

# Energy policy-making – domestic and European challenges and opportunities

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New Thinking For Energy



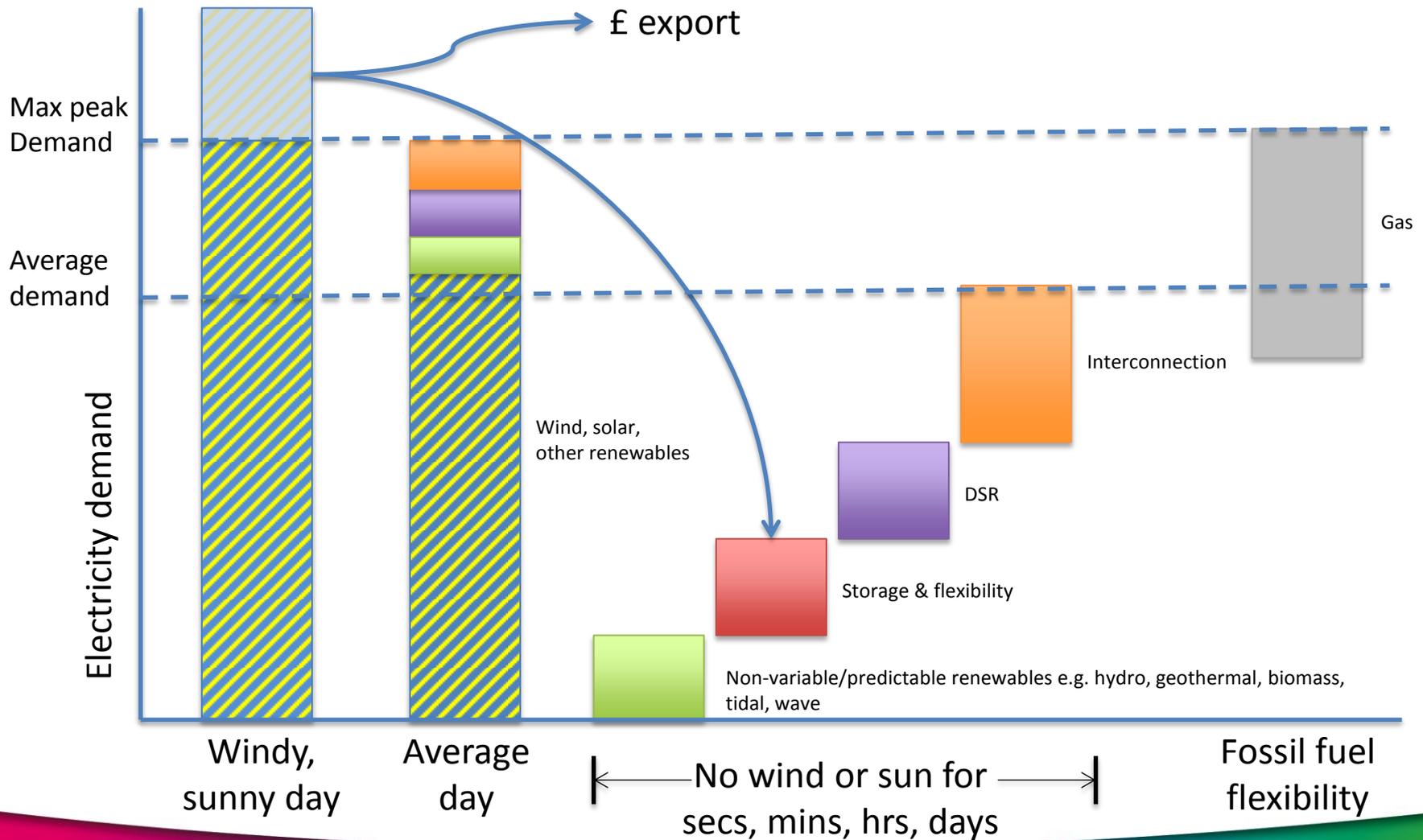
# Overview

- The energy world is undergoing rapid change:
  - Energy technologies (supply, demand and operation) are decentralising
  - New means, and requirements, of system operation and integration are occurring
  - Global investment patterns are moving to RE from FF
  - Social preferences and ownership
  - Public policy momentum around the world to ‘clean’ away from ‘dirty’
- There are considerable energy system challenges which are difficult to meet with current governance system BUT opportunities to capture as well
- There has been lots of change in some countries but needs to spread those changes to more countries, and at a quicker rate
- GB and EU has a governance system which is not fit for purpose and has to be altered to provide value for the ‘new’ ways of doing things
- If the governance changes (institutions and the sources of value within the system) then economics and costs of transformation change and opportunities are opened up

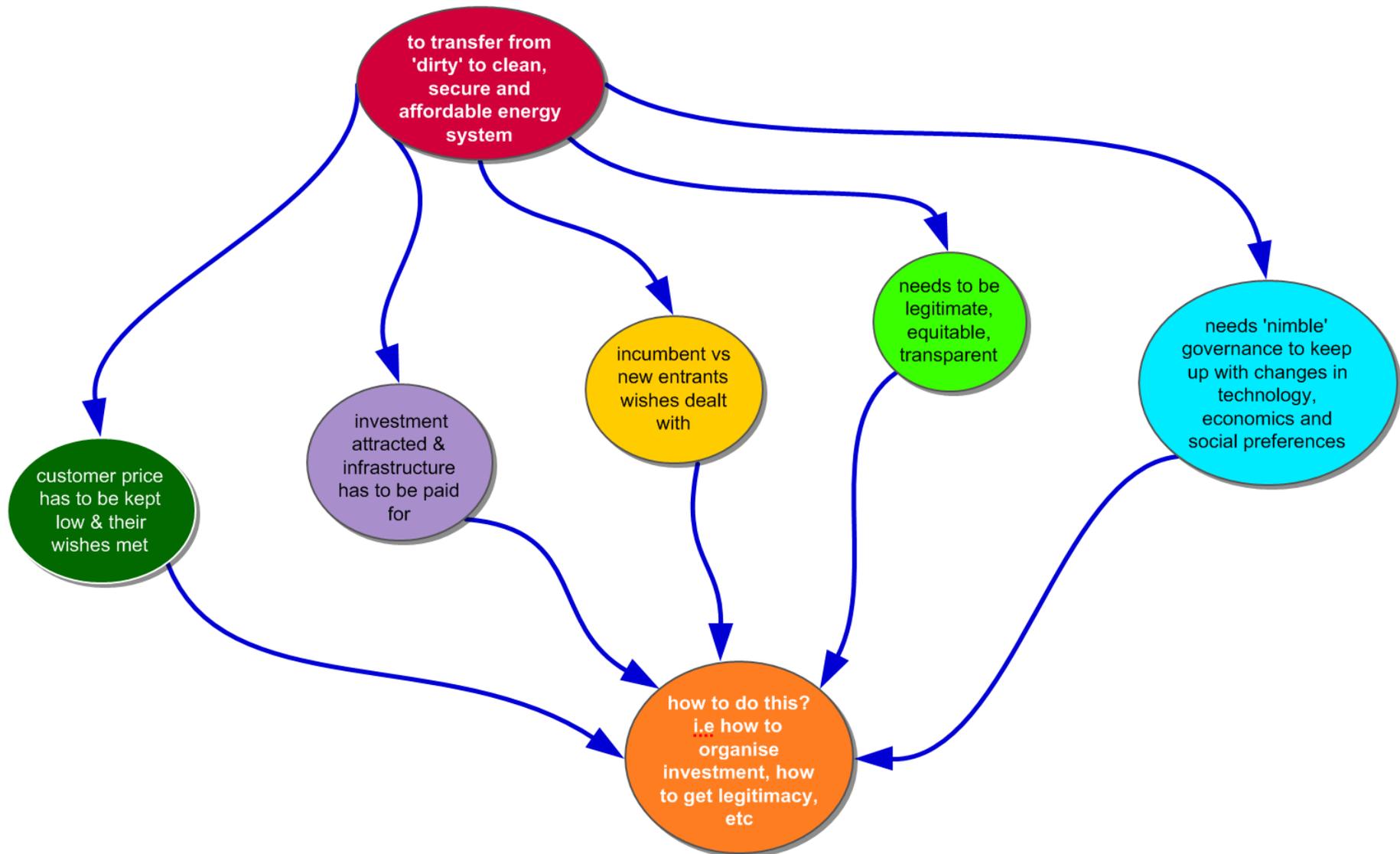
# What kind of energy system foundations do we want?

Secure				
Low-carbon			Affordable	
Better ways of operating				
Demand side flexibility (?18 GW)	Interconnection (?16 GW)	Storage	Cut peak demand	Link heat transport and electricity
<b>Energy efficiency:</b> <ul style="list-style-type: none"><li>• Cut total energy demand</li><li>• Buildings</li><li>• Industry and SMEs</li><li>• Appliances / Equipment</li></ul>			<b>Possible larger capacity due to:</b> <ul style="list-style-type: none"><li>• Electric vehicles</li><li>• Top-up water heating</li></ul>	

# Is a RE and EE system secure? YES



# What are the energy system challenges?



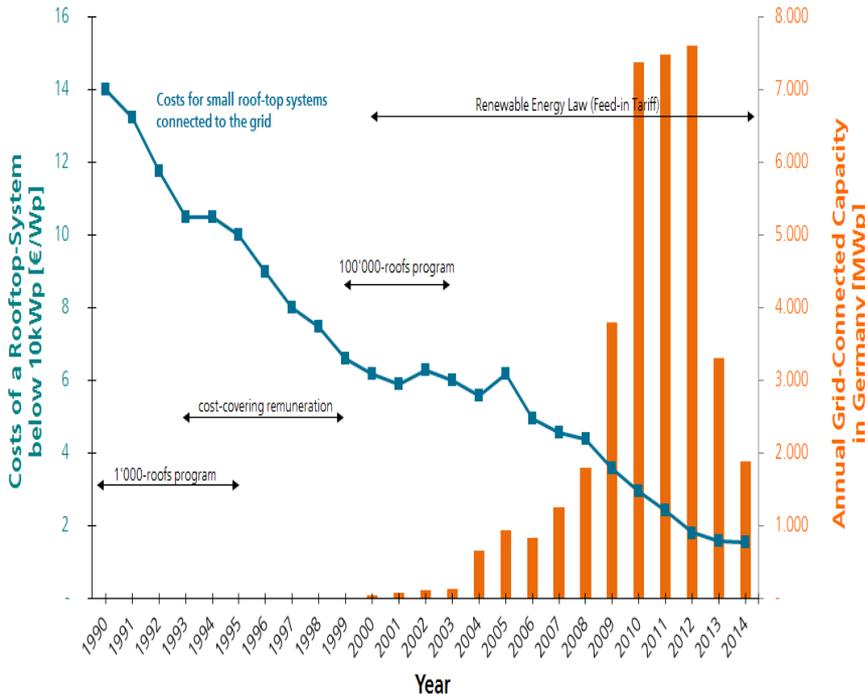
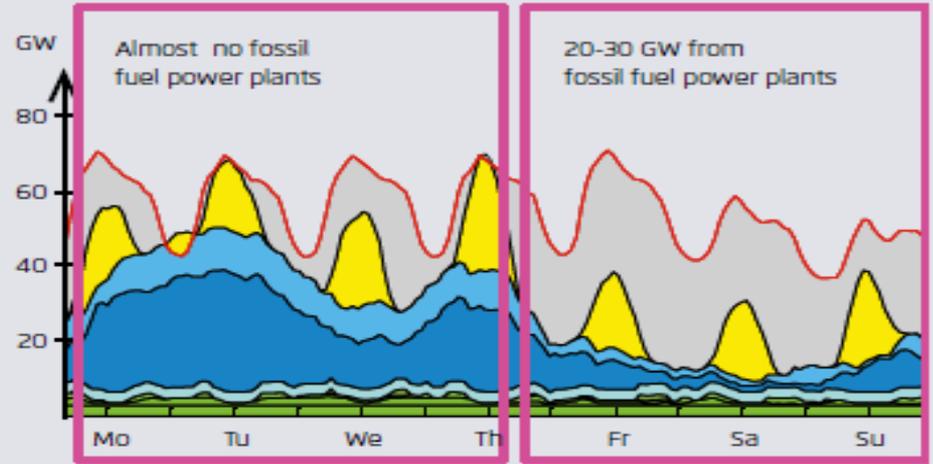
# Particular EU challenges

- The 2030 targets for renewables and energy efficiency reflect a lowest common denominator of political compromise and are unambitious
  - One central challenge is how to come up with ways to overcome the resistance of countries, like Poland, without giving them exemptions for everything
- Backlash against further expansion of renewable energy by several governments, partly on cost grounds.
  - Within the Commission, renewables don't have a strong champion.
  - DG Competition is bearing down with State Aid rules that remain partly poorly defined, especially in terms of exemptions, which is adding to uncertainty.
  - DG Klima is focused on the EU ETS, for limited value.
  - DG Energy is focusing on the Energy Union (about security) and about the New Market Design.
- Getting the New Market Design right is the other second central challenge
  - Getting value to enable a flexible, interconnected energy system is the key
- Nuclear remains about a GB- France-former eastern Europe axis with good access to the Commission, but muddies sensible strategy

Challenges to be met in most countries around the world & EU	Opportunities of Change to be Captured
<ul style="list-style-type: none"> <li>• To transfer from the current energy system to a decarbonised one               <ul style="list-style-type: none"> <li>◦ requires ‘new’ energy system which implies new roles (institutions, utilities, customers, providers, intermediaries, business models, etc), new governance and regulatory environment, new value propositions; speeding up</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• New technologies (supply, demand, ICT) enable a more efficient energy system through greater coordination: utilise infrastructure assets more fully; reduce total infrastructure needs; and reduce costs</li> </ul>
<ul style="list-style-type: none"> <li>• Infrastructure (including ICT) has to be upgraded, and paid for</li> </ul>	<ul style="list-style-type: none"> <li>• Ability to meet customer wishes and develop new business models to do so</li> </ul>
<ul style="list-style-type: none"> <li>• Need to keep prices as low as possible for customers</li> </ul>	<ul style="list-style-type: none"> <li>• New institutional ops to keep prices as low as possible for customers</li> </ul>
<ul style="list-style-type: none"> <li>• Have to keep up with change: decentralisation, rapidly changing technology costs, system economics and operation enabled by ICT, customer and civil society preferences, varying incumbent v new entrant wishes</li> </ul>	<ul style="list-style-type: none"> <li>• Ability to be more resilient to change – whether weather, technologies, customer preferences, policy requirements – and to be more flexible and nimble</li> </ul>
<ul style="list-style-type: none"> <li>• Altering where value currently is in system to where we need it to be to enable innovation</li> </ul>	
<ul style="list-style-type: none"> <li>• Attracting appropriate investment</li> </ul>	

# Germany is an example of change & where opportunities have been captured - but still only in a few countries

Demand for Fossil Fuel Power Plants in 2022: Example of a Week in August



EnBW

e-on

RWE

edp

edf

Enel

ENGIE

VATTENFALL

IBERDROLA

# Meeting sustainable, secure and affordable goals requires transformative governance

- There has (arguably) been very few transformative energy policies / governance since 1970's:
  - RE and CHP policies in Denmark in response to oil crises in 1970s
  - PURPA Act in CA in 1970's again in response to oil crises
  - FITs in Germany in 1990/1;
  - Nuclear phase out in Germany?
  - NEM and / or DSR in some US States?
- Leading to structural, dynamic change which better meets policy goals and society's preferences

# What characterises those transformative measures?

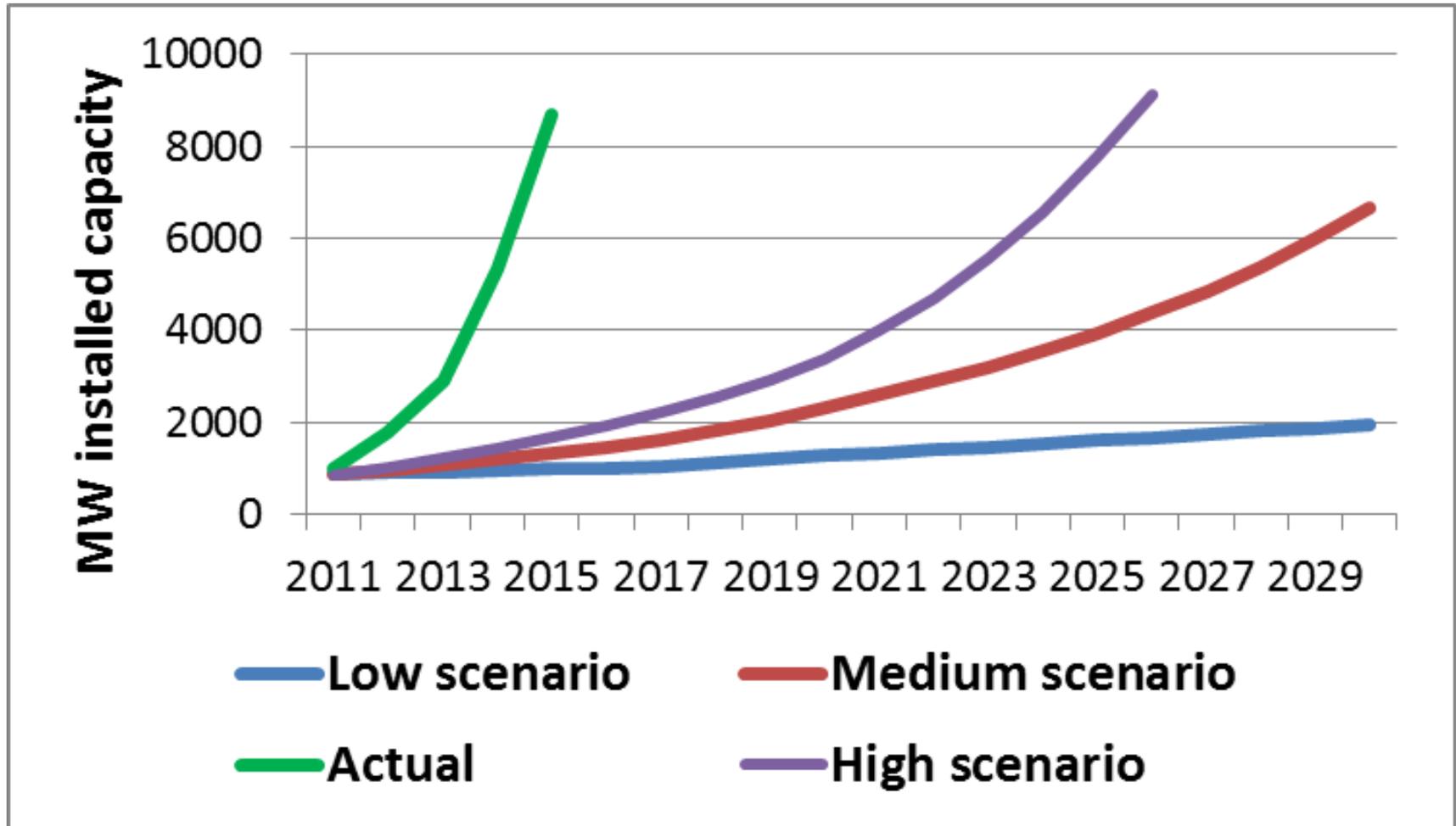
- The decision-makers understood the energy system challenges they were dealing with at the time.
- Then:
  - Knowingly dealt with the current challenges
  - Enabled more choice for customers (all types) / new entrants, and thereby gave them more influence
  - Overcoming inertia
  - Kept up with technological and social change and preferences
  - Assessed cost/benefits in ways beyond straight CBA
- **The Enabler: they provided the means to capture the new opportunities ie provided value or removed barriers**

# The key new 'value' enablers for decarbonised, affordable and secure energy systems

1. A fit-for-purpose governance framework
  - Deals with challenges, opens up opportunities, provides value where it should be, is flexible
  - Sets framework rather than piecemeal development
2. ICT as enabler of system operation and management
3. New regulatory basis – ie a move to performance based regulation rather than some form of rate of return which simply supports supply and bigger assets rather than efficiency.

# THANKYOU

# Solar and storage – glass half full or empty?



Source: Lockwood (2016): <http://projects.exeter.ac.uk/igov/new-thinking-solar-surprise-revisited/>