

# Key Issues of Energy Policy and Net Zero - Getting Governance Right

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New Thinking For Energy



# Definitions

- Energy Governance
  - policies, institutions (at all levels), economic regulation, network rules, market design, retail policy etc **AND**
  - the decision-making processes behind those rules and incentives

# Key points

- Momentum of energy system change is towards D4 (decarbonisation, decentralisation, digitalisation and democratisation)
  - Has illuminated a ‘distribution’ gap in regulation
- Energy economics have changed and value in the energy system must be accessible either because its economic; because of desired social outcomes (decarbonisation); or required system attributes (flexibility)
- Economic regulation (Ofgem) is not keeping up with energy system change, economics of new technologies and resources, new business models, social preferences and is not fit for purpose
  - How to pay for networks in an increasingly prosumer world)
- Dermot Nolan leaving Ofgem provides window of opportunity for changed – which should be grasped
- Delivering net zero requires new roles; additional market opportunities (local markets); coordination process (Energy Transformation Commission)
- Energy efficiency of building is the key issue to crack – requires money; skills; but huge benefits

# Multiple new drivers are altering energy system characteristics to be more D4

- **Decarbonisation** across energy – electricity, heat and transport (<https://public.wmo.int/en/our-mandate/climate/wmo-statement-state-of-global-climate>)
- New technologies, resources and falling prices (many of them distributed energy resources (DER))
  - EVs; Smart grid; Decentralised heat – heat pumps, solar thermal; district heating; Renewables of multiple scales (including PV); Demand Side Response; Building energy efficiency; Flexibility; Storage
- Much of this is at the local distribution level – so **decentralisation** increasingly the economic option
- **Digitalisation** allows new system operation and revealing of value (time and place), hence new energy economics
- New ownership and business models enabling, or being pushed by, greater involvement by customers

# Energy economic are changing – but value still not coming through to those which provide it

- Current governance effectively developed around centralised, fossil fuel and nuclear, top down system operation
- Distribution of electricity or gas was about transfer of energy from big providers to passive customers
  - No obvious way to reveal or capture value within markets or regulation
- Digitalisation
  - is allowing new resources to be bought and sold (ie OctopusAgile)
  - Could reveal granular value of time and place
  - could enable new preferences(ie Peer to Peer) – not so far possible

# Highlights a 'distribution' gap of regulation / markets

- Distribution used to be a 'passive' part of network, whether for gas or electricity
  - Paid for primarily by unit transfer
- Increasingly 'action' in distribution / local area or the difficulties (gas network – hydrogen a distraction)
- Digitalisation enabling different system operation and granular value at time and place
- Social preferences include Peer to Peer Trading
- Distribution system operation, network costs, flexibility increasingly worked out on area, horizontal, two way basis NOT top down, one way, linear
- Needs local markets at GSP and new regulation

# Economic regulation (Ofgem) not keeping up with these possibilities

- Regulatory reform is needed – see NIC Review
- Economics still worked out on static, marginal basis rather than dynamic, system change (ie getting from here to net zero most cost effectively)
- No distribution energy resource assessments (DERA)
  - Basic building block of understanding distribution area value
- Not fit for purpose
- Will come back to this with IGov Framework

# Change of CEO at Ofgem provides window of opportunity

- Strategic Policy Statement can be promulgated (as said by NIC) <http://projects.exeter.ac.uk/igov/new-thinking-the-lost-strategy-and-policy-statement/>
  - This has to also take account of devolved nations
- Duties on Ofgem should be changed (as said by NIC)
- IGov framework would argue Ofgem should be returned to being an economic regulator only (to be discussed)

# Delivering net zero on time cannot be achieved with BAU

- New roles
- New incentives
- Additional markets
- More coordination
  - The essential ingredient
- More direction

# Putting in a place a credible buildings energy efficiency programme should be the priority energy policy

- It provides so many benefits and is essential to net zero.
- It will cost upfront money, but less further on
- Skills creation central to its success
- Several good European policy examples to choose from
- At root, everything has to be made easy for households
  - Poorer households will have to be paid for in its entirety (part of justice issues)

# Justice and Engagement

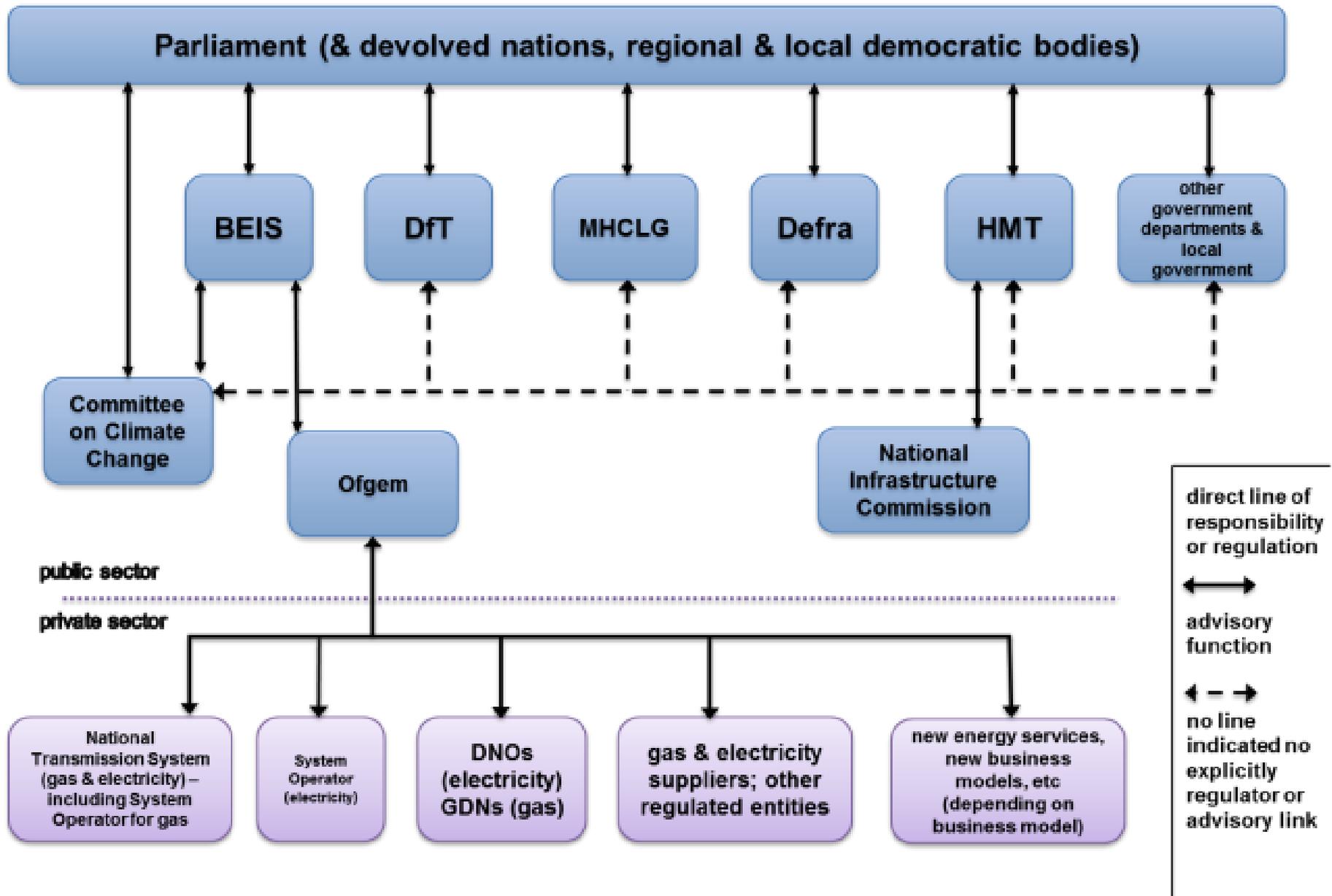
- Britain has major fuel poverty problem
  - Never seem to gets better
  - Result of combo of income, housing quality, energy price
  - Energy efficiency a central means combat it
    - Better housing, less energy used, less money required
    - Gets around problem of focus on price – which will go up in short term to pay for decarbonisation – less over time if sort out energy efficiency in near term
- As energy system changes, those who work in fossil fuel (including gas network) and non-flexible areas (includes nuclear) are either not wanted or cause system problems
- Important that distributional impacts are confronted so that there is a 'just' transition
- Paying for the energy transition should not just be paid for by energy customers – it's a social good

# Data

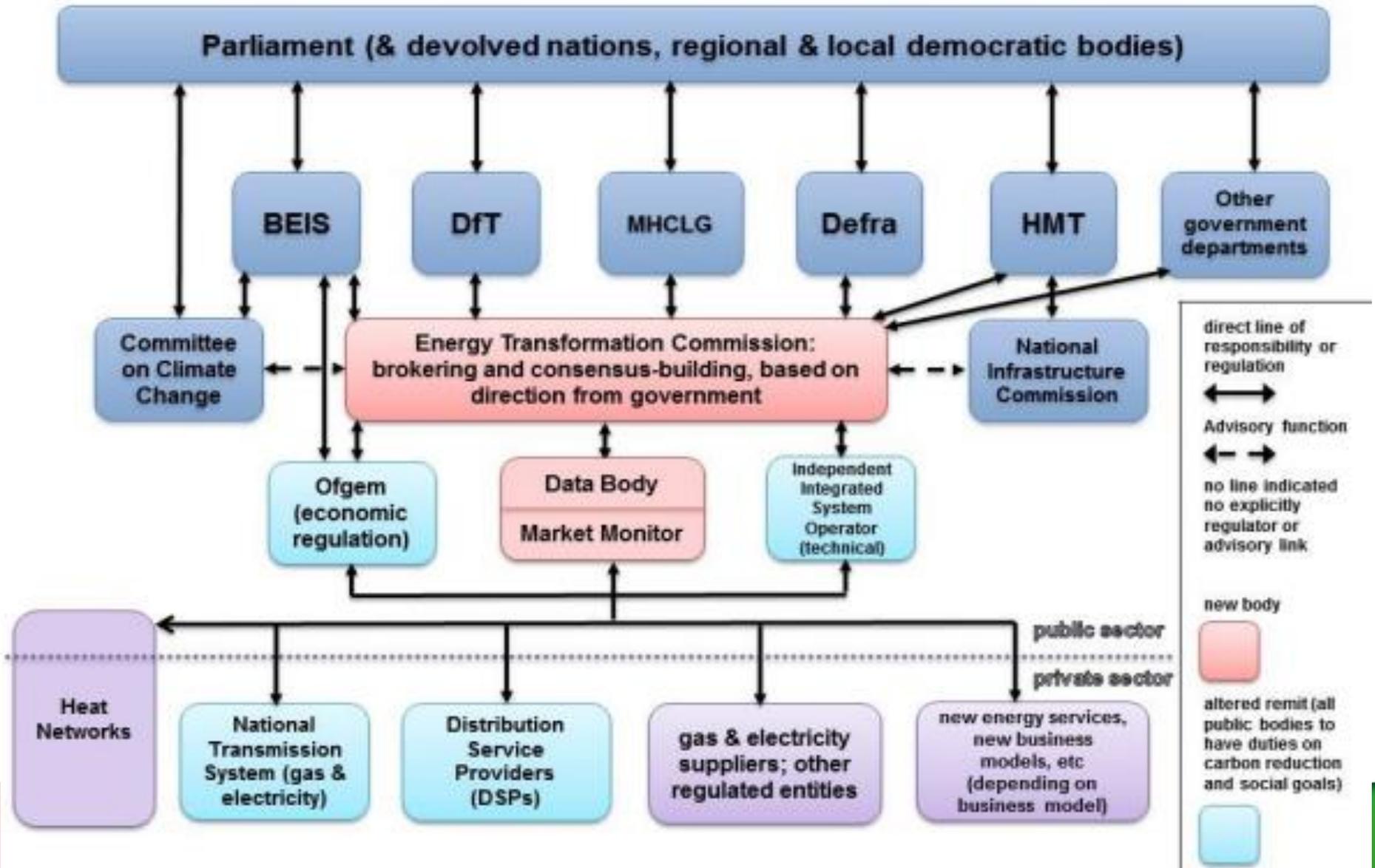
- Much more data washing around about energy use
  - time and place
- In general, good for delivering a smart and flexible energy system
  - Needs system values to be accessible (innovation social good)
  - Private data needs protecting
  - Customer protection becomes much more complex
    - If you buy a smart fridge, and it goes wrong and leaves a pool of water on the floor – is this the fault of the fridge, the internet provider, the tariff supplier etc

# The IGov 'straw' fit for purpose GB energy governance framework

# GB energy governance: current institutions and responsibilities



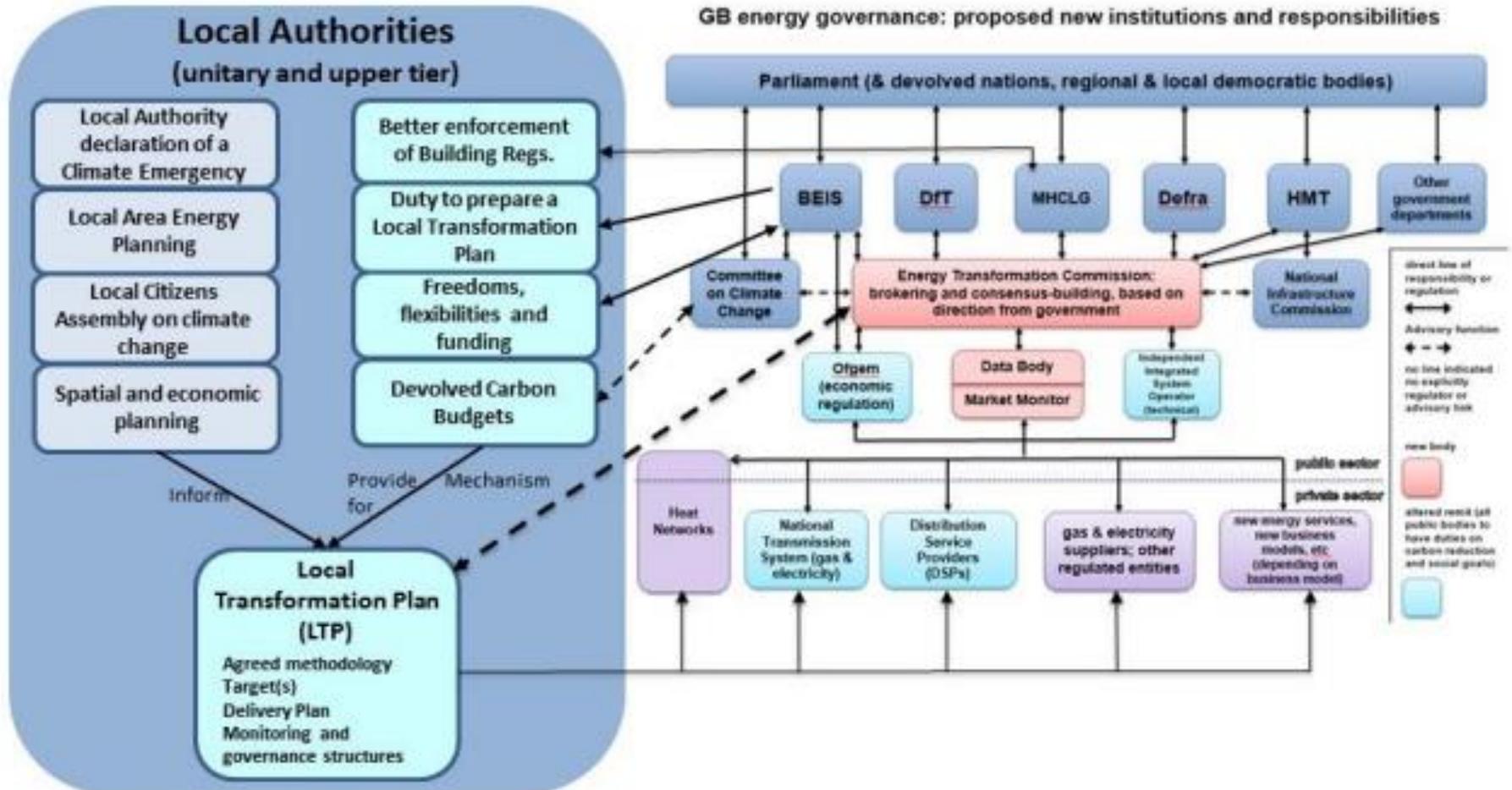
## GB energy governance: proposed new institutions and responsibilities



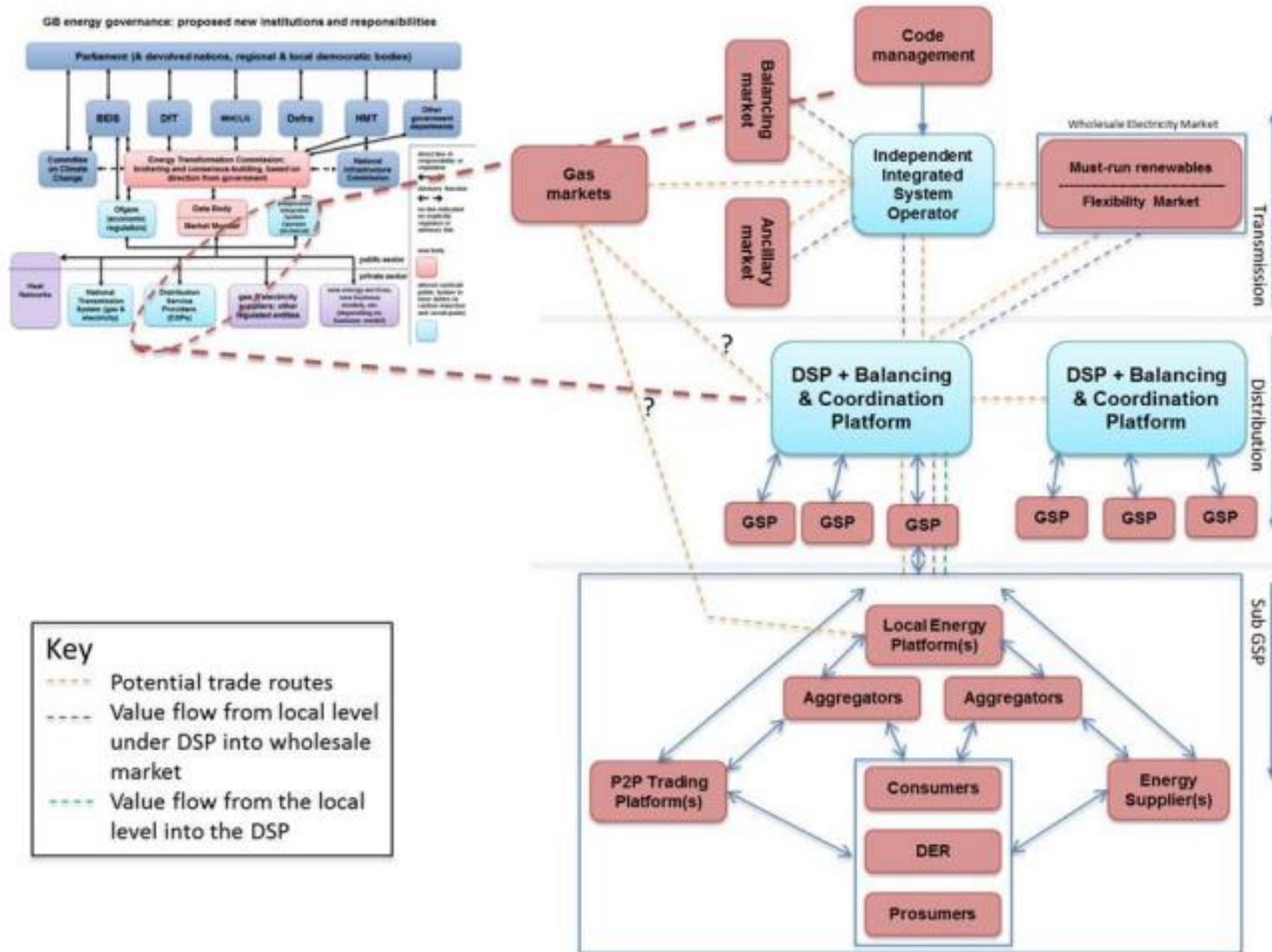
# Local Government Dimension has to be coordinated:

<http://projects.exeter.ac.uk/igov/wp-content/uploads/2019/08/IGov-Getting-energy-governance-right-01-08-19.pdf>

## Local and national energy governance



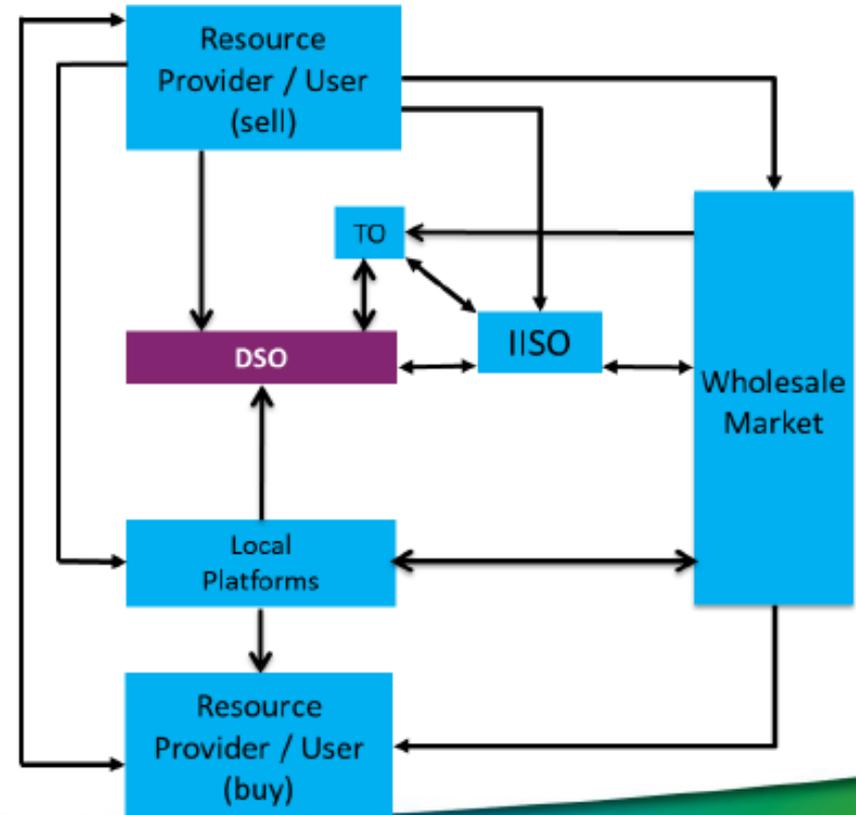
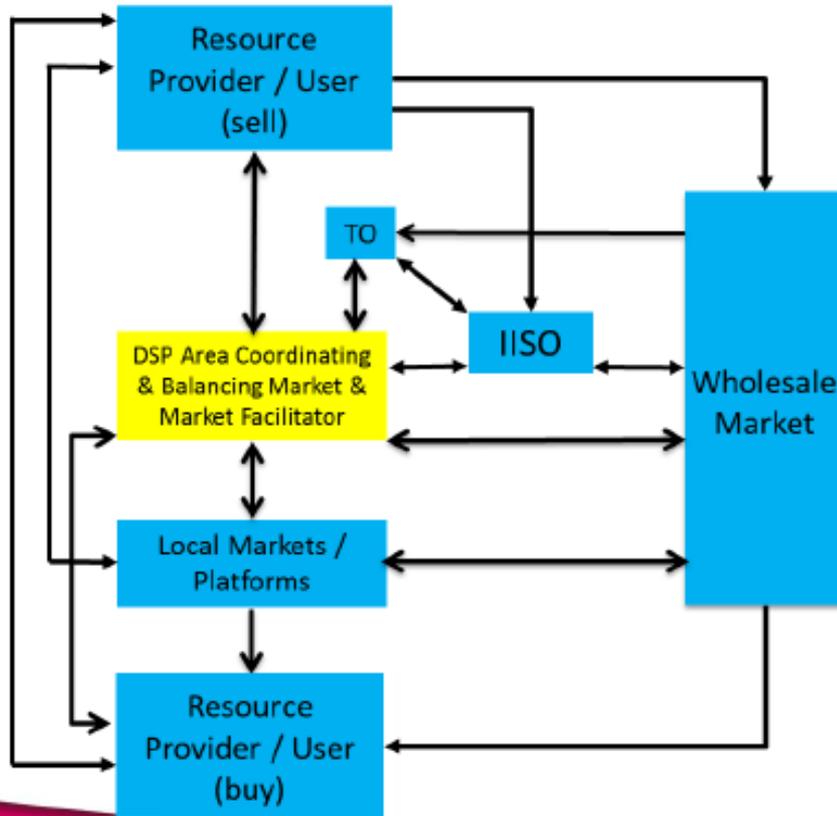
# Market Dimensions as well: <http://projects.exeter.ac.uk/igov/wp-content/uploads/2019/08/IGov-Getting-energy-governance-right-01-08-19.pdf>



IGov Figure 6: Local market design



# Slightly old schematic of area based markets and system operation



# REFERENCES

- <http://projects.exeter.ac.uk/igov/>
- [The 5 links which summarise IGov  
http://projects.exeter.ac.uk/igov/shortcut-to-key-igov-findings/](http://projects.exeter.ac.uk/igov/shortcut-to-key-igov-findings/)
- <http://projects.exeter.ac.uk/igov/new-thinking-the-lost-strategy-and-policy-statement/>
- <http://projects.exeter.ac.uk/igov/new-thinking-looking-at-the-nic-regulatory-review/>

# PRIMERS

- <http://projects.exeter.ac.uk/igov/category/research/primers/>
- NY REV
- E Australia System Change
- DSPs and valuing DER
- Fit for Purpose GB energy governance (needs updating)
- Energy Codes and Licenses

# THANKYOU

<http://projects.exeter.ac.uk/igov/>