

Gas System  
Operator

# Future of Gas Forum: What we heard during the breakout sessions

16<sup>th</sup> May 2019

nationalgrid



# Background to the Future of Gas Forum Breakout Session

- The Future of Gas Forum was held on 16<sup>th</sup> May 2019 in London. It was attended by over 30 gas industry stakeholders and facilitated by the Gas System Operator.
- The potential changes that could impact the future gas markets may vary from transformational discrete topics to combinations of factors which challenge the evolution of the markets.
- We wanted to consider these potential influences on future market change, to try and understand:
  - What impacts could these influences have on industry sectors?
  - What consequential market aspects might need to be reformed?
  - When might potential change to the market frameworks need to be considered in the next 2-10 years?

# Bringing Together Diverse Perspectives to Prepare for the Future Market

- The following slides provide an overview of what we heard during the breakout session
- **The aim of the breakout session was to understand further the impacts of themes of change, which were explored in an initial stakeholder workshop in March 2019.** We created case studies to ‘stress test’ with stakeholders what different themes of change may mean in terms of commercial & regulatory impacts on the market frameworks.
- **The information received will be used to help develop the first Gas Markets Plan (GMaP)**
- All materials presented at the workshop, including further detail on the case studies can be found on the Future of Gas website ([www.futureofgas.uk](http://www.futureofgas.uk))

# Case Studies Discussed

These case studies have been based on potential influencers of the future and National Grid's [Future Energy Scenarios 2018 data](#) where applicable. These are for illustrative purposes only, to stress-test and facilitate discussion of the types of market change that may need to be considered in the future.

No	Case Study	Characteristics
1	New Gases	Hydrogen blending from Electrolysis Large scale production from Steam Methane Reforming with Carbon Capture Usage and Storage (CCUS)
2	Growing embedded supply & demand	Growth of bio-methane and bio-SNG supply sources Increased uptake of compressed natural gas vehicles
3	Evolving offshore supplies	UK Continental Shelf (UKCS) supplies decline Proportion of import supplies meeting demand increases
4	Changing within-day behaviour	Increasing flexible use of gas-fired power stations More commercially-driven gas supplies
5	Status quo	Steady progress of gas market without fundamental new technology changes

# Case Study 1 – New Gases

- The key topics discussed are shown in the squares. We also heard that:
- Stakeholders want to understand more about hydrogen, particularly how it is different to natural gas (e.g. in behaviour and calorific value). It was more challenging to understand market change implications when there are different ways that hydrogen path(s) could emerge in time and regionally.
- Policy makers, regulators and industry need to think about
  - feasibility and timescales for increasing the hydrogen blend: for network infrastructure and different end consumer types (from domestic to industrial). This could help to understand potential timescales for market change.
  - How do timescales for policy, infrastructure development and market change interact?

How is hydrogen different to gas?

The need for policy direction

What is the route to deploying hydrogen?  
What does this mean for timescales for market change?

Guarantees of Origin

Will new frameworks for hydrogen be needed? If so, why and when?

Operational Impact of H2 on infrastructure and end users

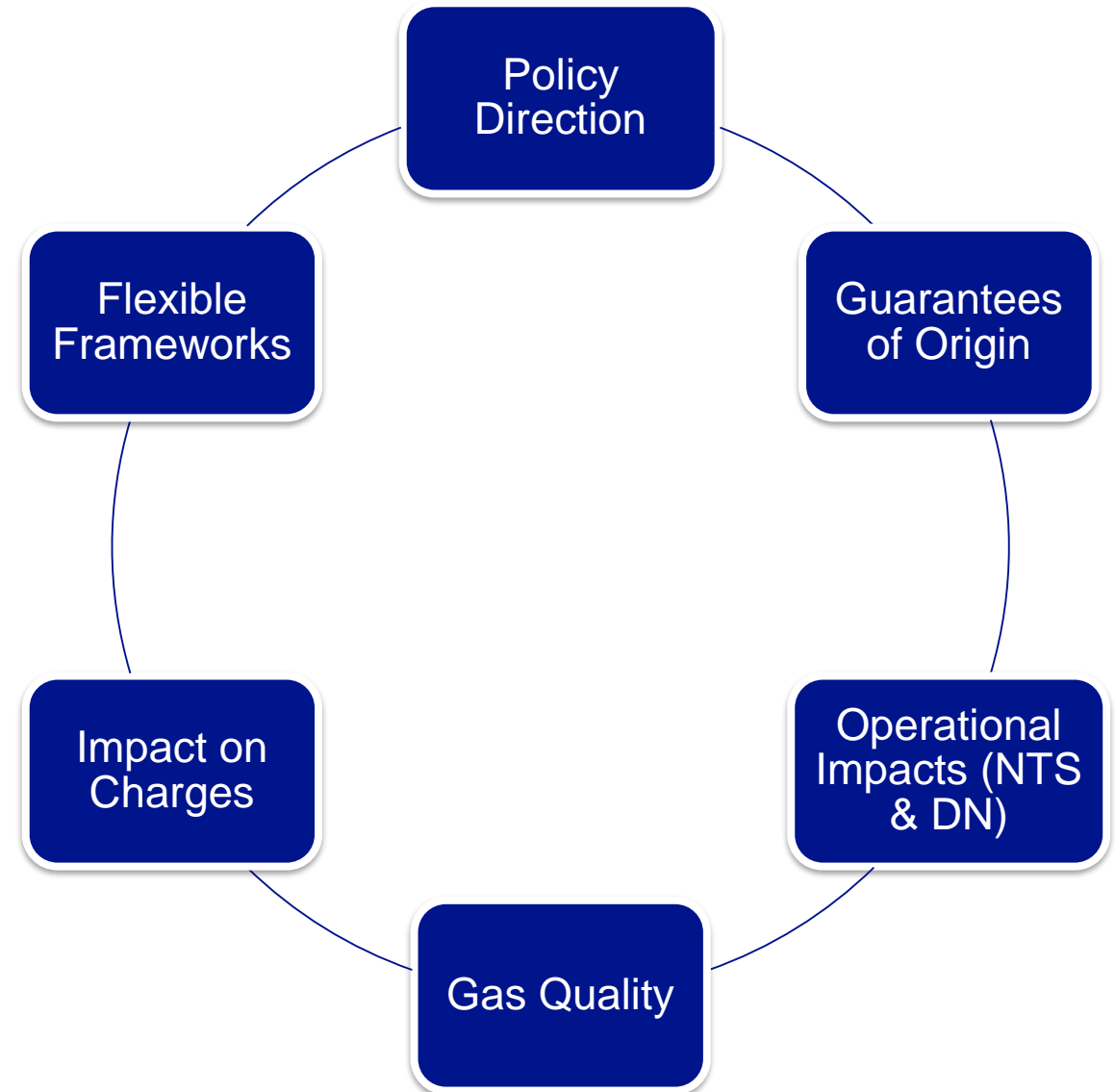
Interactions between electricity, gas, hydrogen, power and storage

Cost

Gas Quality

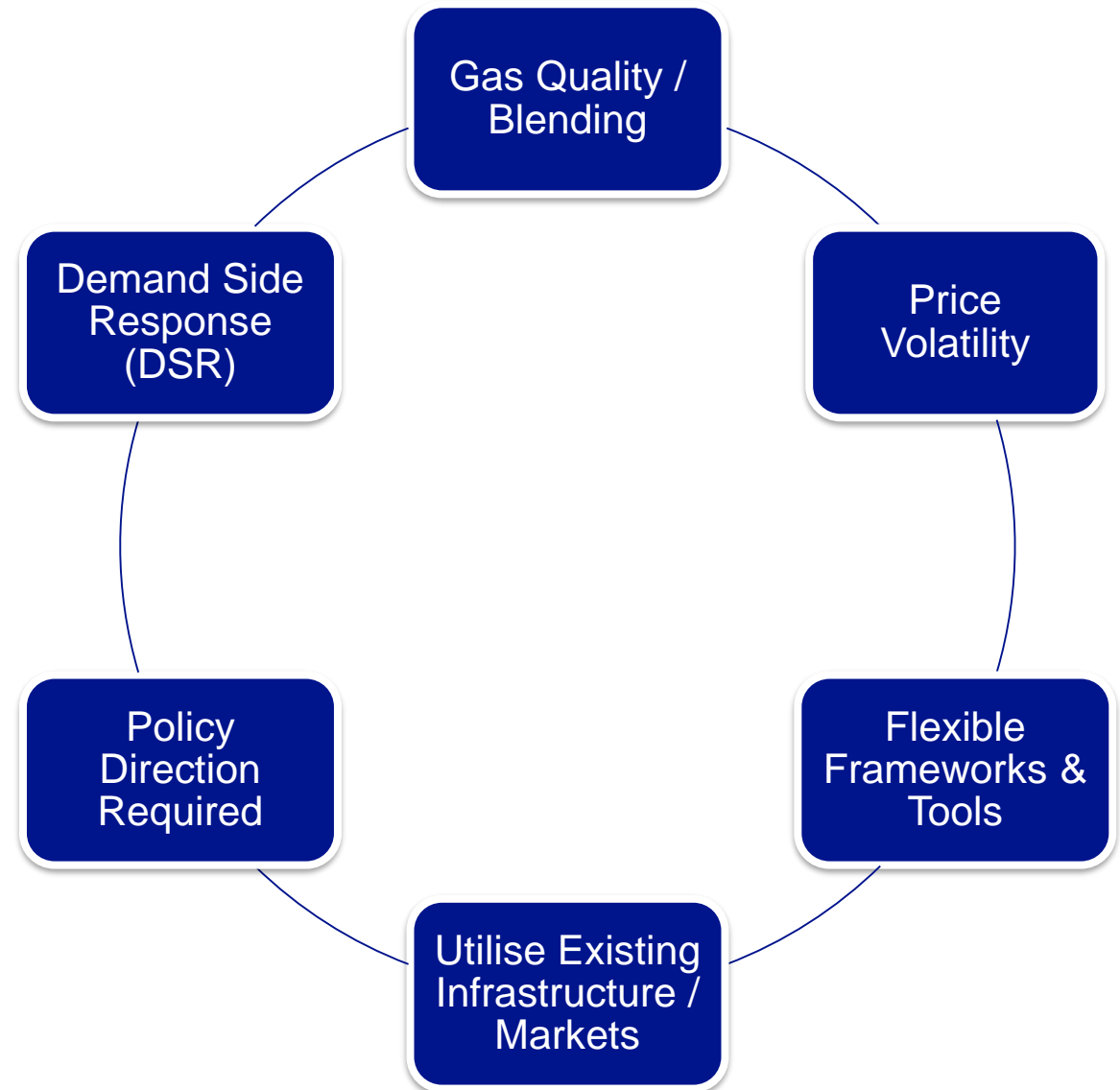
# Case Study 2 – Growing Embedded Supply & Demand

- The key topics discussed are shown in the circle. We also heard that:
- Importance of flexible market frameworks, rules shouldn't lock in early solutions as could hinder further innovation
- Would be useful to have consistent definitions on terminology (Bio-Methane / Bio-SNG)
- Need standardised approach to Guarantees of Origin certification
- Physical DN to NTS reverse flow whilst not expected to be required in the short term, could have a fundamental impact on the market frameworks



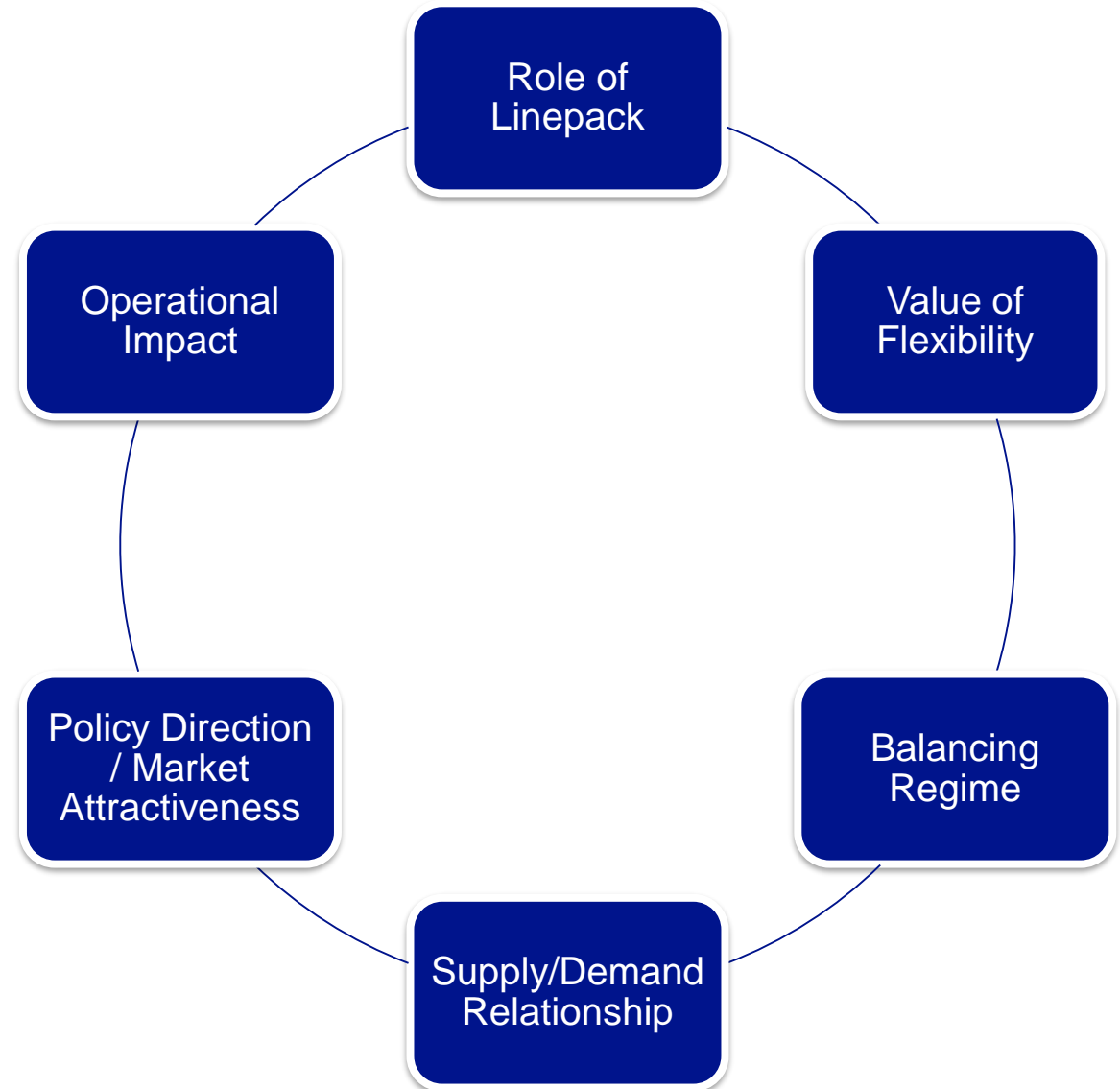
# Case Study 3 – Evolving Offshore Supplies

- The key topics discussed are shown in the circle. We also heard that:
- Due to the uncertainty of how supply mix will evolve over time it was highlighted that there will be a need for flexible markets and frameworks.
- The consequences of reducing Capacity Baselines needs to be fully understood before proceeding
- Policy direction will impact North Sea development
- The understanding and impact of gas DSR was questioned



# Case Study 4 – Changing Within-Day behaviour

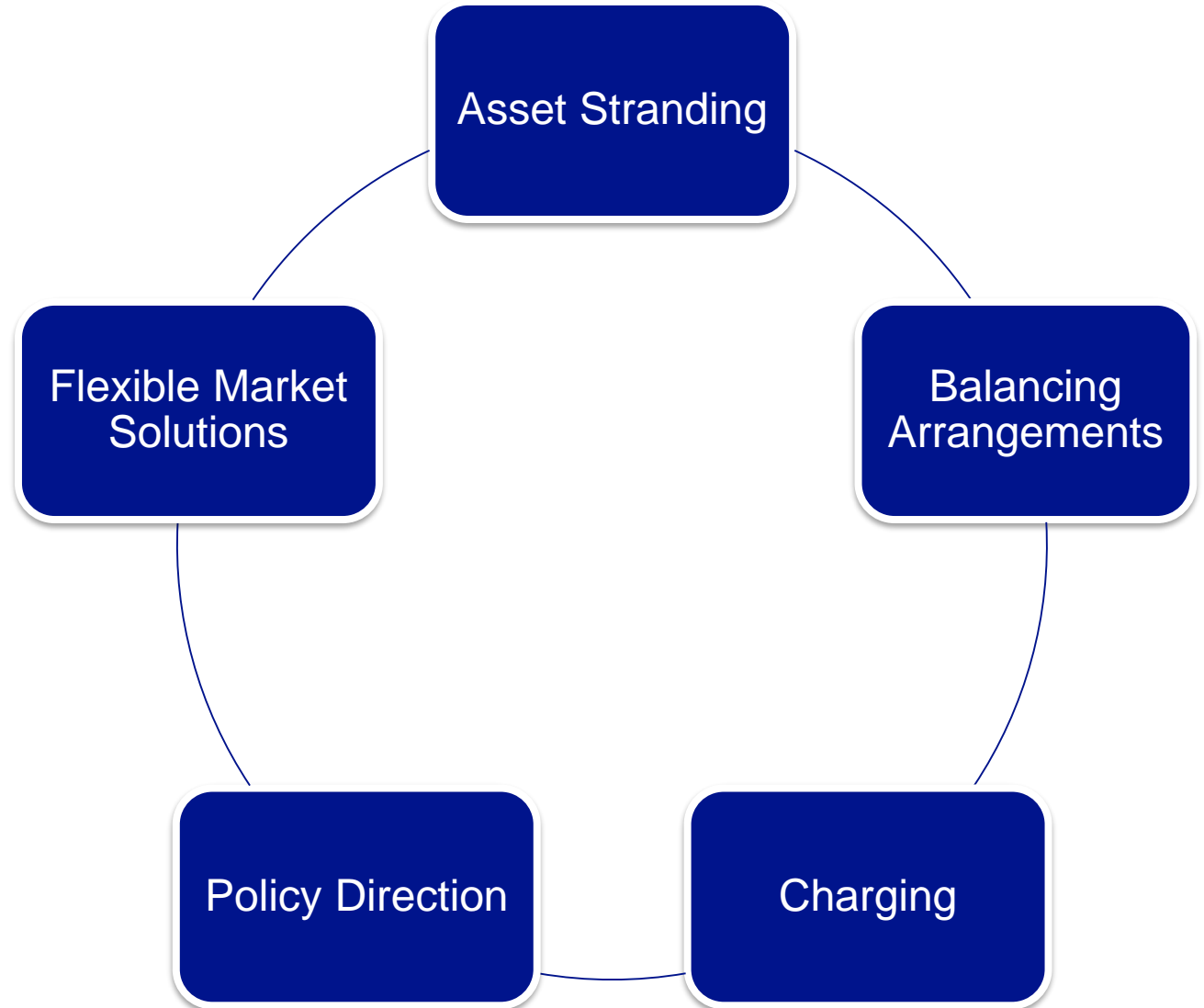
- The key topics discussed are shown in the circle. We also heard that:
- The market should value flexibility as a commodity and the frameworks should reflect this
- A change to a within-day balancing regime would impact the liquidity of the market
- Linepack and compression will continue to play a key role in the flexibility of the network
- Increasing requirement for flexibility on demand side, combined with potential loss of flexibility on supply side, could lead to ‘tipping point’





# Case Study 5 – Status Quo

- The key topics discussed are shown in the circle. We also heard that:
- Investment decisions will be required very soon to enable full potential gas decarbonisation. This requires policy direction and a joined up approach
- There is a considerable risk of asset stranding if there isn't the necessary policy direction
- There was a general understanding that over time as the within-day asks on the gas network change, more commercial solutions could be needed to balance the system – increasing flexibility requirements



# Next Steps

- The sessions were a really positive experience and have provided a wealth of feedback from a wide variety of stakeholders with different perspectives
- The information provided will feed into the development of the first Gas Markets Plan
- National Grid Gas System Operator would like to hear stakeholder views through the summer to build the first GMaP together
- The ambition is to publish a draft version of the GMaP in collaboration with the first [Future of Gas Steering Group](#). With the first GMaP publication currently planned for late summer

# Feedback Received at the Forum

Please tell us what you would like the Gas Markets Plan to achieve?

- “Market based measures to manage transition”
  - “Policy stability and certainty”
  - “Transparency about costs of investing in power grid vs. gas grid – Is it cheaper to invest in power to gas or upgrade electricity network?”
  - “Focus groups i.e. Power to gas would be beneficial”
  - “Impact analysis on investment in infrastructure and keeping optionality in grid for future energy uses”
  - “Timeline of the plan”
  - “Place a value on flexibility”
  - “Provide cost benefit for each considered option”
  - “Strong prioritisation”
  - “Some quick wins”
- The above comments were provided by Stakeholders at the Forum
  - We will take the comments in consideration when developing the Gas Markets Plan. We will also follow up on these comments and provide our rationale for the development of the GMaP at the next Forum

# Carrying on the Conversation

- **If you have any feedback on the information provided or would like further details on anything related to the Gas Markets Plan don't hesitate to get in touch with one of the team**
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Please subscribe to Future of Gas Website <https://futureofgas.uk/> to get the latest information on the GMaP

