

## GC0050 – Demand Control



## Terms of Reference

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- Review need for, and requirements of, Demand Control instructions.
- Review existing capabilities of DNOs to implement Demand Control Instructions.
- Take account of relevant international practice and approach in European Code development.
- Evaluate the costs, benefits and risks of any actions necessary to ensure that DNOs can implement the required Demand Control instructions in the required timescales under future system conditions.

## Demand Control Requirement

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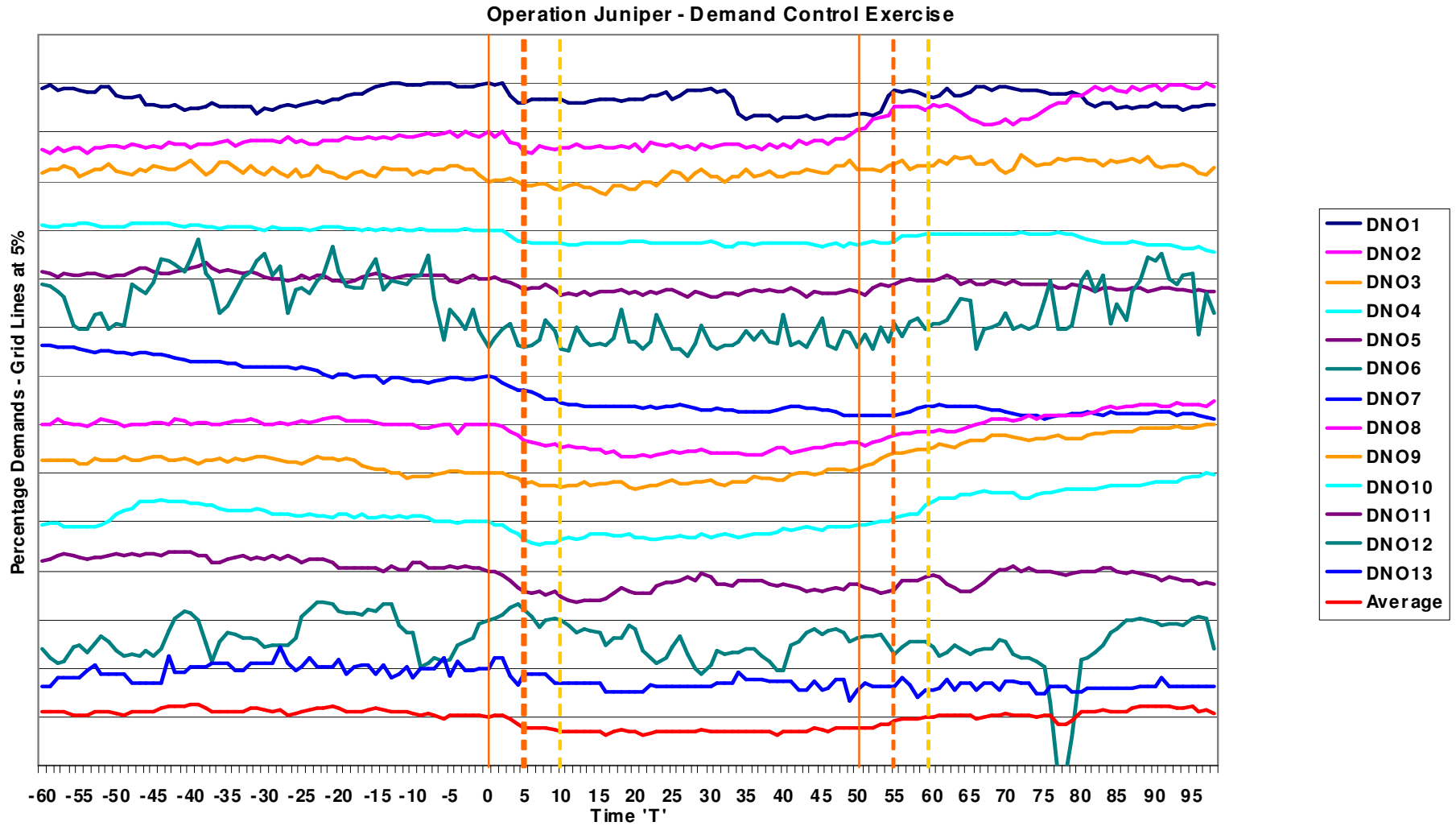
- DCWG established there was a continued requirement for Demand Control through Voltage Reduction.
- However,
  - Change in system conditions had reduced effectiveness of voltage reduction.
  - Delivery within 5 minutes had always been challenging.
- National Grid ENCC were unclear what could be delivered.

## Voltage Reduction tests

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- Voltage Reduction tests (Operation Juniper) were coordinated between DNOs and National Grid ENCC
- Thirteen DNOs involved.
- One Stage of Voltage Reduction implemented to establish timescales to delivery and demand reduction delivered.

# Operation Juniper – Results (1)



## Operation Juniper – Results (2)

	T=0	T=5	T=10	T=50	T=55	T=60
DNO1	0.0%	2.0%	1.6%	0.0%	2.3%	1.7%
DNO2	0.0%	1.9%	1.7%	0.0%	2.3%	2.5%
DNO3	0.0%	0.4%	0.7%	0.0%	0.6%	0.4%
DNO4	0.0%	1.2%	1.4%	0.0%	0.3%	1.1%
DNO5	0.0%	1.2%	1.7%	0.0%	0.9%	1.2%
DNO6	0.0%	0.1%	0.2%	0.0%	2.3%	2.4%
DNO7	0.0%	1.4%	2.7%	0.0%	0.2%	1.1%
DNO8	0.0%	1.6%	2.4%	0.0%	0.6%	1.0%
DNO9	0.0%	1.0%	1.4%	0.0%	1.6%	2.1%
DNO10	0.0%	1.8%	1.8%	0.0%	0.7%	2.7%
DNO11	0.0%	2.0%	2.6%	0.0%	-0.6%	0.8%
DNO12	0.0%	-1.2%	0.0%	0.0%	-1.9%	-1.0%
DNO12	0.0%	0.6%	1.6%	0.0%	0.5%	0.2%
<b>AVERAGE</b>	<b>0.0%</b>	<b>1.1%</b>	<b>1.5%</b>	<b>0.0%</b>	<b>0.8%</b>	<b>1.2%</b>

## European Codes

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- No code requirements covering Demand Reduction criteria.
- Article 7, Frequency Control Management of the Network Code for Operational Security states:
  - “Each TSO shall implement the necessary Remedial Actions, including Demand Side Management or Load Shedding in order to maintain the frequency quality within Operational Security Limits in its Responsibility Area.”

## Working Group Recommendations

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- Changes to the Grid Code OC6.5.3 to improve clarity with regard to explicitly distinguishing between Voltage Reduction and Demand Disconnection services, and the implementation timescales.
- Annual Voltage Reduction tests, coordinated by National Grid, to confirm the demand reduction achievable via Voltage Reduction.
- Review and update of DNO and ENCC procedures to clarify where the Demand Control instruction requires a DNO to implement Voltage Reduction or Demand Disconnection.
- Week 24 Guidance Document published by National Grid to be updated in line with changes to Grid Code OC6.5.3