

Governing for Demand Management Innovations in Germany: Surprises

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Ofgem, 17th March 2016



New Thinking For Energy



Summary

- IGov introduction
 - Presentation based on IGov working paper:
<http://projects.exeter.ac.uk/igov/working-paper-governing-for-demand-management-innovations-in-germany/>
- Demand Defined
- Aspects of German governance for demand management and wider Energiewende that I hadn't expected...

Introduction to IGov

- Innovation and Governance for a Sustainable, Secure and Affordable Economy – 4 years, 5 person team
- Complex inter-actions: governance and innovations
- Includes objectives, policies, rules and incentives, as well as the political and institutional contexts
- Governance matters for innovation:
 - Pace and type: who loses, benefits and compensation
 - Governance can act to enable and to *constrain* innovation
 - Governance should provide direction and leadership
- International comparisons:
 - US (California, Texas, New York)
 - Denmark
 - *Germany*

Demand Management Defined

- D3: Distributed Energy; Demand Side Response; Energy Efficiency (DECC 2014; Ofgem 2015)
- Characteristics of a demand oriented system:
 - A distributed energy system, preferably with high rates of citizen and/or community participation
 - Flexibility of demand (and supply), partly to integrate intermittent generation
 - New business models that enable demand response, efficiency and flexibility (energy services)
 - Smart, energy efficient and interconnected networks
 - Open availability of *relevant market data*
 - Storage where necessary

Ambition and Leadership

- Energiewende targets
 - Ambitious and detailed
 - CO2, renewables and consumption (energy and electricity) – short, medium and long-term
 - Targets for household re-fits (2% per annum)
- Political commitment to targets – embedded
- Popular support for targets (over 90%)
- Matters to Germany if succeed or fail – leadership in climate mitigation/energy transition – the world is watching

Electoral Politics and Transition

- Red-Green (1998-2005)
 - Renewables/transition to Ministry Environment
 - Targeted widespread diffusion of solar/wind
 - Understood that civic participation was important and facilitated it via EEG design
 - Enable new technologies, practices and markets
- SDP/CDU/CSU
 - Energiewende
 - Renewables back to BMWi (economic efficiency)
 - More concessions to the Big 4 (offshore)
 - Adjustments to existing structures
 - Postpone big decisions to next election (2017)

Civic Participation and Societal Buy-in

- Degree to which policy-makers have sought to distribute the benefits of transition widely
- Understanding that civic participation, economically and emotionally, in sustainable energy will result in a more profound embedding of change
- As well as ideas about diffusion and cost reductions, efficiency behind distributed energy
- Hence FiT was designed to substantially limit risks for investors, allowing small scale to get involved (below 100kW and 150kW still in FiT)

Devolved Political and Energy Landscape

- More often hear of Federal system and devolved authority as providing institutional support for distributed energy/local engagement
- BUT
- Energy companies also more dispersed, and fragmented: 900 DSOs and over 1,000 suppliers
- Municipal utilities were mainstays of energy supply, distribution and generation until liberalisation
- Finance more local: Landesbanken, Burgschaftsbanken, low rate loans for sustainable projects

Green as Opportunity

- Government investment in energy efficiency technologies/products – growing export markets: Energy Efficiency: Made in Germany (2014)
- Investment in skills – reduces the cost of PV installation
- Buildings standards have driven construction innovations, skills
- Intellectual skills (learning): consultants and/or skilled craft producers on a global scale
- Combined involvement: BMWi; BMUB; Federal Ministry for Economic Cooperation and Development; Transport and Urban Affairs

Help for the Big 4?

- Hear about existential (generation) = heavy restructuring
 - No nuclear and now coal phase out
 - Merit order, RES and negative prices
 - E.ON, RWE, Vattenfall applied to court to rule that nuclear phase-out illegal
- But – reserve payment for coal seen as generous, and new EEG rules (auctions) seen as more suited to established utilities

Not an Innovator in DSR (or local markets)

- Need to integrate intermittent RES is primary driver for re-think on DSR strategy/policy
- No framework for DSR: EOM 2.0 – suggestions but no formal workplan yet
- Aggregators not recognised within German law (rights, responsibilities etc...)
- Pre-qualification and ancillary service market rules barriers to entry for DSR, and aggregators
- No local balancing markets
- Smart meters: not mandatory for households

Prices, Distributions and Efficiency

- Who benefits:
 - RES: Middle classes; farmers; Heavy industry (exemptions); Self-consumers (exemptions)
- Who pays:
 - Non-exempt industry; SMEs; Households
 - But most vulnerable receive welfare support for heating costs
- Prices have been high (despite falling wholesale prices) but:
 - Efficiency gains mean that households in Germany consume less than e.g. Britain, France, U.S., Spain
 - Household energy cost as a proportion of disposable income one of lowest in Europe

Cleavage in the Debate

- *How* to reach targets up for grabs, despite widespread support for targets
- Recent governance more supportive of central system/scale:
 - Offshore wind
 - North-South transmission
 - New EEG rules infer professionalisation of renewable generators
 - New auction for energy efficiency projects
- What value can be placed on distributed system?
- Should RES only be placed where most efficient?

Bundesnetzagentur (BNetzA)

- Regulator for railways, telecoms, gas and electricity networks
- Economic regulator – works with BMWi/BMUB
- Functions:
 - Implementation
 - Advisory capacity
 - Fine detail of rules
 - Monitoring (with Kartellamt)
- Kartellamt has some responsibility for making sure supply and generation is competitive