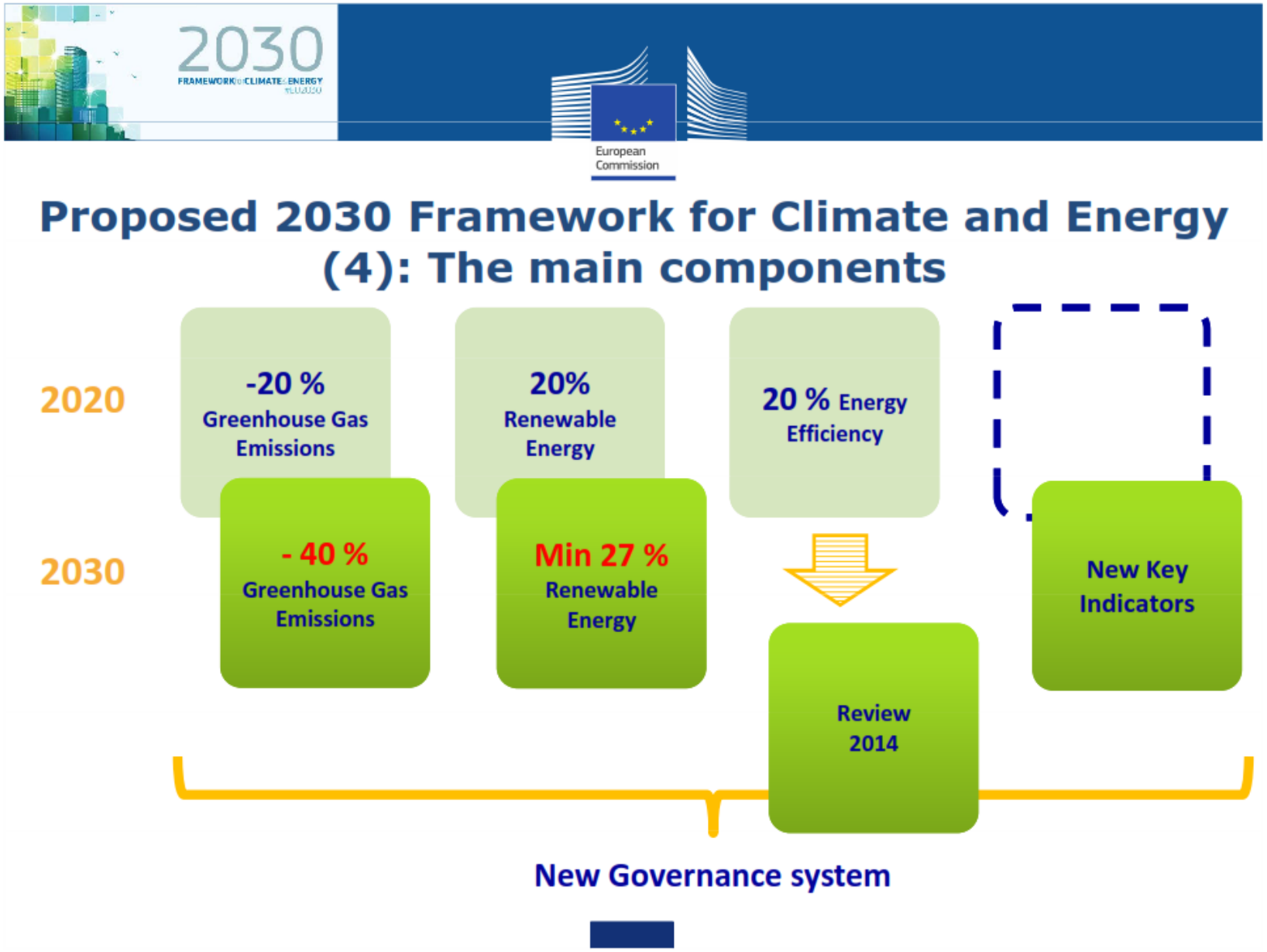
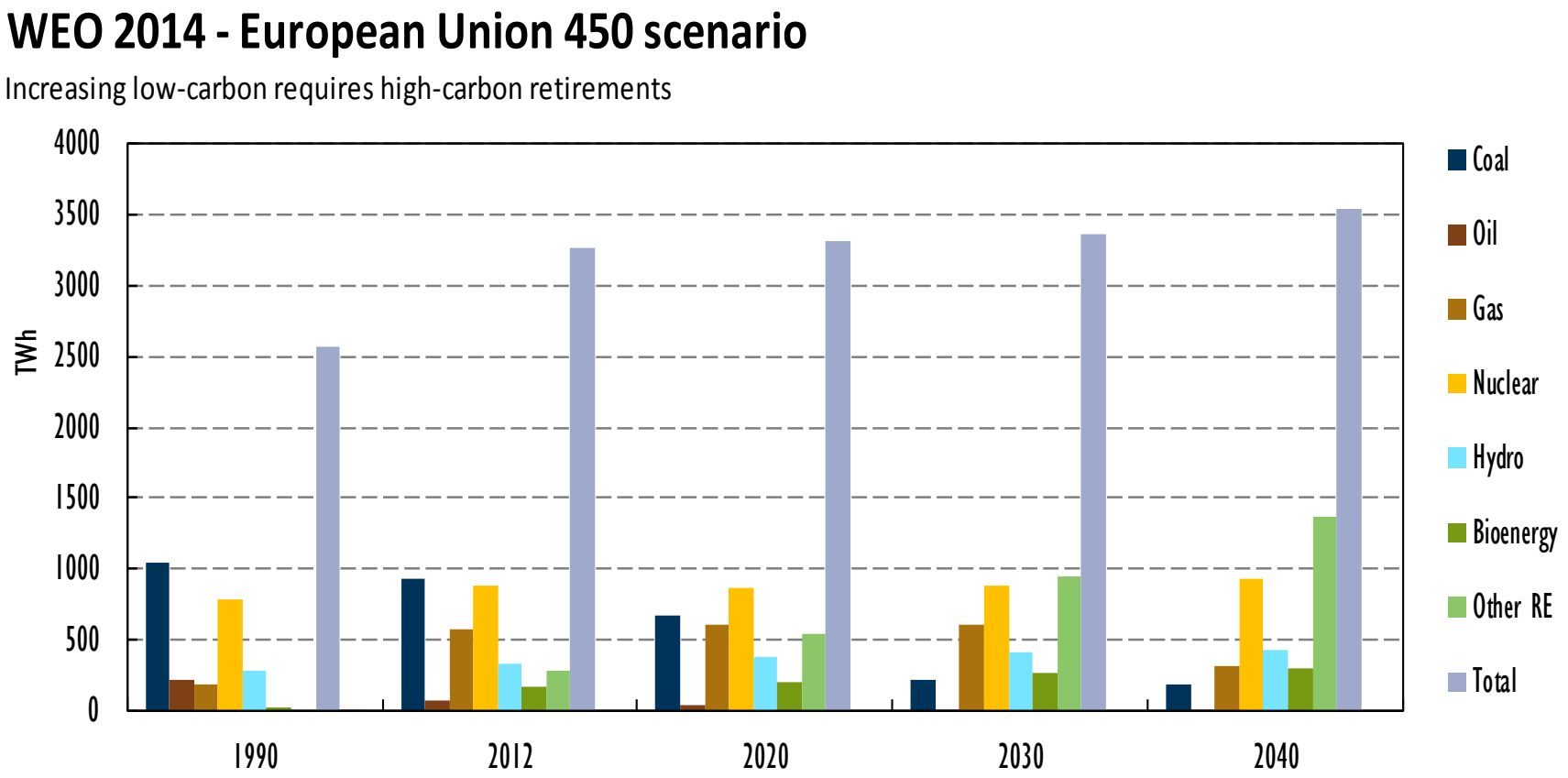
EU policy signals for investment in power sector transformation

Jesse Scott


2030
FRAMEWORK for CLIMATE & ENERGY
European Commission
Proposed 2030 Framework for Climate and Energy (4): The main components
2020
-20 % Greenhouse Gas Emissions
20% Renewable Energy
20 % Energy Efficiency
2030
- 40 % Greenhouse Gas Emissions
Min 27 % Renewable Energy
Review 2014
New Key Indicators
New Governance system

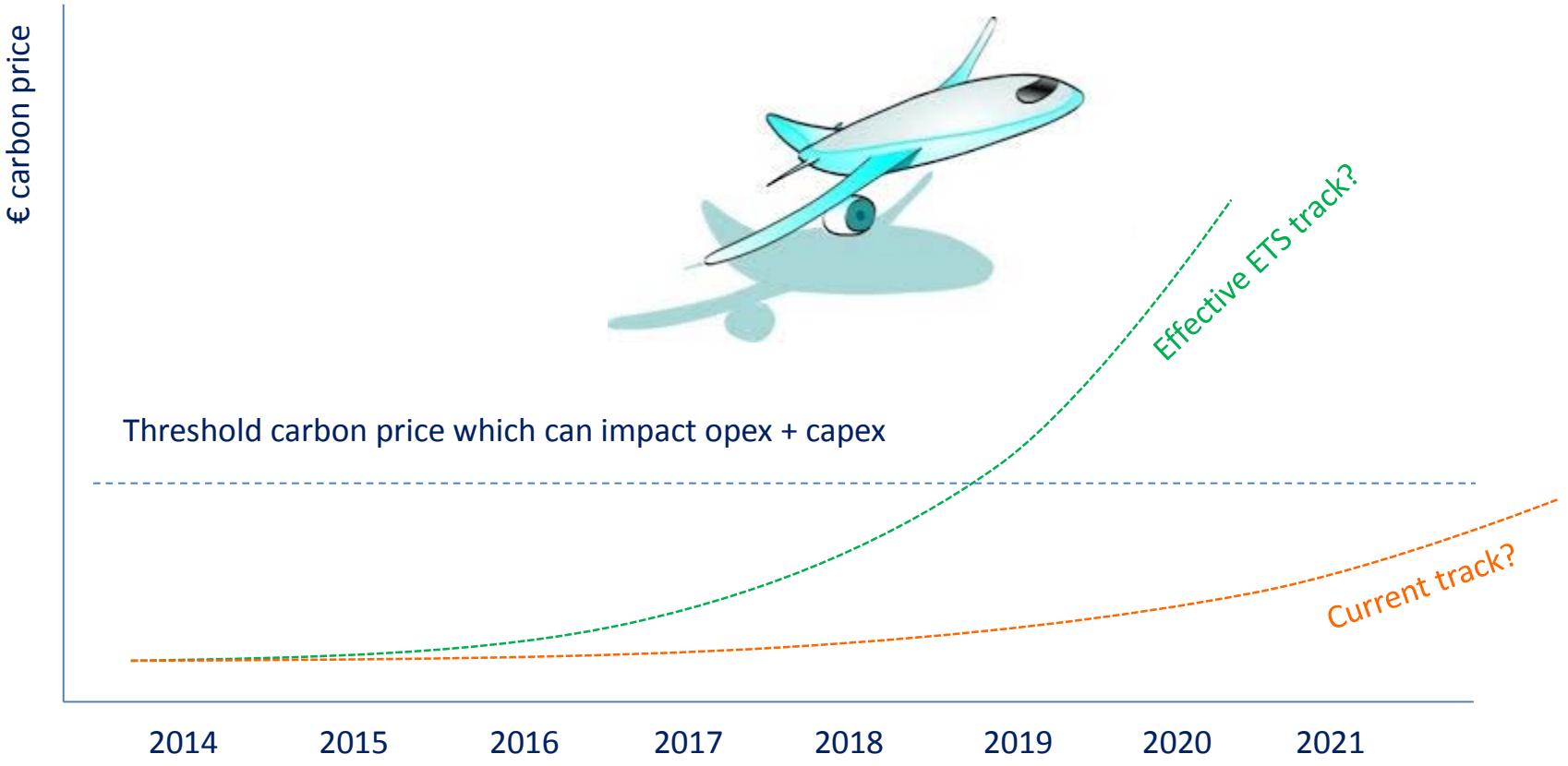
HC out, LC in

High-carbon retirement / power



Getting to the goal on ETS

Reforms need to impact on opex + capex



The RES increase challenge

21% of electricity mix 2014, to 45% by 2030

EU RES 2013 – approx 21%

5% biomass

10% hydro

6% intermittent

EU RES 2030 – approx 45%

5% biomass

10% hydro

30% intermittent

a x5 increase in intermittent generation ?

EU or national

Today: internal energy market or x28 chaos?

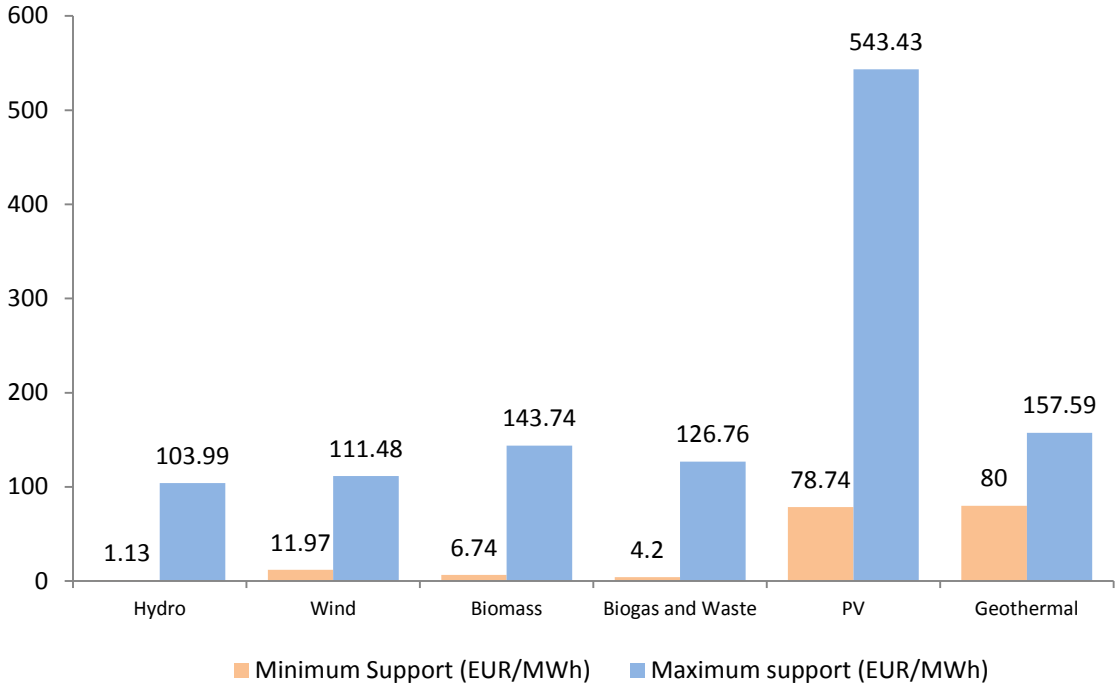
ENERGY MARKET INTEGRATION
AND (MORE) PREDICTABLE POLICIES

ETS as the key driver
Strong innovation policy

MARKETS ARE FRAGMENTED AND POLICIES
ARE START/STOP

National RES and EE schemes
National carbon price floors/taxes
National capacity mechanisms

Levels of promotion

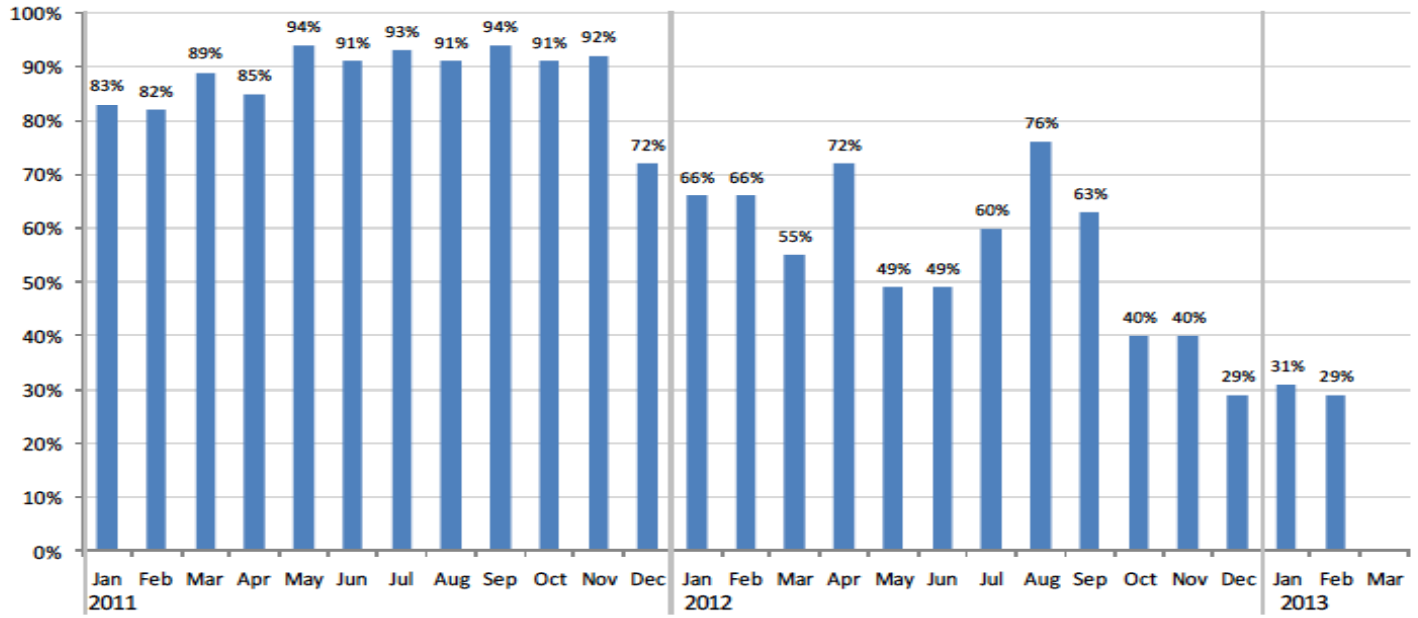


Technology	Min	Max
Hydro		
Wind		
Biomass		
Biogas/Waste		
PV		
Geothermal		

Highly divergent promotion levels across technologies and countries

* Source: **Status Review of Renewable and Energy Efficiency Support Schemes in Europe**

Resulting in renewed price divergences



Renewed price divergences between Germany and the Netherlands show the impact of national climate and energy policies on the internal energy market

Source: Energie Trends 2012, ECN, Energie-Nederland and Netbeheer Nederland

EU Energy Union?

"The Energy Union can only be achieved through a combination of coherent and coordinated measures at EU and national level while preserving Member States' right to define policies matching national preferences"

TITLE XX Environment

Article 191 – objectives of EU environment policy
Article 193 – Member States may take more stringent measures

TITLE XXI Energy

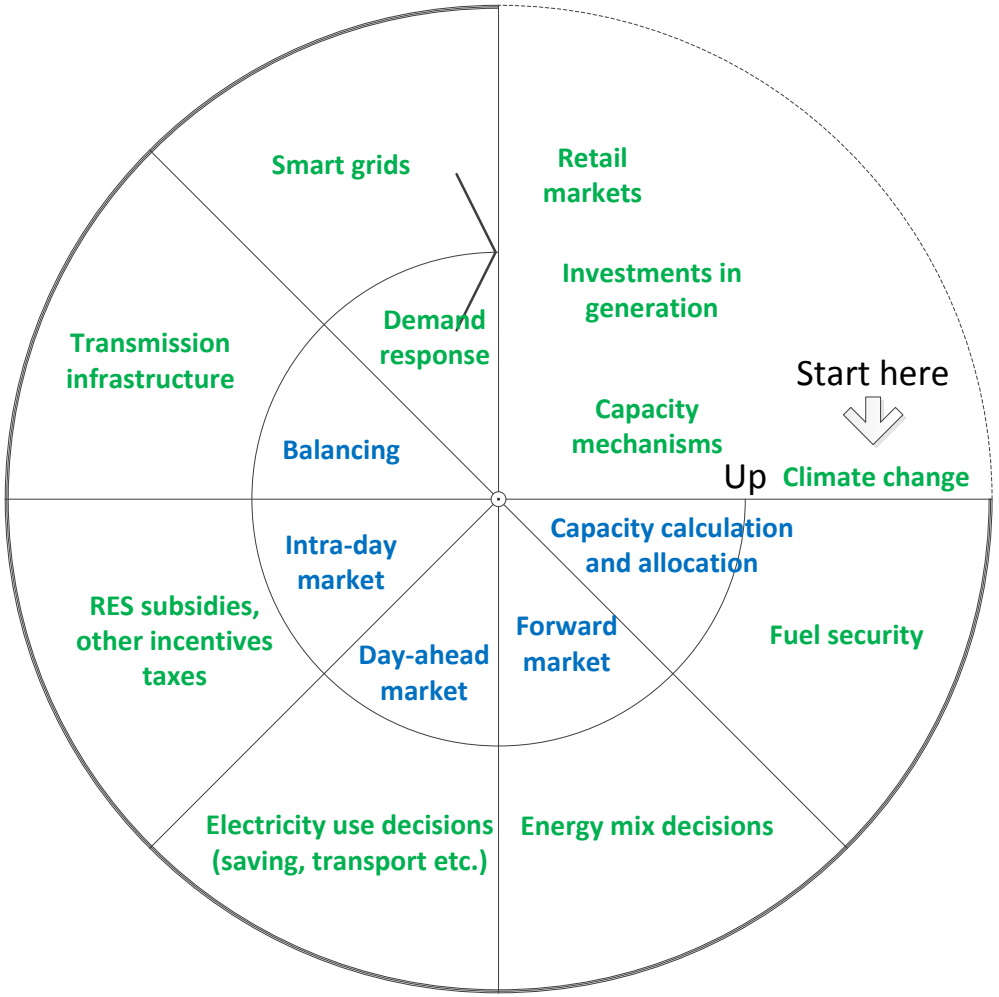
Article 194 – a Member State's right to determine the conditions for exploiting its energy resources, its choice between different energy sources and the general structure of its energy supply

The core EU policy objectives
2011-2014 Key Commission Communications

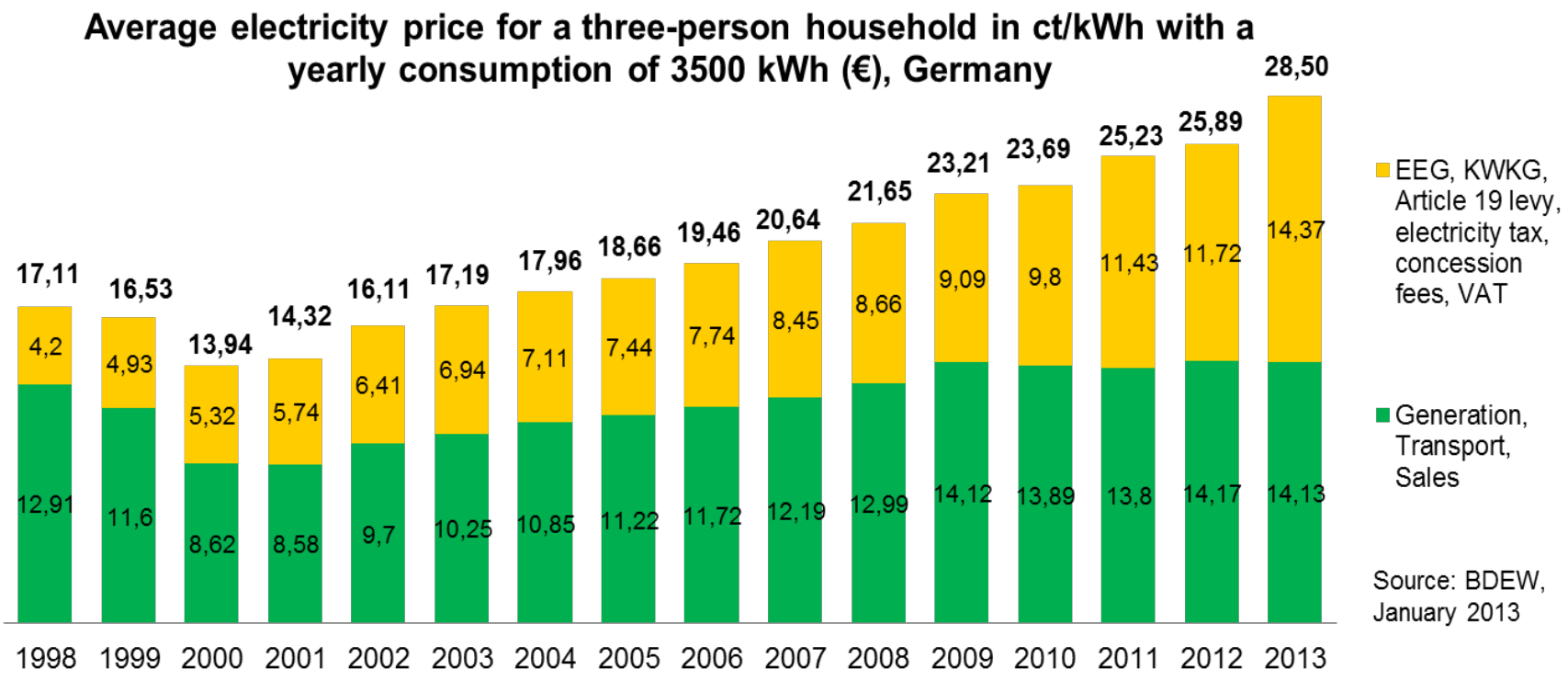
DG Energy DG Climate DG Competition

Markets and policies

The core EU policy objectives
DG Energy view on the evolution of climate and energy policy



What's driving price rises?



Investing?

Institutions and politics
Junker Commission work plan and policy teams for decarbonisation

The leaked early Commission draft on Energy Union includes some useful clarity about which Commissioners will team up to tackle different pieces of the decarbonisation/2030 drafting task during 2015-16.

- EU position on international climate process - **Arias Cañete, Georgieva, Mogherini, Mimica**
- ETS and carbon leakage - **Arias Cañete, Bienkowska**
- Effort-sharing - **Arias Cañete**
- Renewables - **Arias Cañete, Vella, Hogan, Bill, Moedas**
- Fuel economy/transport - **Arias Cañete, Bulc**
- Smart meters - **Arias Cañete, Oettinger**
- Energy efficiency and energy performance of buildings - **Arias Cañete**
- CCS - **Arias Cañete, Moedas**
- Biomass - **Arias Cañete, Moedas, Vella, Hogan, Bulc**
- Governance - **Junker, Sefcovic, Arias Cañete**
- IED/air quality - **Arias Cañete, Vella, Bienkowska, Hogan, Bulc, Moedas**
- Land use - **Arias Cañete, Hogan, Vella, Moedas**

Does the 2015-16 timeline implythat the 2030 draft legislative package would not be published until after Paris?

The road to a 2030 framework

It's not over until…

Step 1: 22 Jan 2014: Commission proposals on goals

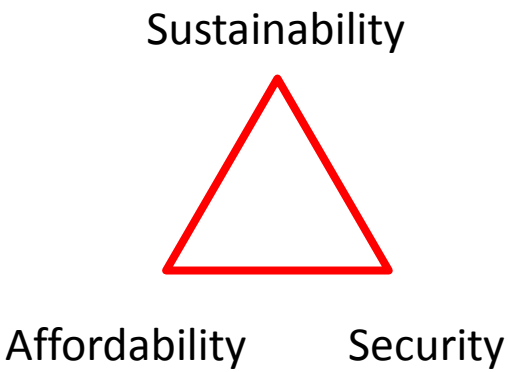
Step 2: October 2014: European Council political decision on goals

Step 3: 2015: Commission drafts legislation to implement goals, spread burdens
The devil is in the details
And new Commissioners might have new ideas

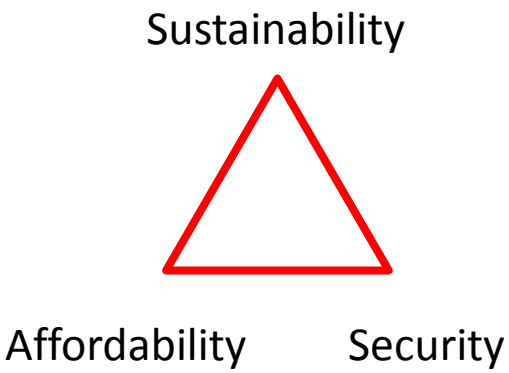
Step 4: 2016-18: Parliament and Council Co-Decision on legislation
The EP definitely has its own ideas
Elections in Member States can mean changes of government

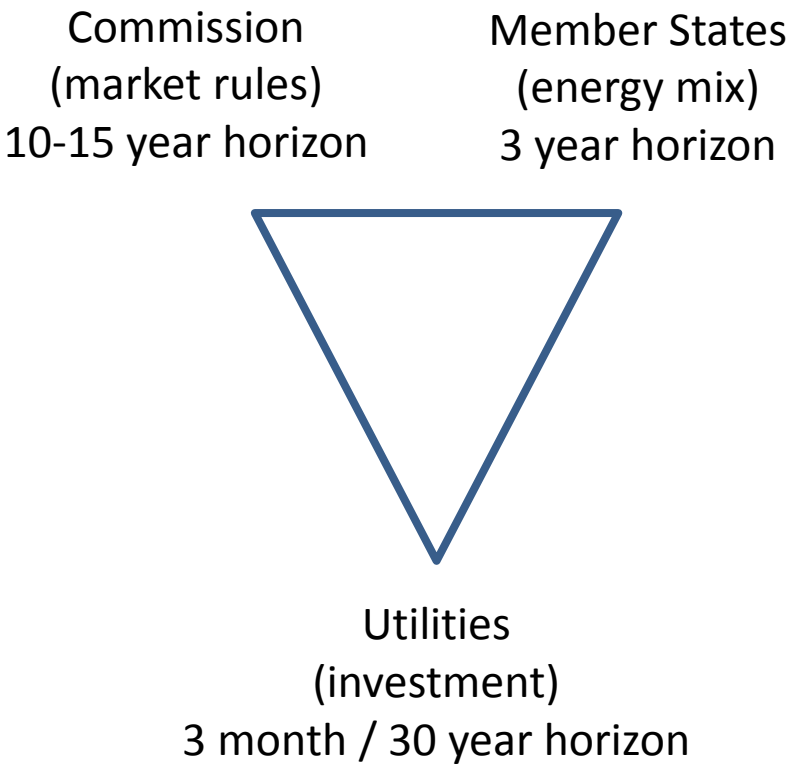
Step 5: 2018-19: National transposition where necessary
More details

EU energy policy decisions – a double “trilemma”



EU energy policy decisions – a double “trilemma”





Politics is rarely linear

In theory:

$$2 + 2 = 4$$

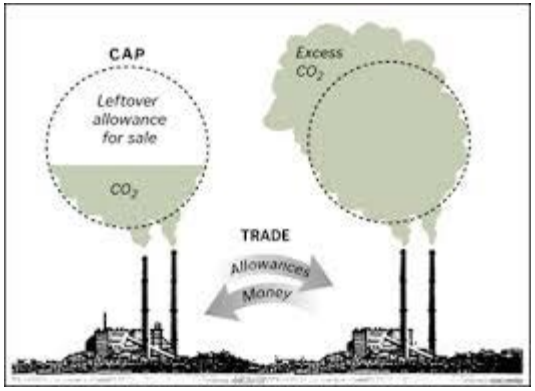
In reality:

$$1 + 5 - 3 + ½ = 3½$$

Back up slides

Carbon reduction signals

Carbon tax (x28 national, not EU)



Cap-and-trade market = ETS

Emissions limit values (portfolio/plant)

Global success of the ETS model

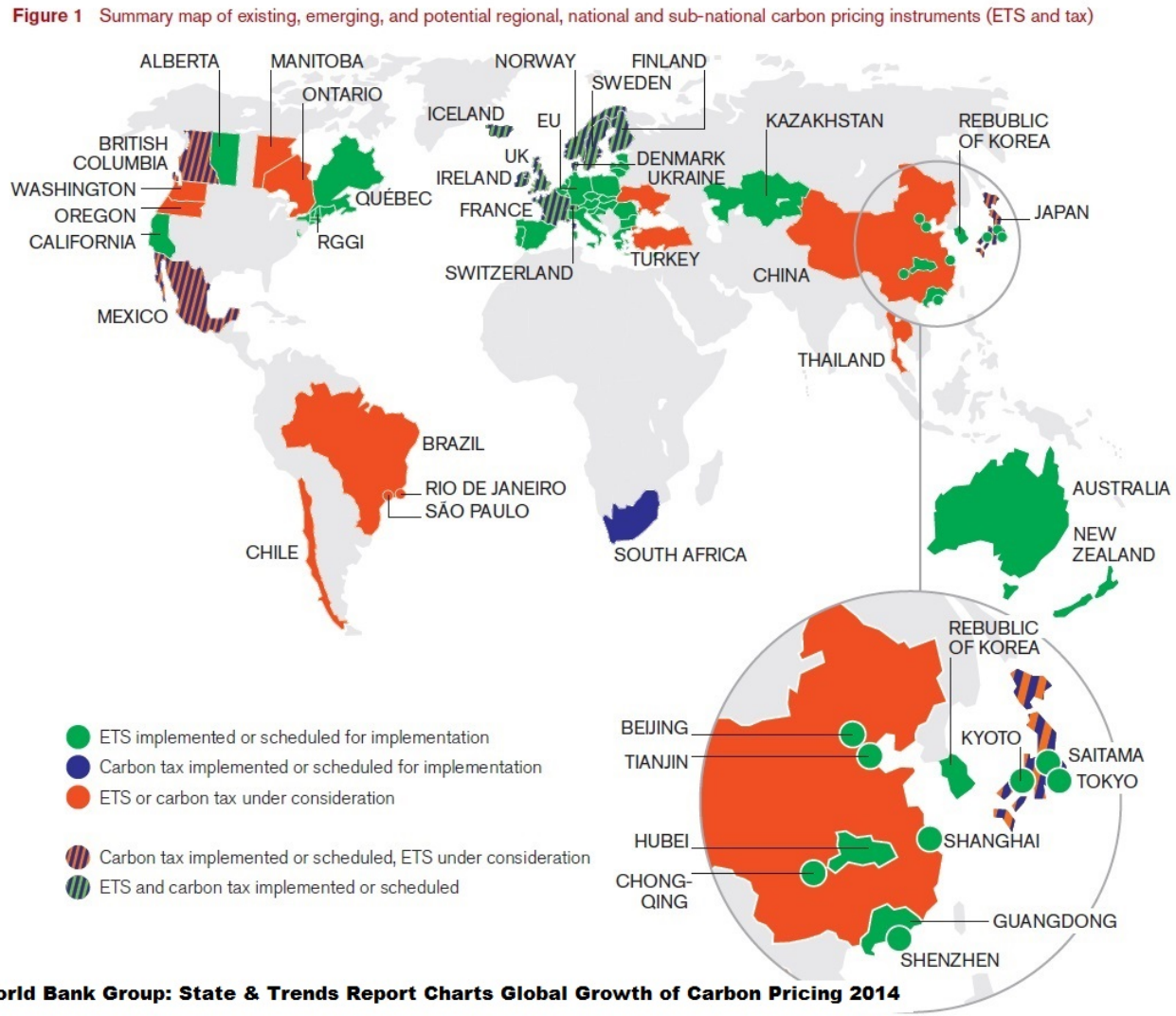


Figure 1 Summary map of existing, emerging, and potential regional, national and sub-national carbon pricing instruments (ETS and tax)

World Bank Group: State & Trends Report Charts Global Growth of Carbon Pricing 2014

ETS problems and reforms

3 different problems, 3 different solutions

Short-term:	Surplus of 2.6bn EUAs by 2020
	Solution: permanent set-aside
Medium-term:	Fixed supply and demand shocks result in price volatility
	Solution: market stability mechanism
Long-term:	The ETS cap is not coherent with the EU 2050 goal
	Solution: strengthen the linear factor

What ambition, when?
Early, economy-wide, high ambition

- Climate is a lower political priority than before the economic crisis, BUT there is still *some* priority and therefore *some* policy ambition
- The power sector is always the first (easy) target for climate policy
- Therefore we face a choice:

No ambition	Low ambition = few sectors (power) = stop/start policies	High ambition = whole-economy = stable policies
(Not a realistic option for the power sector)	Costs the power sector investment in low-carbon technologies and loss of market share from energy saving	Gains the power sector new market share through electrification of additional sectors

What ambition, when?

Power Choices Reloaded – high cost of a Lost Decade

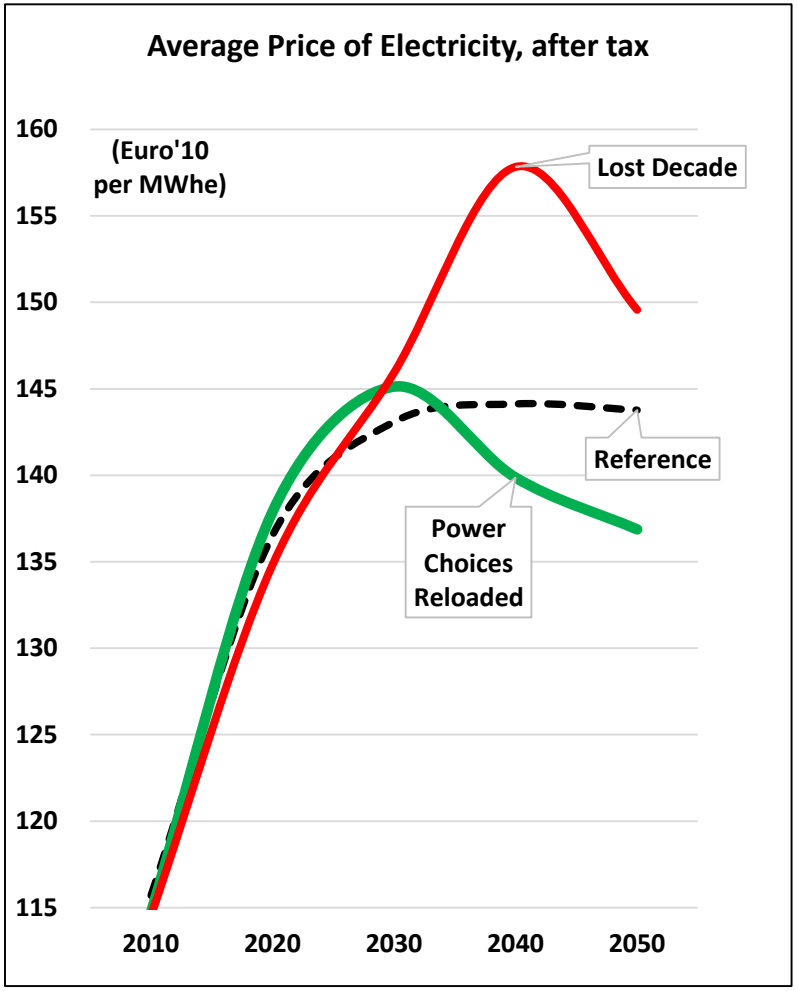
Power Choices Reloaded's *Lost Decade* modelling scenario assumes a complete lack of action in the decade 2020-2030, therefore the entire decarbonisation action has to occur in the last two decades to 2050

Infrastructure, power sector decarbonisation, mobility electrification and technology R&D, as well as energy efficiency in the demand side sectors will have to develop in a very short period of time post-2030

The changes required in the system from 2030 to obtain the necessary cumulative emissions reductions by 2050 result in this scenario being barely feasible in true life

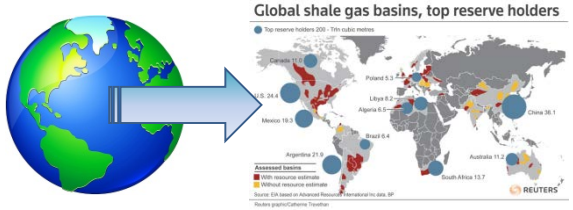
Key failures involved in the Lost Decade case

- **Weak carbon market until 2030**
- **Limited financing under uncertainty hampering investment**
- **Market coordination failures delaying infrastructure**
- **Non-completion of IEM leading to low cross-border energy trade**
- **Slower pace of technology progress: learning curves and build up of supply chains**
- **Delays to energy efficiency persisting up to 2030, especially on the demand-side and in electrification**



Competitiveness, energy and climate
What's at issue?

- **There is no such thing as a global level playing field on energy**
  - Europe and the US have different energy situations, so need different energy strategies



- **Competitiveness is a whole-economy issue**
  - Policies favouring/exempting one sector may have a negative impact on other sectors

- **Intra-European tax/price/policy differentials result in intra-European leakage**
  - Dutch and German steel compete in the same market but under different renewables, carbon and power prices

Market design for investment in decarbonised electricity