Demand Side Response generation & Air Quality regulation: the MCPD & Specified Generator Regs.

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What I will be talking about today

Air quality and Defra's Clean Air Strategy.
Scope of the MCPD & Specified Generator regs.
Summary of Specified Generator controls
Which diesel engines can do triad avoidance
What is next?



Clean Air Strategy - Clean air for the public good and the environment



- Air pollution is our biggest environmental risk to public health
 - Shortens life spans and has a direct impact on the quality of life
- Particulate Material (PM) affects ALL of us; NO_x exacerbates affected / vulnerable
 - exposure to mix of pollutants damages human health and environment
- Action to reduce air pollution is cost-beneficial.
 - New emission ceilings estimated to bring benefits of £2BN vs costs of £0.5– 1BN
 - Benefits underestimated as based on narrow range of costs associated with morbidity and ignores wider costs of long-term ill health and environmental impact



Summary of what is in scope - MCPs & SGs

- ♦ MCPD any <u>unit</u> > 1 MWth and < 50 MWth</p>
- Specified Generator what is on site = AQ impact
 - generate electricity but not excluded generators e.g. emergency backup generators which are tested <50 hrs pa
 all units <1 MW up to < 50 MWth
 - Aggregate to between 1 & < 50 MWth on site</p>
 - And < 1 MW if do balancing or Capacity Market</p>
- Both static & mobile can be captured
- Both MCPD & SGs apply to generators



Specified Generators – Diesel & gas engines



Backup diesel engines – 1MWelec Diesel engine array



Gas engine array



Gas CHP in a basement



Generator controls

- 1. All generators will require a permit that protects AQ
- 2. Emission limit value (ELV) of 190mg/Nm3 NOx at 15% O2
- 3. Where abatement is required the ELV is met within 20 minutes for Tranche A and 10 minutes of operation for Tranche B

Tranche A are existing with capacity or balancing contracts pre Oct 2017, Tranche B are new or existing with new contracts.

Tranche	Criteria	Permitting deadline
В	All	1 January 2019
А	5-50MW, >500mg/Nm3 NOx, >50hpa	1 October 2019
А	Remaining 5-50MW	1 January 2025
А	0-5MW	1 January 2030



Which diesel engines can do Triads?

< 1 MWth engines on a site & no CM/BM contract
Tranche B abated & permitted diesel engines
Tranche A
> 5 MWth, > 50 hpa – permit by Oct 2019 for AQ + abate 2025
> 5 MWth, < 50 hpa – permit & abate by 2025

Solution State > < 5 MWth – permit & abate by 2030</p>

Tranche A with new contracts = Tranche B

MCPD requirement apply > 1 MWth



Diesel Generation

The future is no unabated diesel except for emergency back up





Anglian Water use their Perkins 2806-E18TAG 18.1 Ltr diesel generator with SCR to provide backup power and TRIAD management for their Canwick STW



What do we want from the CAS for combustion?

- A 1500 hr pa cap on < 50 MWth gas peaking plant
 - ♦ Level playing field for all peaking plant < 50 & > 50 MWth
 - If there is no cap on peaking SGs the NOx emissions contribution to the NECD 2030 target could be increased by 0.5%
 - no cap on peaking plant the NOx emissions from these MCPs will be increased by 2.3 kt - compared with the estimated reduction of 17 kt NOx in the MCPD Impact Assessment - this is significant

No cap = reduced opportunity for CHP & > CO2 emissions

• A dialogue with all stakeholders on what is the best peaking technology – NOx emissions & CO2



Any Questions ? <u>MCPDHelp@environment-agency.gov.uk</u>

Access the guidance from these GOV.UK guides: https://www.gov.uk/guidance/medium-combustion-plant-apply-for-anenvironmental-permit https://www.gov.uk/guidance/specified-generator-apply-for-anenvironmental-permit



