



# Cross-party impacts of DSR actions

Presentation of findings to WS6

20<sup>th</sup> May 2014

ELEXON asked us to investigate cross-BSC party impacts of DSR actions...

1

What are the impacts of DSR on different parties?



2

What interventions could be undertaken to improve the use of DSR?



3

What is the potential scale of the impacts, and the benefit of implementing the options?

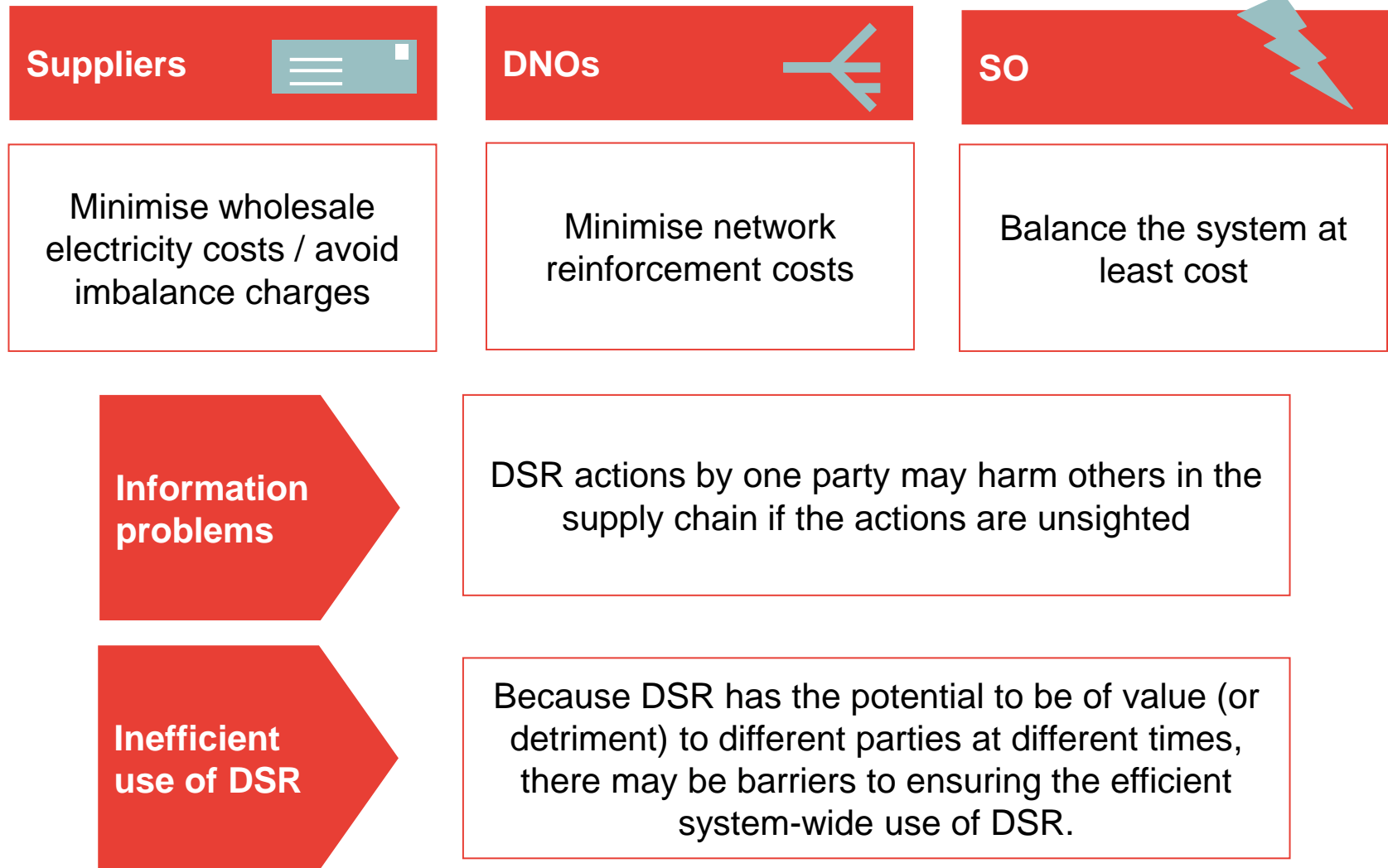


4

What are the implications for industry and ELEXON?

...and so be better informed to consider BSC amendments and implications for the industry and ELEXON

# We considered the problems of DSR use by three parties



# We have developed a model to investigate the cross-party impacts...

**It is a complex half-hourly despatch model of DSR...**



**Optimisation to  
minimise costs**

## Outputs:

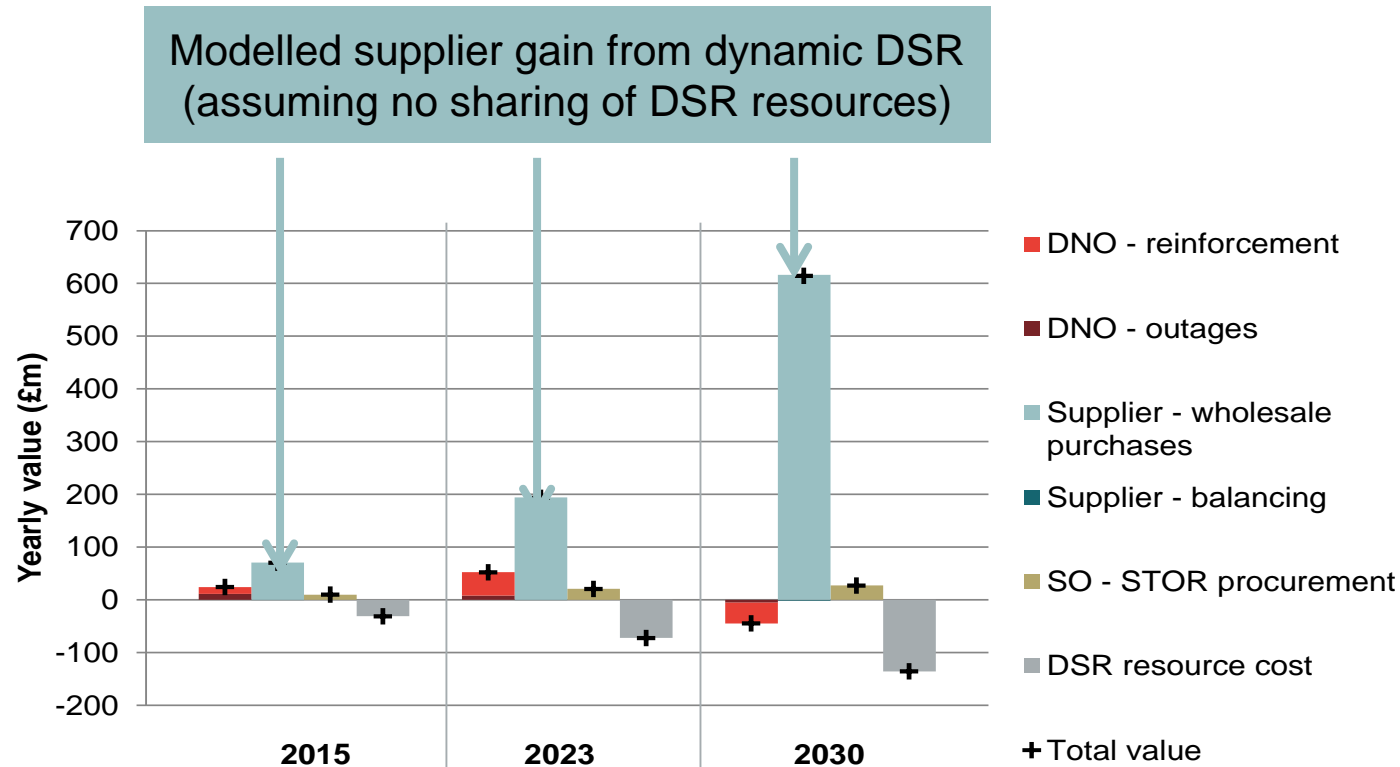
- **Costs for different parties**
- **DSR usage and DNO investment decisions**
- **Load profiles post-DSR**

**...but we also recognise its  
limitations**

- We reviewed the literature and spoke to industry experts.
- We have also made a number of simplifying assumptions which are important drivers of some of the results. For example, the allocation of DSR resources between parties, and wholesale and cash-out prices.
- Further, in our market models we have abstracted away from contractual complexities to identify potential value.

**...and identify the drivers of DSR value under different  
market models**

Suppliers are likely to be the biggest beneficiary from the use of DSR, to reduce their wholesale costs...



...and the impact of DNO and SO DSR only has a very small impact on suppliers

# We considered a range of new market models that could support DSR use

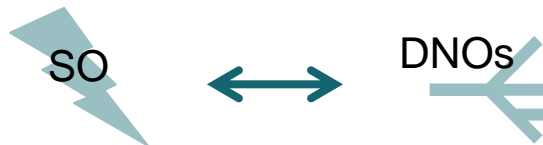
## Market models

### Supplier to supplier trading



- There is the potential for supplier wholesale and balancing costs to be reduced through trading of DSR pre-gate closure.

### DNO and SO sharing



- Sharing can reduce inefficiencies and could take a number of different forms e.g. with central roles for the DNOs, the SO or aggregators.

### Central market platform



- A central market brings together the wholesale and ancillary markets for DSR, and could take a variety of different forms.

# Supplier to supplier trading can be beneficial for small suppliers in particular...

## Sources of benefits to small suppliers

- Pooling imbalance accounts allows suppliers to net off their position, taking advantage of a more diversified customer base
- Suppliers facing an imbalance can call on DSR resources from other suppliers

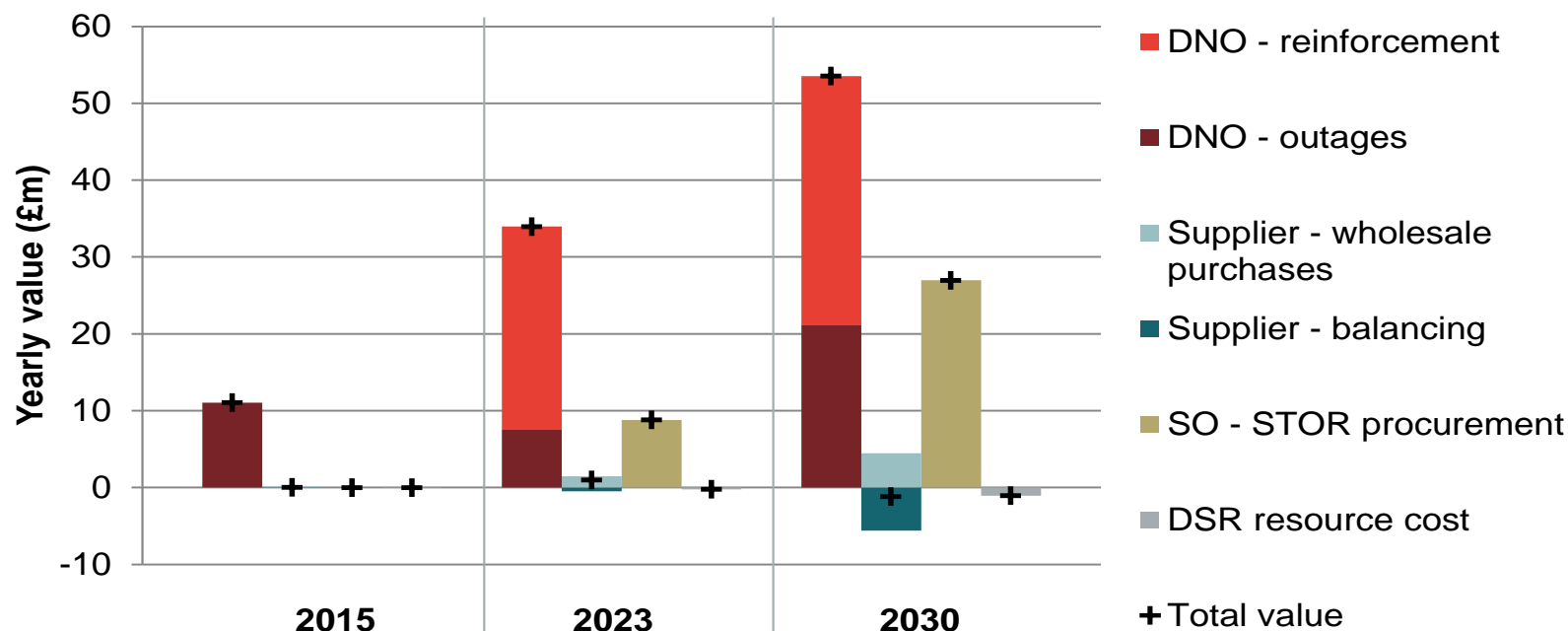
## Effect on the market as a whole

- System-wide imbalances remain the same – costs will be borne by suppliers outside the “club”
- Has the potential to reduce system-wide imbalances through more efficient use of DSR

- Gains from an illustrative “case study” modelled at 35% of imbalance costs or 0.2% of wholesale costs.
- Larger suppliers are unlikely to benefit given the diversity within their own customer base.

... but the benefits are modest

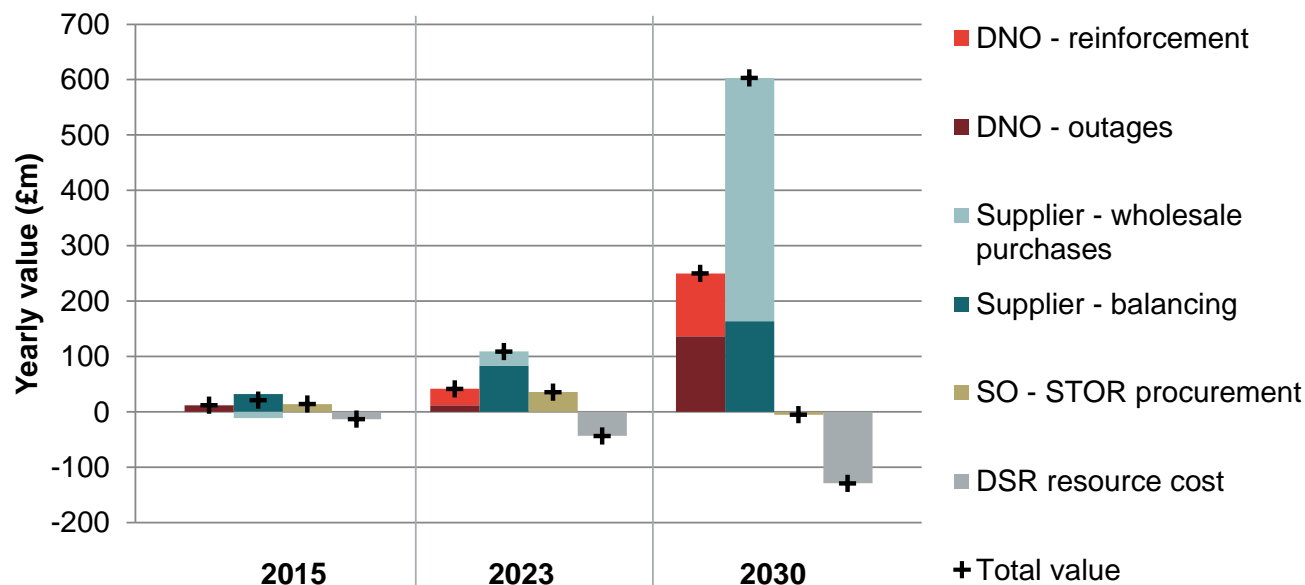
# The modelling demonstrates gains to both the DNO and SO from the sharing of DSR



- This result is the direct corollary of the small impact that DNO DSR has on supplier imbalance volumes.
- Because we have assumed that at any time only 1% of the distribution network is at fault there is likely to be a high proportion of DNO contracts available to the SO for STOR.
- The balance of availability and utilisation payments for DSR in future is important for the potential scale of benefits from “sharing”.



# A central market platform may lead to benefits in a world with high and inefficiently allocated DSR



**Benefits of the market are higher if...**

- There is a higher potential for DSR
- DSR capabilities in the absence of a market are not allocated to those parties that hold the most value
- DSR can be shared between parties, and has the potential to cause conflicts which a market can help resolve

# Insights from this work

## Suppliers

- Suppliers have the highest potential to capture DSR value.
- Impacts on imbalances are likely to be low and so any BSC changes are unlikely to be proportional to benefits.
- Modest gains from trading DSR and there are no current BSC barriers.

## Network owners/SO

- There is potential value in “sharing” of DSR between DNOs and the SO. Further work could investigate:
  - the most appropriate contracting structure to realise these benefits;
  - the services required for verifying, settling and holding DSR contract information.

## Industry as a whole

- There are many uncertainties and challenges associated with a central market but it is worthy of further investigation.
- Further work needs to investigate:
  - the challenges of combining national wholesale and local balancing markets for DSR;
  - in the absence of a central market how best to ensure efficient allocation of DSR.



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FRONTIER ECONOMICS EUROPE LTD.  
BRUSSELS | COLOGNE | LONDON | MADRID

Frontier Economics Ltd, 71 High Holborn, London, WC1V 6DA  
Tel. +44 (0)20 7031 7000 Fax. +44 (0)20 7031 7001 [www.frontier-economics.com](http://www.frontier-economics.com)