# UK Power Networks – Data Sharing

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LCN Fund
Low Carbon Networks

UK Power Networks
Delivering your electricity

# Agenda

- The Increasingly Dynamic DNO Network
- KASM (Kent Active System Management) Project
- How is UKPN's network planning is affected by the Grid Code?
- Implication on UKPN's Long Term Planners
- Options moving forward
- Timescales
- Questions

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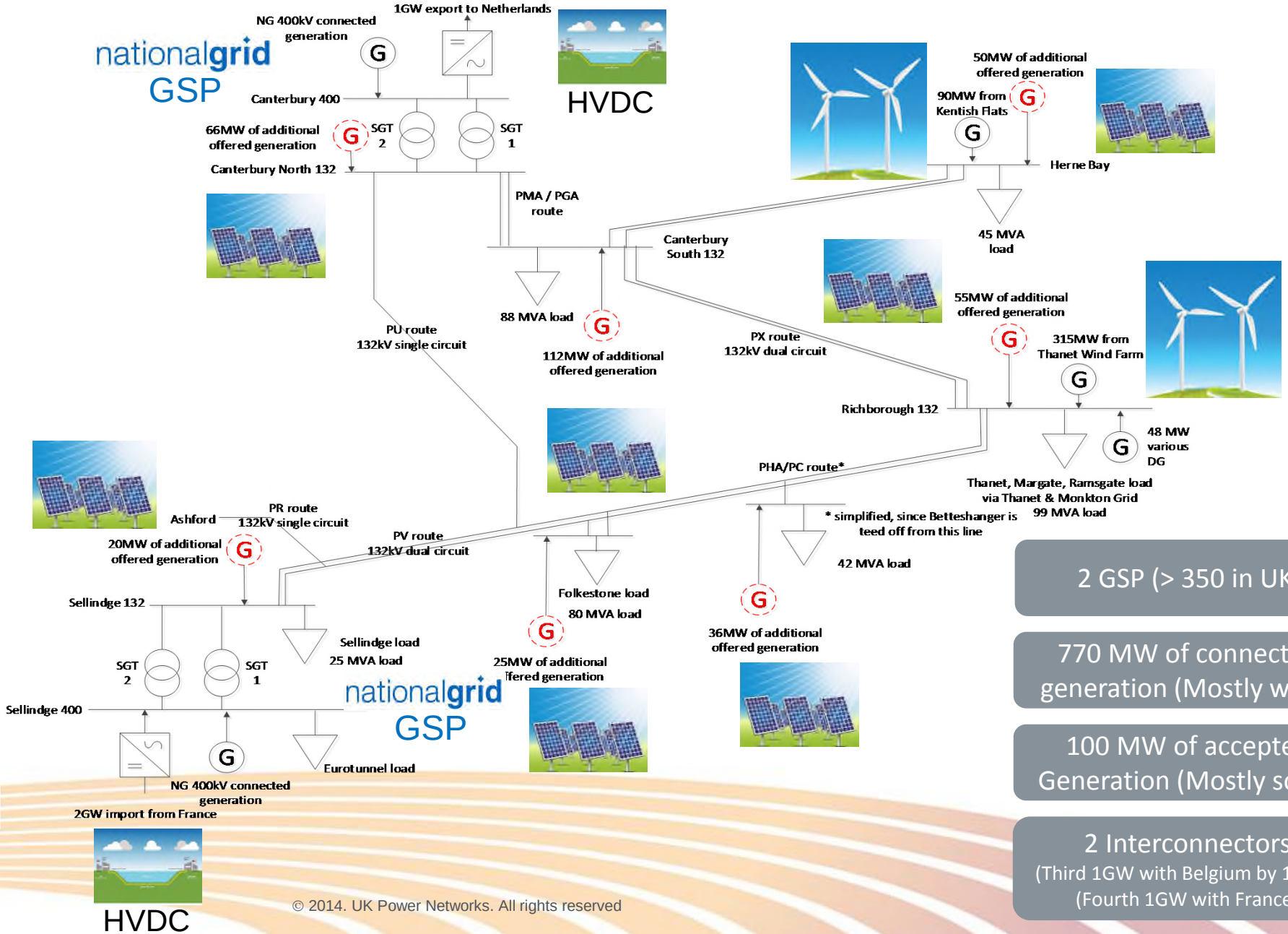
# Increasingly Dynamic DNO Network (East Kent Area):




2 GSP (> 350 in UK)

770 MW of connected generation (Mostly wind)

100 MW of accepted Generation (Mostly solar)

2 Interconnectors
(Third 1GW with Belgium by 18/19)
(Fourth 1GW with France)

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# KASM Project:

£3.9m / 3 years

**Investigate whether contingency analysis software can be used to safely run the high voltage network closer to its limits, by moving away from conservative, 'worst case' assumptions**.

**New capabilities**: Real-time and automated contingency analysis

**Benefits:**

- Reduce constraints on renewable generators
- Release network capacity
- Defer costly network reinforcements

**Project partners:**

NAVIGANT

nationalgrid

**Supplier (Bigwood):**

BSI

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# How is UKPN's network planning is effected by the Grid Code?

**Operational Planners:**

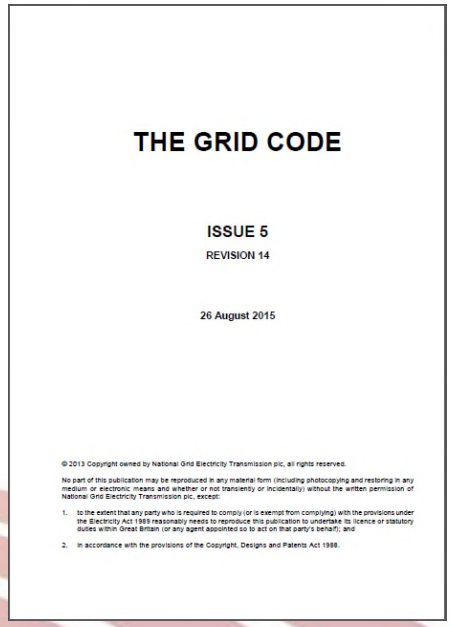
- Full visibility of National Grid Network and generators connected
- Receive National Electricity Transmission Study Network Data Files (NETSNDF), showing expected running arrangements and expected output of generators 2 weeks in ahead of real-time

**Long Term Planners:**

- Limited visibility of National Grid Network and generators connected. Network modelled as equivalents.
- Receive a reduced network model under the week 42 data

**Grid Code OC2.4.1.3.3.(i).z.5 states that**:

*'…the data from the National Electricity Transmission System Study Network Data Files received by each Network Operator* ***must only be used by that User in operating that Network Operator's User System*** *and must not be used for any other purpose or passed on to, or used by, any other business of that User or to, or by, any person within any other such business or elsewhere.'*



THE GRID CODE

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# Implication on UKPN's Long Term Planners

**Issues:**

- South East network is extremely complex due to interconnected nature, generation patterns and interconnectors
- Complex power flows can cause issues such as potential post-fault plant overloads and reverse power flows towards National Grid
- UKPN are now exporting to National Grid's network it is important to accurately model the whole network in longer-term planning timescales
- Longstanding issue but highlighted by the KASM project

**Benefit of having access to NETSNDF:**

- The ability to model the full network including 400 and 275kV running arrangements will ensure better protection of distribution and transmission assets and better utilisation of existing infrastructure.

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# Options explored at GCDF in February 2016

| Ref | Option | Outcome |
|---|---|---|
| 1 | Conclude that NETSNDF data can be used for planning purposes as well as operationally. *(Both legal teams believe the restriction is binding)* | ✗ |
| 2 | Seek a derogation from the Grid Code to allow sharing of data as required. This is unlikely to be successful as it raises questions of data ownership which makes a derogation inappropriate. *(This solution would gain little or no time over an enduring Grid Code change)* | ✗ |
| 3 | Seek permission from the data owners to use data as required. In terms of the ownership of NETS NDF study data the owners are National Grid, DNOs and generators *(Significant complexity involved in getting consent as file includes data from whole GB system)* | ✗ |
| 4 | Strip out any potentially confidential data from the study files. This could be an interim solution but unless automated becomes a repetitive and labour intensive task which addresses the symptom and not the cause. *(NGET are working on this but it is a complex, time-consuming and difficult to maintain task)* | ✗ |
| 5 | Make a change to the Grid Code to remove the restriction in OC2.4.1.3.3.(i).z.5 requiring the use of data supplied under this to be for operational purposes only. *(This would require a minor addition to the Grid Code)* | ✓ |

# Proposed addition to Grid Code OC2

**OC2.4.1.3.3.(i).z.5:**

*'…the data from the National Electricity Transmission System Study Network Data Files received by each Network Operator* ***must only be used***
***by that User in operating*** **AND PLANNING** ***that Network Operator's User System*** *and must*
*not be used for any other purpose or passed on to, or used by, any other business of that User or to, or by, any person within any other such business*
*or elsewhere.'*

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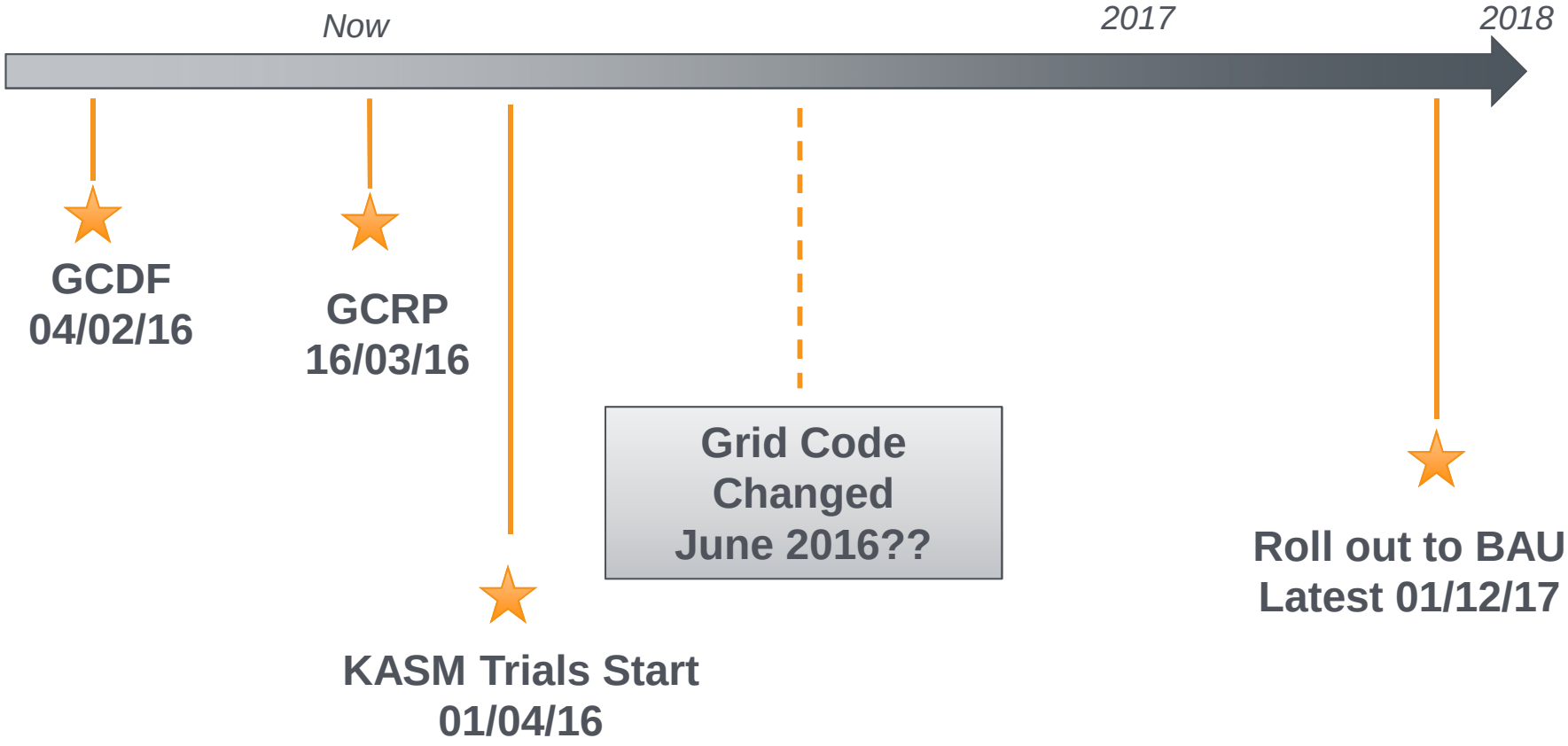
# Timescales

*Timeline showing key milestones moving forward*

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# Thank you

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