



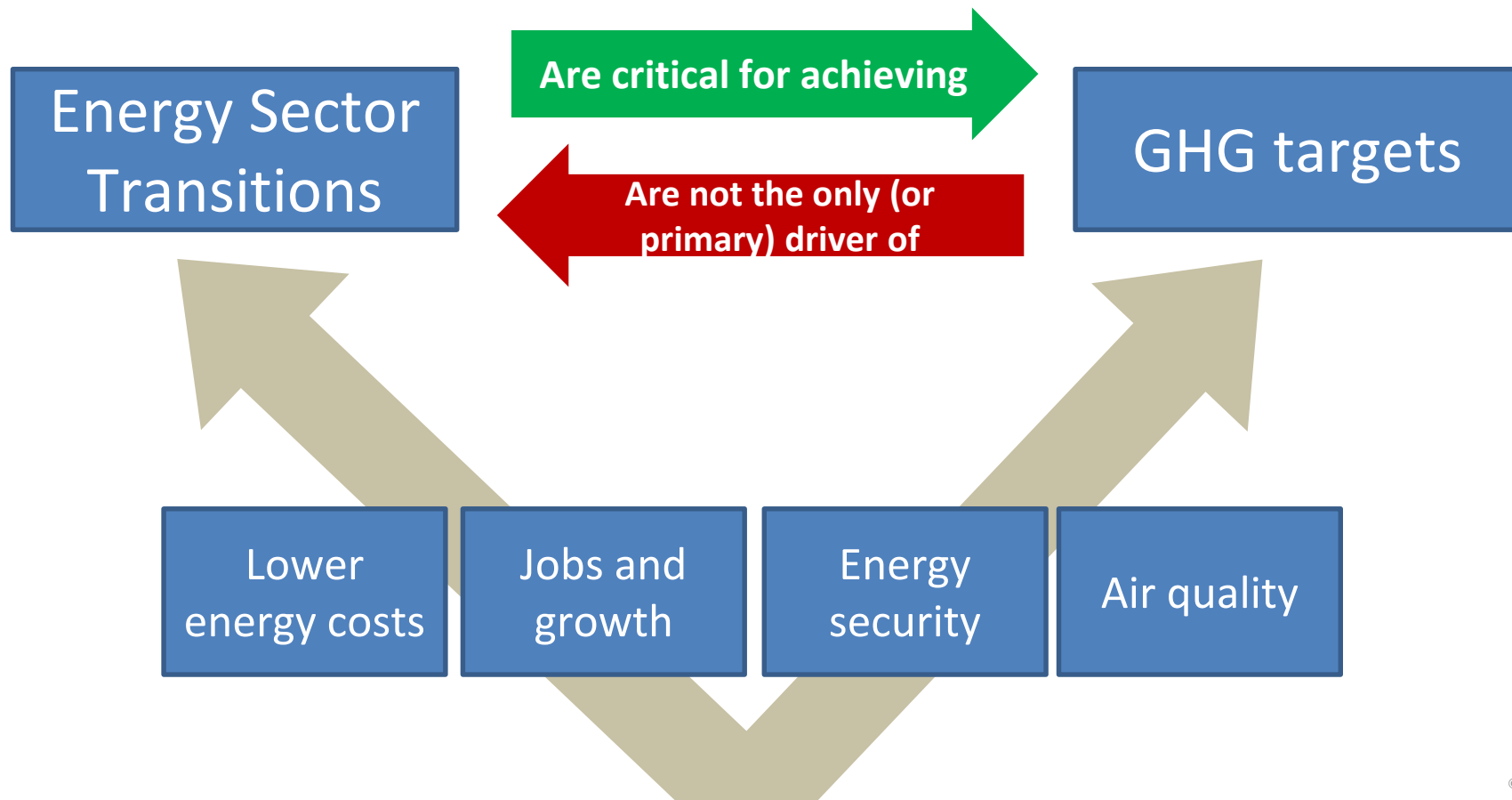
# Policy packages for energy transitions

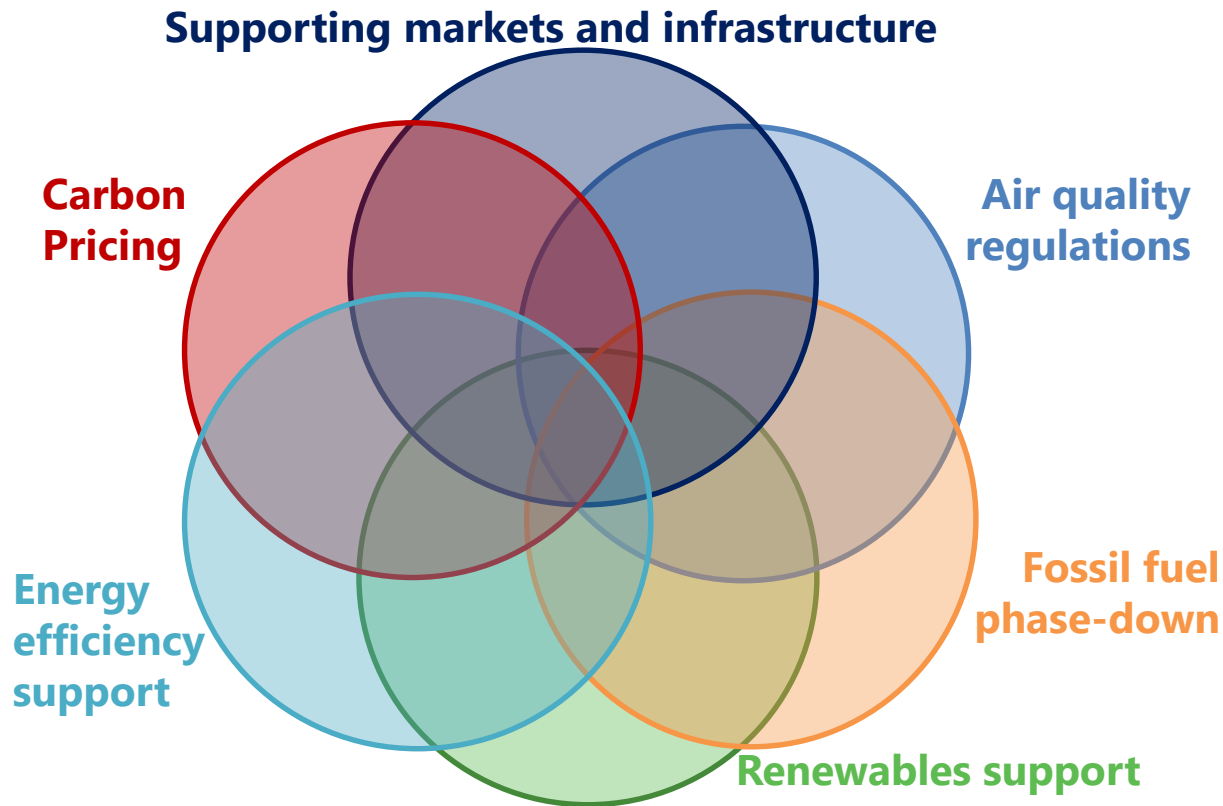
---

Peter Janoska, Environment and Climate Change Unit

COP 24 Katowice, 11 December

# Multiple objectives of clean energy transitions





**A broad basket of policies is relevant for energy transition: policy overlaps and interactions need to be taken into account for effective implementation**

... but real-world policymaking is more challenging!

## Supporting markets and infrastructure

**Carbon  
Pricing**

**Air quality  
regulations**

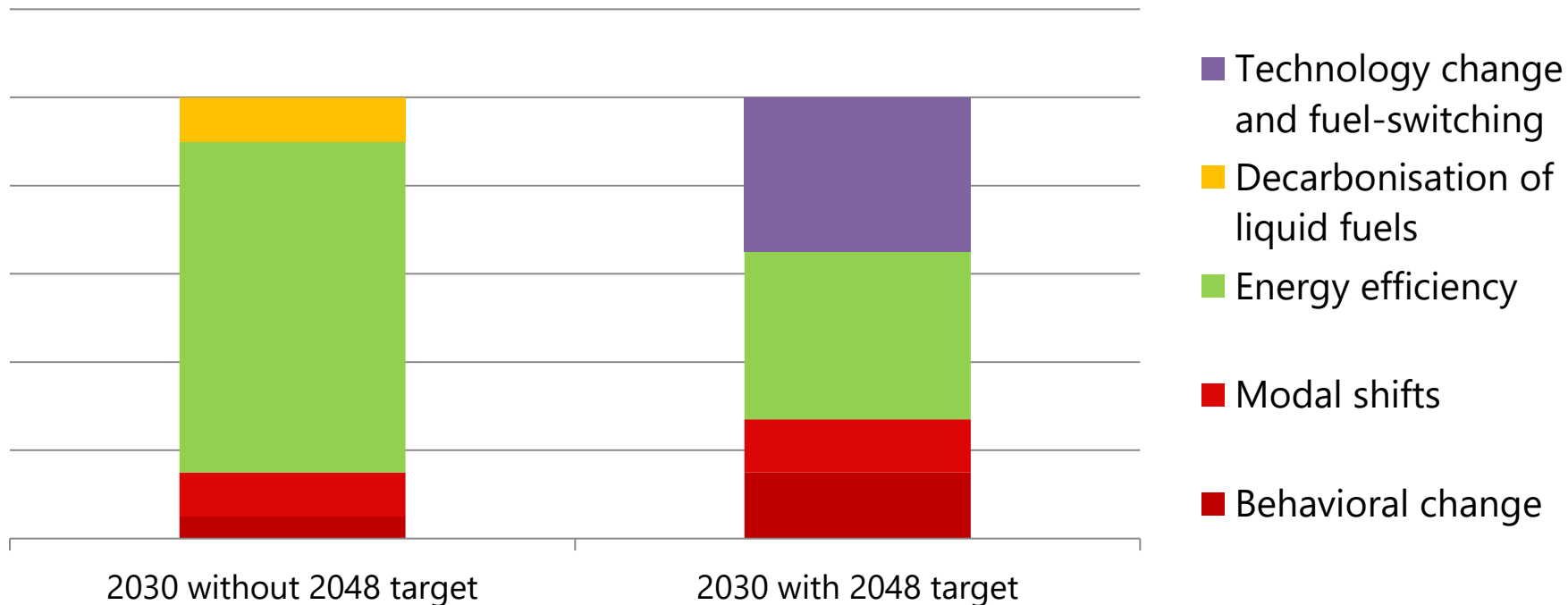
**Energy  
efficiency  
support**

**Fossil fuel  
phase-down**

**Renewables support**

Different country contexts will lead to different policies playing different roles in line with policy priorities; their “size and shape” may vary and evolve over time

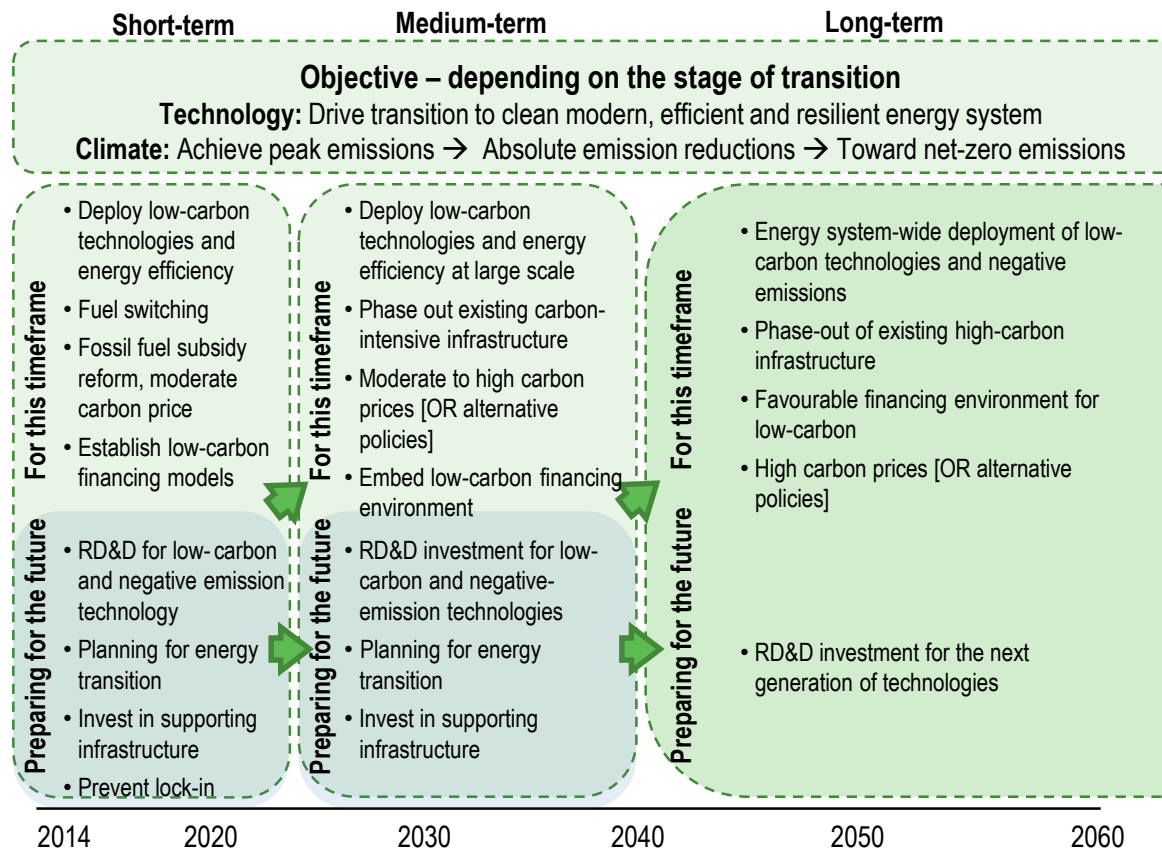
# Optimising for short- and long-term reductions ?



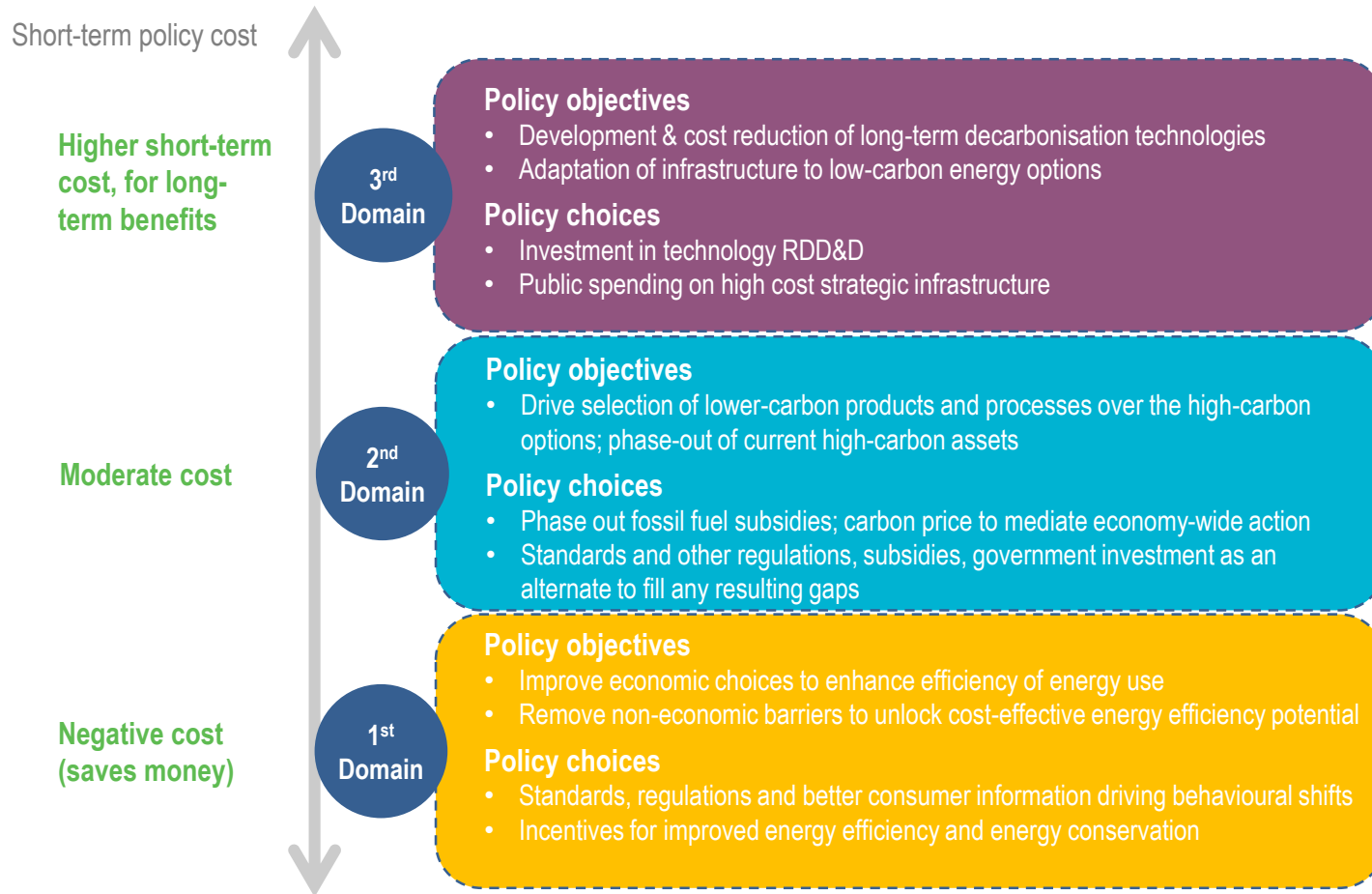
Source: Perrissin and Foussard., 2016

**A policy package for long-term transition may contain different elements than one for a shorter timeframe**

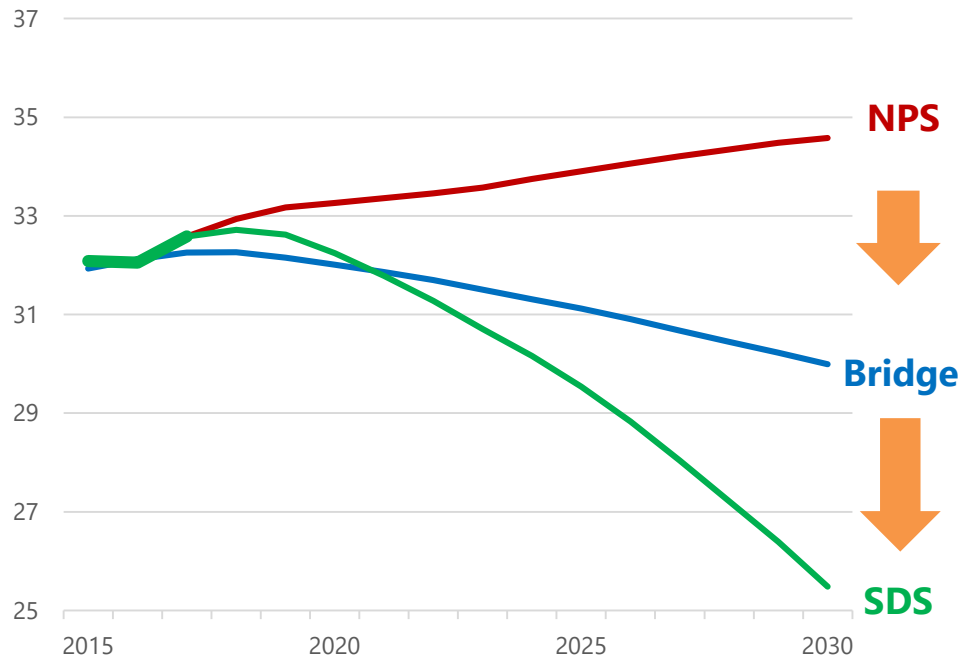
# The time dimension of policy packages: Tailoring to timeframes



# Sustainable energy transition: Domains of policy packages



# Comparing the role of carbon price and policies in IEA scenarios



**Five policies** that deliver cost-effective short-term emission reductions to peak global emissions

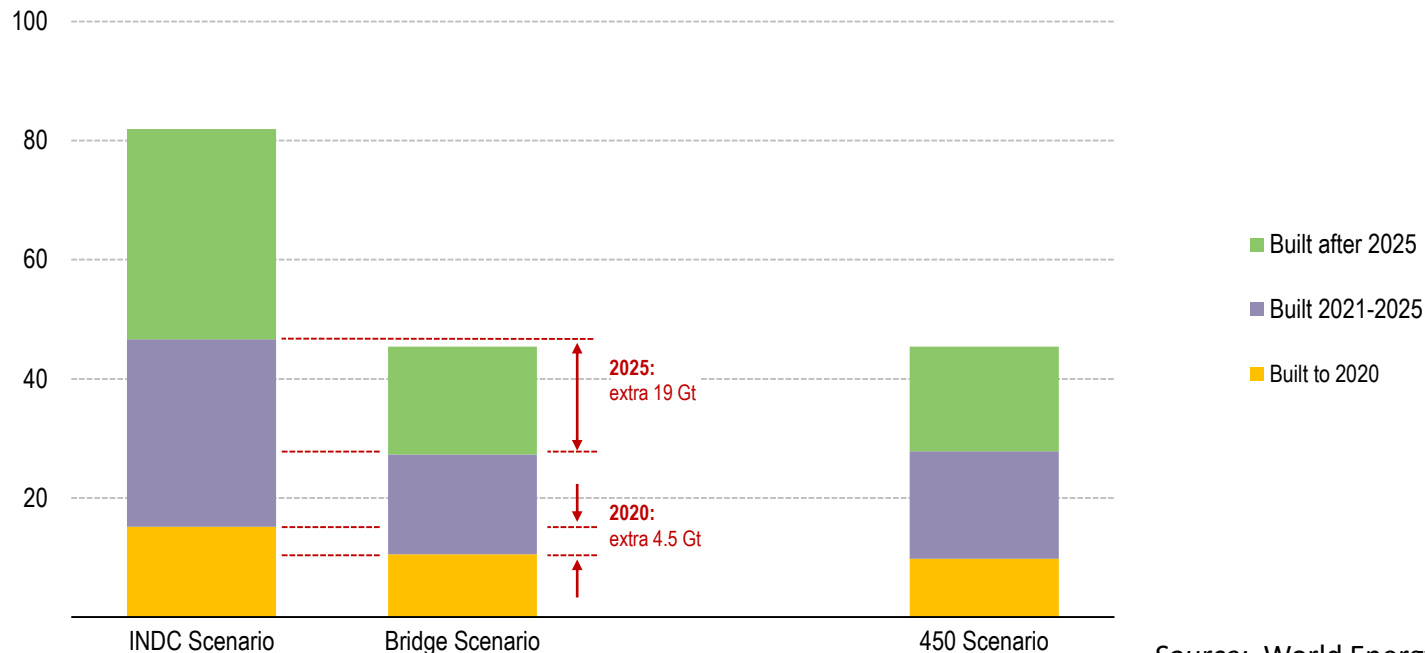
**High carbon price** plus early support for advanced technologies

Source: WEO2018 & [Insights series 2017 - Real-world policy packages for sustainable energy transitions](#)

**Targeted policies can peak emissions, but high carbon prices and advance technologies give deeper reductions consistent with climate goals.**



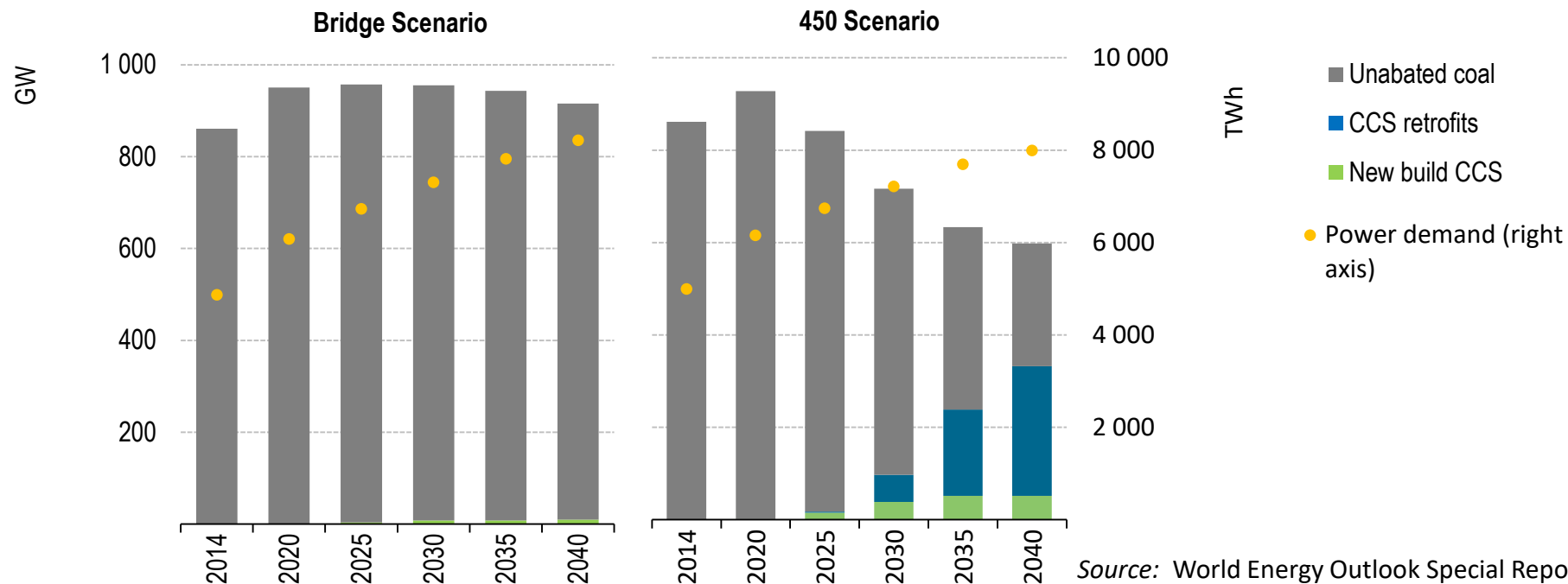
# Emissions from new investments in power generation



Source: World Energy Outlook Special Report: Energy and Climate Change, 2015

**The targeted policies of the Bridge Scenario do a good job of aligning new power sector investment with a 2C Scenario**

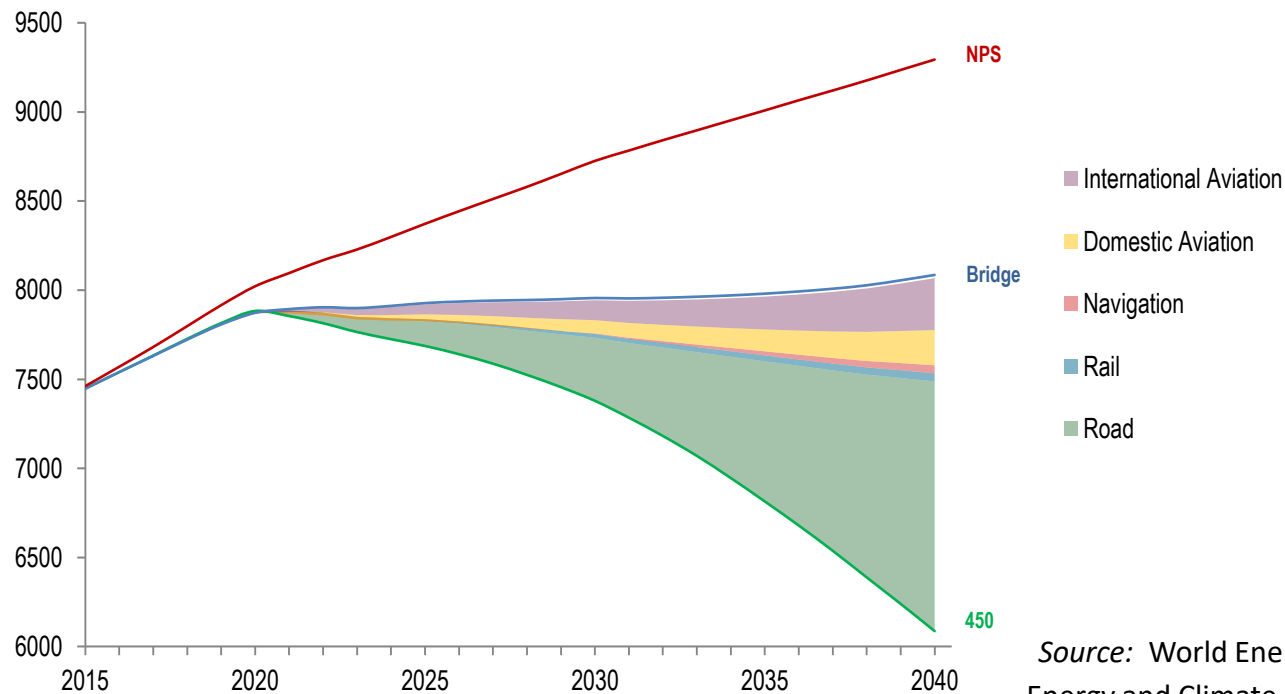
# What's missing? Coal retirement and CCS retrofit



Source: World Energy Outlook Special Report: Energy and Climate Change, 2015

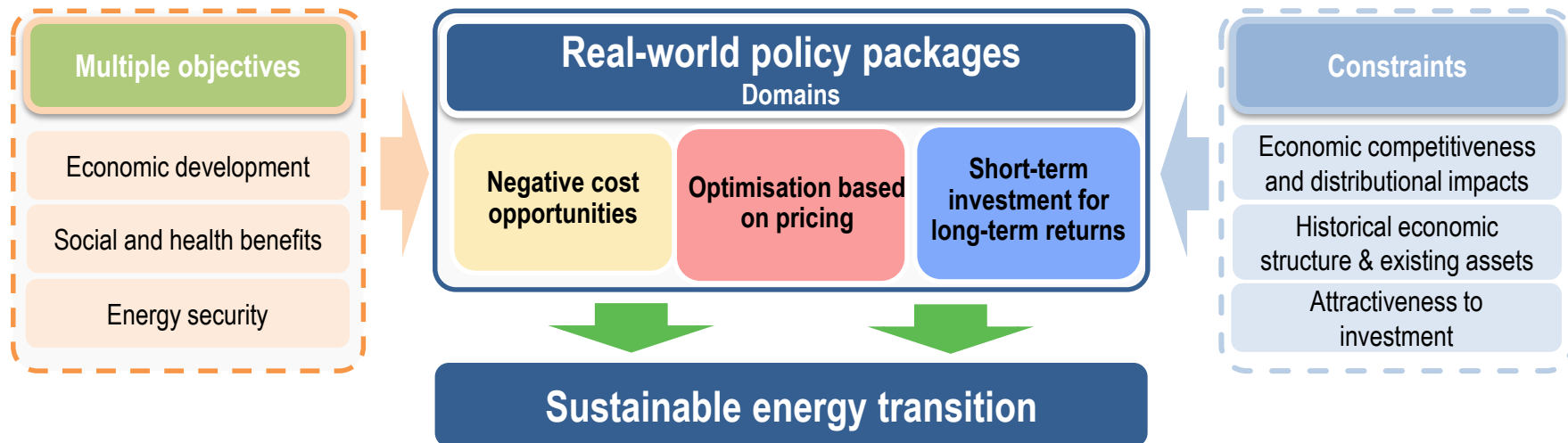
**High carbon prices in the 450 Scenario are needed to drive early retirement of coal plant and retrofit for carbon capture and storage.**

# Transport sector: Comprehensive policy packages needed



Source: World Energy Outlook Special Report: Energy and Climate Change, 2015

**Carbon pricing itself cannot unlock more substantial technology shifts such as electrification or advanced biofuels development.**





# Thank you

Peter Janoska [peter.janoska@iea.org](mailto:peter.janoska@iea.org)

---

[www.iea.org/topics/climatechange/](http://www.iea.org/topics/climatechange/)

<https://twitter.com/iea>