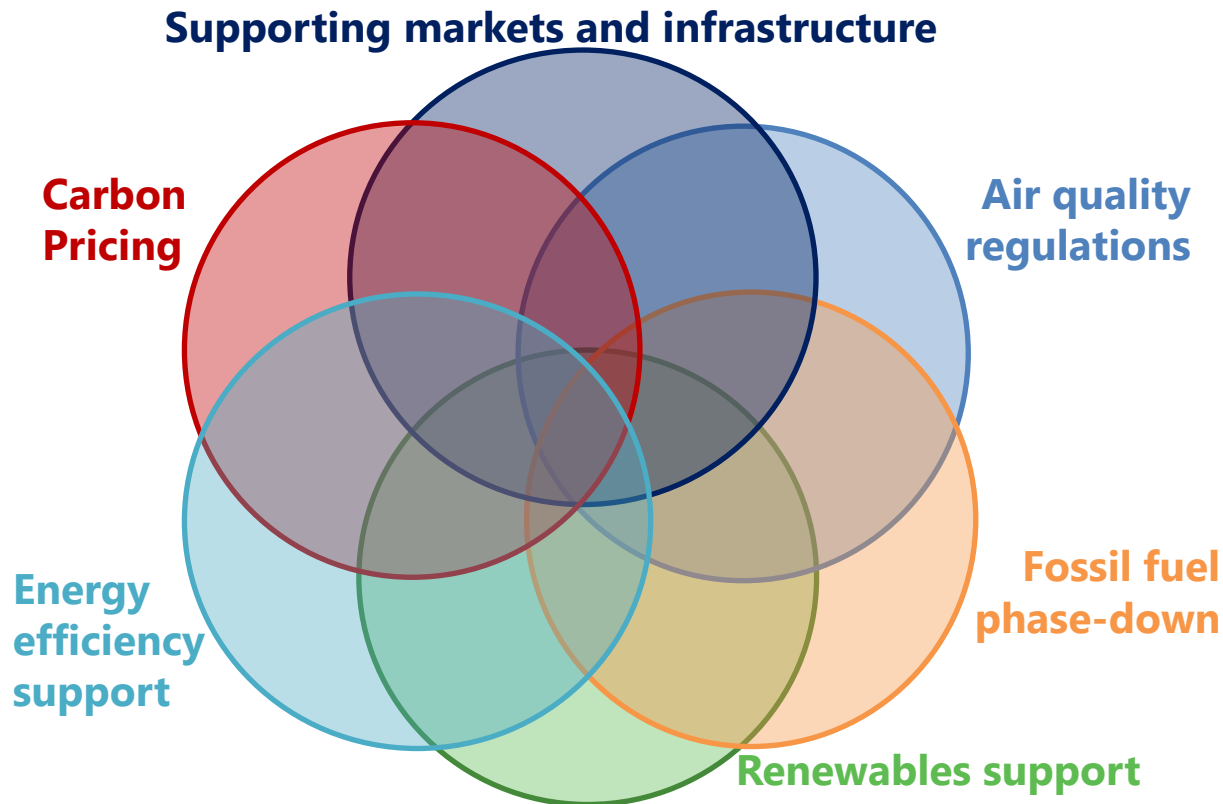




“Real-world” low-carbon policy packages for the energy sector

Christina Hood, Head, Environment and Climate Change Unit

Workshop on Implementing real-world low-carbon policy packages in the energy sector: understanding the challenges Paris, 27 June 2017



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!



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

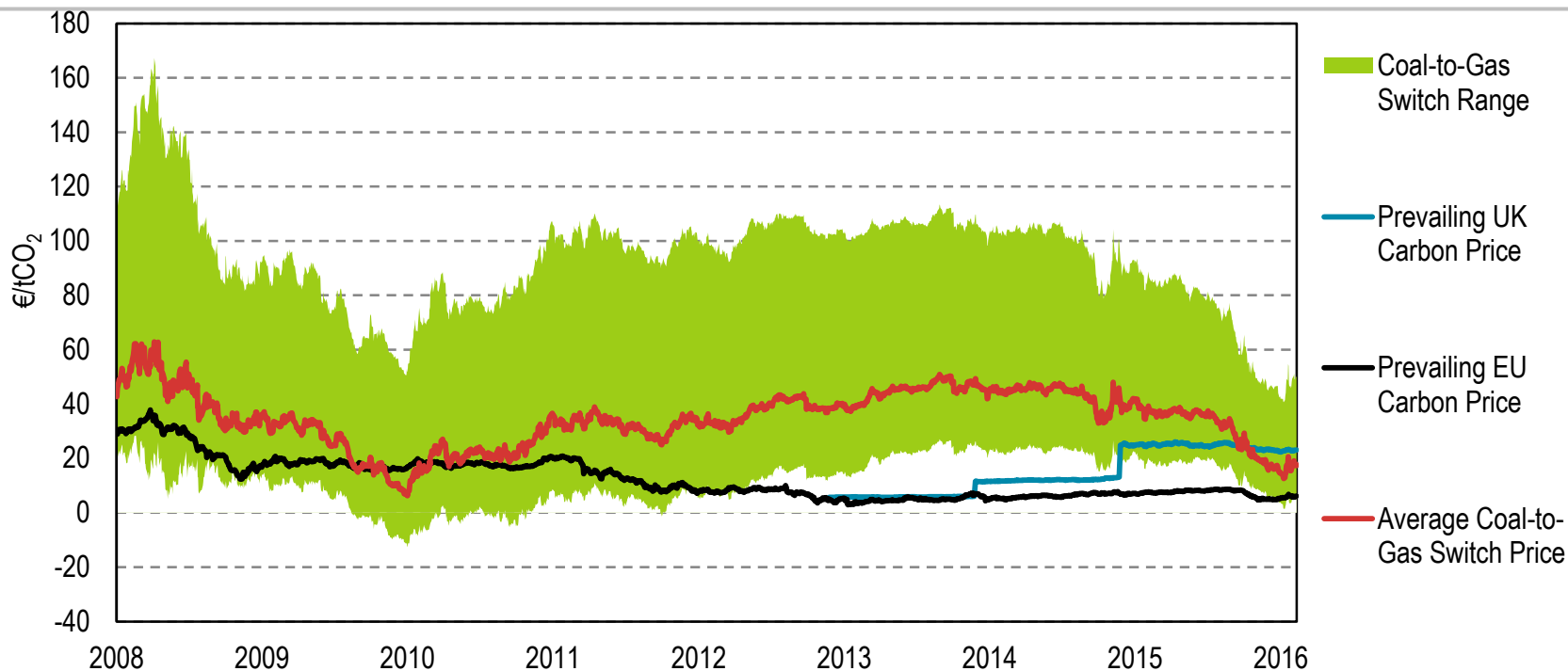
- What can low-to-moderate carbon prices achieve? When and how may they need to be complemented?
- How to manage trade-offs between policies that best support short, medium and long-term action?
- How best to align energy and climate policies among themselves, across jurisdictions, with other policy objectives (e.g. air quality, development)?
- Policy design options for particular political realities, such as concerns about
 - Energy price rises
 - Competitiveness
 - Stranded assets

Carbon prices in IEA scenarios

	Region	2020	2030	2040
NPS	European Union	20	37	50
	Chile	6	12	20
	Republic of Korea	20	37	50
	China	10	23	35
	South Africa	7	15	24
450 Scenario	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

United Kingdom power generation: coal to gas switching



Source: IEA, *Energy, Environment and Climate Change: 2016 Insights*

Moderate carbon prices (with shifts in relative fossil fuel prices) have supported coal to gas switching

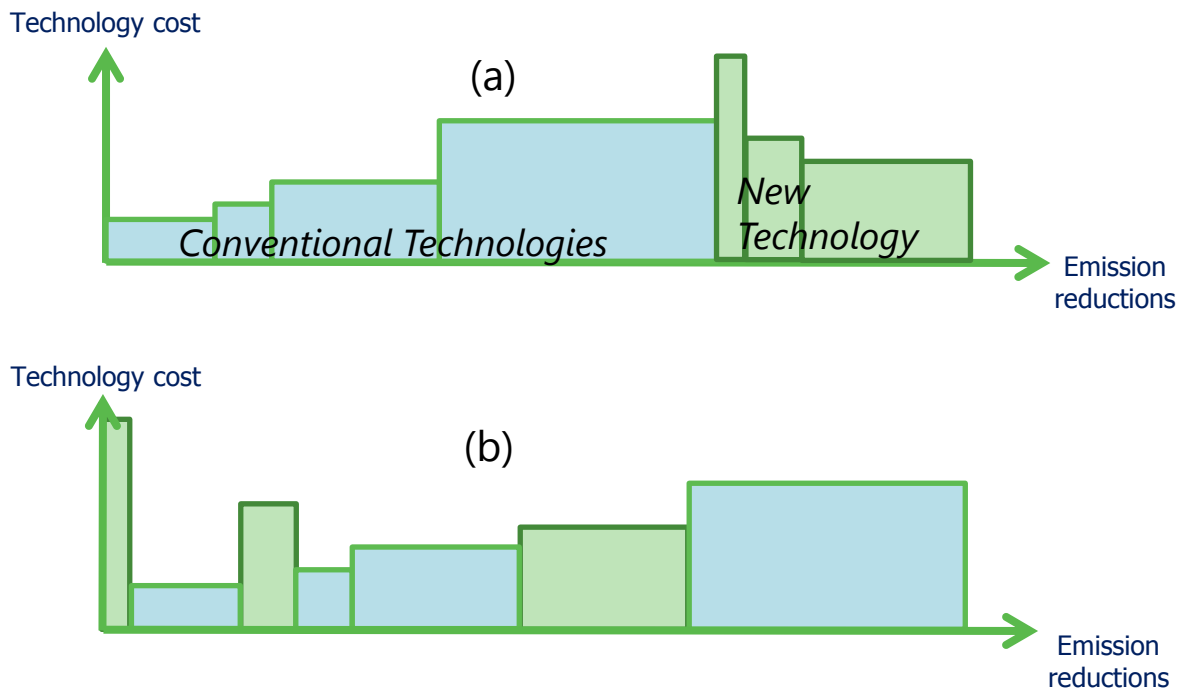
- Can:
 - Lead to some fuel-switching in existing operations
 - Make near-to-market low-carbon technologies cost-effective
 - Backstop other low-carbon support policies

- Cannot:
 - Drive all necessary low-carbon investment
 - Force early retirement of high-carbon assets
 - Give strong signal for electrification of heat and transport
 - [Overcome non-price market barriers]

Low-hanging fruit....

... or preparing for the long-term?

Optimising for the long term: support for technology development



Support for new technologies can lower carbon prices and total investment costs

Tracking Clean Energy Progress



Status against 2° C scenario targets to 2025

■ On track, but sustained deployment & policies required
 ■ More efforts needed
 ■ Not on track

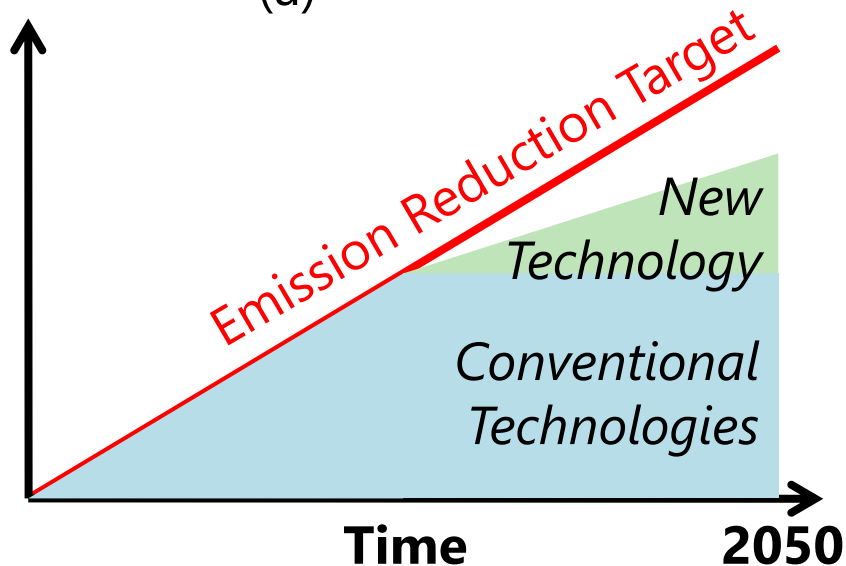
Recent trend (last 12 months)

↗ Positive developments
 ~ Limited developments
 ↘ Negative developments

Another side of optimizing for the long term...

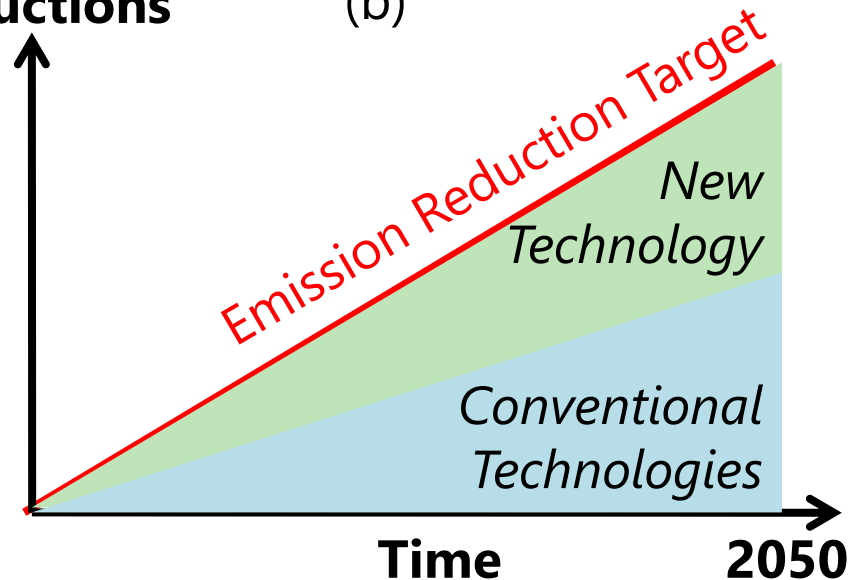
**Emission
Reductions**

(a)

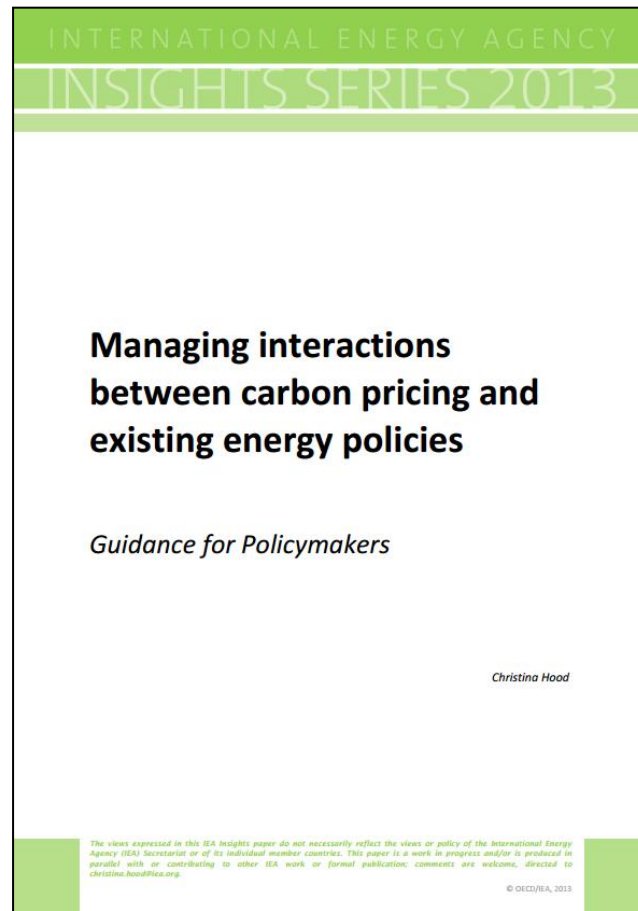
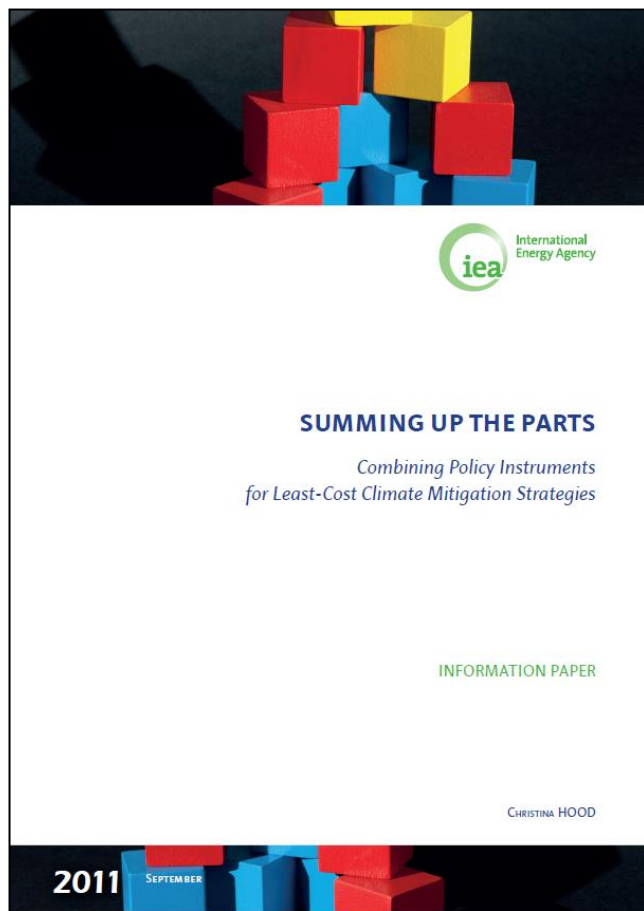


**Emission
Reductions**

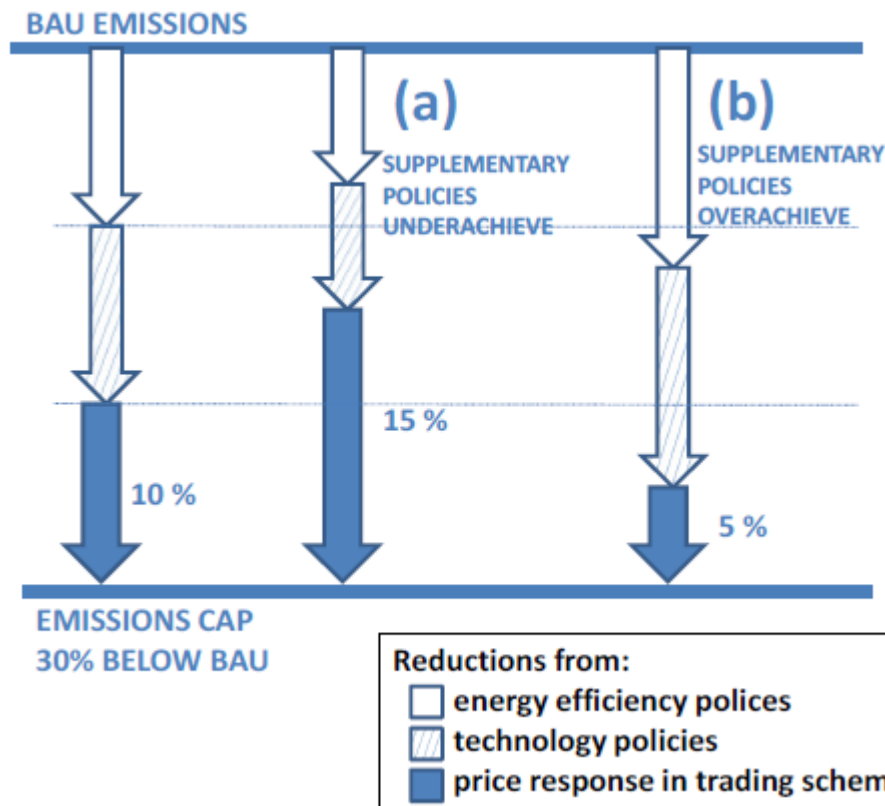
(b)



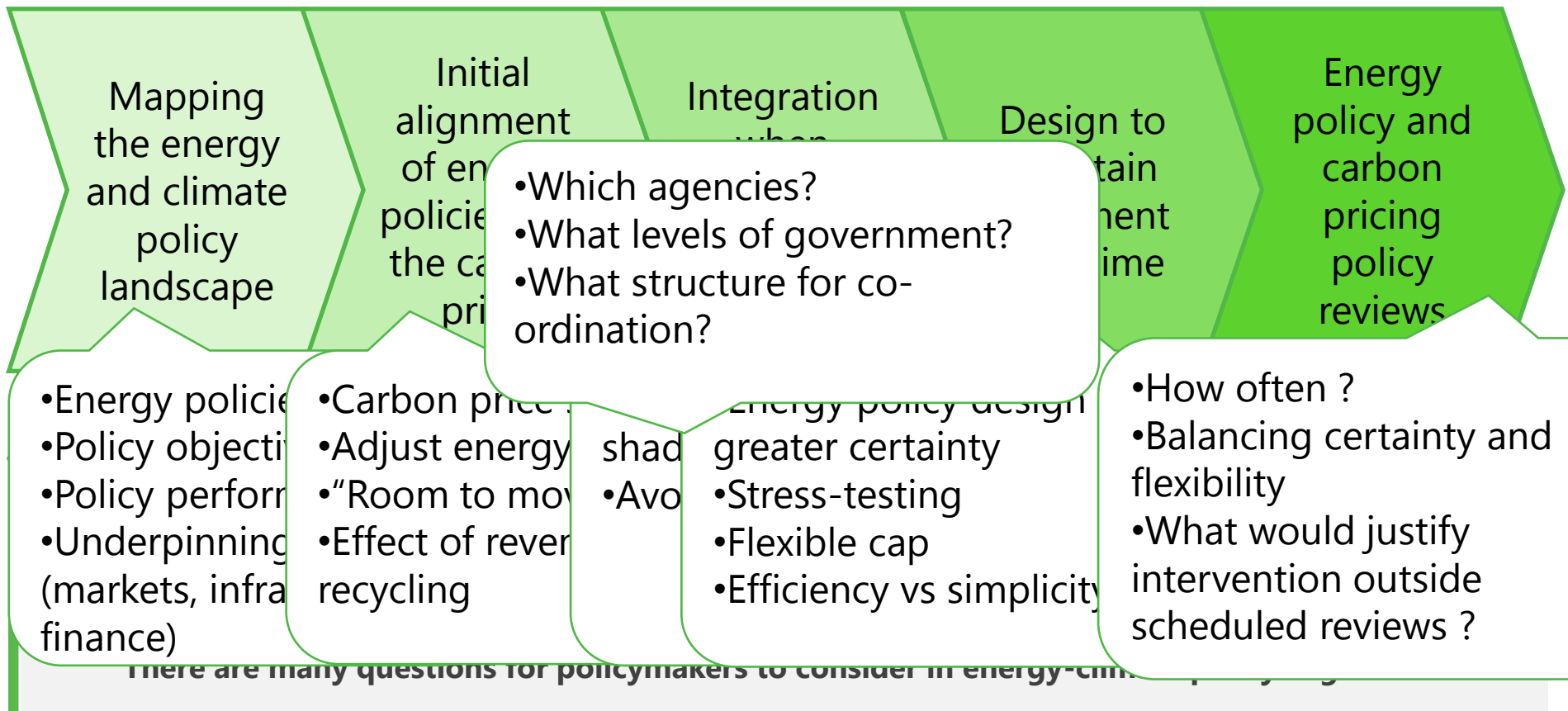
An early start may be necessary for new technologies to scale up at the rate needed



ETS: Supplementary policies can significantly impact prices



Alignment of a carbon price with existing energy policies



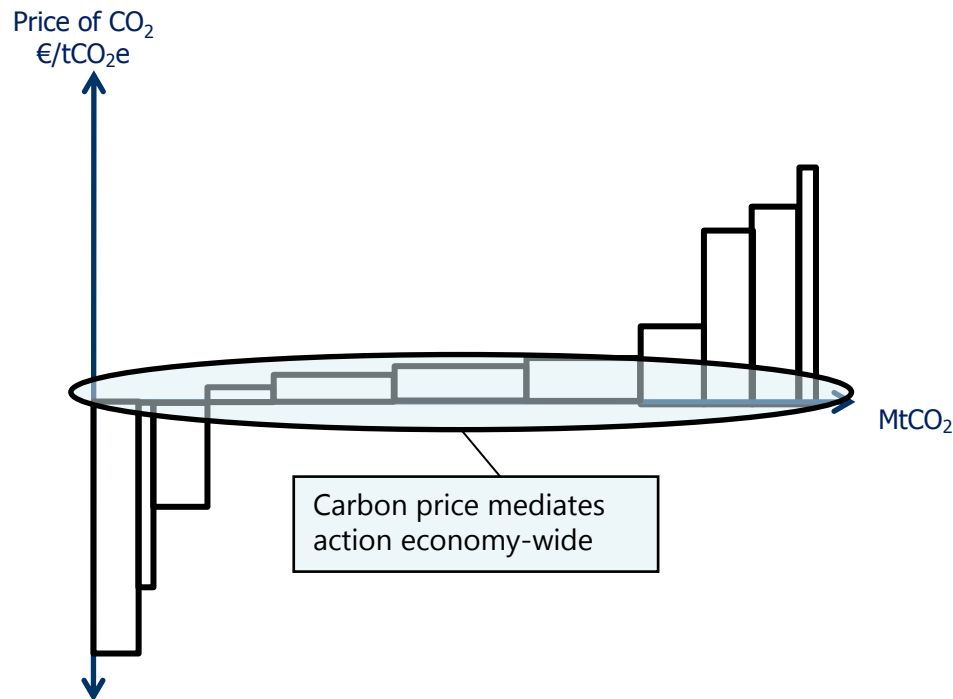
- Workshop 27 June
- Scoping report for release in October 2017
 - Literature review on climate policy mixes and interactions
 - Clarifying the role of carbon pricing in IEA World Energy Model
 - Identify mitigation “gaps” with sustained moderate prices, with a focus on avoiding lock-in and understanding major path dependencies
 - Canada case study: backstop national carbon price; interactions across jurisdictions and sectors
- 2018:
 - Work on China policy mix: national ETS and regulated electricity markets. Seconded from NDRC China to work in IEA Environment and Climate Change Unit.
 - ? India: low-carbon policy packages in the context of other policy objectives
 - Longer publication in late 2018

How can IEA help policymakers deliver more effective, realistic, and well-integrated low-carbon climate and energy policies that take account of local political realities?



Thank you
christina.hood@iea.org

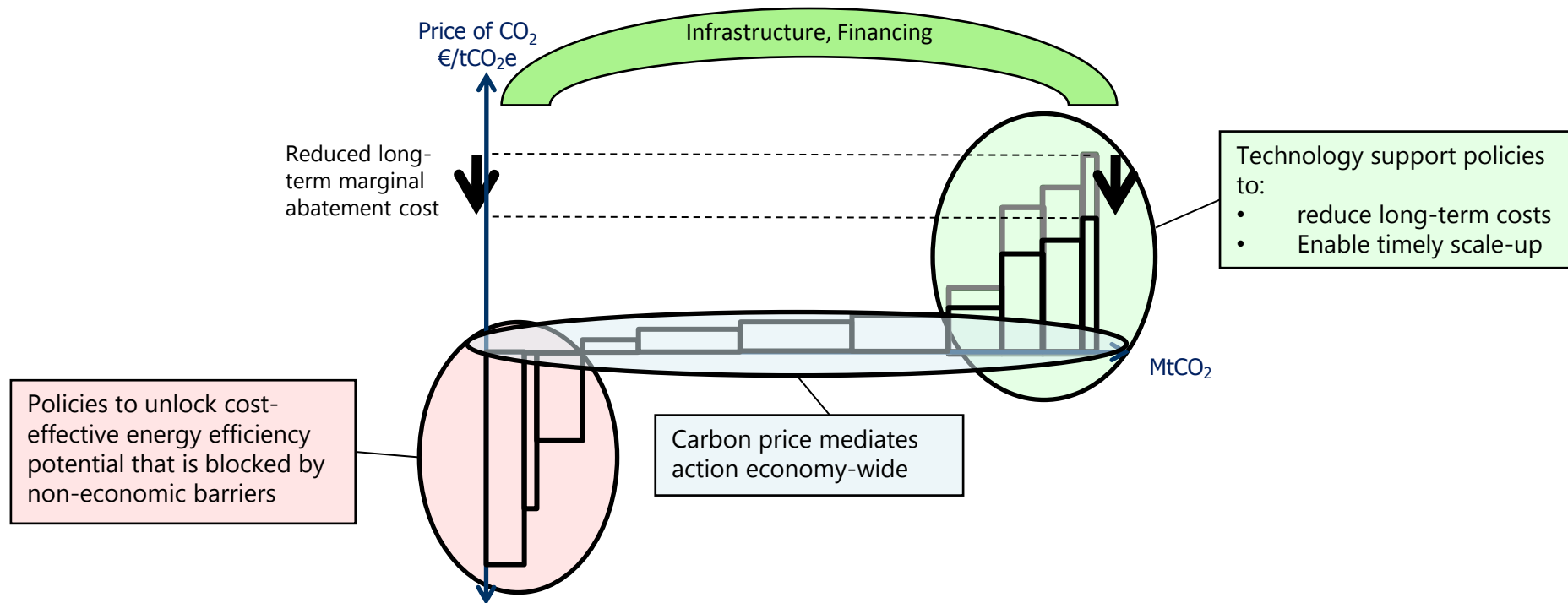
Carbon pricing is necessary but not sufficient



Source: Summing up the Parts, 2011

Costs to society can be reduced through a package of policies including energy efficiency and technology development and deployment, with carbon pricing as the cornerstone.

Carbon pricing is necessary but not sufficient



Source: Summing up the Parts, 2011

Costs to society can be reduced through a package of policies including energy efficiency and technology development and deployment, with carbon pricing as the cornerstone.