

Energy policy-making – domestic and European challenges and opportunities

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New Thinking For Energy



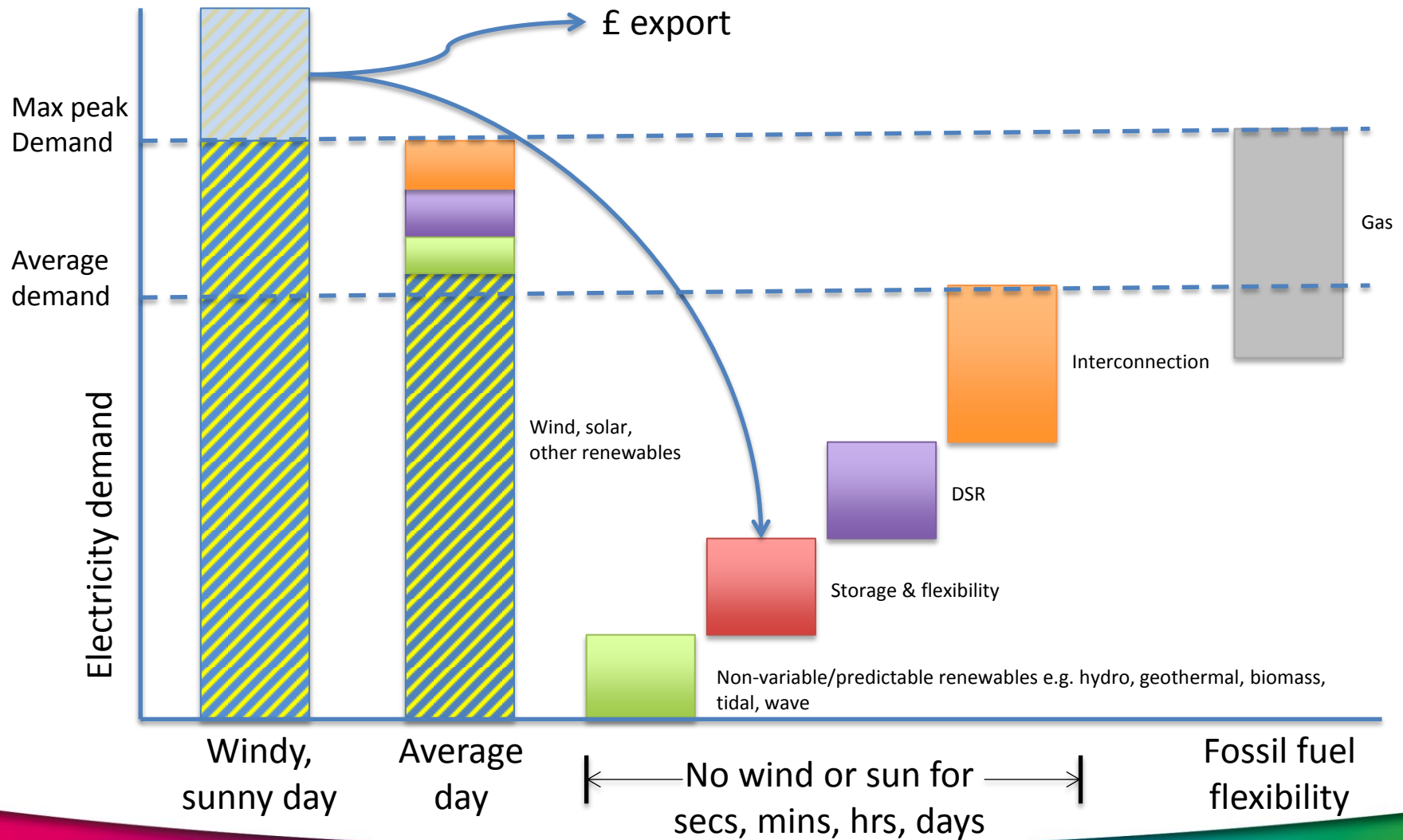
Overview

- 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

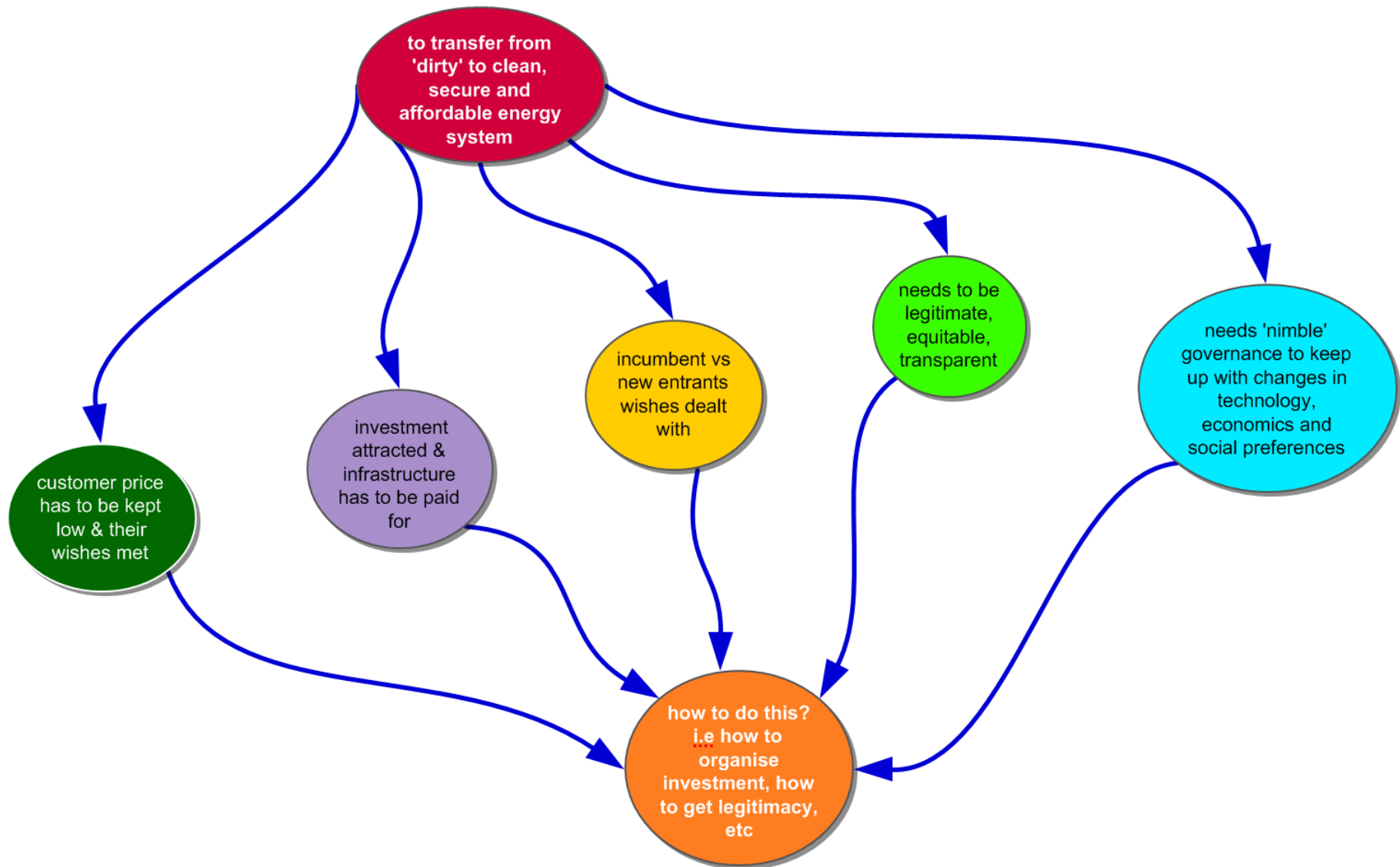
What kind of energy system foundations do we want?

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
Energy efficiency: <ul style="list-style-type: none">• Cut total energy demand• Buildings• Industry and SMEs• Appliances / Equipment			Possible larger capacity due to: <ul style="list-style-type: none">• Electric vehicles• Top-up water heating	

Is a RE and EE system secure? YES



What are the energy system challenges?



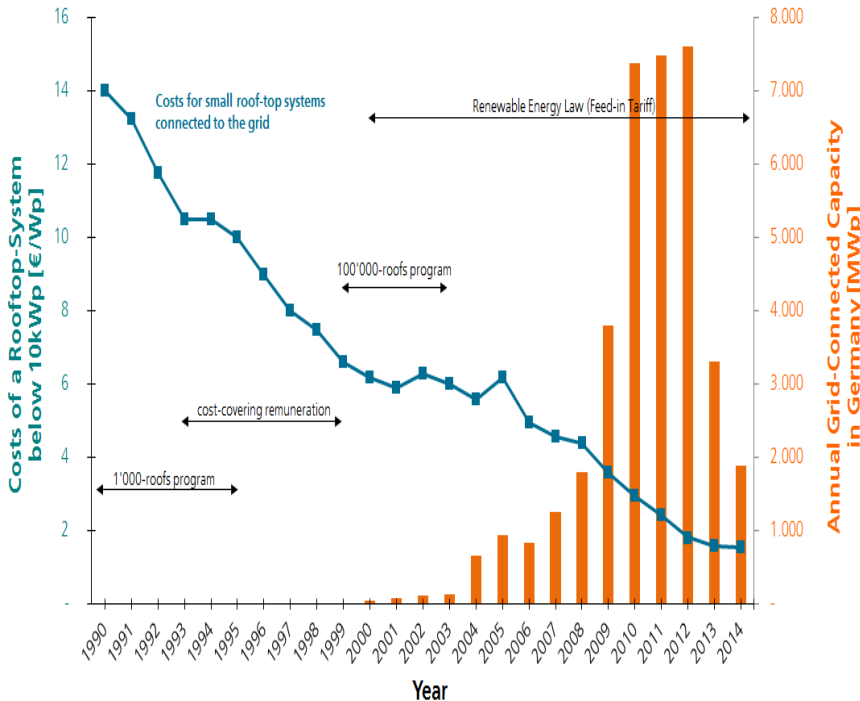
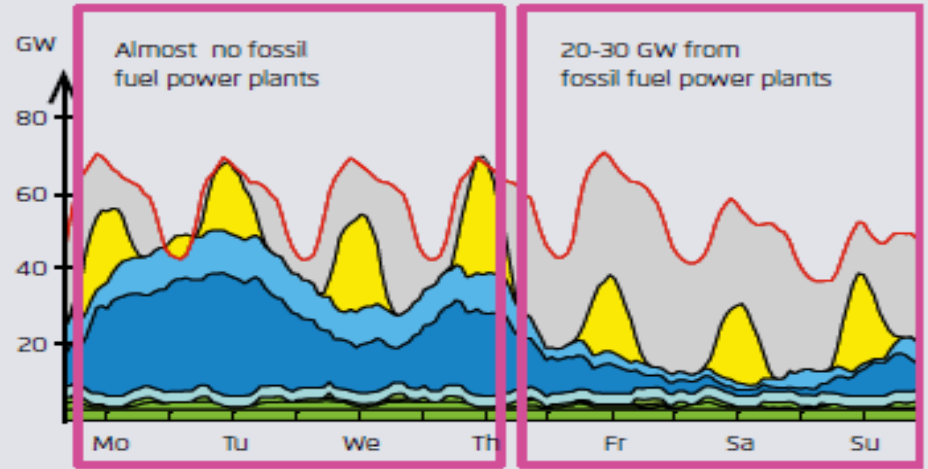
Particular EU challenges

- 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"> • To transfer from the current energy system to a decarbonised one <ul style="list-style-type: none"> ◦ 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 	<ul style="list-style-type: none"> • 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
<ul style="list-style-type: none"> • Infrastructure (including ICT) has to be upgraded, and paid for 	<ul style="list-style-type: none"> • Ability to meet customer wishes and develop new business models to do so
<ul style="list-style-type: none"> • Need to keep prices as low as possible for customers 	<ul style="list-style-type: none"> • New institutional ops to keep prices as low as possible for customers
<ul style="list-style-type: none"> • 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 	<ul style="list-style-type: none"> • Ability to be more resilient to change – whether weather, technologies, customer preferences, policy requirements – and to be more flexible and nimble
<ul style="list-style-type: none"> • Altering where value currently is in system to where we need it to be to enable innovation 	
<ul style="list-style-type: none"> • Attracting appropriate investment 	

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



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?

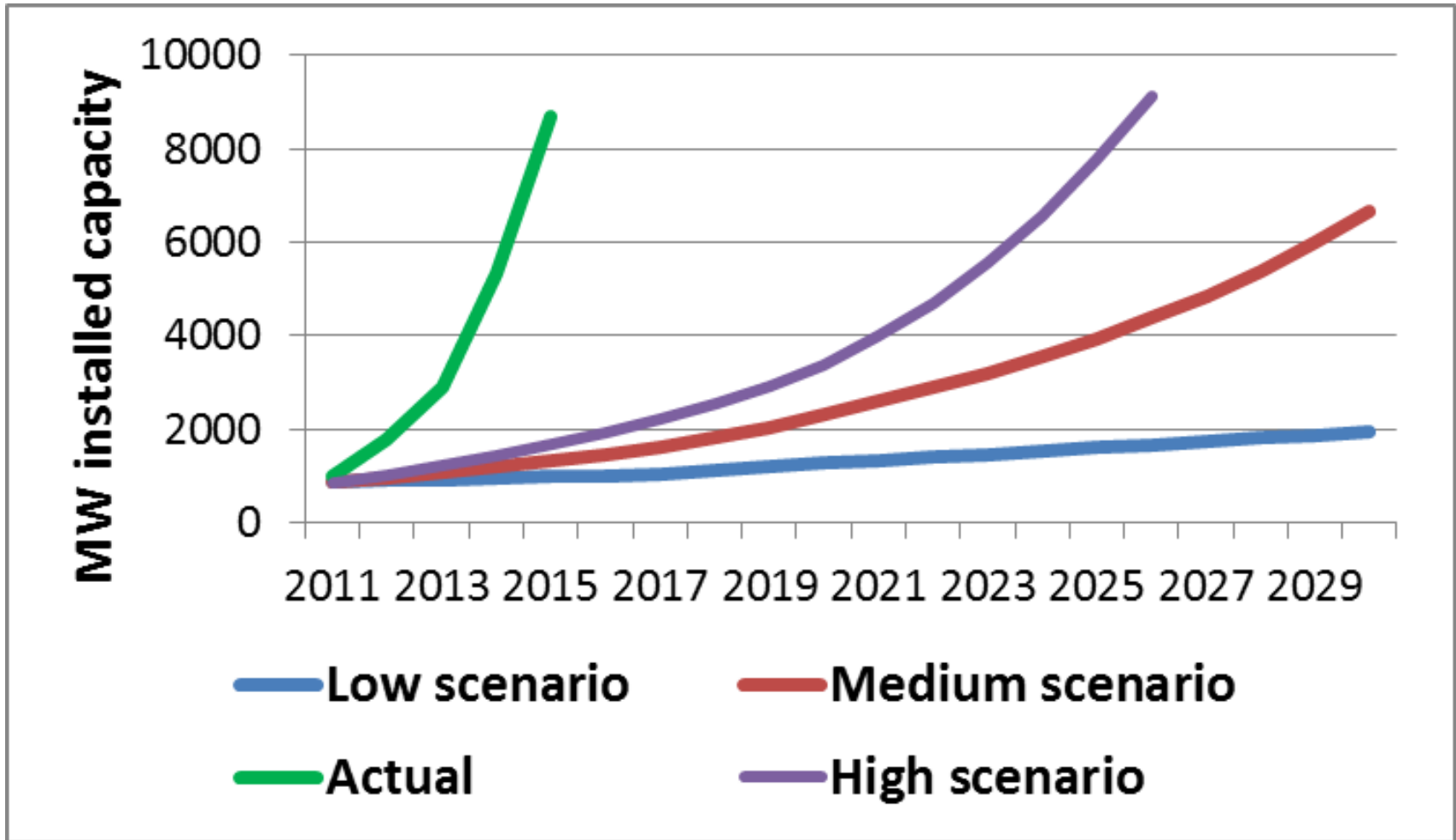
- The decision-makers understood the energy system challenges they were dealing with at the time.
- Then:
 - Knowingly dealt with the current challenges
 - Enabled more choice for customers (all types) / new entrants, and thereby gave them more influence
 - Overcoming inertia
 - Kept up with technological 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/>