



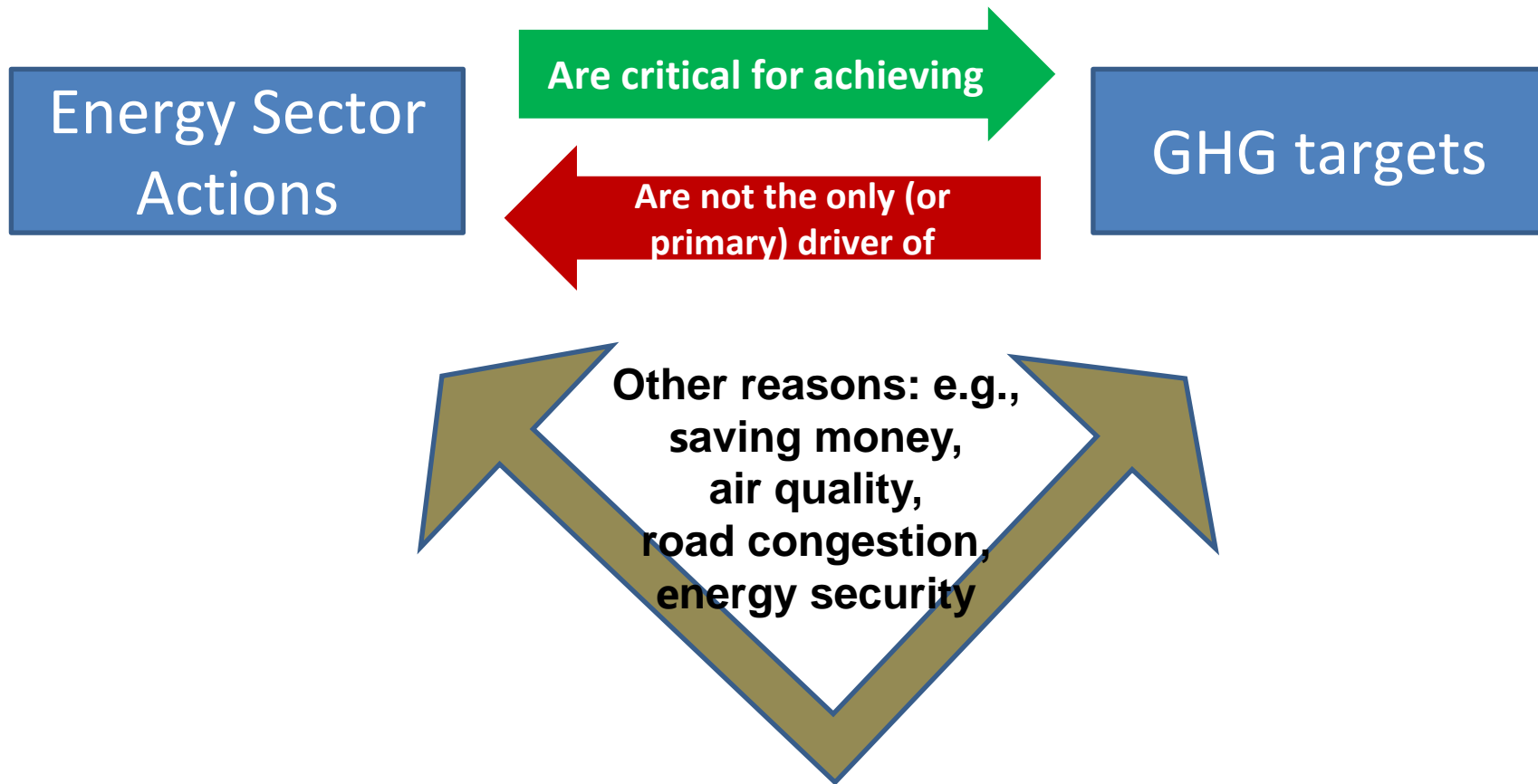
# Emissions trading in a wider climate and energy policy framework

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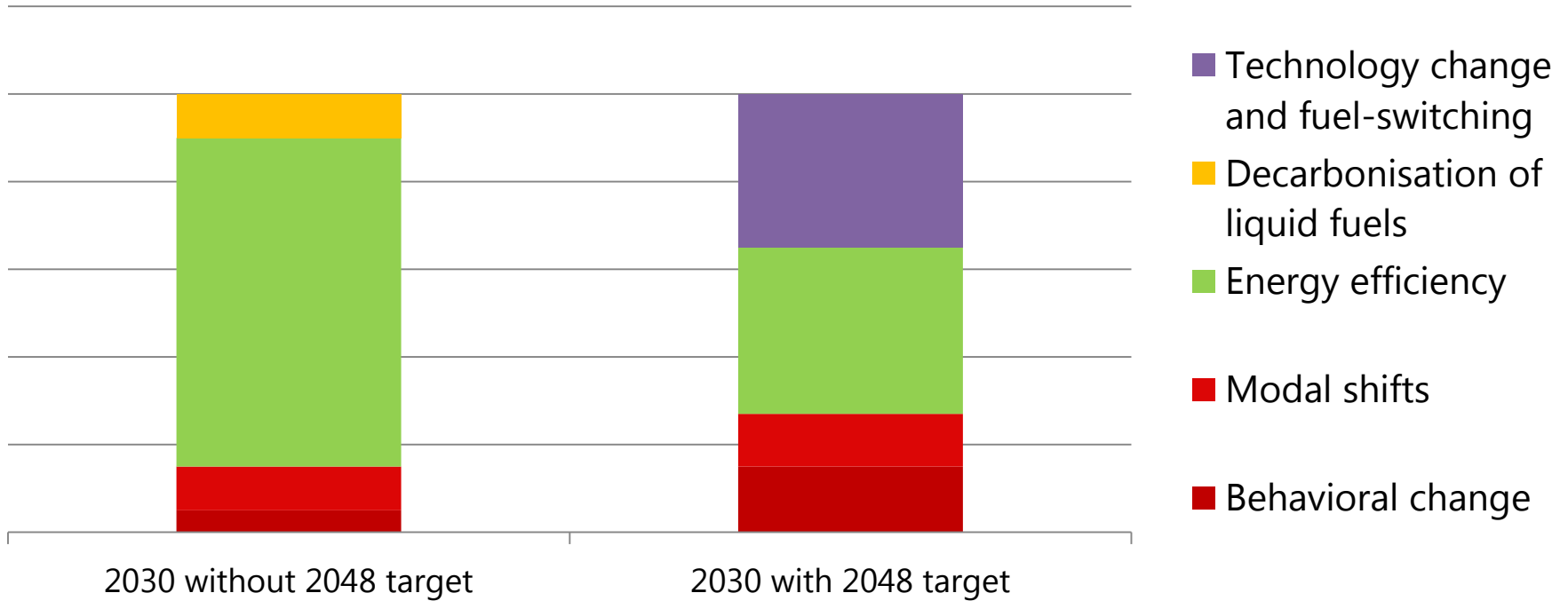
Christina Hood, Head of Unit, Environment and Climate Change, International Energy Agency

*COP 23, 14 November 2017*

# How to motivate GHG reductions ?



# Optimising for short- and long-term reductions ?



Source: Perrissin and Foussard., 2016

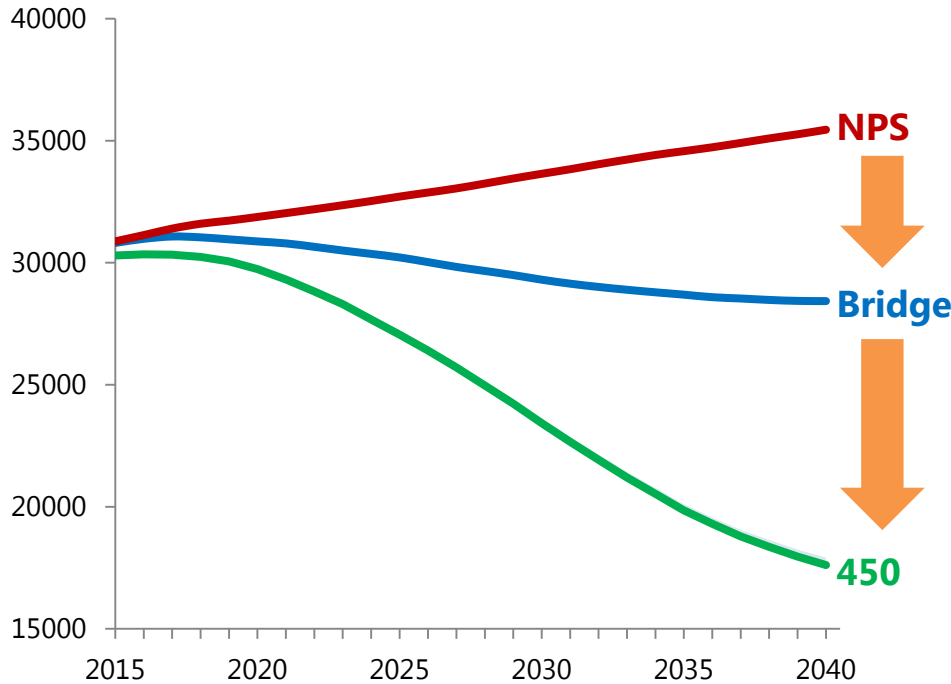
**A policy package for long-term transition may contain different elements than one for a shorter timeframe**

# Policy packages with “moderate” carbon prices

	Region	2020	2030	2040
<b>NPS</b> [And “Bridge” Scenario]	European Union	20	37	50
	Chile	6	12	20
	Republic of Korea	20	37	50
	China	10	23	35
	South Africa	7	15	24
<b>450 Scenario</b>	United States and Canada	20	100	140
	European Union	22	100	140
	Japan	20	100	140
	Republic of Korea	20	100	140
	Australia and New Zealand	20	100	140
	China, Russia, Brazil and South Africa	10	75	125

**Expected carbon prices are well below those needed in a 2C scenario**

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



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

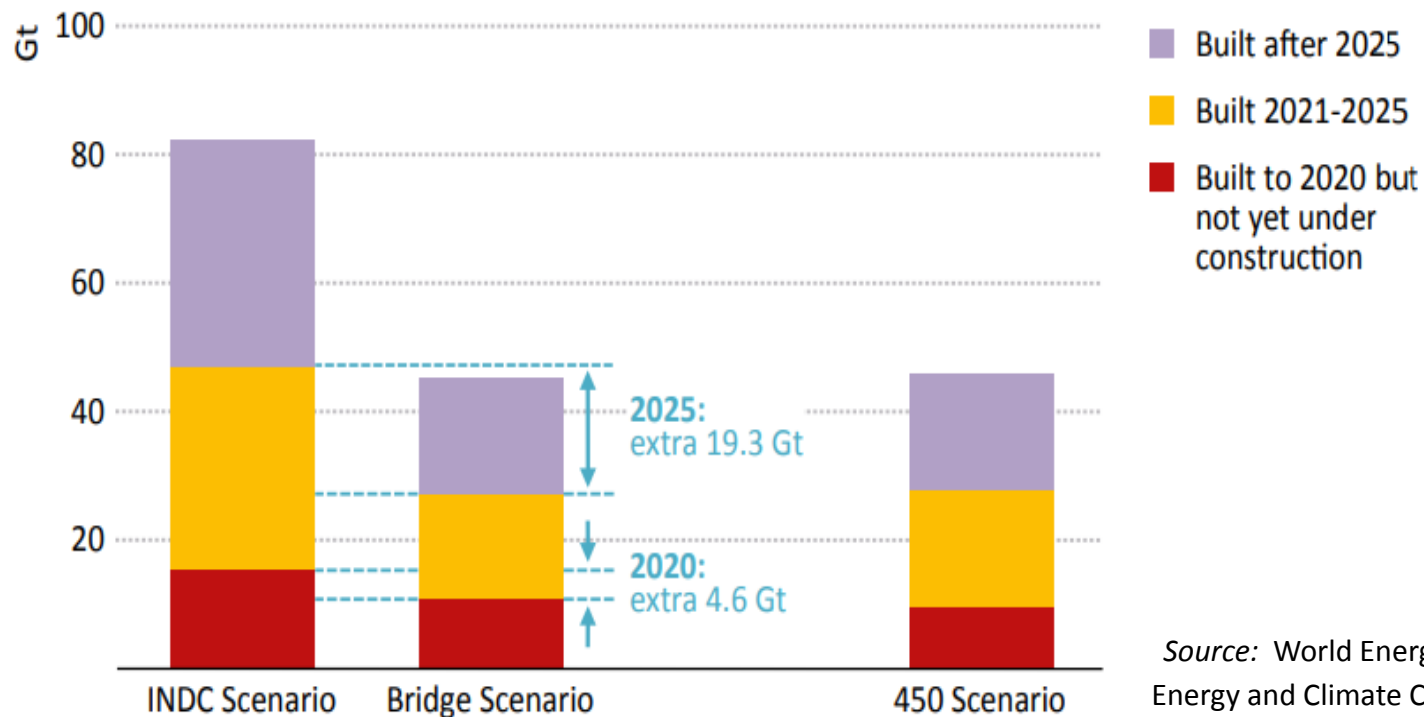
**Bridge**  
High carbon price plus early support for advanced technologies

**450**

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

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

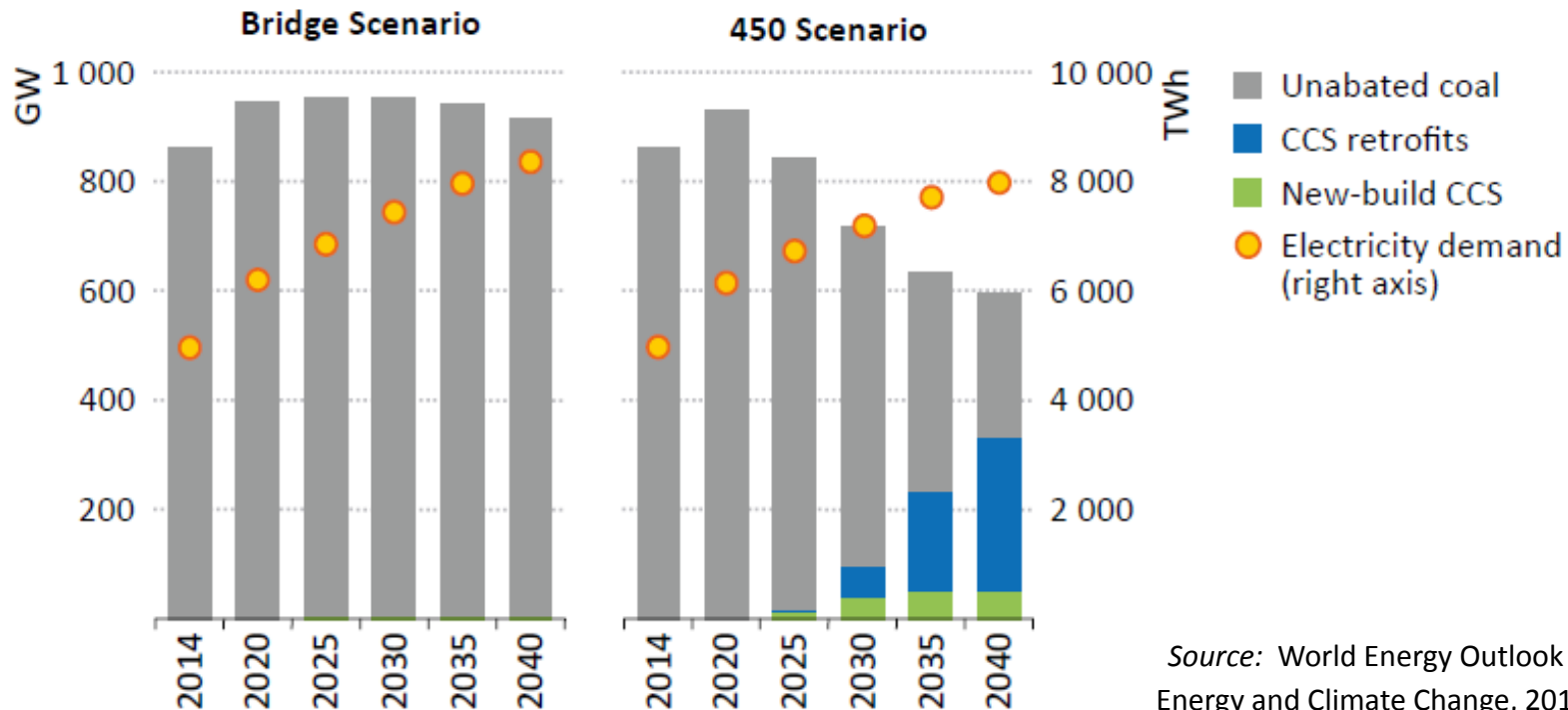
# Emissions from new investments in power generation



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**

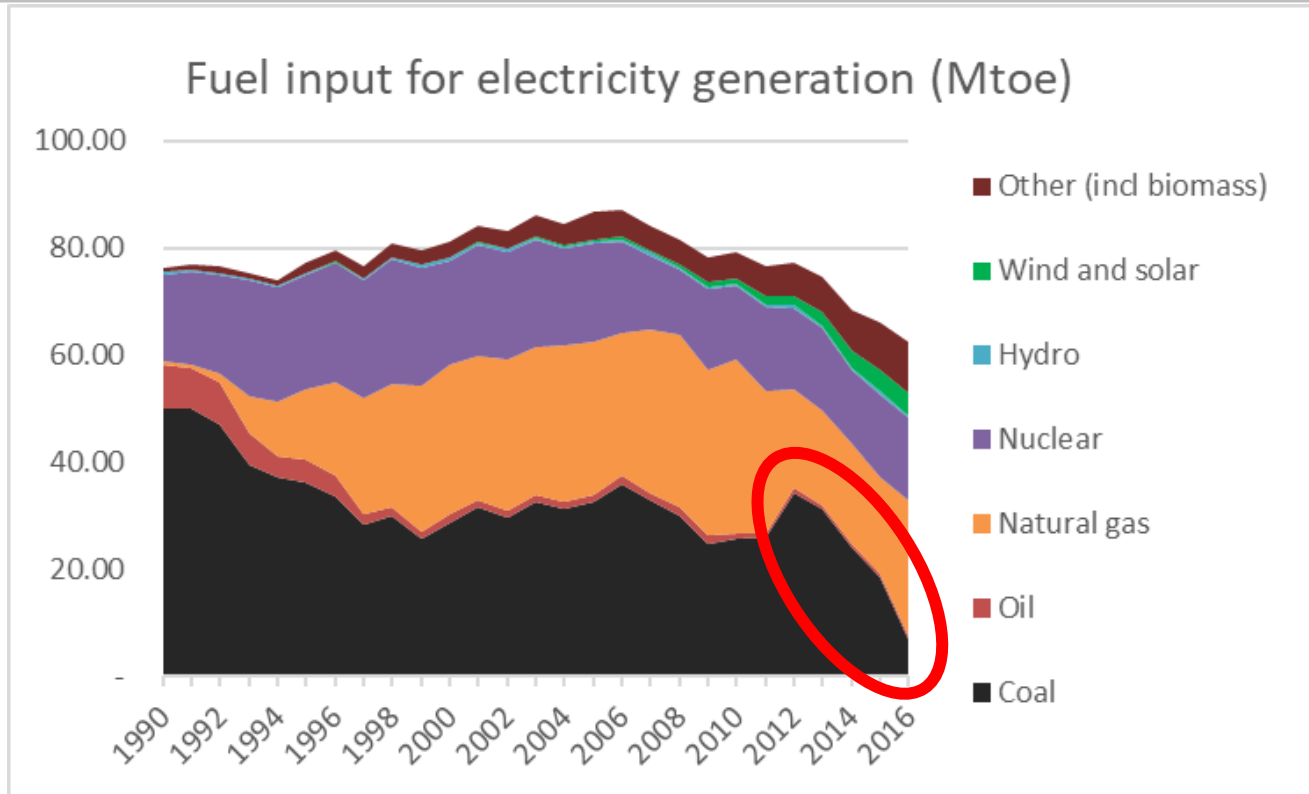
# What's missing? Coal retirement and CCS retrofit



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.**

# Example: Role of UK carbon price floor in coal phase-out



**Even with moderate carbon prices, layered policies (carbon price floor, energy efficiency, renewables support, signaling future coal phase-out) can have dramatic effects**



- Carbon pricing plays a critical role in the policy mix for energy sector decarbonisation...
  - .... but understanding its role, and how it layers with other policies, can be complex.
- Having clarity on what you want the ETS to achieve is critical as it will affect design choices.
- Future IEA work in this area:
  - Scoping paper November COP23
  - 2018 project with China's NDRC Department of Climate Change to map China's policy mix and interactions



**Thank you**  
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