

Orkney Active Network Management system Legacy: informing future projects



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Outline

- **Performance of the Orkney ANM – KPIs**
 - Over 25MW contracted to connect
 - Constraints experienced by generators
 - Communications performance
- **Consolidation of R&D project**
 - Communications solutions
 - Management of sub 50kW generators (to avoid capacity erosion)
- **Evolution of the Orkney Smart Grid**
- **New projects beyond Orkney - PATHS**

The Orkney Isles

Generator performance

Generator Unit	Actual Production Factor After Curtailment [%]	Estimated Production Factor High Wind Year [%]	Estimated Production Factor Low Wind Year [%]
NNFG X	35.5	42.1	35.2
NNFG Y	44.1	36.6	35.2
NNFG Z	41.2	43.8	38.9

The Orkney Isles Communications performance

Link	Availability
Link 1	97.24%
Link 2	97.24%
Link 3	98.99%
Link 4	99.95%
Link 5	99.86%
Link 6	99.94%
Link 7	92.86%

Consolidation of R&D project

- **Communications**

- Upgrade of critical comms link from Scorradale to Kirkwall
- Alternative direct communications links to high value generation assets

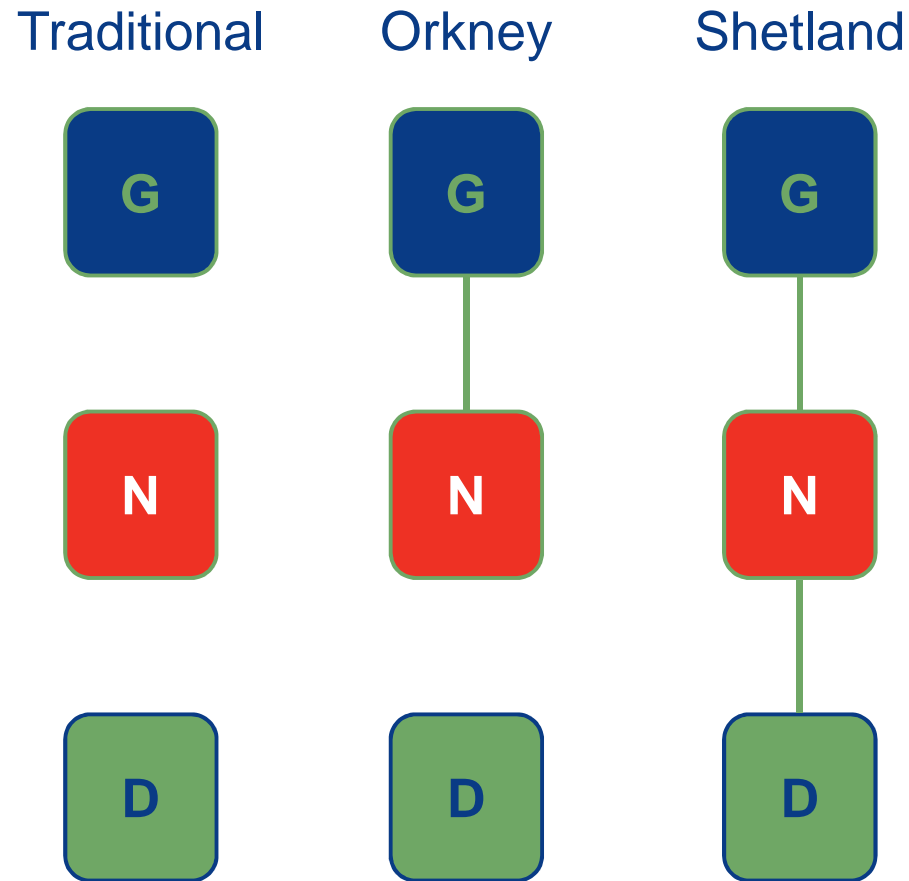
- **Sub 50kW**

- Fixed zonal sub 50kw generation allowance?
- Linkage into ANM with scaled down communications solution ?
- Build on NINES technical solutions.

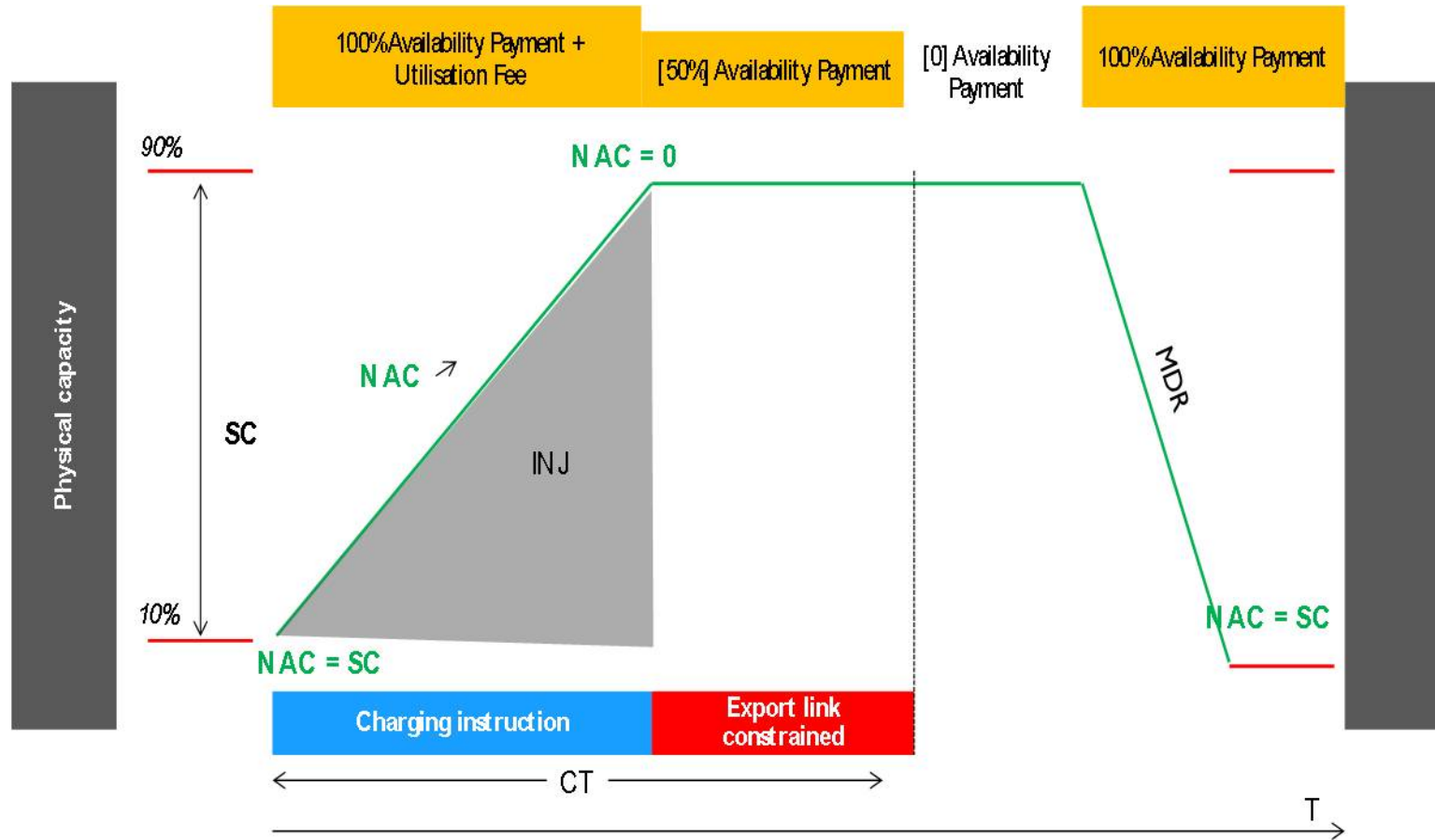
Evolution of the Orkney Smart Grid

- **Energy Storage Park**
- **Migration to software environment**
- **Dynamic Line Rating**
- **State Estimation**
- **Co-ordinated Voltage Control**
- **Maximise benefits from ANM by leveraging the learning from NINES and PATHS.**
- **Integration with Distribution Automation**
- **Integration with Transmission requirements**

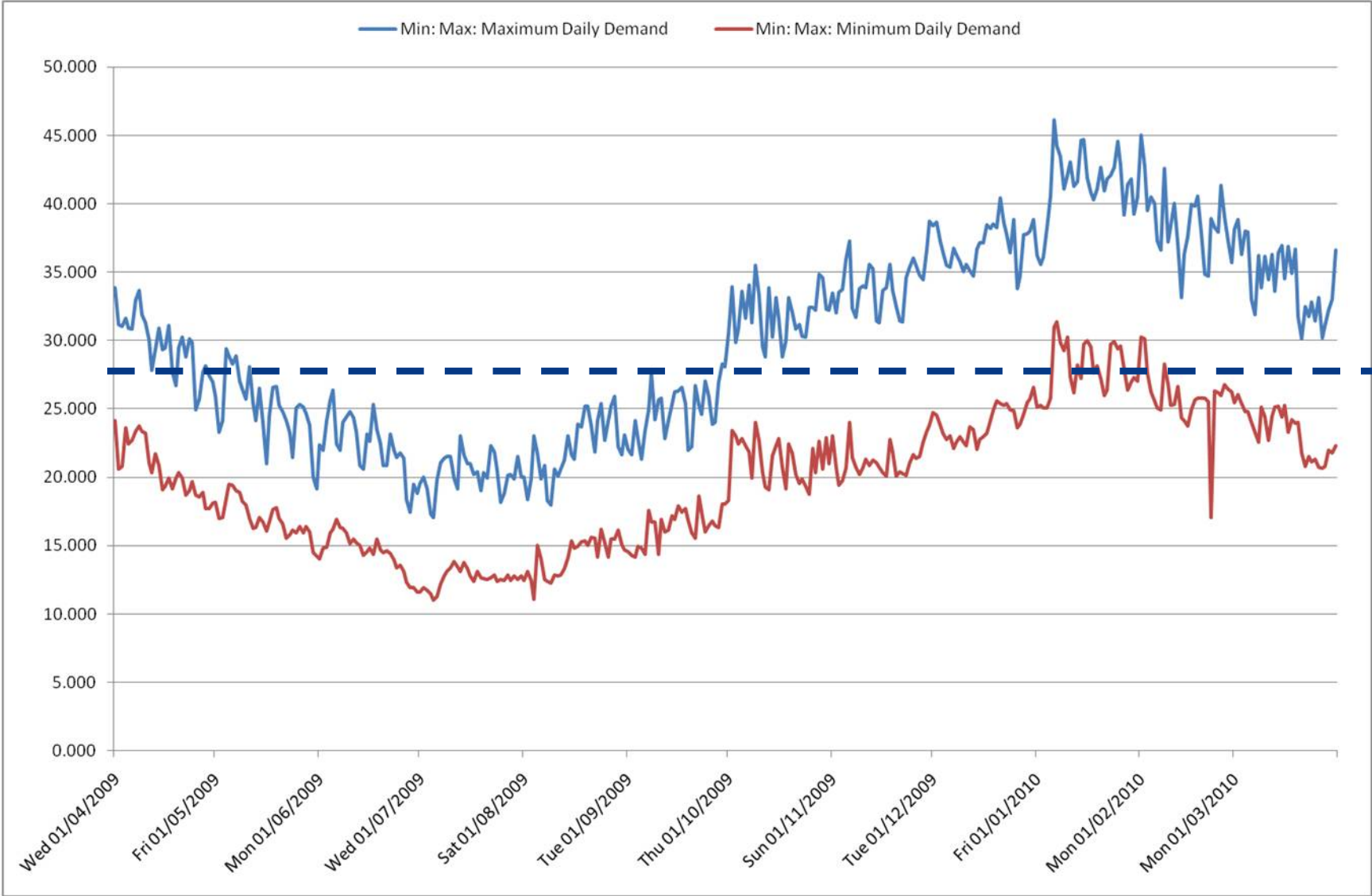
New projects beyond Orkney



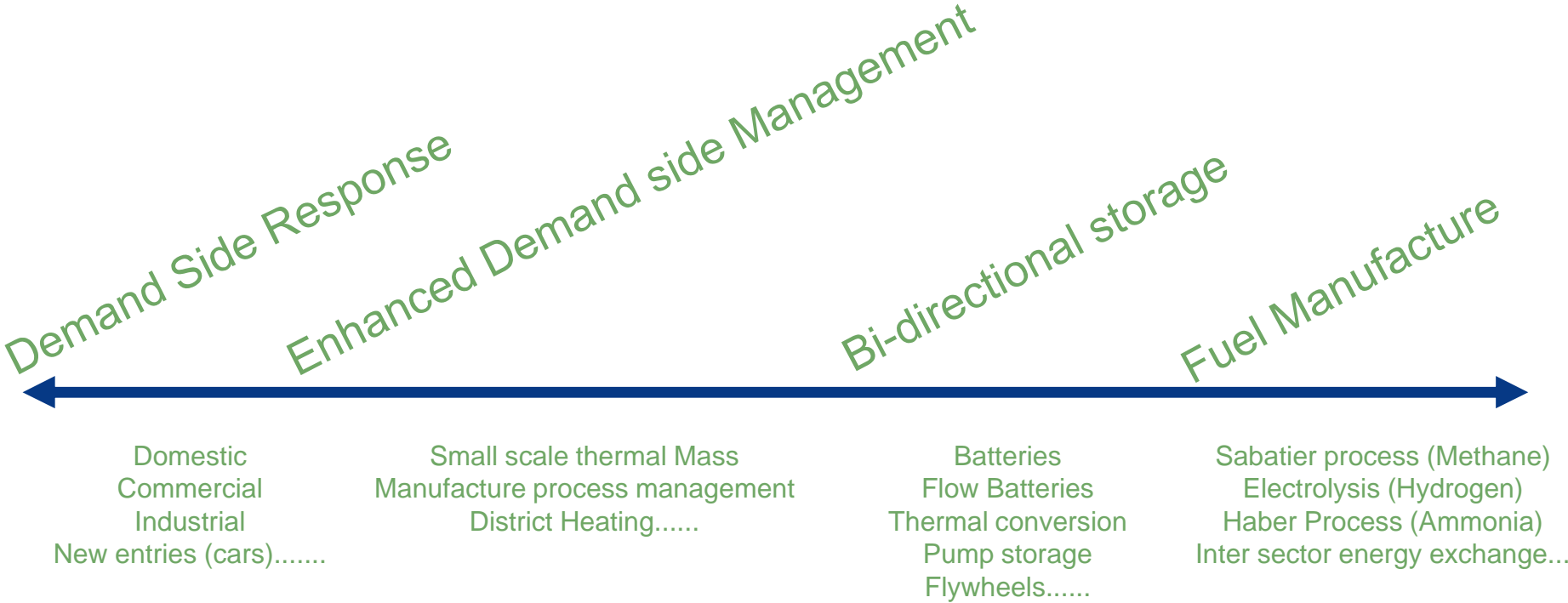
Commercial Model Trial (Energy Storage Park)



Typical Profile



Energy storage continuum



New projects beyond Orkney - PATHS

Traditional

Orkney

Shetland

PATHS





The End

Legacy: informing future projects

<http://www.ssepd.co.uk/OrkneySmartGrid>

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