

New tools to balance the network



In June, National Grid proposed two additional system balancing tools that could provide new opportunities for businesses and the energy market, and could be used in the unlikely event that there is a generating capacity shortfall in the electricity market. Over the summer we asked industry for their views about these proposals and have now published our final proposals consultation based on the feedback received. We are again seeking views on these proposals and continue to welcome any further feedback that we can consider over the coming months.

Both our proposals are being developed to benefit both consumers and industry by improving levels of security of supply with the least impact on energy bills. Finding new ways to encourage a greater role for the demand side will also benefit the UK's energy landscape in the future.

Why are you consulting on these balancing tools?

A large amount of old coal and oil power stations are closing, and the economics for gas generators means some are temporarily closing ('mothballing'). A decline in available power is leading to tighter margins (the difference between the power generation available and peak demand), making our role in matching generation and demand more challenging.

In light of this potential challenge, DECC, National Grid and Ofgem each agreed that it was prudent to consider the case for National Grid procuring additional balancing services to enable it to balance the system. In June 2013 we proposed two new measures and consulted on these earlier in the summer.

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How much will these new tools cost consumers?

There are still uncertainties about how much reserve will be needed and what it will cost. For example, were we to procure 3GW of reserves, comprising 1GW of the demand product and 2GW of the generation product, this would cost less than £1 on the annual domestic consumer bill. That said, we will always utilise the most economic option for consumers. So if it is cheaper to pay businesses to reduce their demand than to fire up a generator, then that is what the demand side balancing reserve will allow us to do.

What do we do?

National Grid owns and operates the electricity and gas networks that connect people to the energy they use.

“We are the ‘system operator’ for the high-voltage electricity transmission network – the country’s power motorways - responsible for managing the flows of electricity to homes and businesses on a real time basis.”

We don’t generate the power - neither do we sell it to consumers. We all pay our bills to energy suppliers, who buy enough electricity to meet their customers’ needs from the power stations and other electricity producers.

“Once that electricity enters our network, our job is to ‘fine tune’ the system to make sure supply and demand match second by second.”

Basically, for that last hour leading up to real-time, we operate the system in real time, balancing supply and demand to deliver electricity securely to the distribution networks.

To do that, we have a range of different tools we can use to balance the network, making sure we have secure power supplies. We do this either through a market tool called the balancing mechanism or through a competitive tender process to buy the ‘balancing’ services we need.

Feedback from our consultation

We received over thirty responses to our consultation in July, and we have revised our proposals in light of that feedback. We are now publishing our final proposals consultation to seek further feedback from the energy industry.

What are the new balancing tools?

Demand Side Balancing Reserve (DSBR) provides an opportunity for large consumers or owners of small embedded generation to earn money through a combination of upfront payments and utilisation payments by contracting to reduce demand or provide generation when required. Further payments are received in the event that the service is utilised. DSBR will not be used to force consumers or businesses to switch off or reduce electricity demand, but it will provide a choice for those who wish to save energy and receive payments when asked to do so during times of high demand. The service would be required for short periods between 4pm and 8 pm on weekday evenings between November and February.

Supplemental Balancing Reserve (SBR) would include contracts between National Grid and generators to make their power stations available in winter, where they would otherwise be closed or mothballed. This additional capacity would only be used as a last resort to balance the system in the unlikely event that there is not sufficient generating capacity available in the market. This could act as a safety net to safeguard consumer interests against the risk of tightening margins.

For example, for the demand side tool, we confirmed the pricing of the product and changed the range of payments for the demand-side service to make it more attractive. We also widened participation so those smaller power generators not connected to our transmission network can also participate.

On the supplement balancing reserve, we refined the proposals to allow more participation, addressed concerns over market distortion, and clarified that this will only be used as a last resort.

Next steps

Introducing new tools to balance the system isn’t new, and there is no guarantee we will use them. But we now need to know if these services are something that companies could provide to us. We are publishing these new proposals to get that feedback by November.

Can you tell me more about it?

Who does what in the electricity industry?

Electricity Generators produce electricity from fossil fuels and nuclear power stations as well as renewable sources such as wind, biomass and hydro. Electricity generators sell the electricity they produce in the wholesale market to electricity suppliers.

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Electricity Suppliers buy electricity from the wholesale markets and sell it to consumers. Electricity suppliers have contracts with electricity generators to provide the energy their customers use.

The Department of Energy & Climate Change (DECC) is the Government department that works to make sure the UK has secure, clean, affordable energy supplies. DECC are responsible for setting energy policy and responsible for energy security; making sure UK businesses and households have secure supplies of energy for light and power, heat and transport. **Ofgem is the Office of Gas and Electricity Markets**, the industry regulator that works independent of Government and the energy industry. Ofgem has a duty to protect the interests of consumers. Ofgem supervise market activity retail competition and regulate the energy networks. Ofgem can take steps to promote energy security in the event that the market does not deliver.

Will the lights go out?

Based on our experience of running the system and on current information about plant availability, we are expecting the coming winter to be manageable. But we can't be complacent. Things can happen that could affect the electricity network, such as power stations breaking down or a sudden cold snap. As a system operator who takes its role seriously, the best thing is for us to be prepared and have the tools available in case.

Will businesses be forced to switch off?

These balancing services are voluntary and we are looking to introduce them for the reason that it will reduce the risk of forced power outages. This voluntary measure could also generate income for businesses who are able to reduce their demand at peak times. Even if a business signs up to DSBR but tells us that they are not available, we will not take any actions to reduce their supply.

What is plant margin?

Plant margin is the available generation available above demand. We like to have a certain amount of generation available over and above what is needed to manage any plant failure or forecast errors.

What does de-rated mean?

We commonly refer to the de-rated plant margin when considering security of supply. This takes account of plant availability and reliability, for example the likelihood of the wind blowing during times of peak demand, and which way the interconnectors will be flowing (importing or exporting)



Do you need regulatory approval?

Should we choose to proceed following the outcome of the consultation and once we have settled on the design for these new services, we will then ask Ofgem to approve the new proposals. If they are approved, we will go out to tender for the services early in 2014, to be in place for the 2014/15 winter.

What's the difference between STOR and capacity margins?

STOR or Short-term Operating Reserves is used by the system operator to deal with short term operational issues such as plant failure and demand forecast errors – some of this is provided by generating plant that forms part of the capacity margin, some is provided by embedded generation and the demand-side.

An adequate capacity margin provides the assurance that there will be sufficient generation and reserve available in operational timescales to meet peak demand – if the margin gets tight, the risk of there being sufficient generation available to balance the system increases.