

# **Diesel Powered Generators for STOR & Balancing Market: Guidance on the Regulation of NOx Emissions**

John Henderson  
Senior Advisor, Fuel & Power  
Environment Agency  
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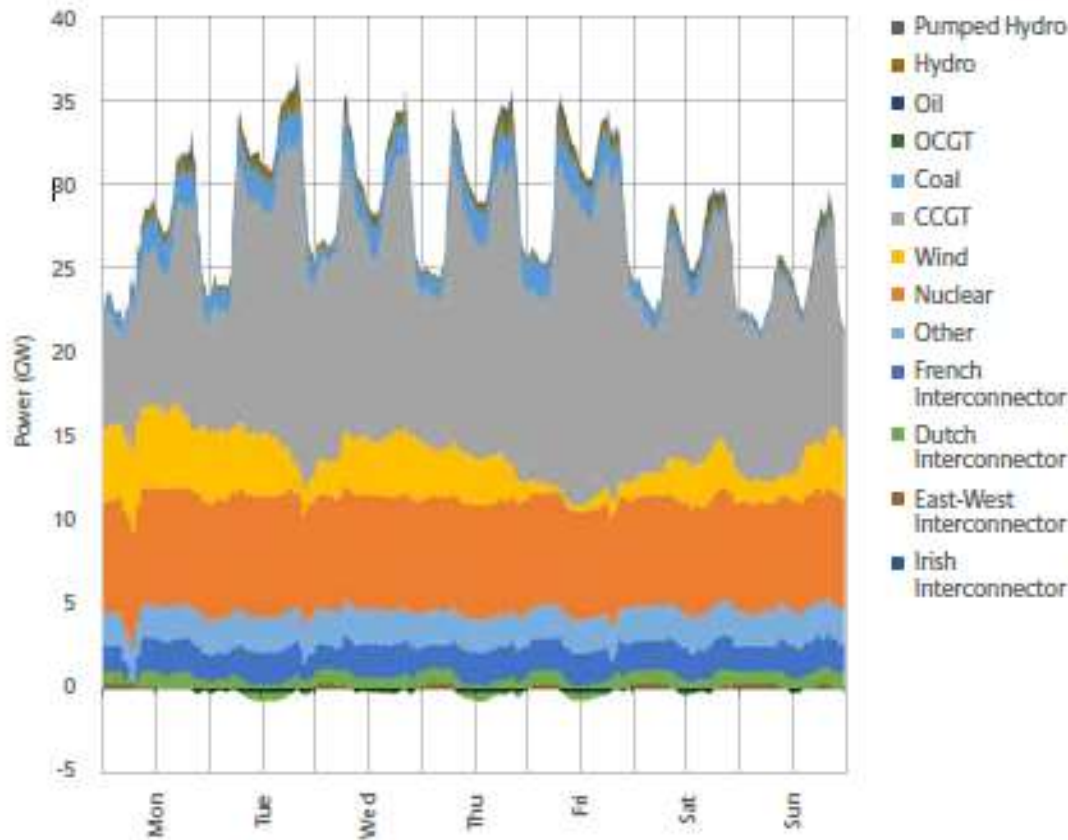
# Diesel Generators: What I will be talking about today

- ➔ Why the Balancing Market
- ➔ Diesels - what they are and why there is a problem
- ➔ Developing the regulations – the process
- ➔ The requirements of the regulations

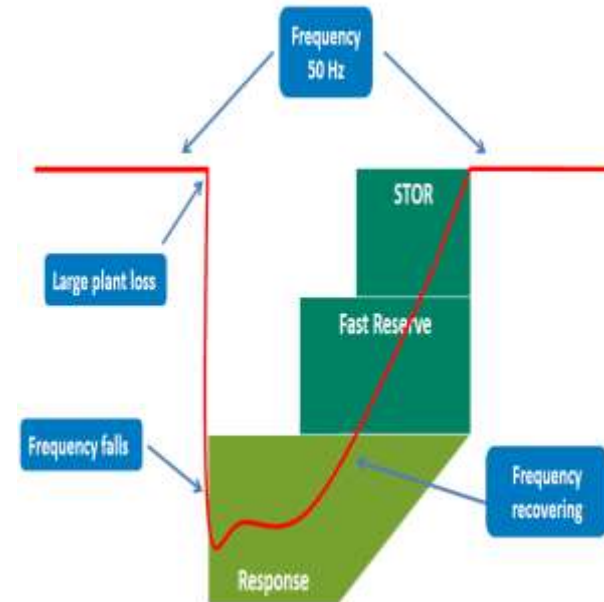
# Why - Capacity Market - STOR

Figure 4

Example of how supply is varied to meet changes in demand in the electricity system, using different generation assets across the week



The electricity Trilemma  
Affordable  
Reliable  
& low carbon



# Diesel Arrays



# Diesel Array - why they are a problem

- Not Part A (< 50 MWth on site) or Part B (no unit > 20 MWth) of EPR
- Local Authority Planning – may be
- Clean Air Act – not really
- MCPD – no because ELVs do not apply to < 500 hours operation pa
- Not really regulated
  
- Capacity Market incentives
- We estimate there was some 1.7 GWe diesel (like) generation contracted to the STORE in 2016

# MCPD & Generator transposition process

- ➔ Defra announce they would regulate high emissions generators – March 2016
- ➔ Defra public consultation on broad approach ended February 2017
- ➔ Defra stakeholder workshops – May to September
- ➔ EA will be the regulator in England under EPR
- ➔ Legal instrument and Impact Assessments to be laid in Parliament – December
- ➔ Legislation made and comes into force - January
- ➔ We issue guidance in 2018
- ➔ First permit to be issued before 2019

# Generator controls 1

1. Generator definition applies aggregation with no *de minimis* rule; mobile plant are in scope if providing services to the grid or connected to permanent infrastructure; sites under 1MW are in scope only if providing balancing services
2. Backup generators which are tested for up to 50 hours a year are exempt and there is no restriction on when testing takes place
3. Generators with safety roles in nuclear sites exempt
4. Tranche A generators benefit from transitional arrangements – qualification dates for sites under 1MW are one year later than for 1-50MW sites

## Generator controls 2

Tranche	Criteria	Permitting deadline
B	All	1 January 2019
A	5-50MW, >500mg/Nm <sup>3</sup> NO <sub>x</sub> , >50hpa	1 October 2019
A	Remaining 5-50MW	1 January 2025
A	0-5MW	1 January 2030

1. Standard permit conditions – limit of 190mg/Nm<sup>3</sup> NO<sub>x</sub> @ 15% O<sub>2</sub> which must be achieved within 20 minutes of operation for Tranche A and 10 minutes of operation for Tranche B
2. Tranche A generators subject to standard permit conditions when capacity agreements from 2014 and 2015 expire



## Generator controls 3

Where the regulator considers there may be a risk to air quality standards resulting from the operation of the generator, an operator will be expected to quantify the impact of emissions on sensitive receptors, e.g. by air dispersion modelling, incorporating as necessary, for example, any proposals for appropriate dispersion, abatement and restrictions on operating hours. The Regulator, accounting for the results of such assessment, will be required to apply any further or different requirements as are necessary to ensure any breach of Ambient Air Quality Directive Annex XI standards is avoided

- ➔ All generators require a permit that protects AQ
- ➔ Bespoke permitting = conditions based on modelled harm i.e. no AQS breaches

# What next ?

- ➔ Statutory Instrument comes into force
  - ➔ We develop and issue guidance
  - ➔ Tranche B permits issued – 2019 onwards
  - ➔ Tranche A permits issued by Oct 2019
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- ➔ AQ issues from diesel combustion is resolved?