Gas Network Security Provisions

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Network Gas Supply Emergency Definitions

- A Network Gas Supply Emergency (NGSE) can be caused by:-
  - A critical transportation constraint
    - This may occur when there is sufficient gas available but due to a constraint on the primary system, the gas can not be transported to the correct location
  - Insufficient gas supplies available to the primary system (Gas Deficit)
    - Gas Deficit Emergency – Insufficient supplies available to the primary system
    - **GS(M)R Safety Monitor Breach – where there is or maybe insufficient storage available to meet winter demand conditions**

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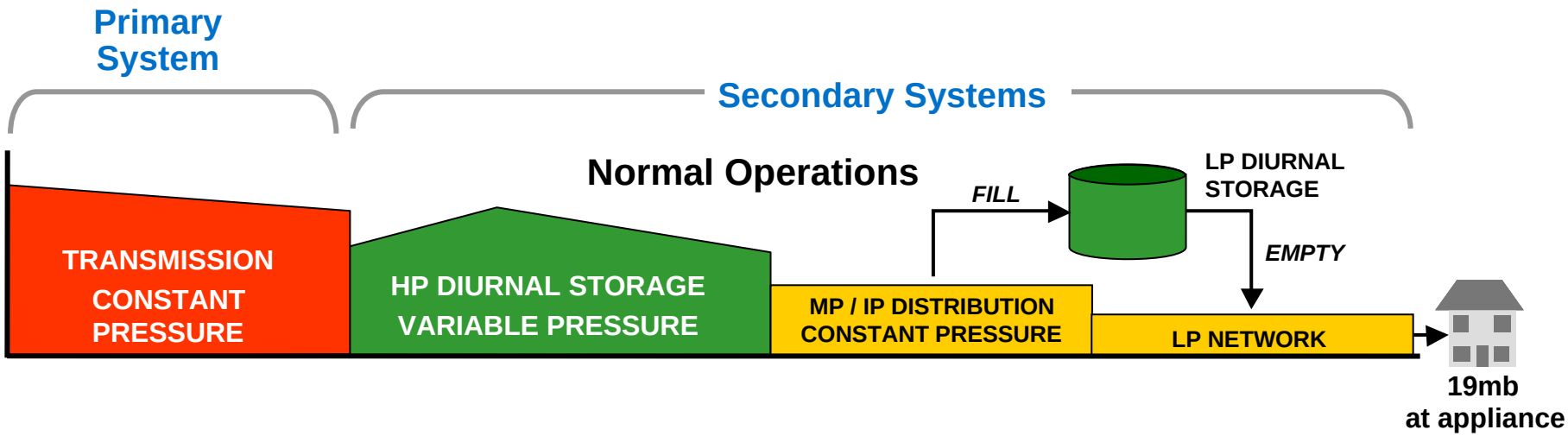
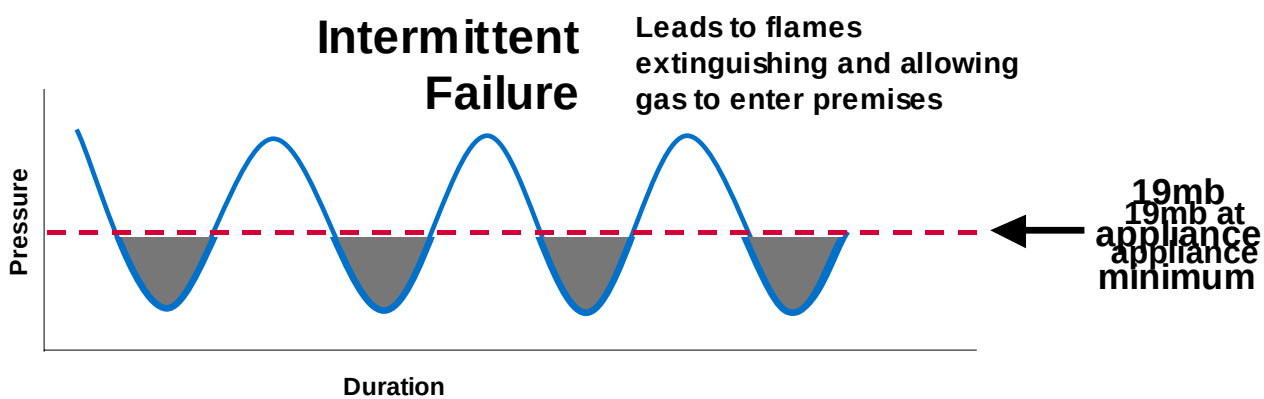
A Network Gas Supply Emergency

Supply / Demand Balance





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Gas Safety (Management) Regulations 1996

- Enacted following HSC/DTI report ‘Britain’s Gas Supply: A safety Framework’ (1995)
- Criminal law NOT civil
- A permissioning, safety case regime
  - low frequency high consequence events
- Key objective
  - to minimise the risk of a gas supply emergency (loss of pressure endangering people) – from occurring or continuing

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GS(M)R – Protecting consumers

- GS(M)R requires ALL consumers to be protected, both industrial and domestic, by maintaining safe pressure OR safely isolating consumers

  - Safely isolating certain consumers whilst maintaining safe pressure in the rest of the network is not a supply emergency – and is a key strategy in the safety cases.

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GS(M)R safety monitor arrangements in the safety case regime

- Aimed at ensuring there is sufficient gas retained in storage to minimise the risk of a supply emergency in a 1 in 50 cold winter.
- To ensure that throughout the winter the network remains at a safe pressure
- Part of the safety cases for
  - National Grid
  - Distribution Networks
  - Independent Gas Transporters
  - The NEC

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GS(M)R safety monitor arrangements in the safety case

- Large industrial users ‘protected by isolation’.
  - Safely isolating consumers is not a supply emergency.
- Domestic and embedded consumers (those difficult to isolate safely and in a timely manner) – protected by gas in storage.
- The safety monitor levels are a backstop when all other arrangements have failed to deliver.
- In summary, they are there to protect the most vulnerable and ensure public safety.

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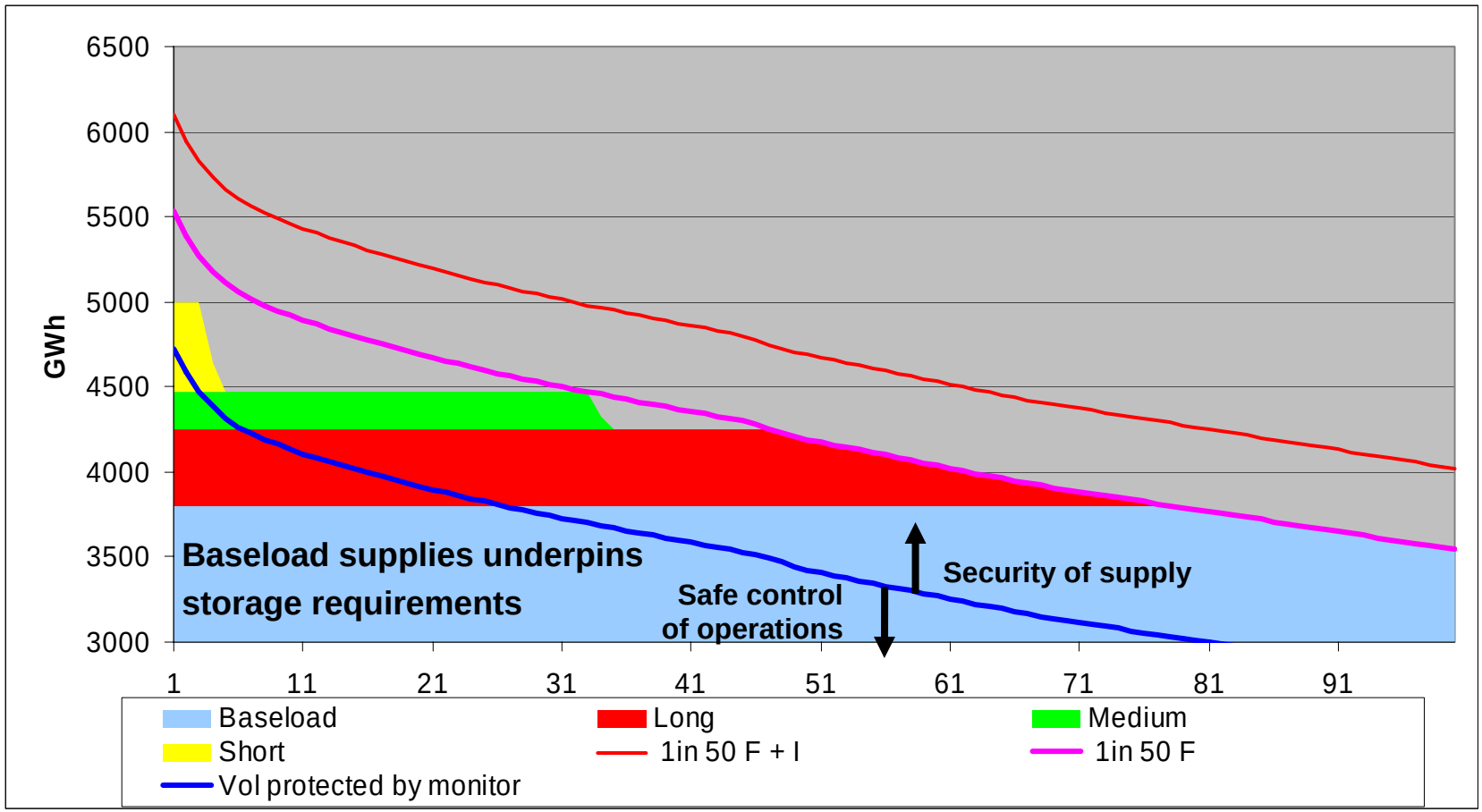
1 in 50 Firm load “protected by monitor”



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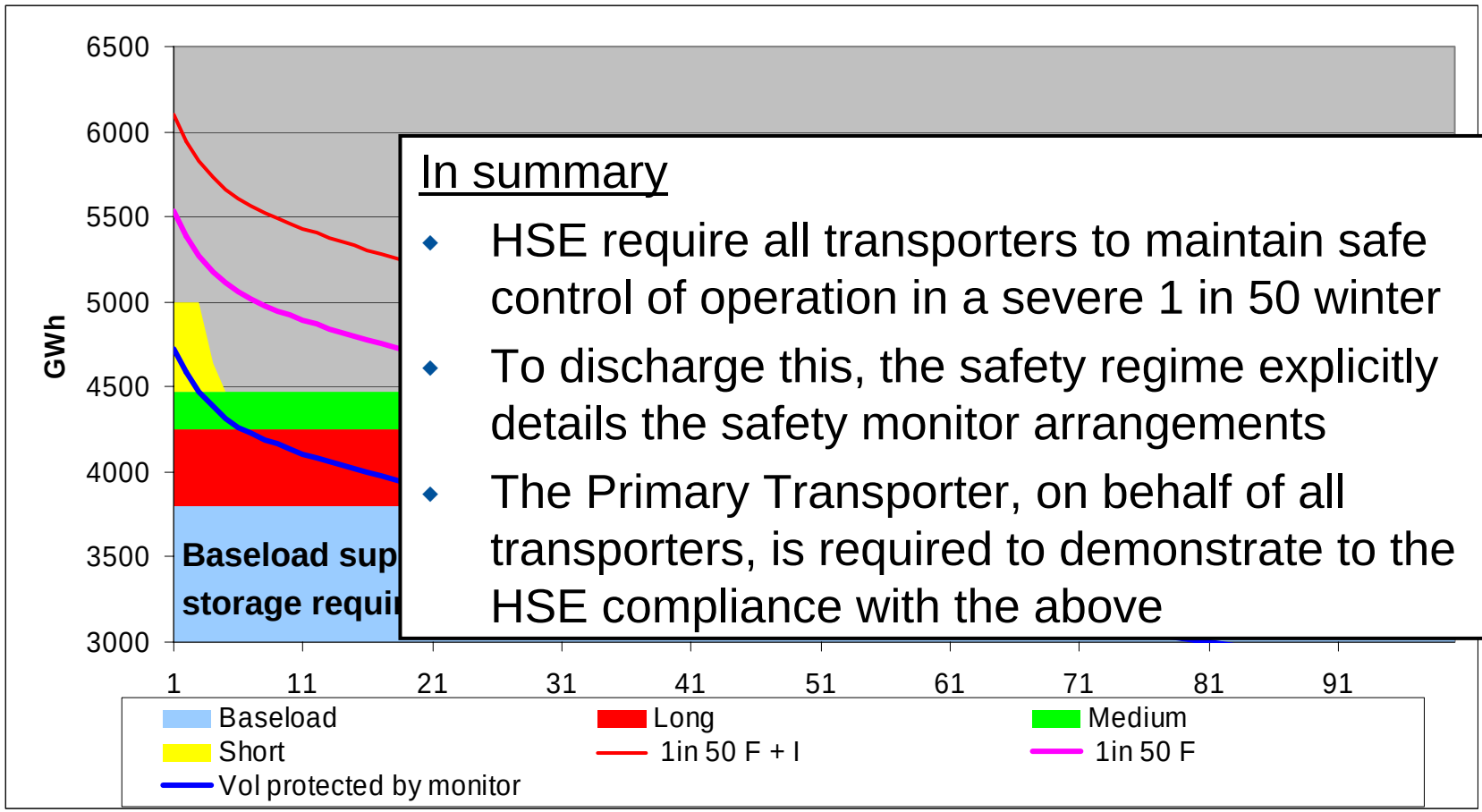

In summary

- HSE require all transporters to maintain safe control of operation in a severe 1 in 50 winter
- To discharge this, the safety regime explicitly details the safety monitor arrangements
- The Primary Transporter, on behalf of all transporters, is required to demonstrate to the HSE compliance with the above

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Commercial procurement of the sufficient gas to meet 1 in 50 security standards

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Gas Codes Manager

National Grid Transmission

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Current position

- National Grid NTS undertakes a role on behalf of all Transporters to calculate the GS(M)R Safety Monitor requirement based on:
  - information provided by industry parties, through consultation,
  - analysis of historic events,
  - operational exercises.
- Monitor levels published

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Current position

- Shippers incentivised to procure sufficient gas to meet their contracted demand through their licence conditions and UNC cashout incentives - Market solution.
- Market Players currently able to value the risk and identify their own mitigation
- Emergency Arrangements provide “back stop” to ensure public safety

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Level of protection

- Current Safety Monitors are the minimum level required for Safe operation not Security of Supply.
- Loads protected by Monitor
  - “Priority” Loads
  - Ireland Firm
  - All Non Daily Metered
- Loads protected by Isolation
  - NTS Interruptibles
  - LDZ Interruptibles
  - NTS Power Firm
  - NTS Industrial Firm
  - DM (excluding Priority loads)

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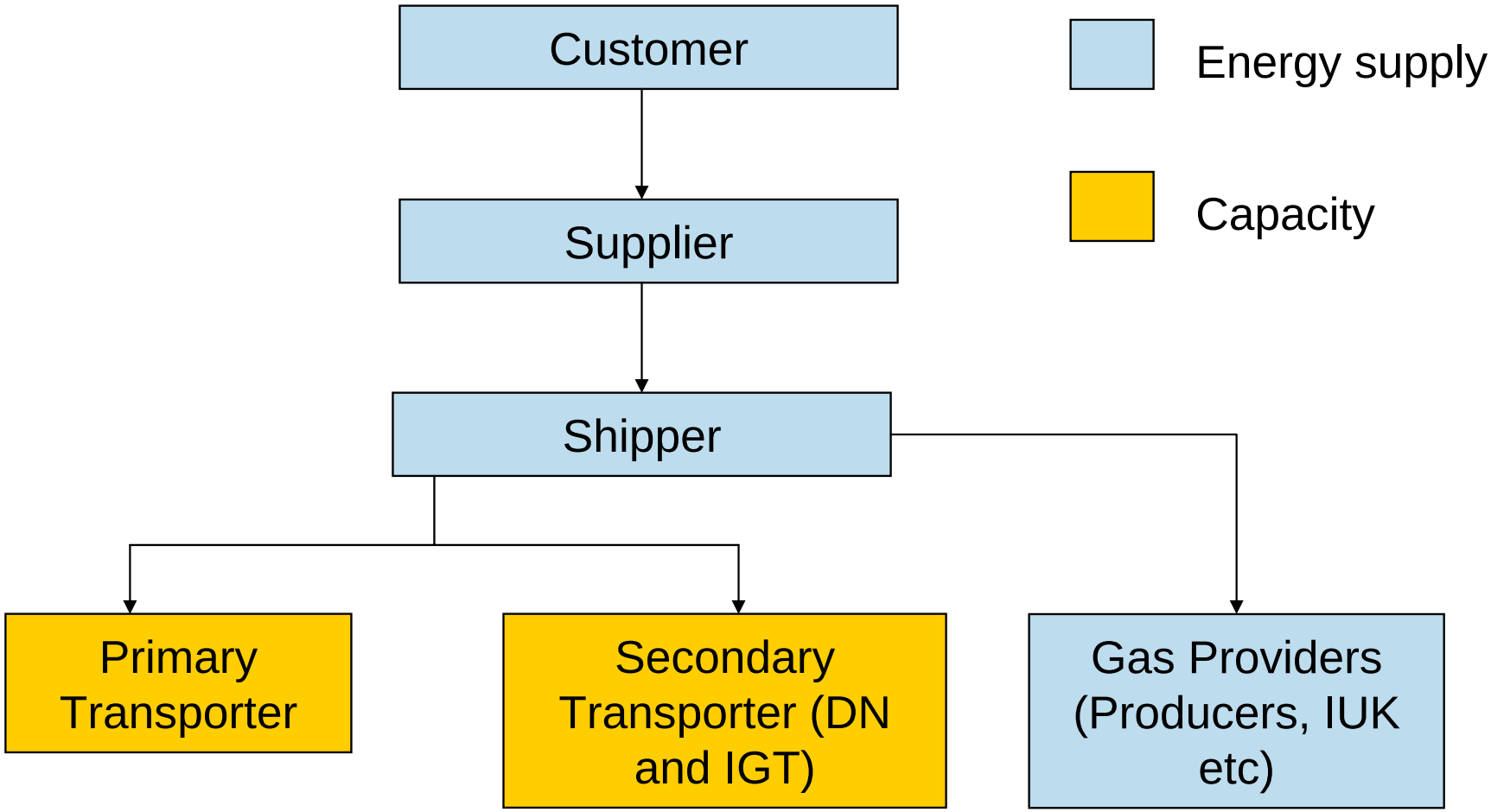
Who should have the requirement to procure?



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Options for who should procure

Options that could be considered:

- Development of existing Multi-shipper market model.
  - Explicit licence obligation on Suppliers/Shippers to discharge industry 1 in 50 obligation.
  - Refinement of existing UNC incentives / compensation
- Multi-Transporter model
  - All Transporters in proportion to load protected
- Single buyer model
  - Primary Transporter
  - Independent entity

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Procurement options

- Contracting for 1 in 50 requirement means that in the majority of years the provision will not be required.
- Single buyer model:
  - Would need to define level of procurement i.e.
    - Avoid Monitor breach in all scenarios?
    - Demand Curtailment expectation?
  - Need to assess potential cost
  - Funding mechanism

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Comparison of Reserve analogy in Electricity with Gas Safety Monitors

- Electricity.
  - Single buyer purchasing of Bal Mech Security of Supply arrangements appropriate to Gate Closure arrangements.
  - Arrangements driven by Electricity Act licence obligations.
  - No Criminal liability.
  - For Security of Supply.
- Gas.
  - Safety Monitors driven by Health and Safety Legislation.
  - The market's lack of gate closure enables a market response.
  - Debate on whether single buyer procurement would be more efficient and economic than current market arrangements.
  - For safety of the public.

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Procurement options

- Contracting with Demand-side.
  - Current Safety Monitors do not include **any** demand that could be safely isolated and the offtake monitored in real time.
  - Assumes all other load is taken off by Shippers or emergency curtailment action.
- Contracting to hold back “beach reserve”.
  - Current Safety Monitors include for realistic maximum beach supplies. Holding back this supply would increase the requirement for other alternative supplies – i.e. storage.
- Reserving storage.
  - Need to reserve volume and deliverability – Need to reassess UIOLI provisions at storage sites, counter nomination processes, resale value of gas and retention of profit on sale.

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Going Forward

- Require assessment of the benefits of moving from:
  - Current multi-party competitive market arrangements which reward shippers for providing the safety monitor gas when needed and directs the costs towards those shippers who have not sourced sufficient supplies to meet their contracted demand.
- To:
  - Single buyer procurement model

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Going Forward

- Need inclusive debate on:
  - Who should procure
  - The level of provision
  - Who could provide
  - Funding
- So that single buyer model can be assessed against incremental changes to current market lead regime.

- All changes in this area will require Safety Case changes.

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Possible Incremental Enhancements

- Need to retain the responsibility for setting of the Safety Monitors with the party currently held responsible under criminal law for the safety of the public.
- Setting of the GS(M)R Safety Monitors relies on information from all parties involved in the provision of supplies to the protected customers.
- Encourage all parties to contribute to this process and help develop / enhance it.
- Possible to consider changes to:
  - Emergency steps
  - Emergency Cashout regime
  - Incremental changes to 0071a arrangements

  to remove commercial exposure to storage curtailment.

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Outlook

Key Issues apparent to National Grid Transmission.

- UK Plc Security of Supply.
  - If Security of Supply secured then risk of emergency reduced.
- Focus on securing and demonstrating a supply and demand balance in order to avoid an NGSE ever occurring.

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