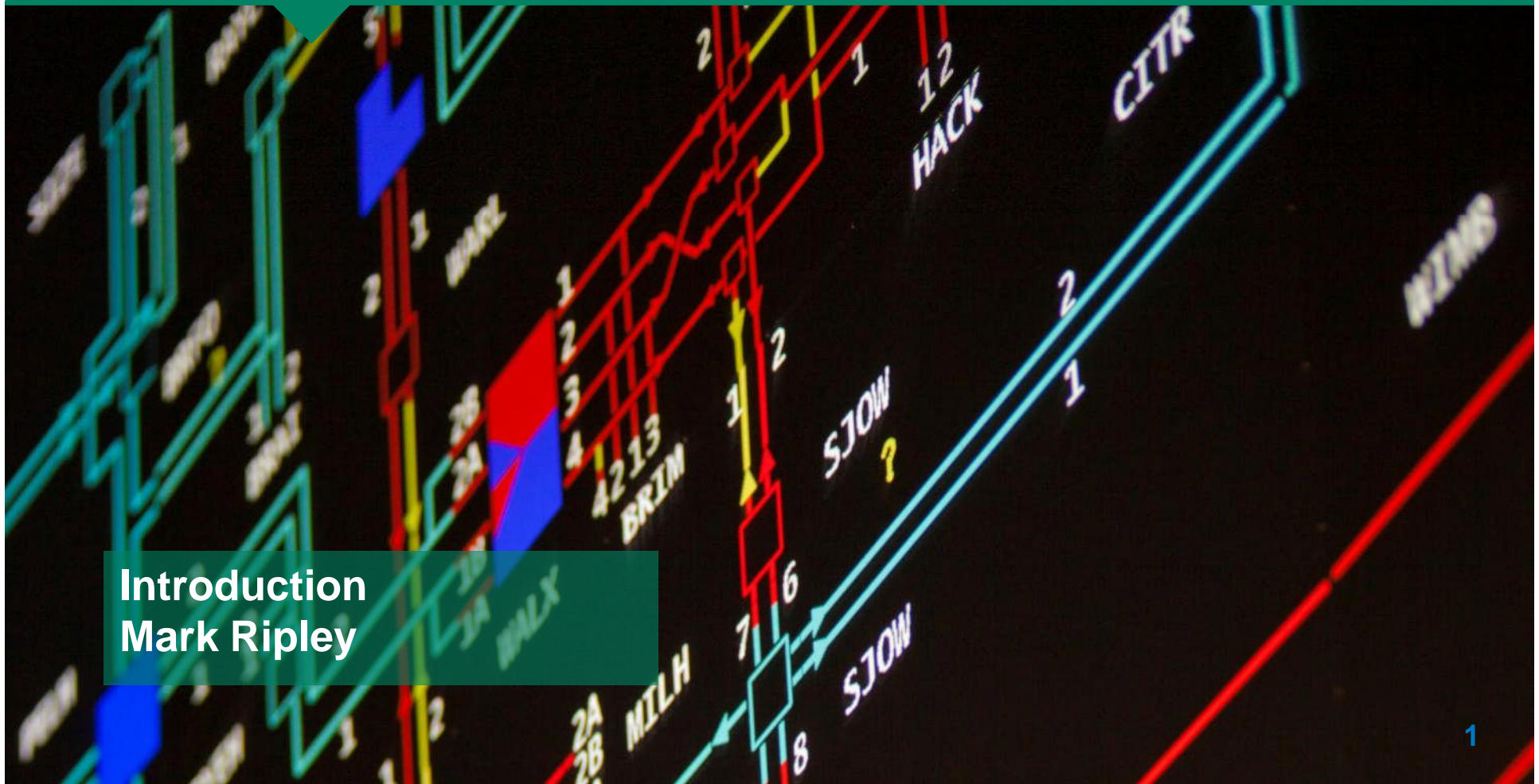


Balancing Services Proposals

Update Workshop



Introduction
Mark Ripley

Housekeeping

- No Fire Alarm test planned
- Fire Exits
- Amenities
- Q & A

Workshop Agenda

10:30	Introduction
10:40	Supplemental Balancing Reserve
11:25	Break
11:35	Demand Side Balancing Reserve
12:20	Q&A
12:30	Lunch

Objectives for the Workshop

- To update you on where we are in the process
- To update you on the design of the proposed new balancing services in light of response to the initial consultation
- To answer your questions and help you to prepare your responses

Where are we in the process?

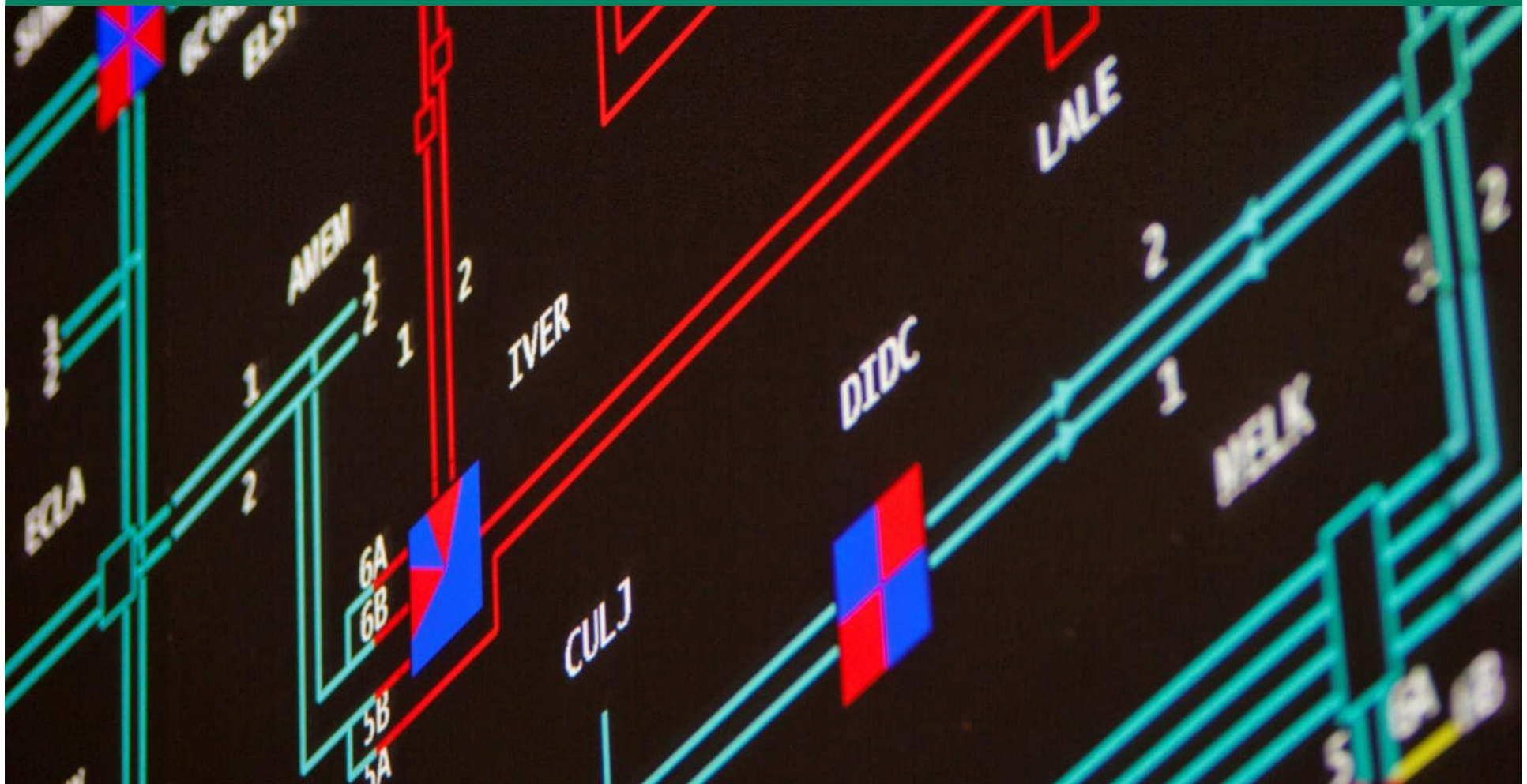
- Initial Consultation in July 2013 – 35 responses
- Wide range of views expressed, valuable feedback received
- We have sought to address concerns raised in refining / clarifying the design of the two reserve products
- We have put these proposals out to final consultation (closing 11th November)
- We have formally consulted on the corresponding changes to the C16 documents needed to implement these products

What comes next?

- In light of consultation responses, we will decide whether to put one, both or neither product forward to Ofgem for approval
- We are required to present our application (and supporting report) to Ofgem within 7 days of the consultation closing
- Ofgem then has 28 days to either accept or reject
- Even if Ofgem approve these products, we would only procure them if there is an anticipated need and it is economic to do so
- These reserves would only be used under limited defined conditions

Supplemental Balancing Reserve

Peter Bingham



SBR – Key issues arising from consultation

- Allow the market to respond
- Bring forward the CM
- Buy more STOR
- Participation, additionality and TEC
- Market distortion / capping price signals
- Use of SBR as a last resort

Supplemental Balancing Reserve - Summary

- Targeted at Power Stations that would otherwise be unavailable to the market
- Held in reserve outside the market, ready to respond in the unlikely event that it is needed
- Despatched by National Grid only as a last resort, to avoid invoking Emergency Actions
- In principle, could also be provided by large demand reducers

Supplemental Balancing Reserve

Revised Proposals

- **Participation** – generating plant (or large demand reducers) that would otherwise be unavailable to the market
 - Declaration from Board of Directors that the plant will not be participating in the electricity and/or balancing markets
 - Plant capable of operating between 6am and 8pm during winter weekdays
 - Dedicated BMU, despatched directly from the Control Room, with real-time operational metering
 - Not required to hold TEC, but granted sufficient transmission access rights under the SBR contract if despatched
 - SBR plant would be held outside the markets for energy and balancing services for the duration of the contract
- **Procurement** – If required, SBR tenders would take place in early 2014 for the winters of 2014/15 & 2015/16
- **Price** – Providers would bid prices for capability, warming and utilisation
- **Target Volume** : Quantity of SBR required established having regard to the latest uncertain supply/demand outlook and the Government's reliability standard

Supplemental Balancing Reserve

Revised Proposals

- **Assessment** – we will accept a sufficient quantity of SBR tenders to meet the Target Volume at least cost, taking account of the declared plant reliability
- **Non-Delivery Charges** – Providers would declare a reliability factor for their plant. If their actual reliability falls below their declared reliability, they will pay a non-delivery charge
- **Despatch (How)** – Plant would be despatched by the System Operator, requesting the submission / following of an FPN, or by accepting an Offer in the BM
- **Despatch (When)** – as a last resort (subject to dynamics) after all commercial balancing actions in the market have been exhausted, to avoid Emergency Actions (including Demand Control)
- **Testing** – SBR plant would be subject to monthly tests. These tests, together with ‘last resort’ despatch instructions will be used to measure the actual reliability of the plant for the calculation of any non-delivery charges
- **Payments** – SBR providers would be paid monthly for capacity less any non-delivery charges, together with any testing, warming and utilisation at the tendered rates
- **Cash-out** – SBR costs should feed into the sharpening of imbalance prices under the Electricity Balancing SCR

SBR – Key Issues

- Allow the market to respond
 - Need for EMR & EBSCR borne out of concerns that price signals are not strong enough to drive a market response
 - No evidence that the market will respond – more likely to see more closures than plant returning
 - These additional tools would support us in balancing the system if the market doesn't respond to tightening margins
- Bring forward the CM
 - This is a matter for Government, but we are working on the assumption this will not happen

SBR - Buy More STOR

- We acknowledge that we could procure additional reserves by extending STOR – and there are advantages, but
 - Would need to ‘buy through’ significant volumes to achieve the additionality we require
 - Prices likely to be much higher than at present
 - Large volumes of extra STOR would distort the energy and balancing markets, and the existing STOR market
 - It could compete in the market outside the availability windows
 - It could be called in preference to BM actions
 - It could be used instead of existing STOR providers
 - We do not need any more STOR – any extra we did buy would be for a different purpose

SBR - Participation and additionality

- Dropped the 50MW limit – open to all BM participants capable of central despatch
- Amended additionally requirements
 - Public declaration that plant bidding for SBR will not be participating in the electricity and/or balancing markets
 - Prohibited from market participation during the contract period
- Questioned whether this is enough to avoid speculative applications (from plant that would have otherwise stayed open)
- No requirement for TEC
 - Deemed access rights under the SBR contract if despatched
 - No unfair advantage as SBR cannot operate in the market

SBR - Market distortion / capping price signals

- Distortion minimised by
 - holding outside the markets for electricity and balancing services for the duration of the contract
 - being used only after all commercial options have been exhausted – i.e. as a last resort
 - ...but cannot enforce closure after the contract ends
- Price Signals enhanced by
 - Clarifying the volume of plant that will stay in the market
 - Proposing that cash-out prices approach VoLL if SBR is ever used
 - Although this should be addressed as part of changes to cash out in light of the EB SCR

SBR - Use of SBR as a last resort

- Concern that we might use SBR before the market has been exhausted
 - 'Last Resort' rules made explicit in the BPS, which we are obliged to follow
 - Our measure of success would be for SBR to be dormant all winter and never be used
- Concern that other generators might lose out while SBR ramps up/down, has extended minimum non-zero times, or generates while warming in advance of need
 - Unlikely to get used
 - Displaced generation would receive constrained off payments

Supplemental Balancing Reserve

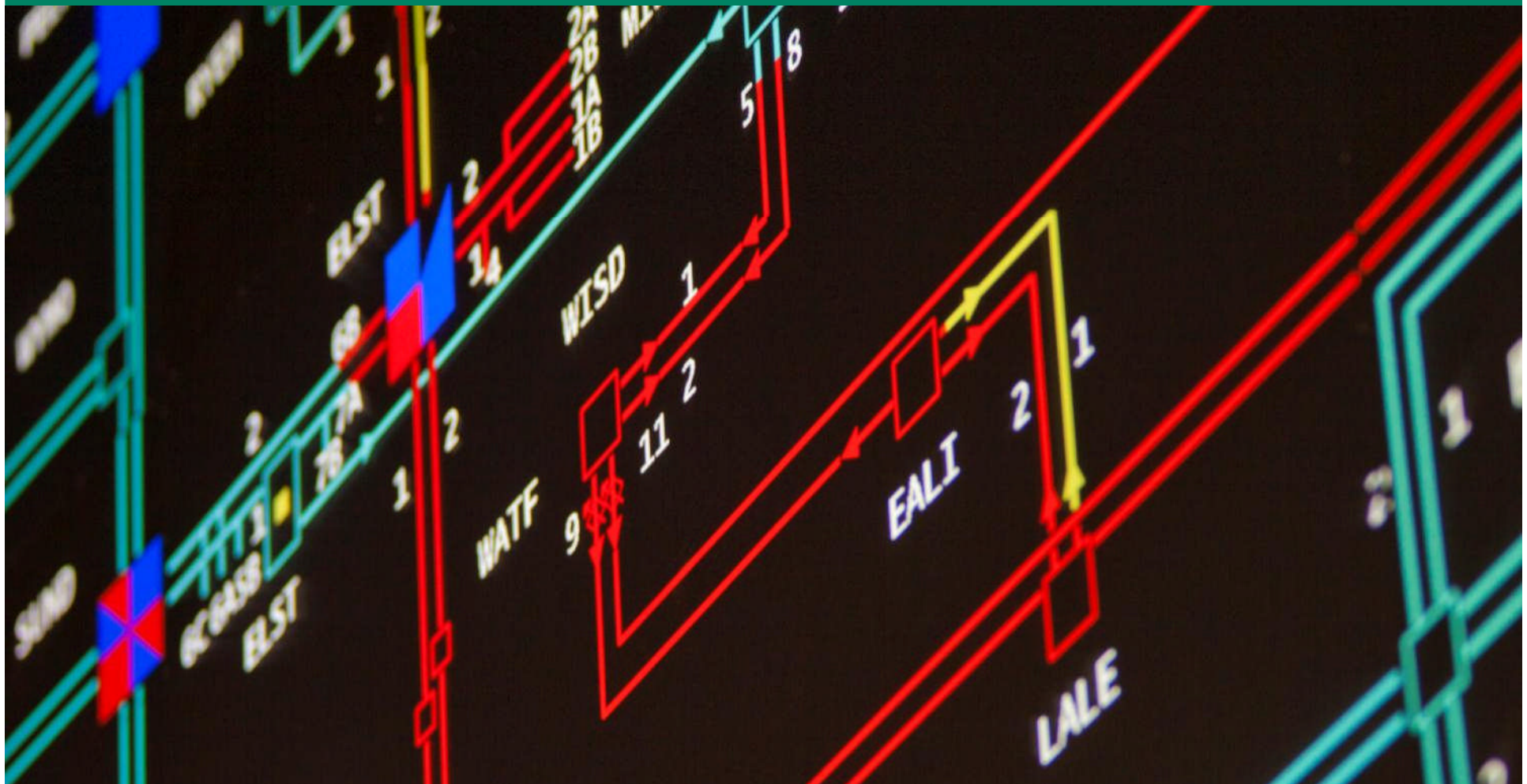
Key Changes following Consultation

- **Participation**
 - 50MW limit removed – but must be a registered Balancing Mechanism Unit (BMU) capable of central despatch
 - Board level declaration that plant bidding for an SBR contract will not be participating in the electricity and/or balancing markets
 - SBR will not require Transmission Entry Capacity
- **Target Volume** : SBR requirement established having regard to the uncertain supply/demand outlook and the Government's reliability standard.
- **Assessment** – Tenders will be accepted to meet the volume requirement at least cost
- **Testing** – SBR will be tested on a monthly basis
- **Non-Delivery Charges** – Will only apply if reliability rate falls below declared reliability
- **Last Resort** – Clarification in the BPS that SBR will be despatched as a 'last resort' after all commercial balancing actions in the market have been exhausted, to the extent that dynamics and other technical considerations permit
- **Cash-out** – Recognition that SBR should feed the sharpening of price signals under the Electricity Balancing SCR

SBR- Questions and Discussion

Demand Side Balancing Reserve

Peter Bingham



DSBR – Key issues arising from consultation

- Bring forward the CM's DSR Transitional Arrangements
- Very different from the EMR capacity product
- Unnecessary and confusing addition to an already active demand side market
- Low setup fee + short duration = limited uptake
- Baseline too simple and excludes triad avoidance
- Utilisation Prices too high
- Lack of penalties and testing will make for an unreliable resource

Demand-Side Balancing Reserve

- Low cost solution to stimulate growth in demand-side services to help balance the system when margins are tight
- Aimed at consumers with capability to reduce demand / shift load / run small embedded / on-site generation over the winter evening peak (who don't do so already)
- Designed around demand reduction/load shifting – lower capital costs / high utilisation costs reflecting value placed by consumers on their electricity supply
- Consumers voluntarily reduce demand in response to an instruction from National Grid, and are paid for delivery
- Should help develop the market for demand-side resources

Demand-Side Balancing Reserve

Revised Proposals

■ Participation

- Consumers able to reduce/shift demand and small embedded generators
- Individual sites must have half-hourly settlement metering (>100kW)
- De minimis threshold of **1MW** to encourage aggregation of smaller sites

- **Product** – Consumer reduces/shifts demand or increases generation on request, between 4pm and 8pm, sustainable for at least 1 hour on any winter weekday (time/duration instructed by the SO)

Demand-Side Balancing Reserve

Revised Proposals

- **Set-up Payment** – Optional payment of **£10/kW** made to cover set-up costs
 - Ability to recover set-up payments if the capability to reduce demand is not established
- **Utilisation Rate** – Providers bid quantities of demand reduction against a choice of utilisation rates (£1/kWh - £15/kWh) representing their Value of Lost Load for which they would be paid to reduce demand
- **Volume Procured** – Valid bids satisfying an economic assessment would be accepted in cost order
- **Tenders** – Summer 2014 tender for delivery in winter 2014/15 and summer 2015 tender for delivery in winter 2015/16

Demand-Side Balancing Reserve

Revised Proposals

- **Despatch (How)** – via secure, low cost solution (e.g. Smartphone App/Email/ SMS/Call Centre)
- **Despatch (When)** – in merit order, after more economic Balancing Services have been used, called off from low to high Utilisation Price. Likely to be called very infrequently
- **Baseline** – Delivery in each half-hour would be measured against a baseline, calculated as the aggregate demand on the previous 10 peak demand days over the last 12 months
- **Utilisation Payments** – Providers would be paid for the quantity of demand reduction delivered in each half-hour at their tendered Utilisation Rate (subject to the stepping function)
- **Cash-out** – DSBR costs should feed into the sharpening of imbalance prices under the Electricity Balancing SCR

DSBR – Is this the right product?

- Bring forward the CM's DSR Transitional Arrangements
 - A matter for DECC, the 2015 initiation provides a two year opportunity to stimulate the demand side market
- Very different from the EMR capacity product
 - We do not invest in capacity, we need additional reserves
 - EMR will encourage investment in demand side capacity over the longer-term
 - DSBR is about starting to develop the potential for demand reduction from existing resources to support system balancing in the short-term
 - Payment structure designed around demand reduction/load shifting (low up front costs, with compensation at a consumer's value of lost load on delivery)

Unnecessary, Confusing, Limited Uptake

- Unnecessary and Confusing Addition
 - Our need for additional reserves creates an additional stimulus/opportunity for growing the demand-side
 - Targeted at the other end of the spectrum to STOR/Triad avoiders (i.e. consumers who don't want to reduce demand regularly, but require higher compensation when asked to do so)
- Limited Uptake (low setup fee + short duration)
 - We have increased the upfront setup fee to £10/kW
 - DSBR may evolve to accessing demand side resources that secure capacity contracts
 - The need for a more active demand side is growing

DSBR – Baseline

- Baseline (simple & excludes triad avoiders)
 - Needs to be simple if this is to be applied to large numbers of smaller non-domestic consumers
 - We are happy that triad avoiders continue to respond to price signals – this product is not designed for them
 - We have changed the calculation of baselines to be the average demand across the days of peak demand on a rolling 12 month basis

DSBR – Utilisation Prices

- Concern over Utilisation prices being too high
 - > £1/kWh (lower priced resources would be despatched frequently, requiring more robust despatch/monitoring)
 - Up to £15/kWh – BM Offers can be as much as £99.9/kWh, but we have limited the resources we contract to be < VoLL)
 - DSBR at lower prices more likely to be accepted & used, hence incentive to bid according to the consumer's value of lost load.

DSBR – Reliability

- Lack of penalties and testing will make for an unreliable resource
 - Introduced the ability to test resources that don't deliver when called and recover setup fees if capability not established
 - Continue to believe that losing out on utilisation payments represents a strong incentive to deliver
- Must have robust control and monitoring systems in place
 - More appropriate for operational reserves which are used regularly
 - Costs would be a barrier for large scale participation of smaller non-domestic consumers

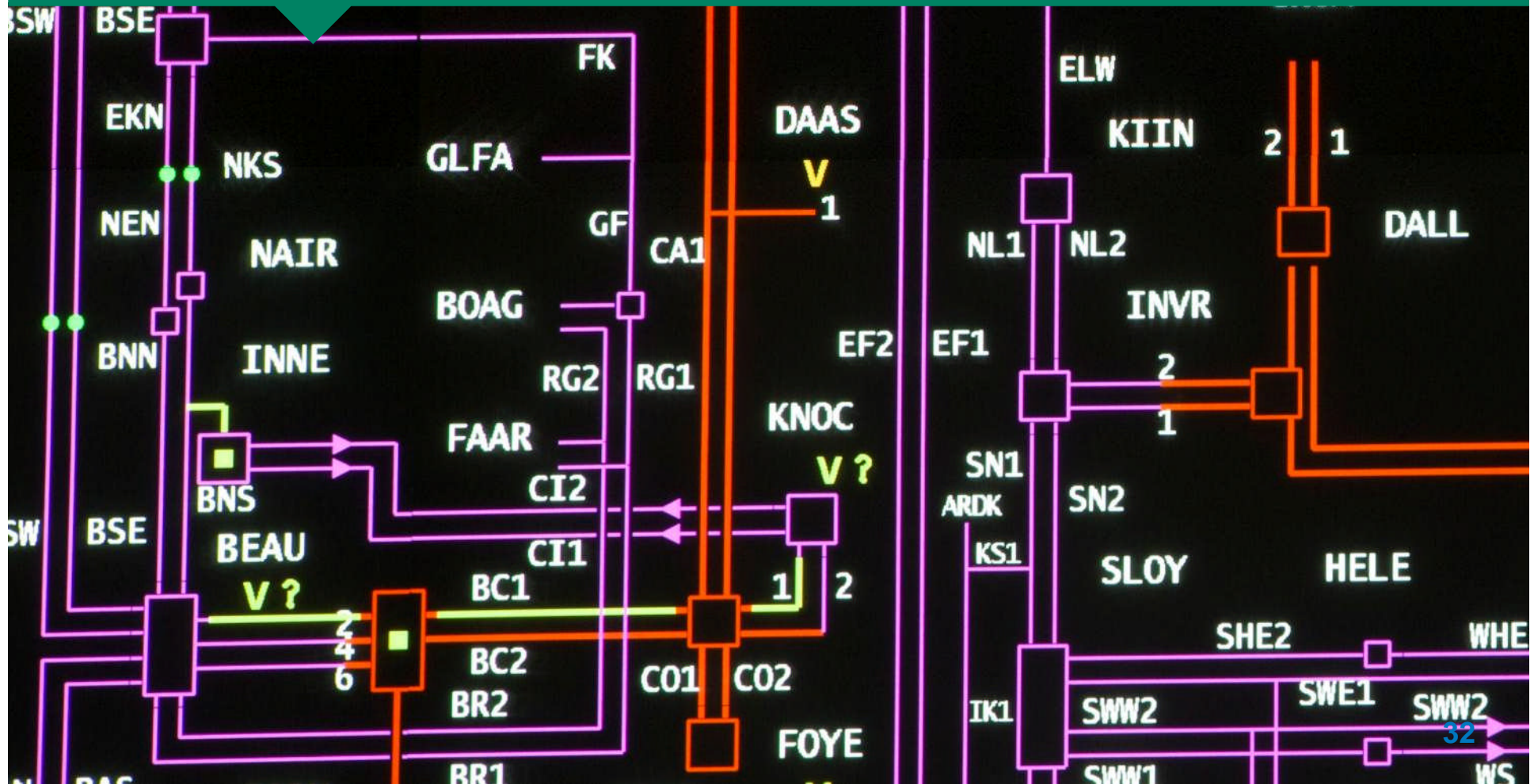
Demand-Side Balancing Reserve

Key Changes following Consultation

- **Embedded Generation** can participate
- Optional **Set-up Payment** fixed at £10/kW per year
- Ability to recover **Set-up Payment** for **non-delivery**
- Revised range of **Utilisation Payments** (£1/kWh, £1.50/kWh, £2/kWh, £3/kWh, £4/kWh, £5/k, £7.50/kWh, £10/kWh, £12.50/kWh, £15/kWh)
- De minimis level of **1MW** to encourage intermediaries to contract with smaller consumers
- **Baselines** calculated as aggregate consumption on highest 10 demand days in previous 12 months
- **Cash-out** – Agree that DSBR should feed the sharpening of price signals under the Electricity Balancing SCR

DSBR- Questions and Discussion

Summary & Next Steps



Consultation Responses

- We have 7 days to prepare any application to Ofgem
- Keep responses concise, highlighting you key issues
- No need to repeat previous views/detail
- Do you support DSBR or should we drop it?
- Do you support SBR? or should we drop it?

Next Steps

- Proposals subject to industry consultation
- Following the consultation we will:
 - Consider whether to put neither, one or both products forward to Ofgem for approval
- **If** approved, we will assess the need to procure and determine the volume required
- **If** we decide to procure
 - SBR will be tendered early in the new year (for 2014/15 and 2015/16)
 - DSBR will be tendered in the spring, with contracts established in the summer

Revised Arrangements – High-level product descriptions

	Demand-Side Balancing Reserve	Supplemental Balancing Reserve
Participation	<ul style="list-style-type: none"> • Half-hourly metered consumers, including embedded generation • 1MW de-minimis limit (intermediaries to recruit/manage smaller consumers) • Limited opportunity for STOR providers and Triad Avoiders 	<ul style="list-style-type: none"> • Generating plant with dedicated BM Unit, with direct control/operational metering • Public declaration that the plant would not be participating in the market • Excluded from participation in the energy & balancing markets
Availability	<ul style="list-style-type: none"> • Reduce demand on request between 4pm-8pm on winter weekdays 	<ul style="list-style-type: none"> • Generate specified output/duration on request between 6am and 8pm.
Price	<ul style="list-style-type: none"> • Optional setup payment of 10/kW/yr • Utilisation price (£1/kWh - £15/kWh), 	<ul style="list-style-type: none"> • Tendered capability, utilisation and warming prices
Volume	<ul style="list-style-type: none"> • All valid tenders accepted subject to an economic test 	<ul style="list-style-type: none"> • Tenders accepted to meet requirement established against supply/demand outlook
Penalties	<ul style="list-style-type: none"> • Recovery of setup payment for non-delivery 	<ul style="list-style-type: none"> • Capability payments reduced if outage rate is higher than tendered
Despatch	<ul style="list-style-type: none"> • Despatched via Smart Phone App (or alternative) in ascending price order, most likely after BM actions 	<ul style="list-style-type: none"> • Despatched as last resort (including after DSBR) ahead of emergency measures - subject to dynamics
Cash-out	<ul style="list-style-type: none"> • Actions should be priced into imbalance prices as per Ofgem's Electricity Balancing SCR 	