

Summary of outputs

IGov1

Innovation and Governance for a sustainable, secure and affordable economy

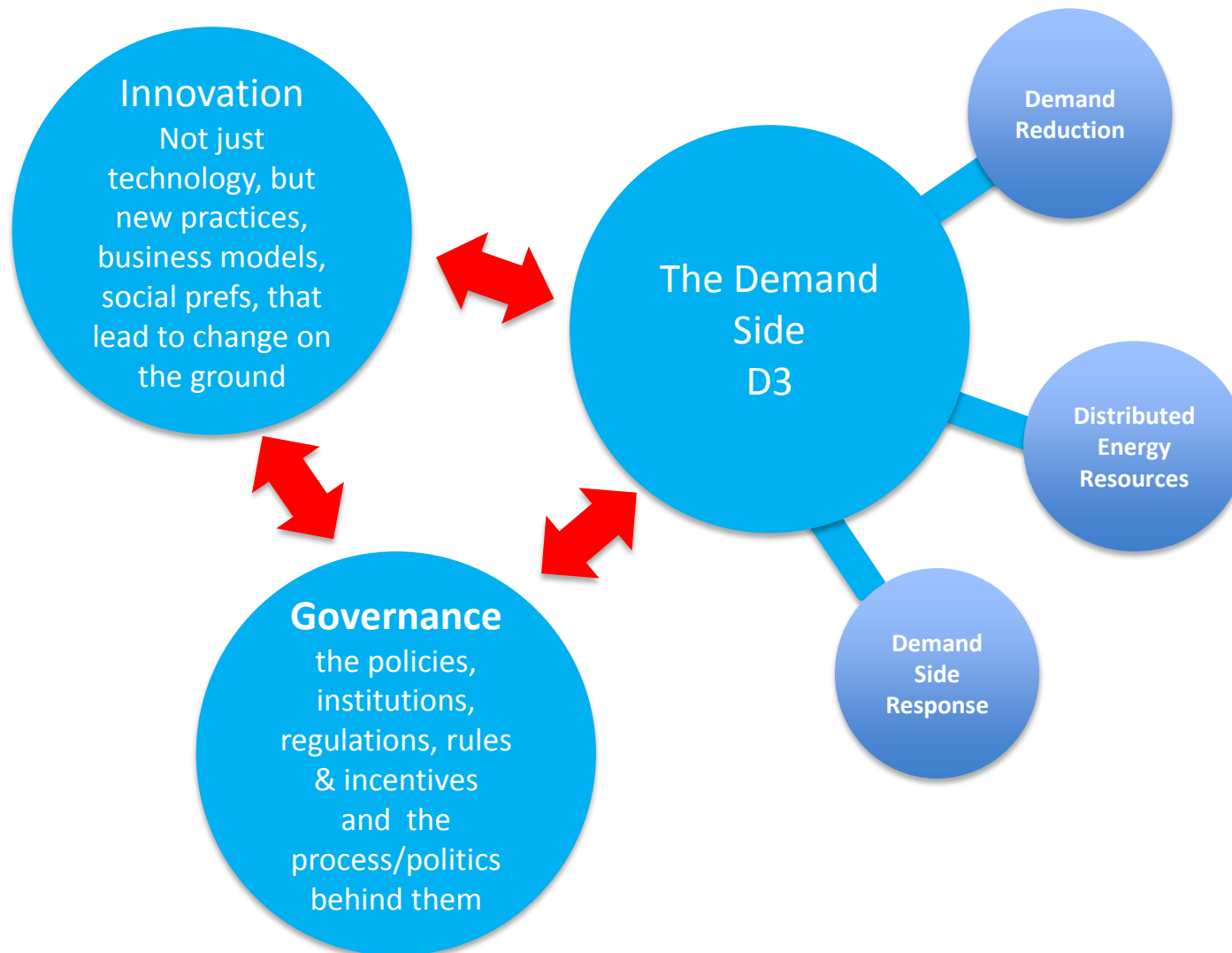
Oct 2012 – Dec 2016



New Thinking For Energy

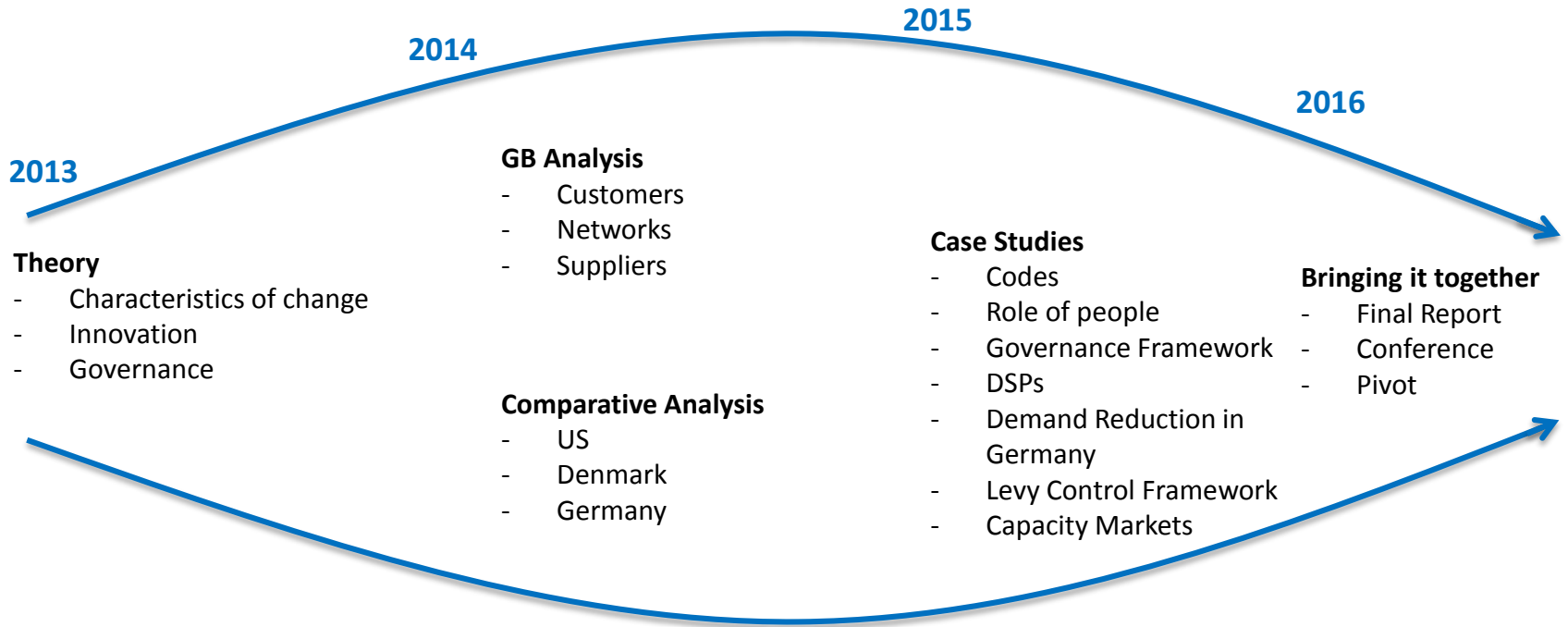


Definitions within IGov



Deliverables

Target	Delivered
<ul style="list-style-type: none"> At least 15 working papers 	<ul style="list-style-type: none"> 21 written
<ul style="list-style-type: none"> At least 12 journal articles 	<ul style="list-style-type: none"> 22 published and 3 under review PLUS <ul style="list-style-type: none"> 17 books/book chapters 21 conference papers
<ul style="list-style-type: none"> At least 5 events to engage with stakeholder groups 	<ul style="list-style-type: none"> 5 held (theory; PEG; Codes; DSPs; Framework)
<ul style="list-style-type: none"> An end of research conference 	<ul style="list-style-type: none"> 1 held in December 2016
<ul style="list-style-type: none"> On-going dissemination through dedicated research website 	<ul style="list-style-type: none"> 34 external blogs; 101 IGov blogs Wide range of media (articles & quotes in national press, sector newsletters/websites) Twitter presence and growth
<ul style="list-style-type: none"> Meetings with decision-makers and other actors 	<ul style="list-style-type: none"> 74 meetings across academia; industry; policy & politics; NGOs, others Presented/Panels at 70 conferences Submitted evidence to 18 inquiries/consultations



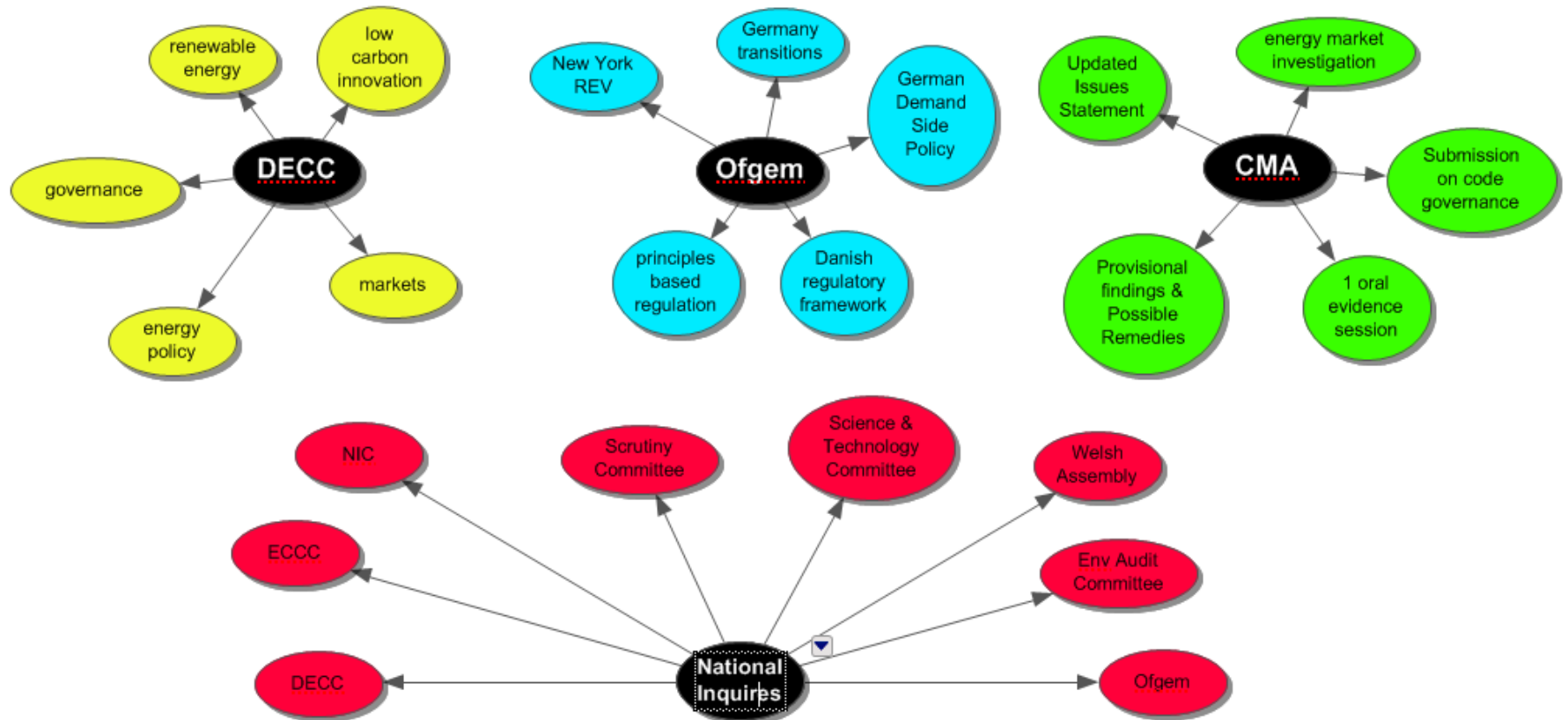
Outputs	➤ 1 workshop	➤ 1 conference	➤ 3 workshops	➤ 1 conference
	➤ 5 working papers	➤ 7 working papers	➤ 6 working papers	➤ 3 working paper
	➤ 5 journal articles	➤ 8 journal articles	➤ 3 journal articles	➤ 6 journal articles
Wider Impact	➤ 1 submissions	➤ 7 submissions	➤ 5 submissions	➤ 5 submissions
	➤ 2 media	➤ 4 media	➤ 17 media	➤ 8 media
	➤ 4 Events/Confs.	➤ 15 Events/Confs	➤ 19 Events/Confs	➤ 19 Events/Confs
	➤ 23 meetings	➤ 17 meetings	➤ 14 meetings	➤ 21 meetings

Website

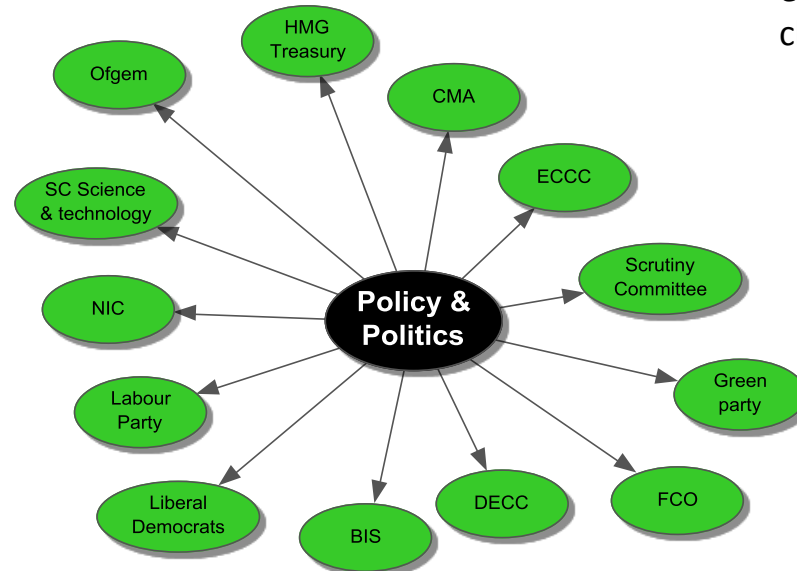
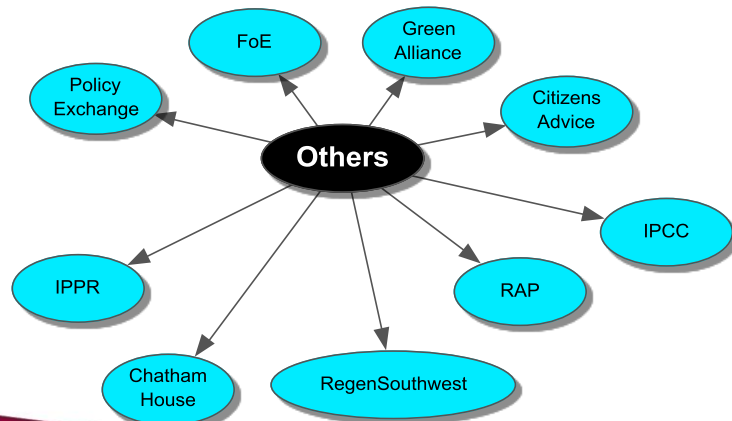
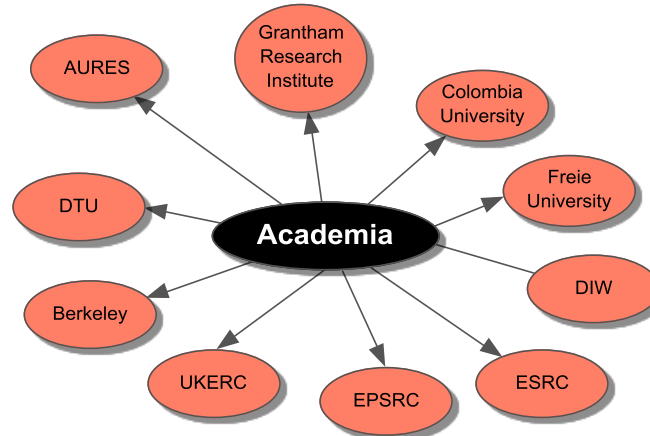
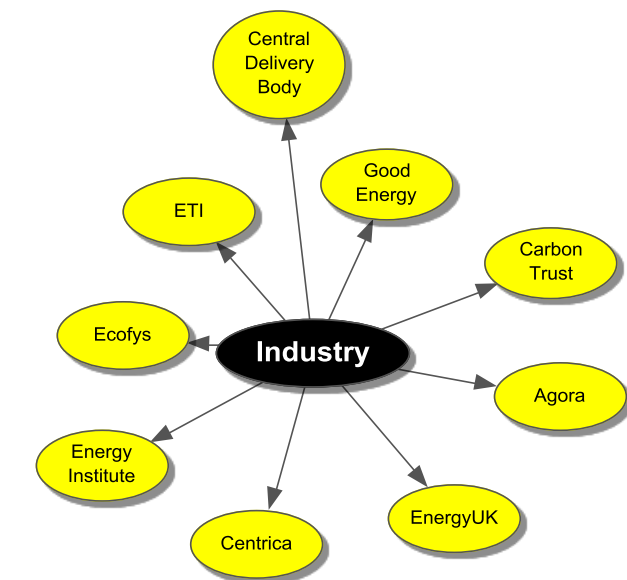
- 135 blogs
- 96 presentations
- 52 publications
- 18 working papers
- 17,000+ users and over 32,000+ meaningful sessions



Sample of Policy Meetings



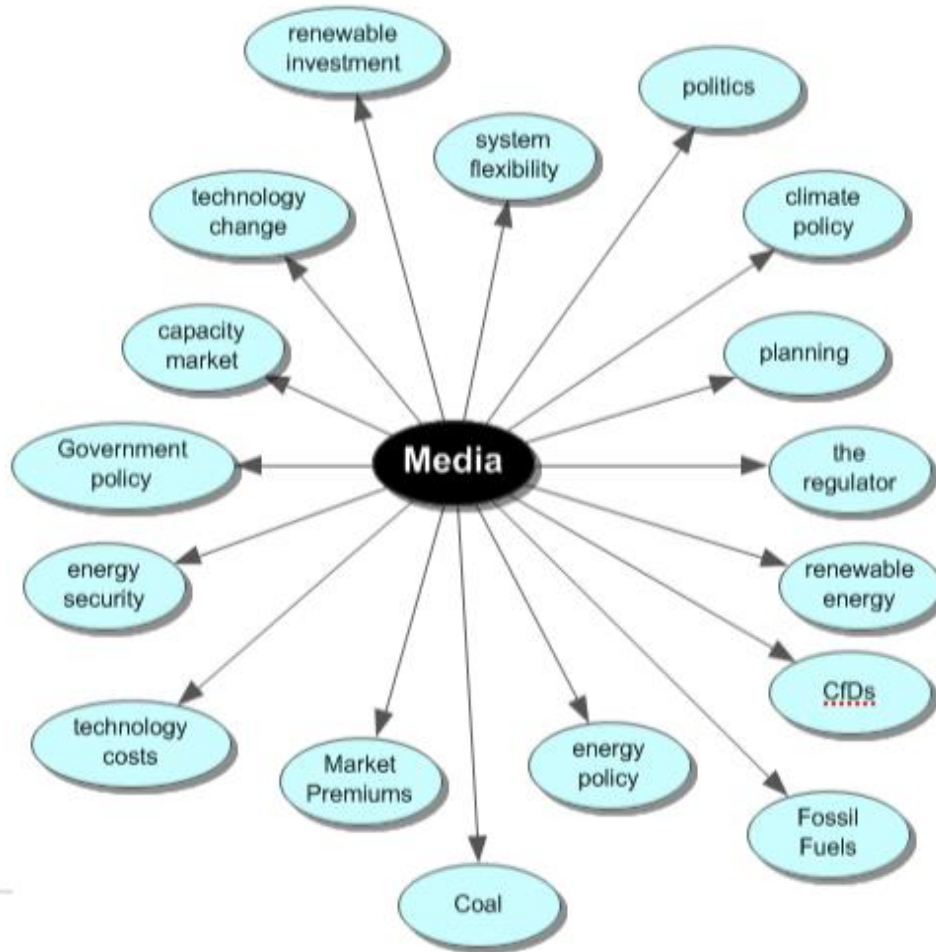
Sample of wider Meetings/Advice



Advised on:

- Energy System Transformation
- Renewable Energy
- Institutional Governance Change
- Politics and Policy
- International Comparisons
- Other groups on energy and climate change strategies

Sample of Media areas



- **International Media:** BBC World Service; CTV News Canada.
- **National & Local Media:** Daily Telegraph; The Guardian; The Independent; The Daily Mail; The Mirror; BBC Today Programme; BBC Local Radio and Local News; Western Morning News; Statesman Century
- **Industry News:** Cornwall Energy Spectrum; Windpower Monthly; Solar Power Portal; Business Green; Edie; Energy & environmental Management; Energy Voice; New Power
- **Wider News;** Carbon Brief; Energy Desk; ECIU; No to Nuclear Power; The Shift ; Simply switch; Blue & Green; Click Green; The House

Key Findings

Supply focused system

- The system and governance is still supply focused and values a centralised approach, rather than providing enough value for a flexible, demand-side focussed, customer oriented system
- Security of supply remains narrowly focussed on generation supply capacity rather than wider system capabilities

People passive

- Regressive distribution of costs on vulnerable and non-switchers (SVTs) contributes to consumer focus on price/alienation - opposite of engagement and providing clear information/incentives to participate on demand side.
- People should not be thought of as simple consumers as this reinforces passivity, instead they should be looked at in terms of how active or not they are able/willing to become
- There is a growing need for greater public dialogue to both build understanding and seek meaningful consent

Need to accelerate local new markets formation

- Piecemeal approach and lack of strategy for distributed energy (and wider D3) in government; plus uncoordinated between different areas of Government
- Change is happening quickly but not governance, policy, regulation - actors do not have clear handle on the change or those that are driving it
- Need to reveal value within the system for new entrants and services – and the question is HOW to do this and we have chosen the DSP model
- We need accessible, free and transparent data, with appropriate customer protection

Key Findings

System favours incumbents over new actors

- Barriers to entry and expansion, e.g. codes, collateral for progressive new market players exist so they are emerging but slowly and it can be difficult to make a profit
- Incumbent players still retain disproportionate influence on policy development and within system change to achieve policy aims and not enough political/policy resource (delegation)
- Lack of joined up, strategic thinking in existing institutions

Role of capacity and ideas in policy making process

- There is insufficient energy specific knowledge capacity in Government policy making (which can lead to an over reliance on incumbents for knowledge and data)
- Ofgem struggles with the innovation processes e.g. even for core functions like regulated networks

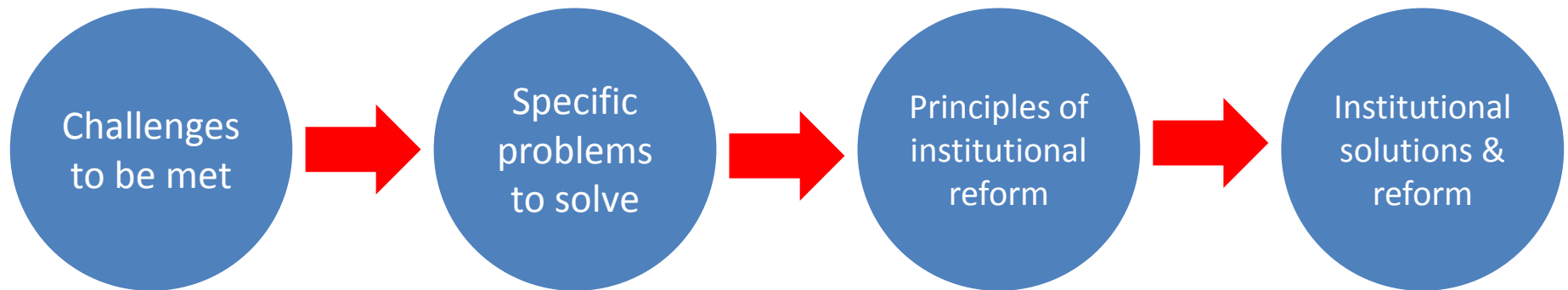
Need to rethink the overarching governance framework

- Electoral system contributes to confrontational politics that makes developing stable societal consensus for change difficult
- We need a legitimate long-term framework from the top down, optimisation from the bottom up and facilitation from the middle out (across elec, heat, transport)
- A lot of responsibility for change has been delegated to Ofgem which have to make trade-offs that should sit with Government

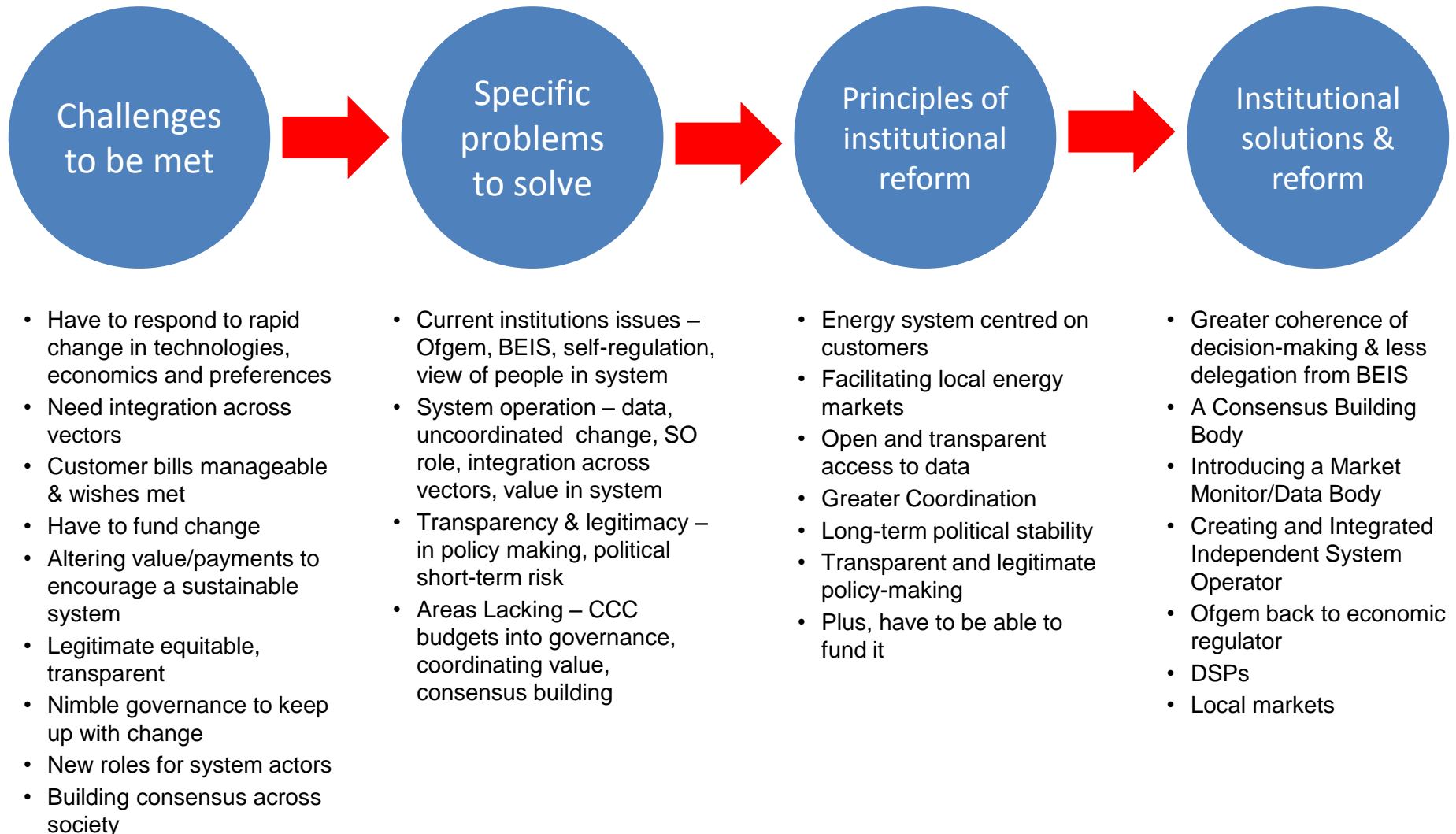
Gulf Between Conventional and 'New' Energy System

- Lack of value within conventional energy system means that innovation / new ways of doing things occurs despite system rather than because of it
- Limited overlap between those involved in conventional or 'new' energy system means that there is a limited understanding of what actually is happening which is different in many areas of energy system

IGov approach to governance change



Summary of findings



Summary of main outputs



New Thinking For Energy



Phase 1 – Theory (main outputs)

Workshop

- Theorising Governance Change for a Sustainable Economy

Journal Articles

- Historical institutionalism and the politics of sustainable energy transitions: A research agenda (*accepted EPC*)
- Governing for sustainable energy innovations: politics, variety and contestation , *Energy Research & Social Science*, Vol 12, pp: 96–105
- Energy Depoliticisation in the UK: Destroying Political Capacity, *British Journal for Politics and International Relations* 18:1, 107-124.
- Measuring and Explaining Policy Paradigm Change: the Case of UK Energy Policy, *Policy & Politics*, 42:4, 513-530
- Politicising UK Energy: What Speaking Energy Security Can Do', *Policy & Politics* 42:2
- The political sustainability of climate policy: The case of the UK Climate Change Act. *Global Environmental Change*

Working Papers

- Understanding the Politics of Low Carbon Transition (Jan 13)
- The Political Sustainability of the 2008 Climate Change Act (Feb 13)
- Politicizing UK Energy: What Speaking Energy Security Can Do (Jun 13)
- Theorising governance and innovation in sustainable energy transitions (Jul 13)
- Governance, Innovation and the Transition to a Sustainable Energy System: Perspectives from Economic Theory (Jul 13)
- Change and Inertia in the UK Energy System (Mar 14)
- The political dynamics of green transformations (Apr 14)
- Depoliticisation, Institutions and Political Capacity (Apr 14)

Phase 2 (main outputs)

Workshops

- Progressive Energy Governance conference
- Codes and Licences Workshop
- DSP roundtable
- IGov Framework roundtable

Journal Articles

- Creating protective space for innovation in electricity distribution networks in Great Britain: The politics of institutional change' Environmental Innovation and Societal Transitions
- Technology Scale and Supply Chains in a Secure, Affordable and Low Carbon Energy Transition. Applied Energy
- Momentum is increasing towards a flexible electricity system based on renewables. Nature Energy, 1st Feb ARTICLE NUMBER: 15030 | DOI: 10.1038/NENERGY.2015.30
- Designing energy policy under uncertainty. Nature Climate Change vol. 5, 517-518
- The Comparative Political Economy of Energy: Sustainable Transitions in Germany and Britain

Working Papers

- Demand and Decarbonisation in 2050: Themes from Scenarios (Feb 14)
- Energy networks and distributed energy resources in Great Britain (Oct 14)
- Mapping Policies for Improved Efficiency & Reductions in Final Demand (Feb 15)
- Public Value Energy Governance (Mar 15)
- Energy Governance, Suppliers and Demand Side Management (May 15)
- The Danish system of electricity policy-making and regulation (Jun 15)
- The Danish system of electricity policy-making and regulation (Jun 15)
- Governing for Demand Management Innovations in Germany: Politics, Policy and Practice
- Innovation and energy industry codes in Great Britain'
- New York Rev – Working Paper for Colombia University (2016)

Phase 3 (main outputs)

Workshops

- Final IGov Conference: Energy Governance – new ideas, new institutions, new people

Journal Articles

- Historical institutionalism and the politics of sustainable energy transitions: A research agenda
- Momentum is increasing towards a flexible electricity system based on renewables
- The UK's Levy Control Framework for renewable electricity support
- Governing for sustainable energy system change: Politics, contexts and contingency
- Energy Depoliticisation in the UK: Destroying Political Capacity,
- Designing energy policy under uncertainty
- Creating protective space for innovation in electricity distribution networks in Great Britain: The politics of institutional change.

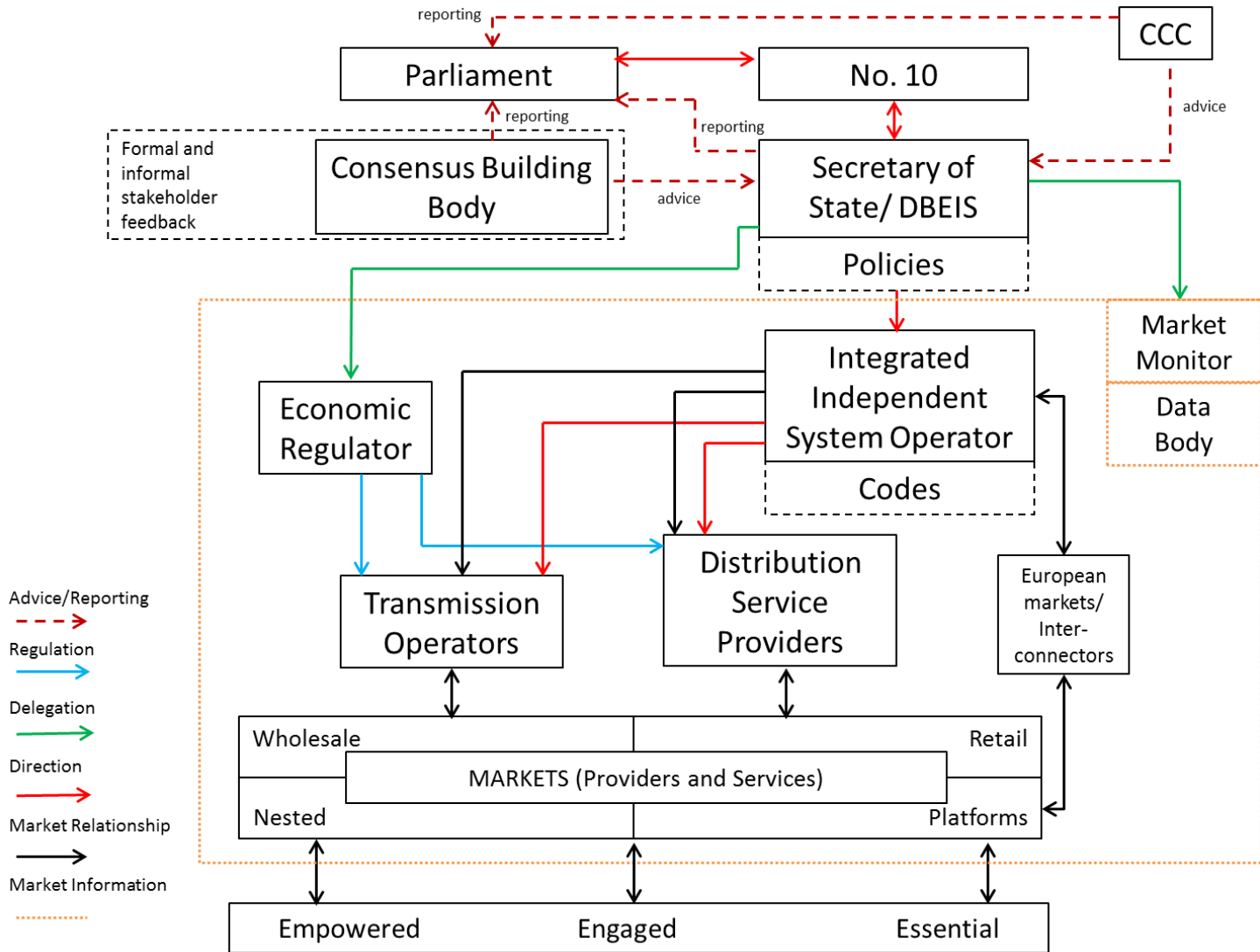
Other Papers

- GB Energy Governance for Innovation, Sustainability and Affordability: An institutional framework
- People, Demand and Governance in Future Energy Systems
- Governing for Demand Management Innovations in Germany: Politics, Policy and Practice
- The governance of retail energy market services in the UK: a framework for the future' (with Nick Eyre), Working Paper, UK Energy Research Centre
- New York Rev – Working Paper for Colombia University
- Codes Governance and Reform Discussion Paper

Case Studies

- The governance of energy industry codes in Great Britain
- Rethinking the Role of People with the Energy System
- Fit-for-Purpose GB Energy Governance
- Distribution Service Providers - a transformative energy system institution?
- Governing for Demand Side Innovations: the Untold Story of Germany's Energiewende
- The UK's Levy Control Framework
- The Capacity Market

Phase 3: Fit-for-purpose Institutional Framework



Key Findings



New Thinking For Energy

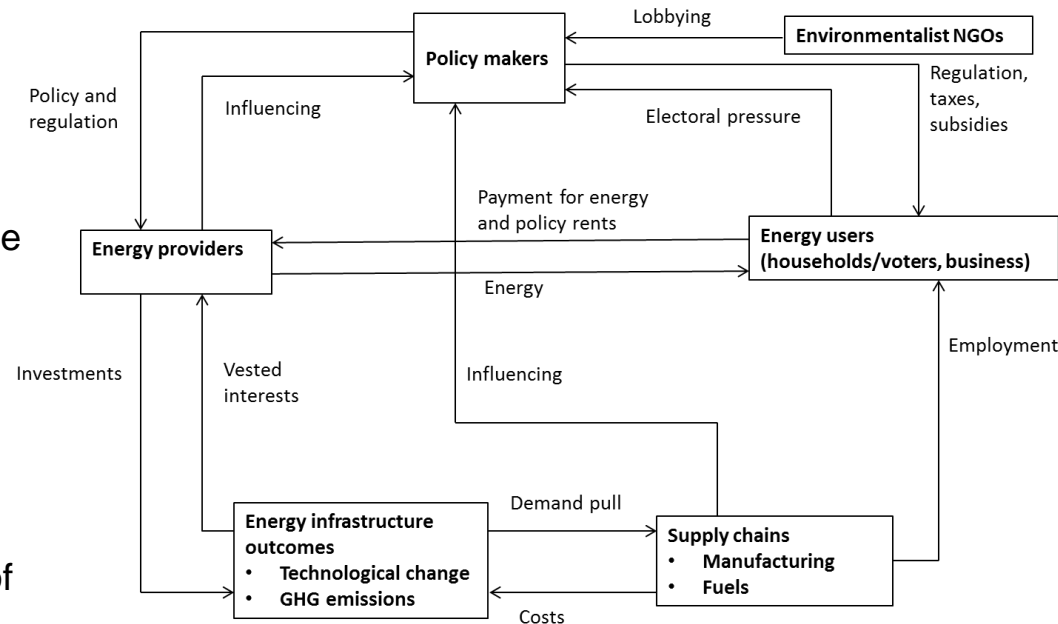


Phase 1: Theory (Key findings)

- ‘Governing for sustainable energy system change: Politics, contexts and contingency’, Energy Research & Social Science 12 (2016) 96-105 = New framework:
 - Explains variety in the **nature of energy transitions**
 - Places sustainable energy governance within domestic political and energy contexts to reveal **the contingent nature of energy governance**
 - Is **specific about energy system actor groups**, their interests and ideas, and how they influence governance
 - **Links politics and governance with practices and outcomes** in energy systems

Phase 1: Theory (key findings)

- 'Historical institutionalism and the politics of sustainable energy transitions: a research agenda' *Environment and Planning C: Government and Policy*, in press.
- HI as useful for analysing the governance of energy systems, their openness or resistance to innovation, and the politics that shapes that governance
- Recognises key actors and relationships in the energy system (see figure)



- Two parts:
 1. Understanding diversity in energy transition outcomes in terms of the effects of different institutional arrangements
 - Role of political and electoral institutions in aggregating voter interests and values
 - The importance of delegation and regulatory inertia/activism
 - Different routes to credible commitment to energy transitions, in different political systems
 - Role of institutions in shaping the power and interests of incumbents, and openness of policy to capture
 2. Understanding of transitions in terms of institutional development and change
 - Importance of positive feedback effects as a source of institutional stability ('lock-in'), but also as making change politically sustainable
 - Importance of unanticipated consequences in institutional design
 - Common pattern of institutional 'layering' in energy systems, leading to hybrid policy regimes

Theorising change - Key findings

- Introduced frameworks for analysing sustainable energy system innovations that:
 - Place governance in a central position
 - Take variety and domestic contingency seriously: explains how domestic political institutions and energy infrastructures influence energy governance and transitions
 - Consider politics, policy and practice change to be inter-linked
- In relation to the research questions, our theoretical frameworks suggest:
 - Incentives (both commercial and political) are shaped by institutions; Institutions in turn embody previous important ideas (especially, in GB, about markets)
 - Institutions may lead to feedback effects that lock-in the power of dominant actors
 - Institutions can be challenged by new ideas (i.e. the desire to transform the energy system for environmental sustainability)
 - Over time and with new objectives, if there are powerful actors who can veto some forms of change, systems tend to display 'layering' of policies and institutions
 - Some of our comparator countries/states have some aspects of institutional design that have enabled more innovation for sustainability; while no system is perfect and there are challenges of transferring from one context to another, we can learn valuable lessons

Phase 2 GB Analysis (Key findings)

People and their role within the energy system

- **The energy system is becoming more decentralised**
 - Direction of travel is closer to end users
 - Customers will be more involved
- **We need to thinking about customers differently**
 - People are consumers, but are also customers, citizens and voters
 - Level of engagement, not sector (empowered, engaged, essential)
- **We need consent and conversations about the future**
 - Meaningful public consent increasingly important
 - We need a national and very local conversations
- **Governance needs to put people first**
 - Optimising the system from the bottom up, across vectors
 - Representing customers across institutions
 - Protecting 'essential' customers

Phase 2 GB Analysis – Suppliers Key Findings

- Suppliers and demand management (D3):
 - Innovative business models better enable aspects of D3
 - Traditional model designed to take generation to market, reward volume
 - Delegated responsibility; supplier hub model: ‘interface’ with consumers
- Key Issues/themes:
 - Demand policies operate within wider energy (economic) governance context – mixed signals; sustainability not embedded in codes; lack of policies/rules to incentivise D3
 - Barriers to entry and expansion for ‘innovative’ independents
 - Costs incurred in: industry codes, technical proficiency, collateral
 - Some energy governance supports incumbent market power
 - Supply-centralised system orientation; vertical integration; incumbency effect (sticky customers); scale rewarded
 - Distribution of costs and benefits of current system
 - Some sticky/vulnerable customers pay more; trust issues; consumers (SMEs; household) pay but share less in the benefits

Phase 2 GB Analysis (Key findings)

Networks

- Innovation needed for demand side/D3/DSO functioning in electricity distribution networks; DNOs not innovative.
- Ofgem slow to respond; understanding of innovation dominated by over-simplified economic paradigm, has taken time to evolve
- LCNF good for R&D and demonstration projects, but most not yet feeding into BAU investments
- RIIO may incentivise more innovation than RPI-X, but savings still expected to be marginal to early 2020s (Fig 1).
- Planning assumes smooth, gradual technological and institutional change, but innovation processes usually involve tipping points (see solar PV growth in Fig 2). Big challenge for networks as response time is slow.
- In other sectors (cable, broadband, EV charging?) networks go first in anticipation of non-linear growth. Problem for regulated monopolies. Need for greater 'anticipatory investment', together with better coordination of policy and regulation through 'system architect' to avoid risk of stranded assets.
- Codes governance not designed for changes needed (see case study)

Figure 1: Expected savings from smart grid solutions for ED1 period (2015-2023)

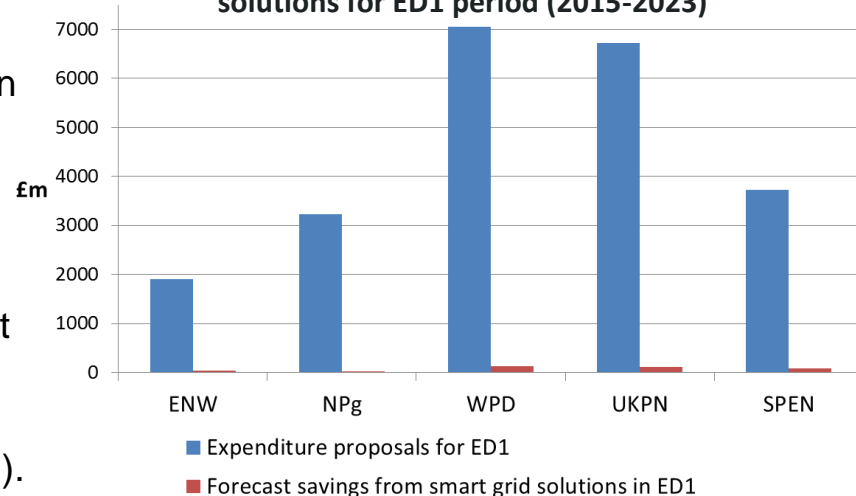
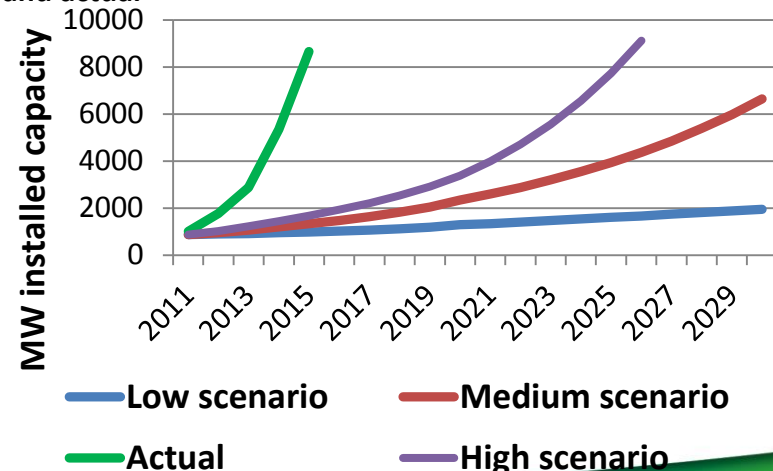


Figure 2: Solar PV growth – Smart Grid Forum scenarios and actual



GB Analysis – Key Findings

- **People:** D3 is close to end users, so system and governance needs to focus more on their role and understanding. Need an approach that recognises that trust has to be rebuilt (social licence), that engagement and meaningful consent is needed; and a reshaping of governance to put people at the centre of thinking based on how able or willing they are to engage.
Suppliers: there needs to be an overhaul of governance to emphasise demand services. There are insufficient incentives for suppliers to provide demand services to customers; an overemphasis on (large) suppliers to enact energy efficiency policies; and barriers to entry and expansion for independents
- **Networks:** Innovation needed for D3 functioning in electricity distribution networks. Ofgem has responded (slowly) but works with over-simplified model of innovation. Technological and behavioural change will be disruptive for networks without greater anticipatory investment and policy/regulatory coordination to avoid stranded assets. Codes governance system needs to be reformed to facilitate system transformation.

Key Findings Germany

- In 'phase II' of energy transformation but supply focused:
 - Nuclear phase out simplifies low carbon choice = renewables
 - Distributed power 'revolution' – (some) **citizens benefit from transition**
 - Efficiency and renewable energy markets & lobbies growing in strength
 - Supply focus to change? Increase **market flexibility to integrate RES**
- Governance arrangements:
 - Co-ordination, goal oriented, municipal/local institutions, more distributed authority; role of **welfare in protecting vulnerable**
 - Clearer **leadership**/guidance: not least ambitious demand reduction **targets**
 - **Accessible policies**: FiT/priority access = low risk; efficiency grants/loans
 - Environment Ministry: **innovative**, able to shelter FiT scheme for some time
- Issues:
 - Coalition refocus on **economic/cost efficiency**, in response to popular concern re: high prices per unit/cost of policies (EEG)
 - Recent refocus on scale/central projects: offshore wind; big grid; new FiT – places **distributed revolution at risk?**
 - DSR policy too slow to respond to market/technologies

Key Findings Denmark

- Policies originally driven by security of supply (1970s/80s oil shocks) - Path dependency!!
 - High levels of end-use efficiency driven by taxes and regulation, and conversion efficiency via DH/CHP
 - Lots of distributed generation (wind cooperatives)
- Also in 'phase II', but gets flexibility (mostly) through interconnection
- Inclusive, consensual and evidence-based decision-making process provides stability (e.g. 2012 Energy Agreement) – linked to electoral/political system
- Not-for-profit institutions (DEA, Energinet.dk) with clear remits and strong capacity: move from planning to market since 1980s but steering through use of subsidy and tax
- Absence of large incumbents with market power, except state-owned DONG
- Electricity market design and regulations allow participation of many small actors (generators, suppliers) via aggregators; includes DSR by small-scale DH providers (CHP + electric boilers...now looking to heat pumps);
- But Denmark not particularly ahead of UK on I&C DSR, smart grids (yet)

Key Findings - US

- 50 States with very different regulatory models so hard to generalise
- Some US States have long term histories of transformation (ie California); some market orientated States are being faced with complex, cultural / economic issues (ie competitiveness of solar in Texas); some States are acting as always; some States are attempting to rewrite the rule book (ie NY, Hawaii).
- The US is well ahead of Europe in terms of incorporating the demand side in markets
- Some States governance may enable easier transformation pathways (questions such as Public Utility Commission versus CEO regulatory model; Default service; aggregation; decoupling; FERC)
- Shale is part of the equation but complex

Comparative Countries: key findings

- US
 - Very hard to generalise from State to State. Demand side within markets reasonably commonplace. EE on a state by state basis very different. US has now moved up to no.2 in global investment in renewables. Rhetoric at the Federal level in support of climate change is strong, and much is riding on the Trump/Clinton outcome. Several States are now undertaking transformative CC and energy policies – driven by very different reasons ie Hawaii and cost of imported fossil fuels; NY and the aftermath of Hurricane Sandy; California and its now embedded pro-environment, market-wary culture; Vermont and its progressive politics.
- Denmark
 - Inclusive, consensual and evidence-based decision-making process, linked to electoral/political system, provides stability. Not-for-profit institutions with clear remits and strong capacity provide clear direction; Electricity market design and regulations allow participation of many small actors, but domestic flexibility is still work in progress
- Germany:
 - has a supply-oriented governance and market system and the distributed nature of Germany's transition is currently in doubt
 - BUT transition more inclusive; it has ambitious demand targets that lead policy change; the transition is considered to be a long-term, iterative project that requires planning and leadership; demand management now seen as key to a smart, integrated, sustainable system.

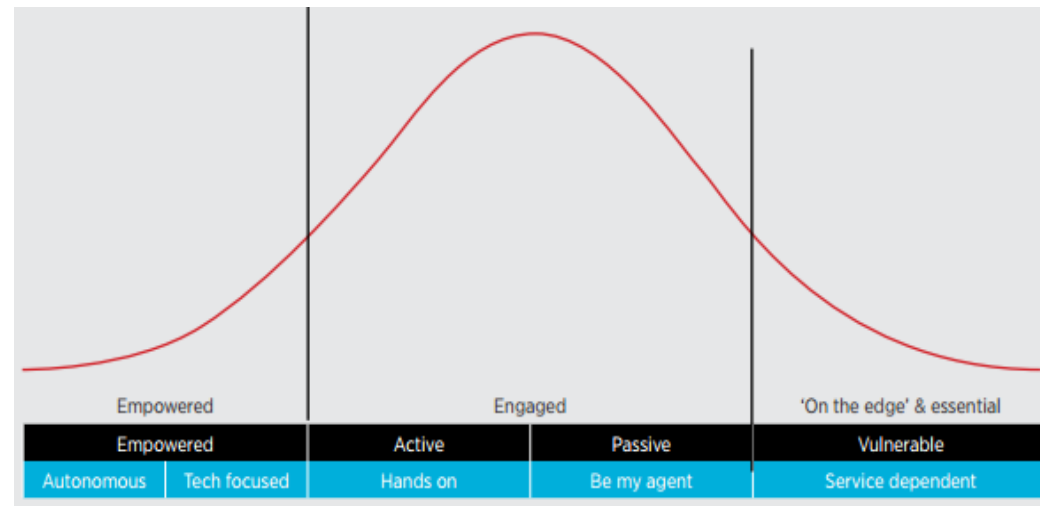
Phase 3 Case study - Codes

- GB code governance is system of 'self-authored regulation', set up to minimise regulatory risk and for reasons of informational efficiency...
- ...but system has potential risks of capture, including informational capture, and regulatory inertia
- GB codes governance system:
 - Is complex, fragmented and opaque
 - Dominated by incumbents
 - Is adrift from energy and climate policy objectives
- Previous reform efforts (including 2015 Ofgem review and CMA) have been piecemeal and not engaged strategically with principle of self-authored regulation
- We recommend relocating codes governance in public domain (for example under an independent not-for-profit SO), with a rule-based mandate for code changes, appropriate expertise and capacity, a transparent modification process and right of appeal to minimise regulatory risk.

Phase 3 Case Study – Rethinking the role of people

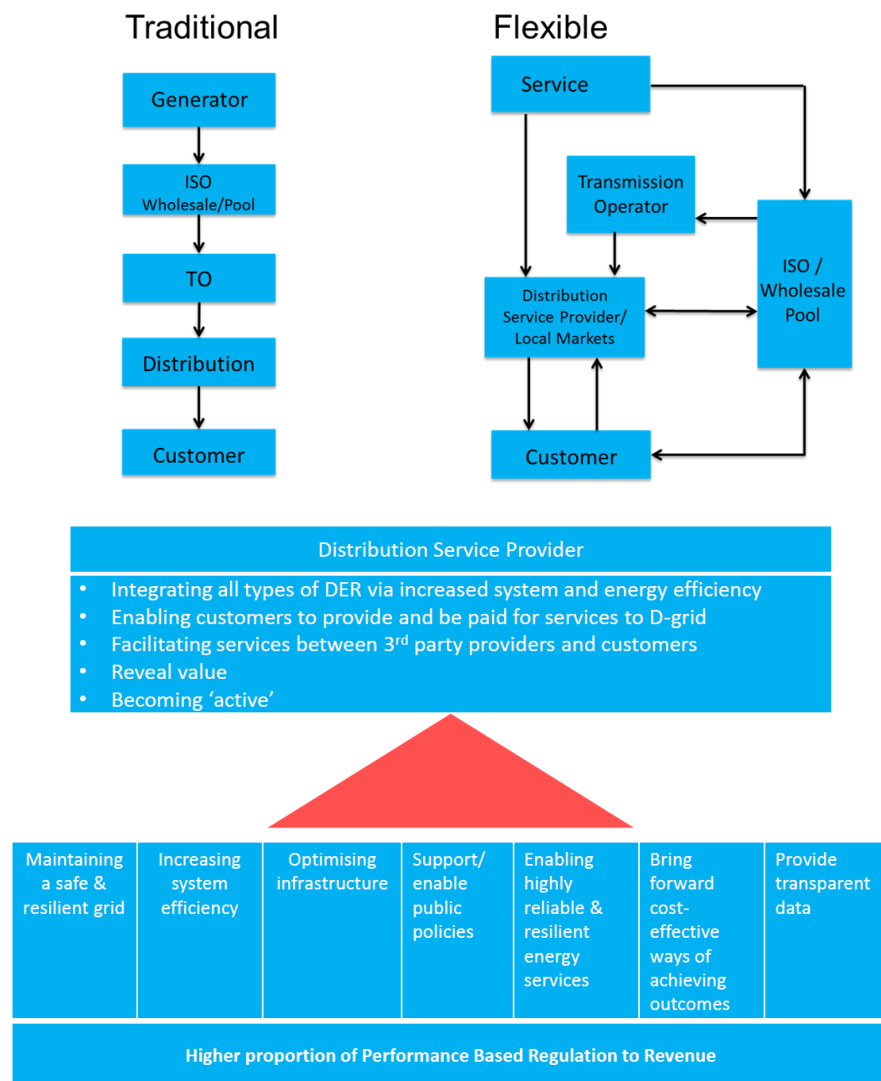
- Energy systems undergoing fundamental and rapid change
- Much of the direction of travel is decentralised and includes new technologies, social practices and business models, across distributed energy resources, DSR and demand reduction. These are all closer to people.
- There is an expectation that people will be more involved or will at least have more offers directed at them. However, they are currently mainly passive, some so major challenges to overcome.
- There is also a need to seek meaningful consent for the change that are occurring and having real conversations (to explain change and to gain consent) and to rebuild trust.
- Need to move away from thinking of people as consumers and recognise the wider roles they play in terms of being customers, citizens, voters. And think about them in terms of how they do or could engage:

empowered – engaged - essential



Phase 3 Case Study: Distribution Service Providers

- A co-ordinator and market facilitator of distribution areas, across electricity, heat and EV; and supply (S) and demand (D)
- Combined energy and system services to enable granularity of value for services
- Physical, local 'spot' market /platform which nets off S and D
- In general, does not own resources
- Any resource sold to / bought by any customer via co-ordinated private platforms + DSP
- Regulated for different revenues
 - Traditional cost of service
 - Performance based
 - Transaction related



Source: Adapted from CSIRO and Energy Networks Association 2015, Electricity Network Transformation Roadmap: Interim Program Report

Phase 3 Case Study: the Untold Story of Germany's Energiewende

- Looks at less examined aspect of Germany's Energiewende: governance for demand side innovations.
- Takes a novel, but arguably optimal, definition of energy demand that includes: demand reduction; demand flexibility; as well as distributed energy.
- Applies a framework that takes governance, changes in energy markets, citizens' experiences, and the politics of energy to be inextricably inter-lined.
- Through these lenses, examines Germany's demand policies, across each category of demand, outcomes in energy markets and implications for the re-emerging politics of the Energiewende.
- What is revealed are specifics of how energy markets in Germany are changing; the complex and iterative nature of demand governance; and the fact that Germany is not as progressive in terms of demand policies as it has been in renewable and nuclear policies.

Phase 3 Case study – Levy Control Framework

- The LCF introduces a budgetary-based framework on top of existing quantity- and price-based support mechanisms
- The LCF is arguably best seen as a mechanism for limiting political risk for investors, but the interaction between the LCF and aspects of underlying cost drivers in the Renewables Obligation and the CfD FiTs has created a new source of uncertainty
- Lack of transparency about the assumptions in the government's forecast of the LCF is a significant factor in uncertainty, as is the absence, to date, of a medium-to-long term LCF envelope
- The LCF could in theory prevent the UK from meeting renewable energy targets, although this has not been the case so far
- The LCF shows the strength of influence of the Treasury over energy policy, especially under the Chancellorship of George Osborne
- We argue that the political need for the LCF is particularly strong in the UK because of high inequality and low wage growth, and an absence of wider positive feedback effects from renewable energy policies. However, it is largely a defensive measure, and is not a good substitute for such feedback effects.

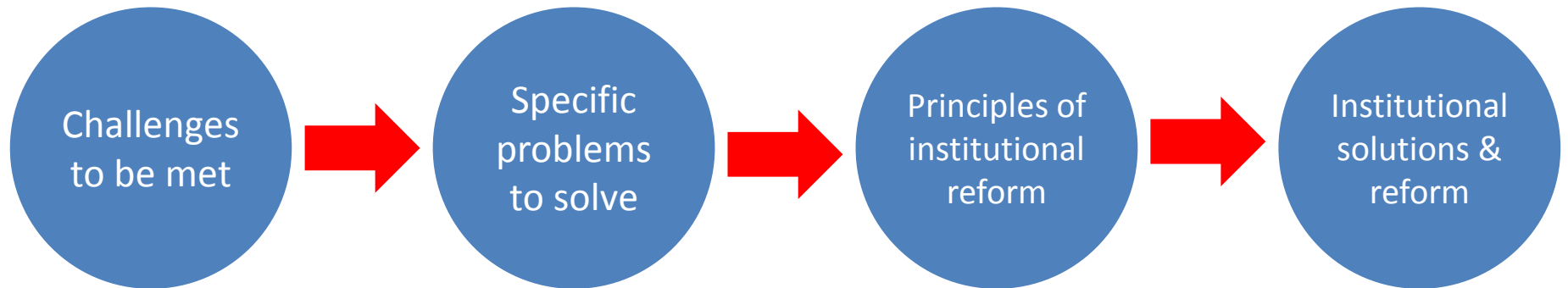
Phase 3 Case study – Capacity Market

- CM criticised for inclusion of high-carbon capacity, failure to induce new investment, lack of focus on flexible capabilities, and weak involvement of DSR
- Case study looking at why we got CM in the first place, and why we got the design we did
- Attempt to assess role of ideas about security of supply, and about generating companies lobbying for their interests; both ideas about security of supply and company interests themselves seen as constructed, not given
- Will draw on official documentation (a number of consultations and lots of responses!) plus interviews
- Early interpretation of evidence is that decision to have a mechanism driven by evolving view of resource adequacy problem in government/by politicians, while design decisions influenced by company lobbying.

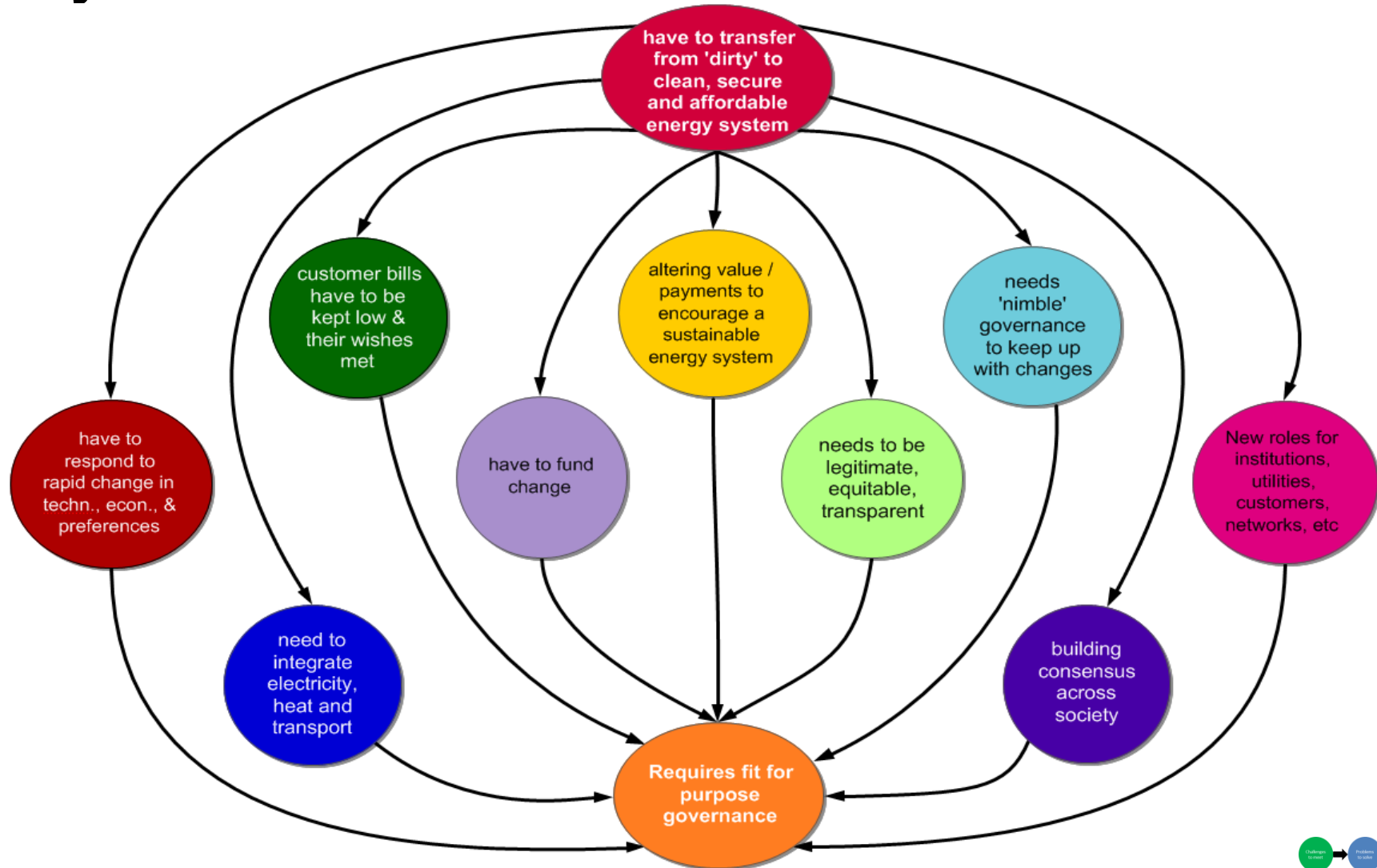
Phase 3: A fit-for-purpose governance framework

- Many of areas of the research came together in our research on institutional reform and a proposed new framework for energy governance in GB
- This included (covered in slides below):
 - Setting out the general challenges for transforming energy systems
 - Specific GB energy governance problems to solve
 - 6 key principles for institutional reform
 - A fit-for-purpose institutional framework
 - A summary of how to map the principles of reform to the proposed framework
- This was set out in more detail in the IGov paper: [GB Energy Governance for Innovation, Sustainability and Affordability: An institutional framework](#)
- Which also set the framework for the final IGov conference: [Summary of Day](#)

The IGov approach



General challenges of transforming energy systems



Specific GB energy governance problems to solve

Problems to do with transparency & legitimacy of decision-making

Does not deal with losers; inherent distributional impacts of policies; rhetoric lets 'market' dictate direction not CCC budgets;

Short term nature of political decisions

Problems to do with current institutions

Regulation lagging change; not nimble

Self-regulation leads to inertia

BEIS policy decision de facto delegated to other bodies which do not have legitimacy and ignores distributional issues

End users viewed as passive consumers, within sectors

Uncoordinated decision making

Problems to do with operation

Limited Access to Data

Uncoordinated, non-integrated & directionless system change

Inflexible Demand Side

SO focuses on T rather than integrated T & D across vectors

Value/payments in system reflect conventional system

Things that are lacking

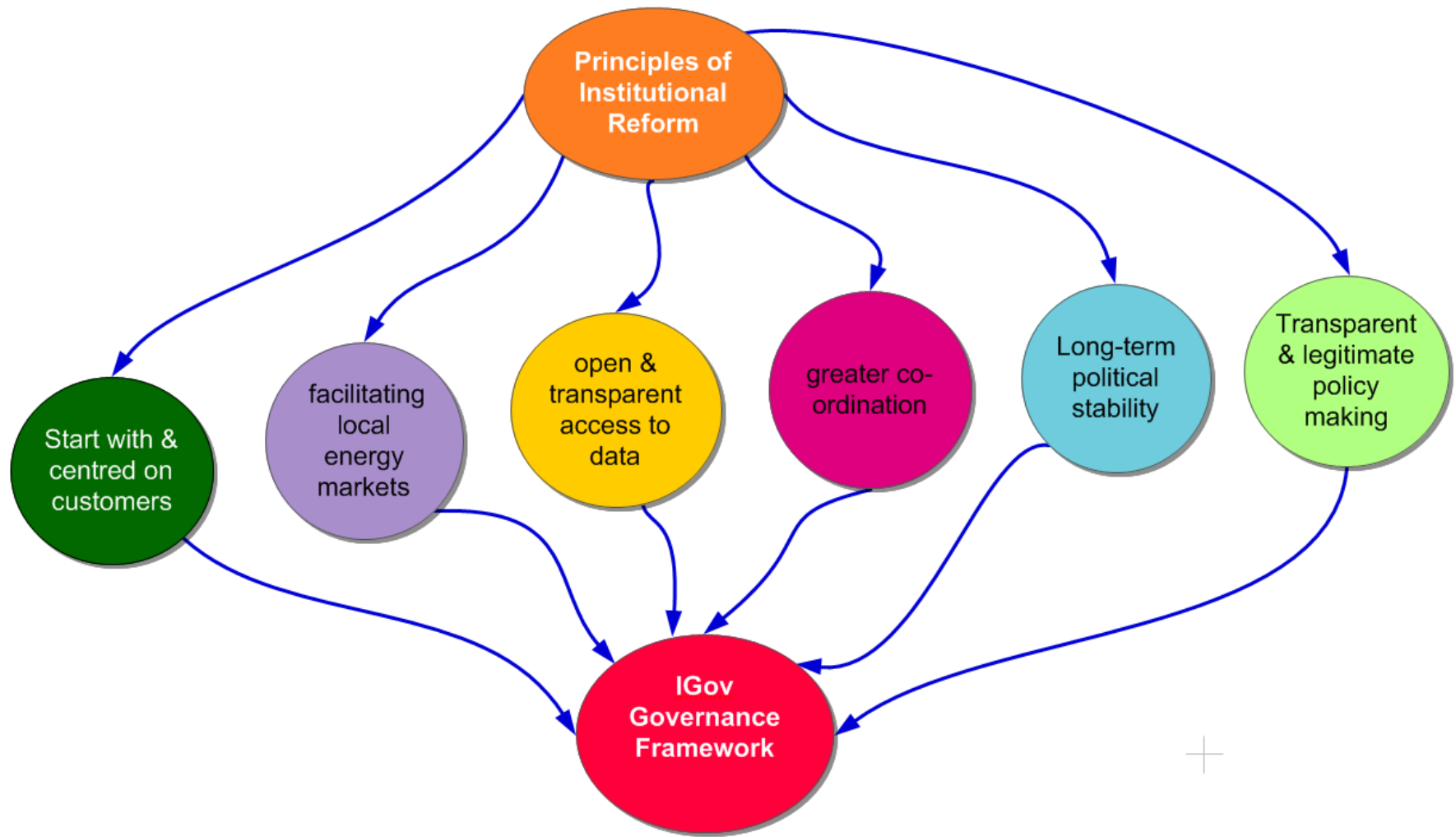
A way to incorporate CCC budgets across institutions

A means to coordinate value of DER & local markets

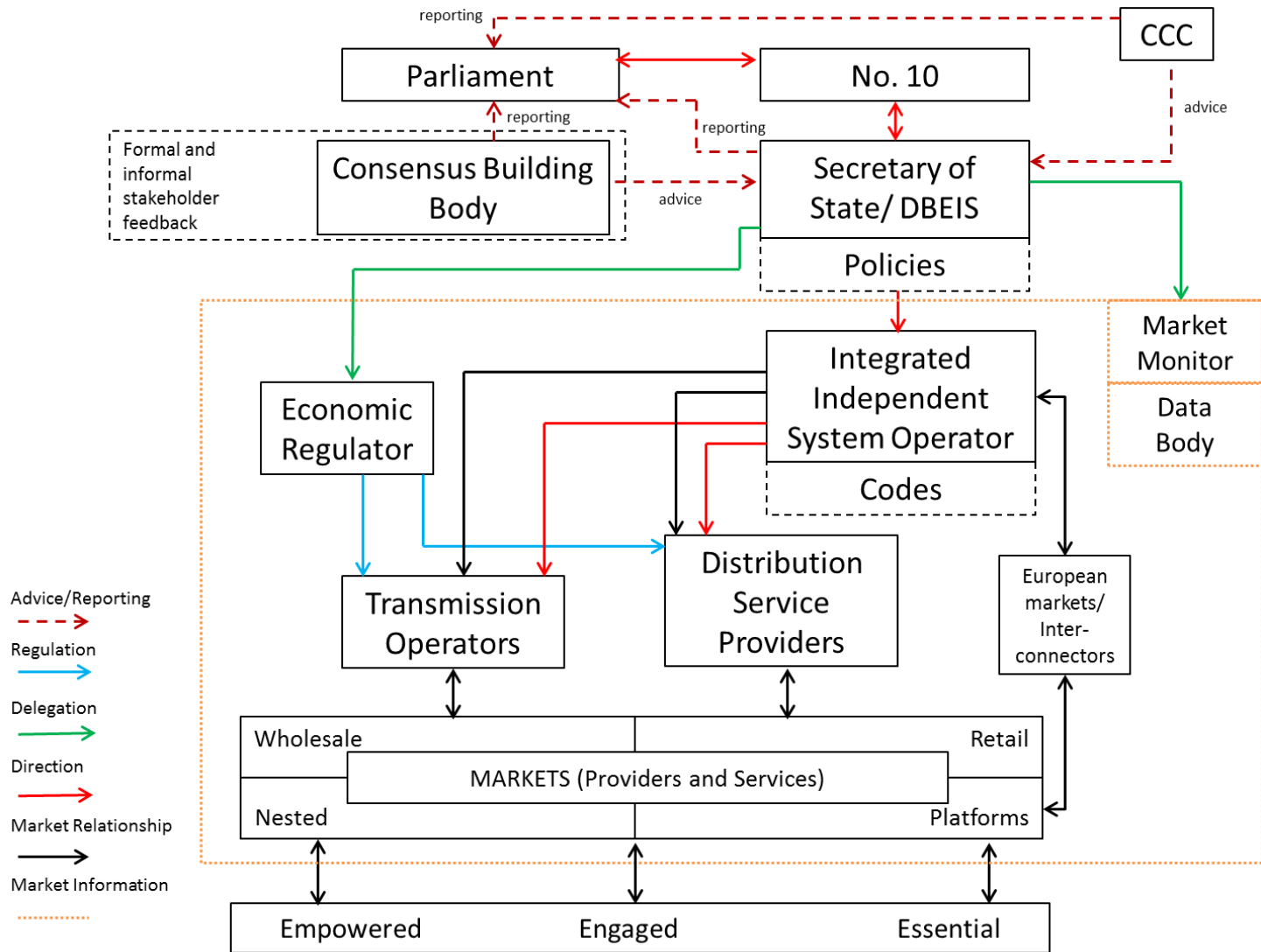
A place for discussion and consensus building

An efficient energy system

6 Key Principles of Institutional Reform



Fit-for-purpose Institutional Framework



Matching principles to institutional reform within the IGov Framework

Principles of Institutional Reform

Energy system centred on customers
Facilitating local energy markets
Open and transparent access to data
Greater Coordination
Long-term political stability
Transparent and legitimate policy-making

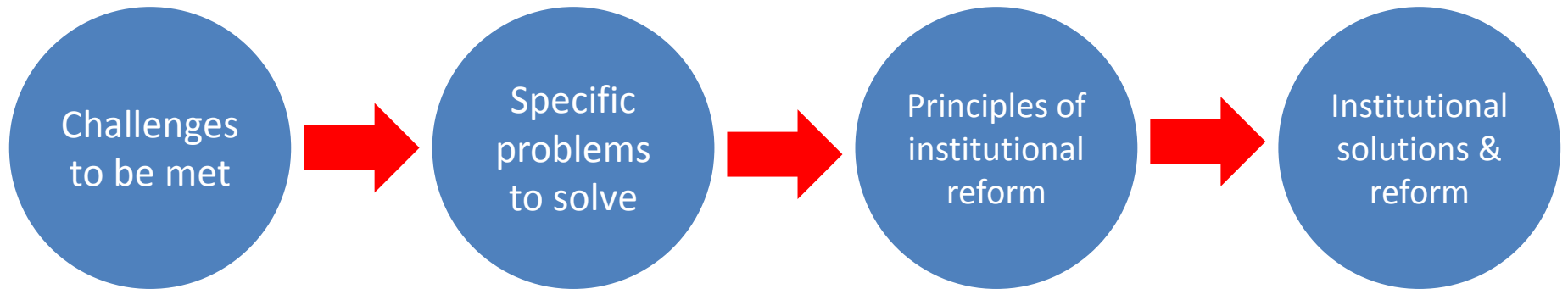


Institutional solutions & reform

DSPs, local energy markets, bottom-up optimisation via DSPs & IISO
DSPs
Data Body, Market Monitor
Consensus Building Body, IISO, BEIS taking decisions, Economic Regulator, DSPs
Consensus Building Body
Greater coherence of decision-making & less delegation from BEIS



Summary



- Have to respond to rapid change in technologies, economics and preferences
- Need integration across vectors
- Customer bills manageable & wishes met
- Have to fund change
- Altering value/payments to encourage a sustainable system
- Legitimate equitable, transparent
- Nimble governance to keep up with change
- New roles for system actors
- Building consensus across society

- Current institutions issues – Ofgem, BEIS, self-regulation, view of people in system
- System operation – data, uncoordinated change, SO role, integration across vectors, value in system
- Transparency & legitimacy – in policy making, political short-term risk
- Areas Lacking – CCC budgets into governance, coordinating value, consensus building

- Energy system centred on customers
- Facilitating local energy markets
- Open and transparent access to data
- Greater Coordination
- Long-term political stability
- Transparent and legitimate policy-making
- Plus, have to be able to fund it

- Greater coherence of decision-making & less delegation from BEIS
- A Consensus Building Body
- Introducing a Market Monitor/Data Body
- Creating and Integrated Independent System Operator
- Ofgem back to economic regulator
- DSPs
- Local markets

Detailed Outputs & Initial Impact



New Thinking For Energy



Journal Articles

2016

- 'Historical institutionalism and the politics of sustainable energy transitions: A research agenda' Environmental and Planning C, published on-line July 2016
- Forward for a Special Issue on Policy Dialogue on the assessment and convergence of renewable energy policy in EU member states, Journal of Energy & Environment.
- 'Momentum is increasing towards a flexible electricity system based on renewables'. Nature Energy, 1st Feb 2016
- The UK's Levy Control Framework for renewable electricity support Energy Policy 97:193-201
- Governing for sustainable energy system change: Politics, contexts and contingency. Energy Research & Social Science, Vol 12, Feb 2016, pp: 96–105
- Energy Depoliticisation in the UK: Destroying Political Capacity, British Journal for Politics and International Relations, 18:1, 107-124.

2015

- Designing energy policy under uncertainty. Nature Climate Change vol. 5, 517-518
- Climate Change Benchmarking: constructing a sustainable future?, Review of International Studies, 41:05 (Special Issue), 969-992.
- Creating protective space for innovation in electricity distribution networks in Great Britain: The politics of institutional change. Environmental Innovation and Societal Transitions. Volume 18, March 2016, Pages 111–127

2014

- Measuring and Explaining Policy Paradigm Change: the Case of UK Energy Policy (2014) – included in Policy & Politics - Virtual Collections 2015: The Environment
- Supply chains and energy security in a low carbon transition. *Applied Energy, Volume 123, Pages 292-295*
- Ideas, Power and Change: Explaining EU-Russia Energy Relations', Journal of European Public Policy 21, 1, pp. 58-75
- Measuring and Explaining Policy Paradigm Change: the Case of UK Energy Policy', Policy & Politics, 42:4, 513-530.

2014 cont.

- Technology scale and supply chains in a secure, affordable and low carbon energy transition *Applied Energy, Volume 123*
- Politicising UK Energy: What Speaking Energy Security Can Do, Policy & Politics 42:2, 259-274
- Environmental politics in a cold climate, Juncture 21.1 (89-96): Summer 2014
- 'Fossil fuel subsidy reform, rent management and political fragmentation in developing countries' New Political Economy 20, 4, pp. 475-494

2013

- Book Review for Juncture Vol 19 (4) 266-267 on 'the carbon crunch' (March 13)
- 'Stern 2.0? The report of the Global Commission on the Economy and Climate' Political Quarterly 86, 1, 146-151
- 'Environmental politics in a cold climate' Juncture (IPPR) 21, 1, pp. 89-96,
- Paying for climate policy, Juncture 26, Sept 2013
- The Political Sustainability of Climate Policy, Global Environmental Change Volume 23 (5)

Under Review:

- The governance of energy industry codes in Great Britain: Barriers to innovation and sustainability,
- 'Demand Side Measures and Transformation: the Untold Story of Germany's Energiewende
- 'The Comparative Political Economy of Energy: Sustainable Transitions in Germany and Britain'

Chapters/Books

2016

- Kuzemko (2016) 'The Great British Energy Transition?', in R. Looney ed. *The Routledge Handbook of Transitions to Energy and Climate Security*. London: Routledge

2015

- Mitchell (2015) *Electricity Markets and their Regulatory Systems for a Sustainable Future* in Paul Ekins, Mike Bradshaw, and Jim Watson (eds) *Global Energy: Issues, Potentials, and Policy Implications*. Oxford University Press. September 2015
- Kern, F., Kuzemko, C. & Mitchell, C. (2015) *How And Why Do Policy Paradigms Change; And Does It Matter? The Case Of UK Energy Policy (Chpt 13)* in Hogan, J & Howlett, M. (eds) *Policy Paradigms in Theory and Practice*. Palgrave.
- Lockwood, M. (2015) 'The political dynamics of green transformations: the roles of policy feedback and institutional context' in Ian Scoones, Melissa Leach and Peter Newell (eds.) *The Politics of Green Transformations* Earthscan/Routledge: Abingdon/New York
- Kuzemko & Hadfield (2015) 'Defining and Projecting EU Energy Policy', in Jakub Godzimirski (ed.) *EU Leadership in Energy and Environmental Governance? Global and Local Challenges and Responses*. Palgrave Macmillan.
- Kuzemko (2015) 'Politicizing UK Energy: What Speaking Energy Security Can Do', in M. Flinders and M. Wood (eds.) *Tracing the Political: Depoliticization, Governance and the State*. Bristol: Policy Press.
- Kuzemko, Caroline; Goldthau, Andreas and Keating, Michael (eds.) (2015) *The Global Energy Challenge: environment, development and security*. Basingstoke and New York: Palgrave Macmillan.

2014

- Somanathan E., T. Sterner, T. Sugiyama, D. Chimanikire, N.K. Dubash, J. Essandoh-Yeddu, S. Fifita, L. Goulder, A. Jaffe, X. Labandeira, S. Managi, C. Mitchell, J.P. Montero, F. Teng, and T. Zyllicz, 2014: National and Sub-national Policies and Institutions. In: *Climate Change 2014: Mitigation of Climate Change. Contribution of Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change* [Edenhofer, O., R. Pichs-Madruga, Y. Sokona, E. Farahani, S. Kadner, K. Seyboth, A. Adler, I. Baum, S. Brunner, P. Eickemeier, B. Kriemann, J. Savolainen, S. Schlömer, C. von Stechow, T. Zwickel and J.C. Minx (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA,

Chapters/Books

2013

- Mitchell, C., Watson, J., Whiting, J. (2013). Energy Security in a Multipolar World UK, Palgrave MacMillan.
- Mitchell, C.H.C., Watson, J. (2013). New Challenges in Energy Security: the UK in a Multipolar World - Conclusions and Recommendations in Mitchell C, Watson J, Whiting J (eds.) New Challenges in Energy Security: the UK in a Multipolar World, Palgrave MacMillan.
- Mitchell, C.H.C., Watson, J. (2013). Introduction: Conceptualising Energy Security in Mitchell CHC, Watson J, Whiting J (eds.) New Challenges in Energy Security: the UK in a Multipolar World, Palgrave Macmillan, UK: Palgrave MacMillan.
- Kuzemko (2013) The Energy Security-Climate Nexus: Institutional Change in the UK and Beyond. Hampshire and New York: Palgrave Macmillan
- Kuzemko (2013) Energy Security: Geopolitics, Governance and Multipolarity' in C. Mitchell, J. Watson and J. Whiting (eds.) New Challenges in Energy Security: the UK in a Multipolar World. Basingstoke and New York: Palgrave Macmillan (with Mike Bradshaw)
- Frogatt, Kuzemko & Rouhaud (2013) 'The Energy Security-Climate Nexus and the Environment' in C. Mitchell, J. Watson and J. Whiting (eds.) New Challenges in Energy Security: the UK in a Multipolar World.
- Lockwood (2013), The political economy of low carbon development in F. Urban and J. Nordensvard (eds.) Low Carbon Development: Key Issues, published by Earthscan/Routledge
- Mitchell, C., Watson, J., Whiting, J. (2013) Energy Security in a Multipolar World UK, Palgrave MacMillan. (2013).
- Kuzemko, C. (2013) The Energy Security-Climate Nexus: Institutional Change in the UK and Beyond. Hampshire and New York: Palgrave Macmillan

Working Papers

2016:

- People, Demand and Governance in Future Energy Systems
- Governing for Demand Management Innovations in Germany: Politics, Policy and Practice
- The governance of retail energy market services in the UK: a framework for the future' (with Nick Eyre), Working Paper, UK Energy Research Centre

2015:

- Codes Governance and Reform Discussion Paper
- Public Value Energy Governance: establishing an institutional framework which better fits a sustainable, secure & affordable energy system.
- Innovation and energy industry codes in Great Britain
- The Danish system of electricity policy-making and regulation
- Energy Governance, Suppliers and Demand Side Management
- Mapping Policies for Improved Efficiency & Reductions in Final Demand

2014:

- Change and Inertia in the UK Energy System – getting our institutions and governance right.
- Energy networks and distributed energy resources in Great Britain
- The political dynamics of green transformations
- Governance, Innovation and the Transition to a Sustainable Energy System
- Depoliticisation, Institutions and Public Capacity
- EU Climate Benchmarking: Compromises and Compliance in Germany and the UK
- Demand and Decarbonisation in 2050: Themes from Scenarios

2013

- Governance, Innovation and the Transition to a Sustainable Energy System: Perspectives from Economic Theory
- Theorising governance and innovation in sustainable energy transitions
- The Political Sustainability of the 2008 Climate Change Act
- Understanding the Politics of Low Carbon Transition
- Politicizing UK Energy: What Speaking Energy Security Can Do

Conference and Other Papers

2016

- 'GB Energy Governance for Innovation, Sustainability and Affordability: An institutional framework', IGov final conference, 28th Nov 2016
- 'GB Energy Governance for Innovation, Sustainability and Affordability: An institutional framework', Aalborg University, 23rd November 2016
- 'Innovation and the governance of energy industry codes', BIEE 2016, Oxford 21-22nd Sept.
- 'Governing for Innovation Without Disruption in Energy Systems' BIEE 2016, Oxford 21-22nd Sept.
- 'Comparative Politics and Energy: Demand Management in Germany and Britain', Political Studies Association (PSA) Annual Conference, Sussex, March 2016

2015

- 'The Political Economy of Sustainable Energy Transitions: Institutions, Contingency and Contestations', 4th International Conference on Sustainability Transitions, Sussex
- 'Governing for Sustainable Innovations: politics, variety and contestations', International Conference on Public Policy (ICPP), Milan
- 'German and UK Energy Politicisations: Crisis, Embedded Institutions and Change Narratives', International Conference on Public Policy (ICPP), Milan

2014

- Governance and disruptive energy system change to International Workshop on Incumbent-Challenger Interactions in Energy Transitions, Stuttgart, Germany
- Achieving energy transitions: Which RES policies are best applied when? Reducing risk and creating an enabling environment, UEF Law School, Joensuu, Finland
- 'Comparative (De)politicisations: Motivations, Rules and Contestations', APDSG workshop, University of Sheffield
- Climate Benchmarking: the Emergent and Contingent Politics of Climate Norm Creation', paper for the Benchmarking in Global Governance (BiGG) workshop, University of Warwick
- 'UK Rules and Incentives', IGov Conference, Royal Geographic Society, London
- Climate Norm Creation and Interactions with Energy Governance', BISA Annual Conference, Dublin

2013

- 'Smart grid-lock? The role of ideas, interests and institutions in contestations over the future of electricity networks in Britain', Eindhoven, Netherlands
- Energy Depoliticisation in the UK: Destroying Political Capacity', Policy and Politics Annual Conference, Bristol
- 'Exploring the Politics of Low Carbon Transition', European Consortium for Politics Research (ECPR) Annual Conference, Bordeaux
- 'System change in a regulatory state paradigm: the "smart" grid in the UK', (ECPR) Annual Conference, Bordeaux
- 'UK Energy Transition: Ideational Variety and Differential Change', 4th International Conference on Sustainability Transitions, Zurich
- 'The Importance of Governance for Innovation: a Theory of Managed Energy Transition', IGov workshop, British Library
- 'Energy and Depoliticisation: the Forgotten Public Policy Issue', a paper for the Political Studies Association (PSA) Annual Conference, Cardiff

Meetings/Advice

	Academic	Industry	Others	Policy/Politics
2016	<ul style="list-style-type: none"> Centre on Global Energy Policy, Colombia University AURES research group EEG Research and Matchmaking Conference, Washington 	<ul style="list-style-type: none"> Regen Southwest Agora Ecofys Energy Technologies Institute 	<ul style="list-style-type: none"> Global RAP event Buerger Berlin Energie DIW IPPR Chatham House CSE Green Alliance 	<ul style="list-style-type: none"> DECC Energy Strategy Networks and Markets Team DECC-ESRC renewable teams German Advisory Council on the Environment German Environment Agency National Infrastructure Commission MEP Clare Moody Ofgem Horizon Scanning
2015	<ul style="list-style-type: none"> Grantham Research Institute UKERC Advisory Group on Societal preferences, affordability 	<ul style="list-style-type: none"> Carbon Trust 	<ul style="list-style-type: none"> Citizens Advice Energy Team Chatham House Corporate Leaders Group on climate change IPPR 10:10 Green Social Democracy Policy Exchange 	<ul style="list-style-type: none"> DECC Future Electricity Networks team Energy and Climate Change Committee (staff) Ofgem Welsh National Assembly
2014	<ul style="list-style-type: none"> Ensymora Research Meeting DTU, Denmark EPSRC meeting 	<ul style="list-style-type: none"> EnergyUK Energy Institute 	<ul style="list-style-type: none"> RAP global RAP Europe IPRR Green Alliance 	<ul style="list-style-type: none"> Ofgem BIS Energy Team Labour Party shadow energy team HMG Treasury 2 Labour Party Conference events CMA HoL Select Committee on Science and Technology Scrutiny Committee on Energy Bill
2013	<ul style="list-style-type: none"> UKERC Directors Meeting UKERC Co-directors meeting UKERC smart grid teams 	<ul style="list-style-type: none"> Good Energy Central Delivery Body for smart meters 	<ul style="list-style-type: none"> RAP Europe RAP Global IPCC IPPR Friends of Earth John Ashton Green Alliance 	<ul style="list-style-type: none"> Department for Business, Innovation and Skills Green party Ofgem Heads of Team Ed Balls
2012	<ul style="list-style-type: none"> EU SEFEP project research team 		<ul style="list-style-type: none"> RAP Global Board Meeting (Oct 12) Chatham House IPCC IPPR Policy Advisory Group 	<ul style="list-style-type: none"> FCO Liberal Democrats Energy Team

External Events/Panels

	Academic	Industry	Policy/Politics	Others
2016	<ul style="list-style-type: none"> IGov DSPs IGov Governance Framework FFU, Berlin 	<ul style="list-style-type: none"> Chatham House, future of utilities 	<ul style="list-style-type: none"> IGov – final conference Ofgem – Germany Demand side policies BIEE - Disruption in Energy Systems DIW - Energy Security with Renewables 	<ul style="list-style-type: none"> IGov – final conference Cornwall Council
2015		<ul style="list-style-type: none"> Cornwall Energy Panel 	<ul style="list-style-type: none"> EEC Fuelling Debate panel UK Embassy in Brazil 	<ul style="list-style-type: none"> IPPR on politics of green transformations Thailand Solar PV Roadmap
2014	<ul style="list-style-type: none"> RCUK Science Panel 	<ul style="list-style-type: none"> Cornwall Energy 	<ul style="list-style-type: none"> PRASEG Panel 	<ul style="list-style-type: none"> Chatham House
2013	<ul style="list-style-type: none"> SEFEP research group Ensymora EPRC Annaul Conference 	<ul style="list-style-type: none"> BIEE 	<ul style="list-style-type: none"> Cornwall Council 	
2012	<ul style="list-style-type: none"> ESMW research cluster 		<ul style="list-style-type: none"> FCO 	

Positions

- Chair of Regulatory Assistance Project
- Advisory Panel for Nature Energy
- Visiting Professorship within the Helmholtz project ENERGY TRANS, Freie University of Berlin, November 2015 – April 2016.
- Visiting Fellow at the Energy and Resources Group, University of California, Berkeley and the Global Energy Policy Centre, Columbia University, New York, June – November 2015 – this included attending various meetings organised by the GEPC.
- Board Member Energy and Climate Information Unit
- Green Alliance Green Social Democracy Panel
- New Era Economics Advisory Panel, Institute for Public Policy Research
- Advisory Board member for the EPSRC funded 'Welfare, Employment and Energy Demand' project
- 2012-13: Member of the Industry and Parliament Trust's Energy Commission

Main Media

2016

- Renewable energy – letters Daily Telegraph 24 June
- Nuclear Power – BBC Radio 4's Today Programme, BBC Radio Cornwall
- Capacity Market - Guardian; Electricity Info.org; solar power portal; simplyswitch.com; notonuclear.net
- Trends in renewable investment: Guardian, Independent
- Climate Policy - The Shift

2015

- Open Letter from Green Alliance to Oliver Letwin: Protecting government's energy policy capability
- Cost of renewables: Blue & Green; Carbon Brief; Solar Power Portal, Daily Mail, ClickGreen, Energy Desk,
- Market Models: Windpower Monthly; New Power
- Baseload: ECIU, 24th July
- Storage & Interconnection: Edie.net; PV Magazine; GreenBiz; NY City News; Business Green; Institution of Mechanical Engineers; Edie.net
- Planning: Energy Spectrum
- Budget & Politics: The Guardian; Energy Voice; Business Green; Energy Desk; Carbon BriefThe Guardian; Energy & Environment Management;
- IEA & PV: PV Tech; Edie.net; Click-Green; Blue&Green Tomorrow;
- International Politics: BBC Radio 4's Today Programme

- Ofgem Role: Energy Spectrum
- CfDs: Energy Spectrum
- Cornwall Energy Island: BBC Radio Cornwall; BBC 1 Spotlight News
- Energy Policy: Business Green; The House magazine
- Fossil Fuels: Guardian

2014

- Capacity Market: BBC; the Independent; Carbon Brief; Business Green;
- Climate change; Western Morning News;
- Coal: The Guardian;
- EU Market Premiums: Open letter to Commissioner Günther Oettinger and Joaquín Almunia
- Energy Security: BBC World Service; CTV News Canada.

2013

- Energy Bill: The Daily Mirror
- System change: New Statesman Century

Submissions/Evidence

2016

- Submission to The National Infrastructure Assessment – Process and Methodology, NIC
- Submission to Environmental Audit Committee inquiry on Sustainability and HM Treasury.
- Submission to DECC Consultation on Regulation and Innovation
- Submission to National Infrastructure Commission call for Evidence
- Submission to Environment and Sustainability Committee of the Welsh National Assembly's

2015

- Submission to CMA on Code Governance: info request to industry participants,
- Submission to CMA Energy Market Investigation – Provisional Findings & Possible Remedies
- Submission to Ofgem on NTBMs: Supporting transformative change in the energy market
- Submission to CMA on the CMA Energy Market Investigation – Updated Issues Statement
- Oral Evidence to Environment and Sustainability Committee of the Welsh National Assembly

2014

- Submission to ECC on Fuelling the debate: successes and future challenges
- Submission to DECC on the draft Strategy and Policy Statement
- Submission to CMA energy market investigation
- Submission to ECC on Electricity Demand-Side Measures
- Submission to DECC on EMR: Consultation on Industry code and licence modifications
- Oral Evidence to Competition and Markets Authority inquiry into energy markets
- Oral evidence to HoL Select Committee on Science and Technology for the Inquiry on The Resilience of Electricity Infrastructure.

2013

- Written & Oral evidence to Scrutiny Committee on Energy Bill

Presentations

2016

- **US:** Inter-American Development Bank; University of California; American Association of Geographers Annual Meeting
- **EU:** Clare Moody MEP; Freie Universität Berlin; Agora; ESRC/Nottingham Trent University/Open University, Brussels
- **Policy:** IGov Energy Governance; Chatham House; ESRC-DECC; UKERC System Change conference; BIEE Innovation and Disruption
- **UK Academic:** University of Sussex (2); University of Edinburgh; UKERC;
- **Others:** IGov DSP Roundtable; British Consulate; 4th International Conference on Sustainability Transitions

2015

- **US:** New York
- **EU:** EU SET Plan; Freie Universität, Berlin; European School of Management and Technology ESMT, Berlin; University of Aalborg
- **Policy:** ECC Committee
- **Industry:** Cornwall Energy; Energy and Climate Change Intelligence Unit; Solar Trade Association
- **UK Academic:** Exeter (2); Centre on Innovation and Energy Demand; Imperial College
- **Others:** Chatham House ; Eden Project

2014

- **EU:** DTU, Denmark; UEF Law School, Joensuu, Finland; ECPR, France; Eindhoven; German Development Institute, Bonn; Institute for Advanced Sustainability Studies (IASS), Berlin
- **Industry:** Energy Institute
- **UK Academic:** University of Exeter (3); Norwich; Conference on Earth Systems; University of Sussex (3); UKERC; Canterbury Christ Church University
- **Others:** IGov PEG conference;

2013

- **UK Academic:** UKERC (2); Leeds
- **Others:** ESMW

Examples of Impact to Date

- The CMA and Codes

- In 2014 the CMA began their Energy Market Investigation
- As part of this we submitted 4 pieces of written evidence, gave evidence at a hearing and produced 6 pieces of analysis on our website.
- We were quoted in numerous documents, including the [final report](#)
- In part, as a result of our early insights on the need for reform of Codes and Licenses, the CMA added a new 'theory of harm' to their investigation "the broader regulatory framework, including the current system of code governance, acts as a barrier to pro-competitive innovation and change".
- Following on from the CMA work on codes we carried out a wide range of further analysis into the industry codes that shaped the system which included: detailed analysis papers, conference papers/presentations, a discussion paper and a roundtable event with government, the regulator and the code administrators. All the information from these is on the IGov website.



Energy market investigation

Final report

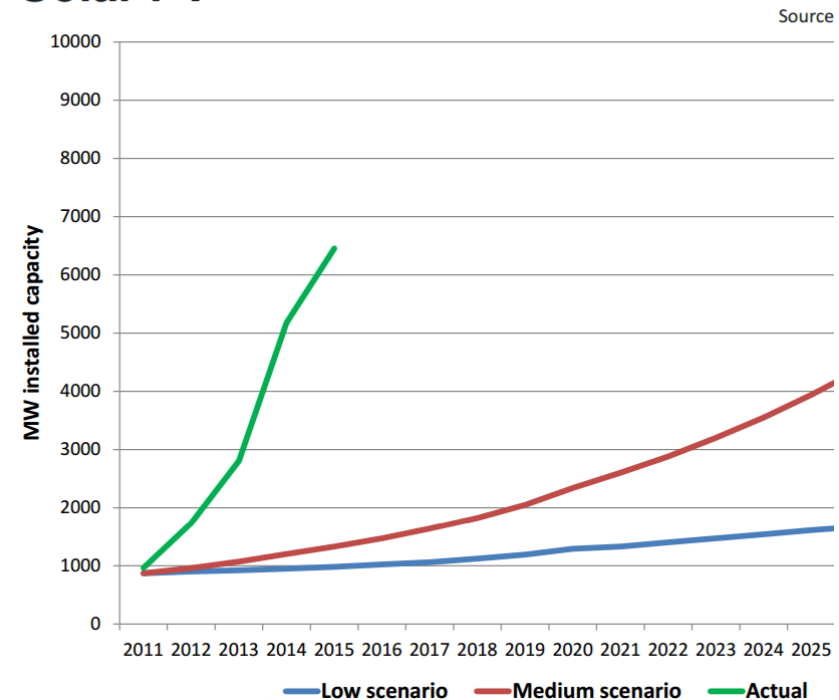
24 June 2016

Examples of Impact to Date

- Adoption of Research Findings

- An example of how research has been used by policy makers is some analysis we did on the uptake of solar PV in the UK
- This picture first presentation at a [Solar Trade Association Event](#) in 2015
- The image was widely tweeted and used following the meeting, including by Ofgem, who used it in a number of their external presentations – such as:
 - Ofgem Chief Exec Dermot Nolan in a [speech to Energy UK](#) (wrongly attributed to Cornwall Energy)
 - talks on their [innovation plan](#)
 - talks on system change & [smart energy](#)

Solar PV



Examples of Impact to Date

- Dissemination of International Insights

- As part of IGov we have looked at what is happening in terms of energy and governance in other countries, particularly some US States, Germany and Denmark.
- This research has been written up as detailed working papers, journal articles, blogs and think pieces and shared at academic and industry conferences
- We have also had several face to face meetings with policymakers within Government and with senior staff and partners/teams within Ofgem to brief them on our insights
- Both Ofgem and BEIS have since developed links with NY PSC so that they incorporate ideas into GB energy policy

Examples of Impact to Date

- Policy impact

- In addition to meetings on our international work we have been invited to meetings with DECC, HMG Treasury and the National Infrastructure Commission
- These have primarily been to share our insights on innovation and governance within the energy system across teams working on flexibility issues and electricity markets
- Feedback from staff at these meetings has shown the value that they have gain from our input to their emerging ideas and plans (for example, on flexibility and on the future arrangements for the system operator).

Examples of Impact to Date

- A Framework for Change

- The detailed IGov case studies have been the building blocks for creating a Fit-for-Purpose GB Institutional Governance Framework.
- This has gone through numerous iterations and been used as the basis of workshops with policy makers, decision makers, the regulator and system actors.
- The final version of the framework has since been used at meetings with different decision-making bodies, and be used in numerous submissions to various Government and governmental body calls for evidence
- As a result, the framework and its ideas have become the basis of many of the discussions taking place on energy governance change within the energy sector currently.