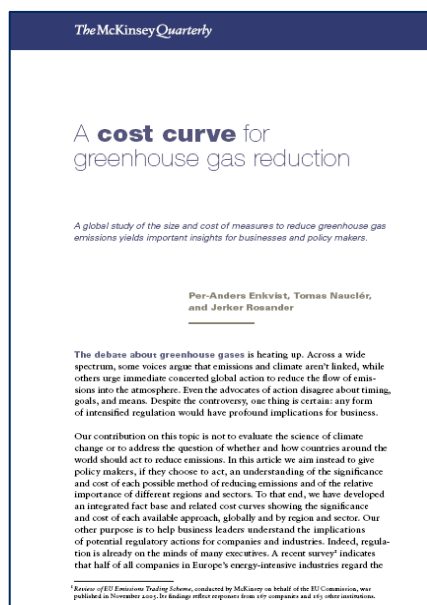
Wirtschaft
für Klimaschutz
BDIinitiativ

McKinsey&Company

McKinsey has supported several high-profile studies on costs and potentials of abatement

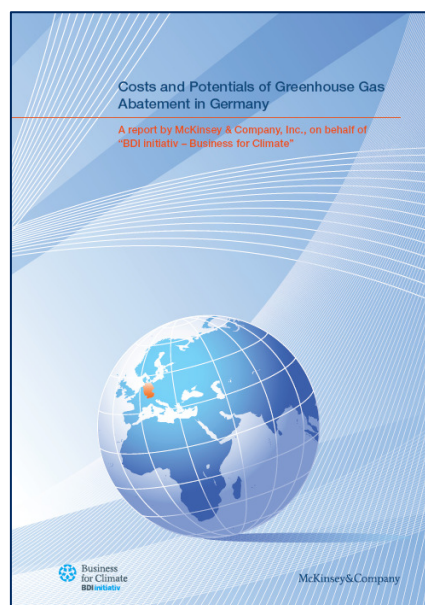
Fall 2006:

First Global Greenhouse Gas abatement cost curve



September 2007:

Report on Costs and Potentials of GHG Abatement in Germany (BDI)



November 2007:

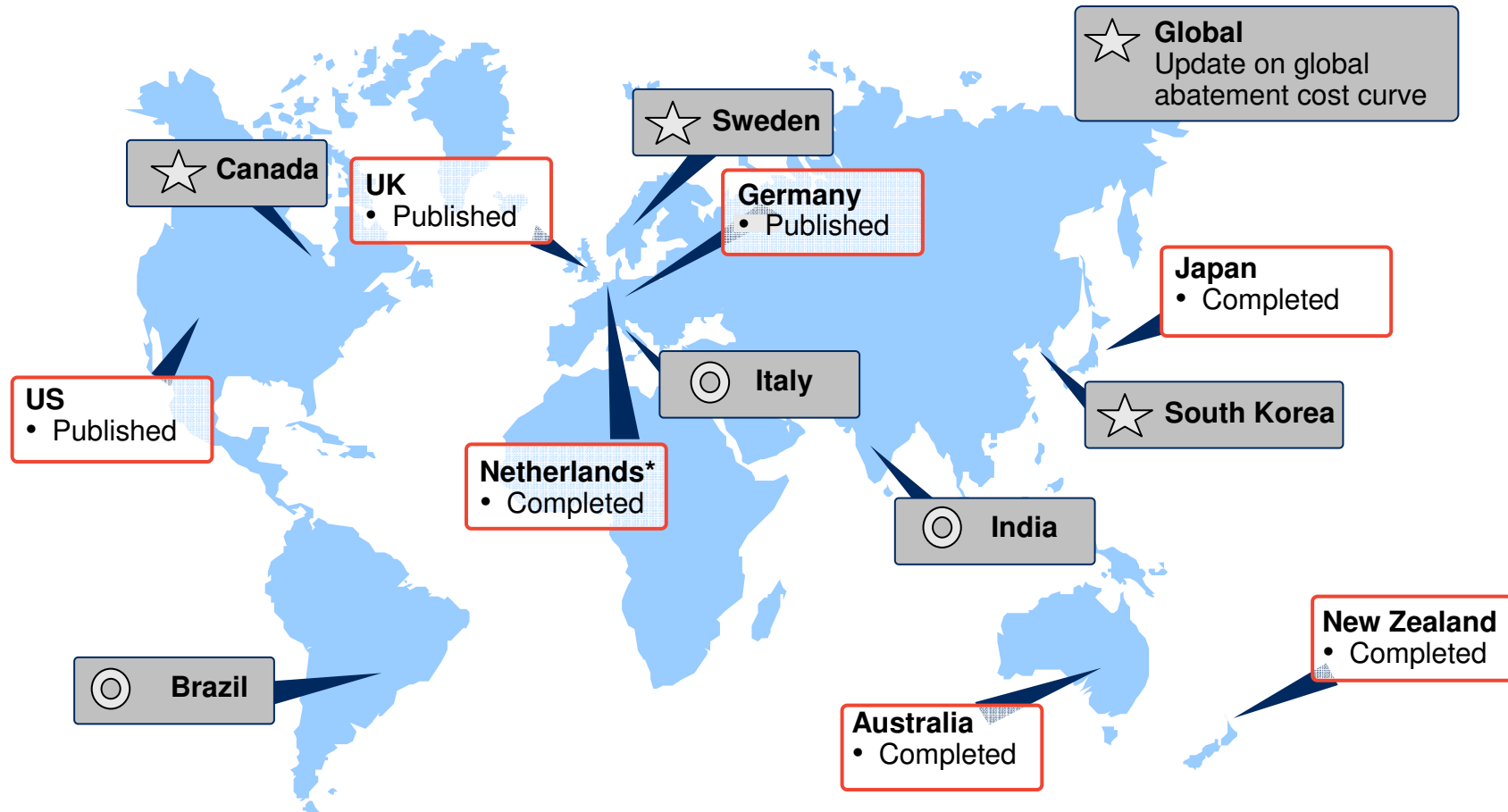
UK Report on measures against climate change (CBI)



US Report released one week ago

More efforts are currently ongoing

- Completed
- Starting now
- Planned

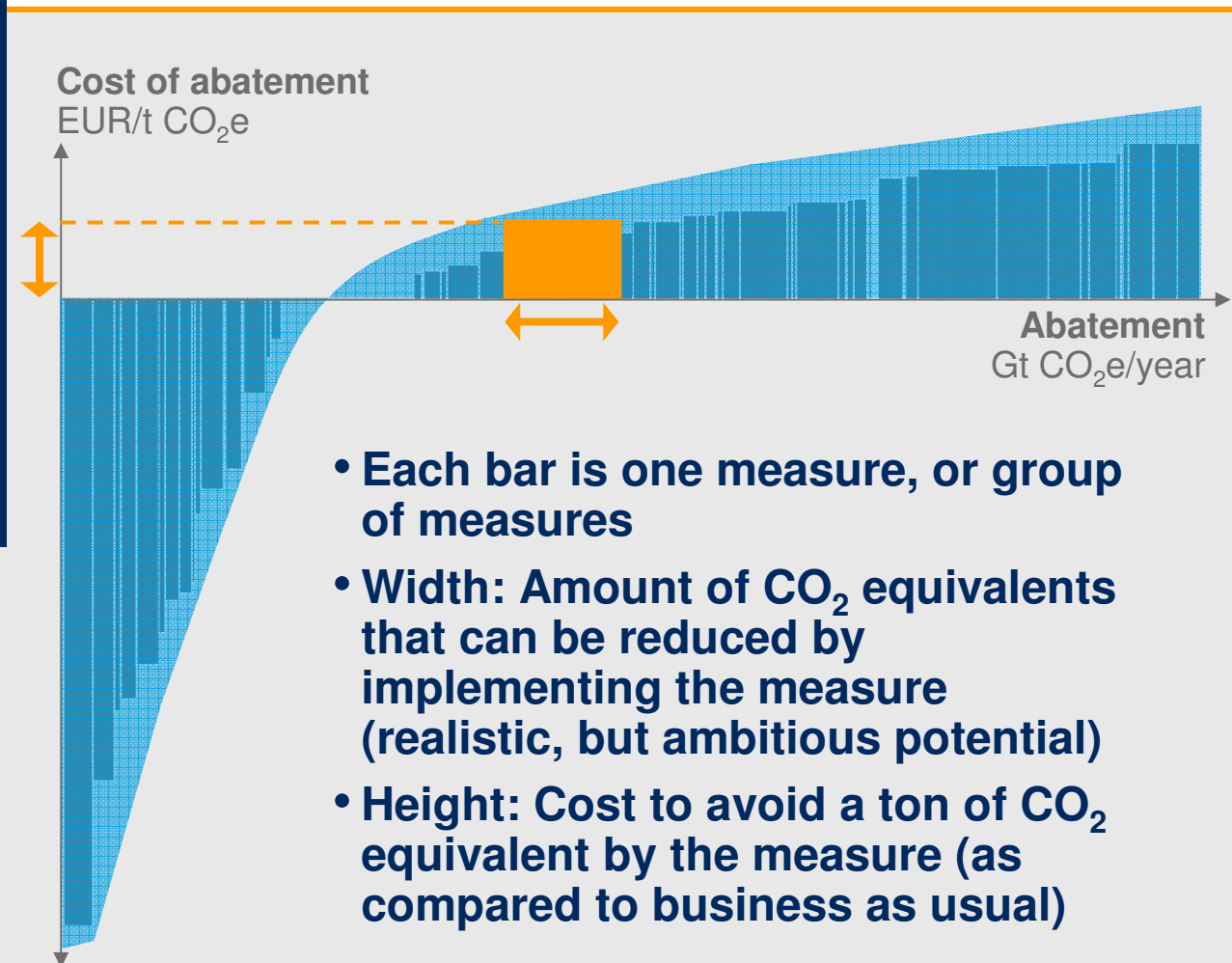


* Focusing on abatement opportunities on buildings

Source: McKinsey

The Greenhouse Gas Abatement Cost Curve is the common methodology behind all efforts

- **Scope:** All relevant sectors, several timeframes
- **Involvement:** Companies, Industry Associations, Experts
- **Academic review:** Leading academics for review of methodology



The global cost curve debunked some myths around abatement levers

Myths

Opportunities are concentrated in the **industry and power** sectors

All sectors can (and have to) contribute significantly to abatement

Limited amount of **low-cost** opportunities in industrialized countries

Negative cost abatement potential represents at least **35 - 45%** of potential

We can only achieve the required abatement through **new technology**

70% of the total 2030 potential is achievable through **existing technology**

Opportunities are concentrated in **OECD and China**

RoW* contributes **> 40%** of the total 2030 abatement potential

CO₂ prices will increase to above EUR 100 in the long term

CO₂ prices should stay in the range of **EUR 40 to 60/t** in the long term

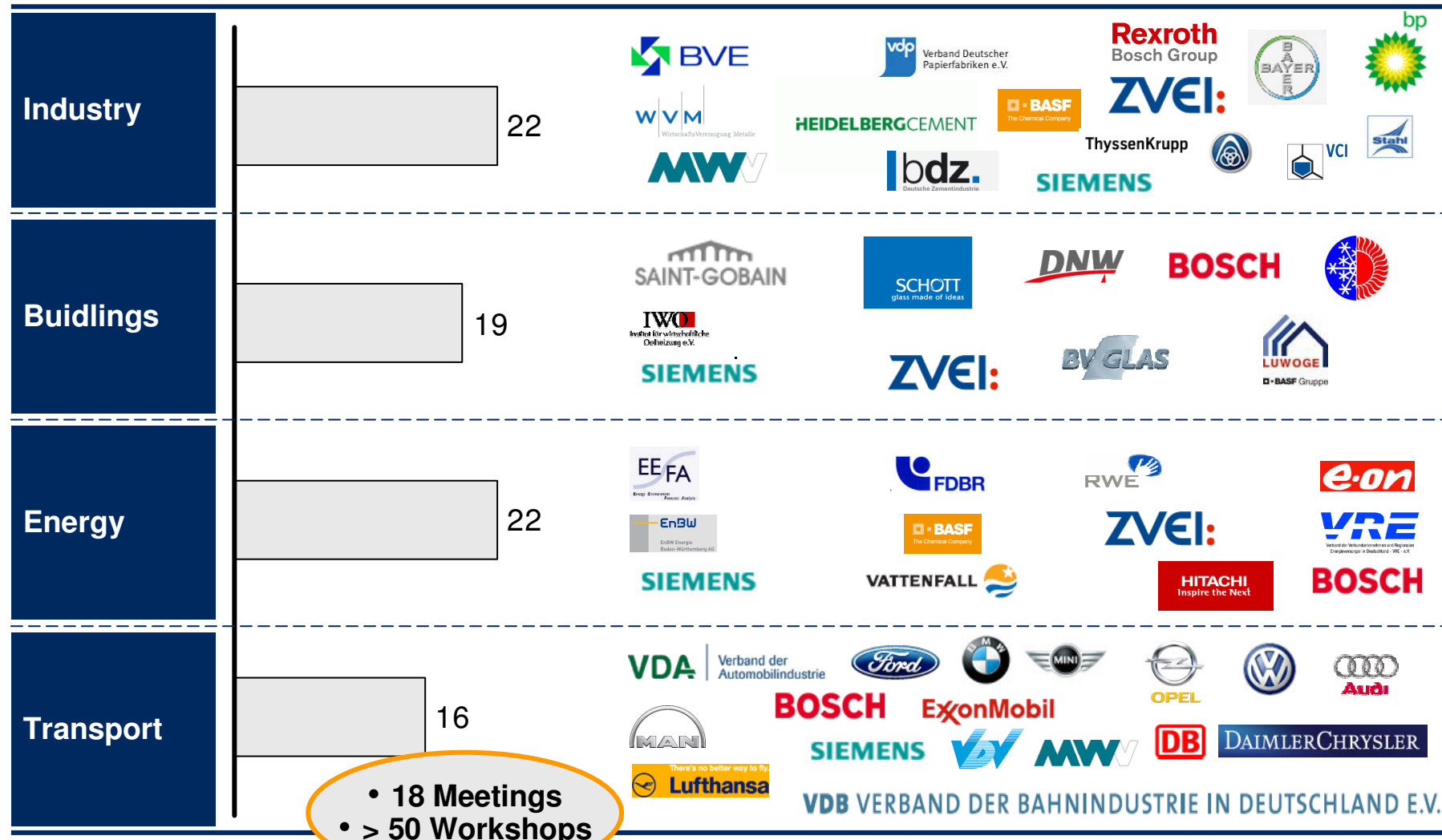
Realities

* Rest of world (RoW) includes Africa, South and Central America excl. Mexico, Asia excl. China and other industrialized Asian countries

The German work involved more than 70 companies and associations

Working group Number of participants

Companies/Associations (Selection)

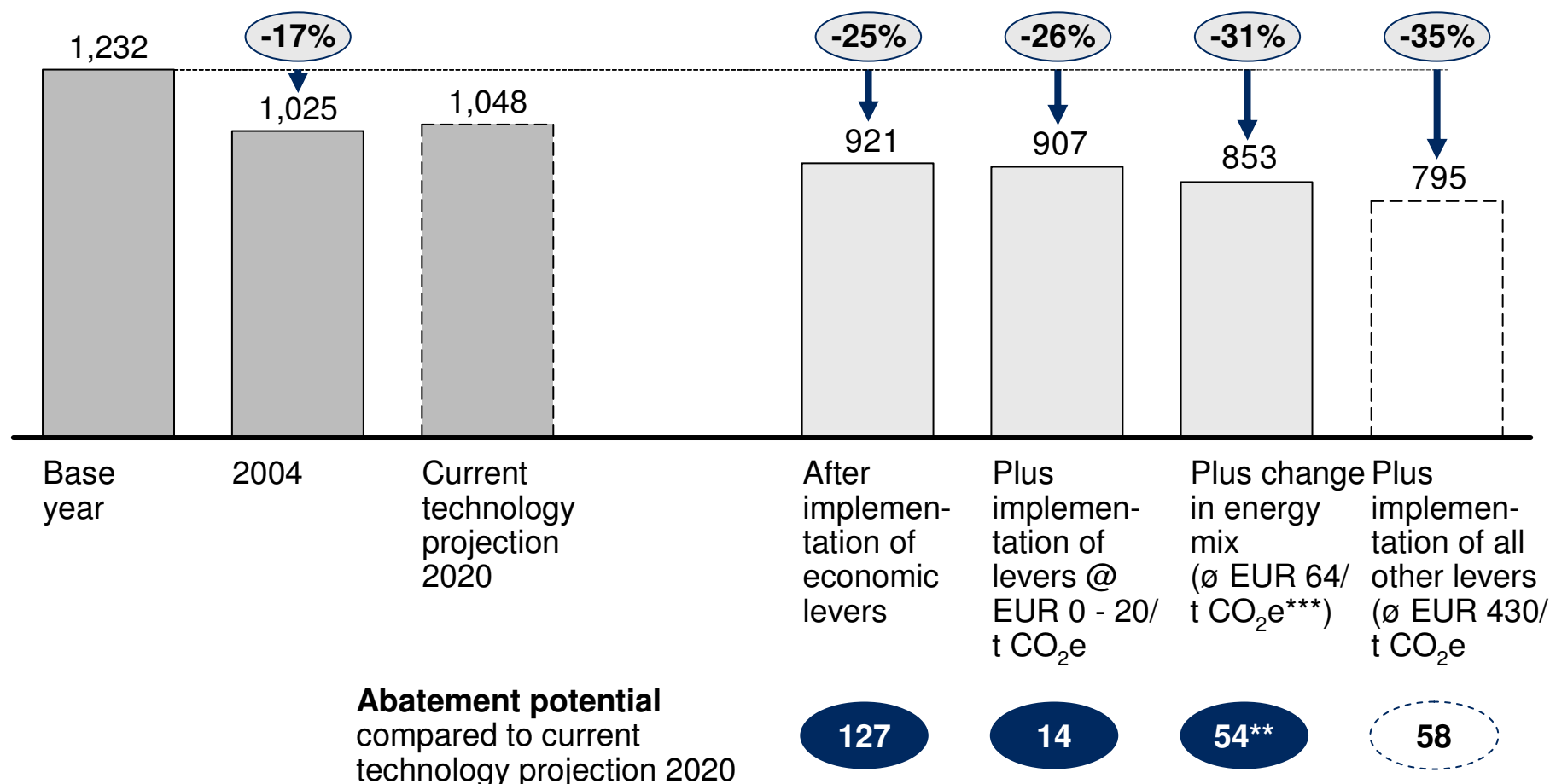


Source: Studie "Kosten und Potenziale der Vermeidung von Treibhausgasemissionen in Deutschland", von McKinsey & Company, Inc. im Auftrag von "BDI initiativ – Wirtschaft für Klimaschutz"

Abatement potential – Germany 2020*

Mt CO₂e

DECISION-MAKER
PERSPECTIVE



* Maintaining nuclear phase-out

** Including 6 Mt CO₂e from CCS pilot projects in power generation

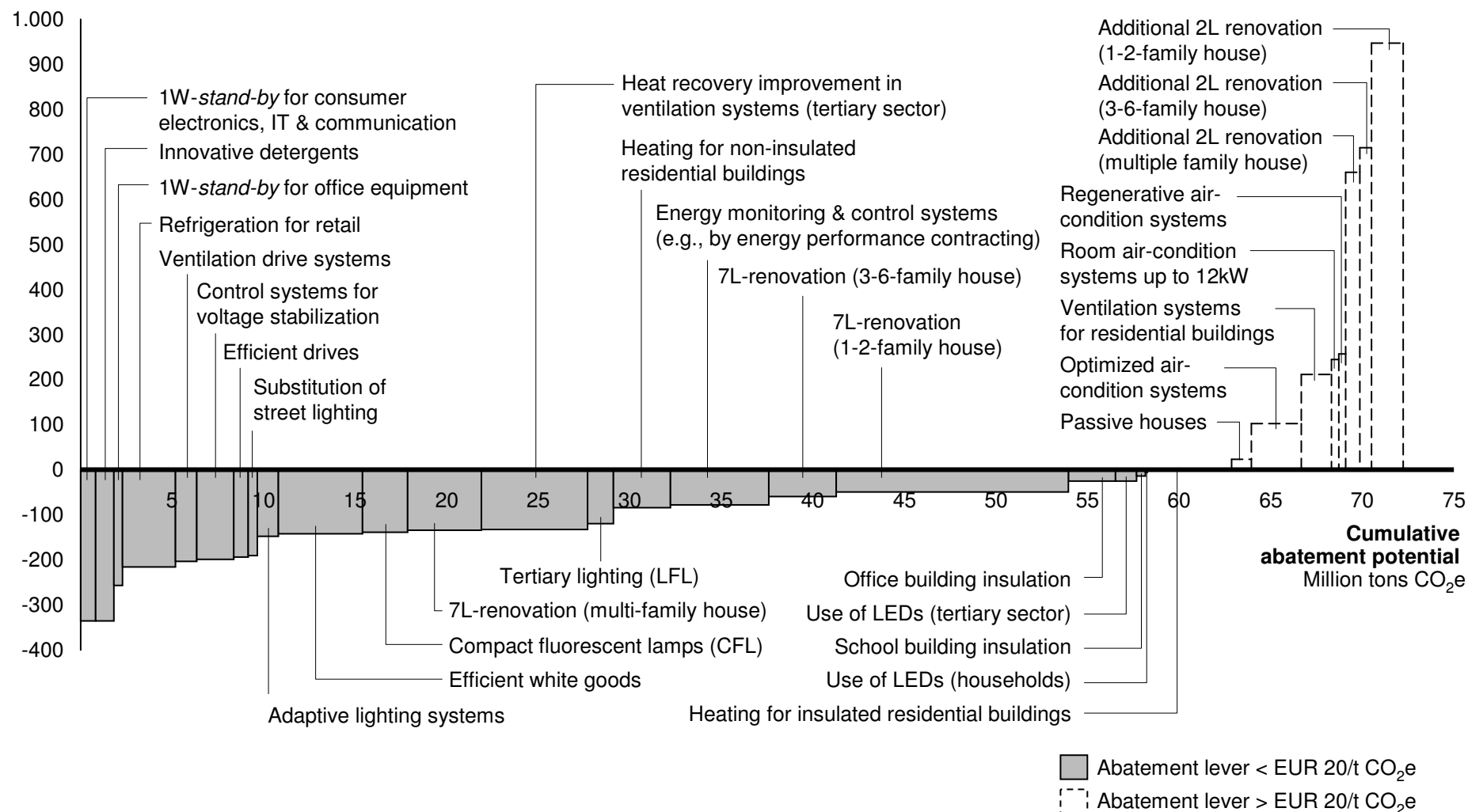
*** Power generation: ø EUR 32/t CO₂e; biofuels: ø EUR 175/t CO₂e; both considering the applicable subsidy rates in each case, taxes, and customs

Source: Report "Kosten und Potenziale der Vermeidung von Treibhausgasemissionen in Deutschland" by McKinsey & Company, Inc. on behalf of "BDI initiativ – Wirtschaft für Klimaschutz"

Buildings sector: Abatement cost curve – Germany 2020

DECISION-MAKER
PERSPECTIVE

Abatement cost
EUR/t CO₂e

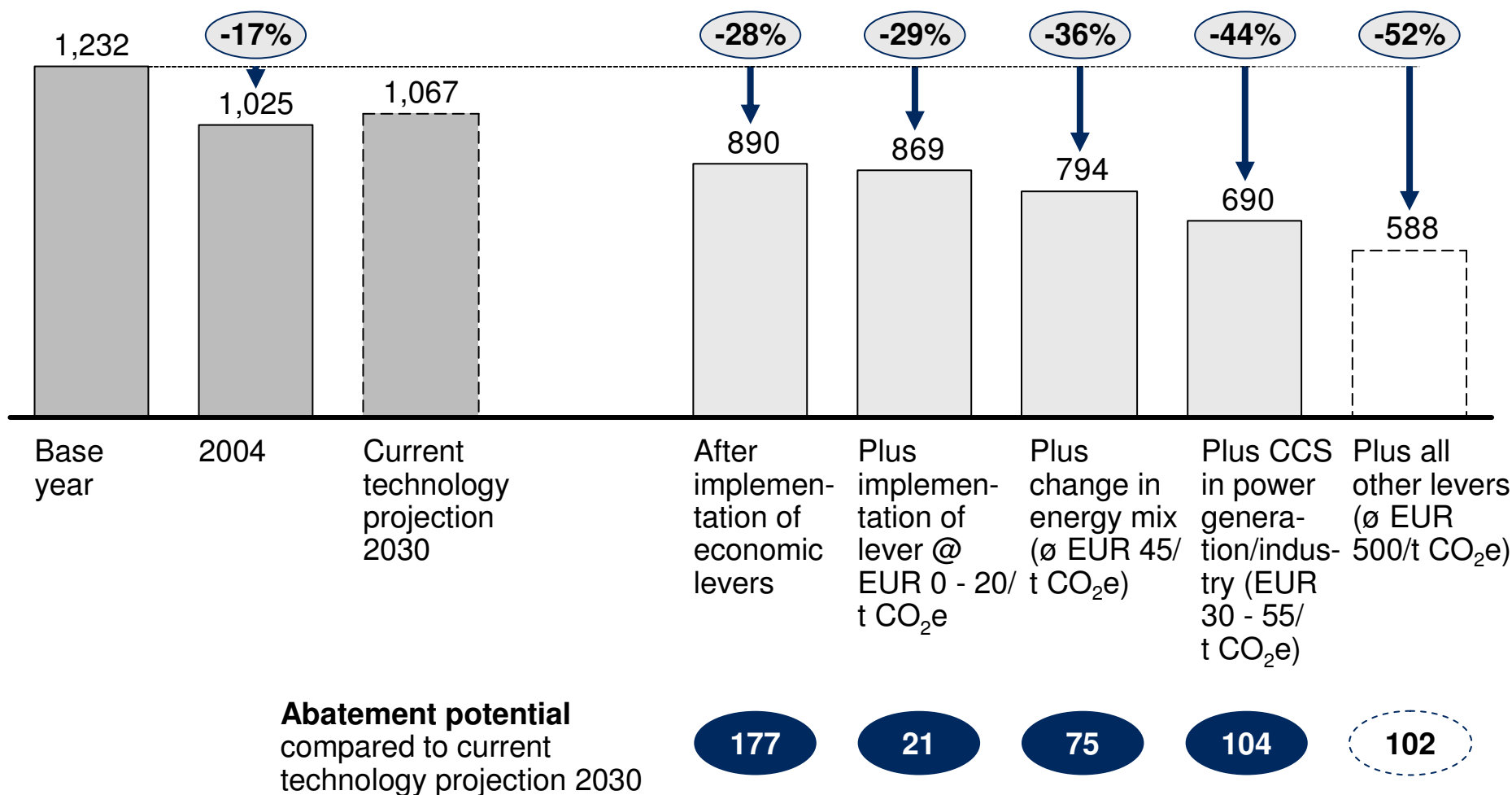


Source: Report "Kosten und Potenziale der Vermeidung von Treibhausgasemissionen in Deutschland" by McKinsey & Company, Inc. on behalf of "BDI initiativ – Wirtschaft für Klimaschutz"

Abatement potential – Germany 2030*

Mt CO₂e

DECISION-MAKER
PERSPECTIVE



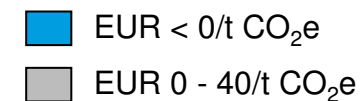
* Maintaining nuclear phase-out

** Power generation: ø EUR 31/t CO₂e; biofuels: ø EUR 95/t CO₂e; both considering the applicable subsidy rates in each case, taxes, and custom

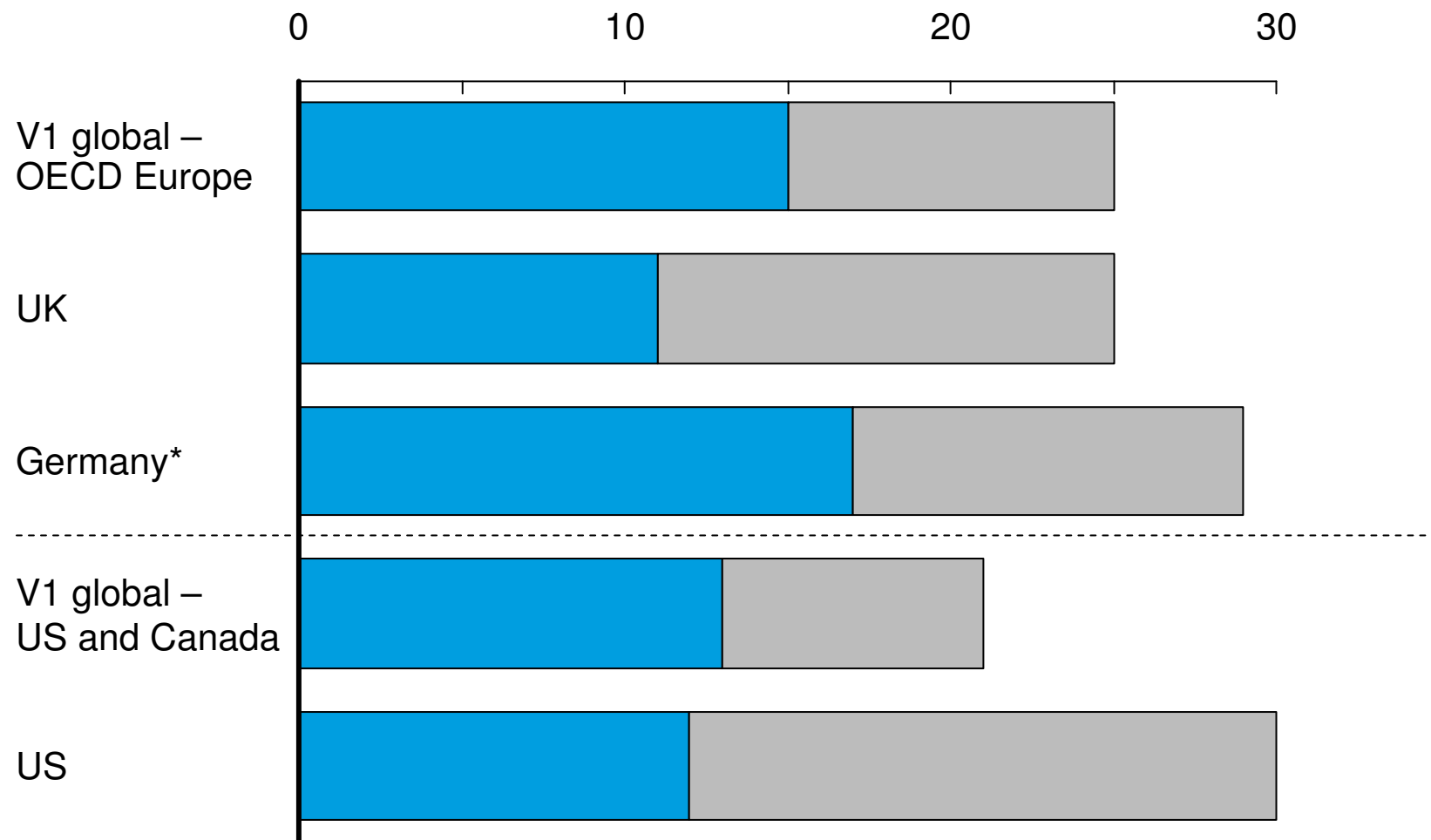
Source: Report "Kosten und Potenziale der Vermeidung von Treibhausgasemissionen in Deutschland" by McKinsey & Company, Inc. on behalf of "BDI initiativ – Wirtschaft für Klimaschutz"

National curves confirm global curve, and add additional insights

2030, reduction in percent of BAU



FIRST ROUGH ESTIMATES



* Based on current technology projection, decision maker perspective

Source: McKinsey

The way forward...

- A sound methodology
 - Consistent across emitting sectors (and countries)
 - Fully transparent on input data and general assumptions
 - Confirmed with unbiased academic experts
- Broad and deep involvement of decision makers
 - All relevant (and conflicting) views
 - Bottom-up assessment



Leading Companies have taken on the challenge –
they see significant opportunities for business!
