

CIGRE NGN Netherlands

Paris session 2024 – Take aways



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For power system expertise

Context



Introduction / Cigre NGN
Netherlands

Cigre Contribution Overview –
Research Paper

Cigre Paris 2024 – Exhibitor
Experience

Quick Intro



Padraig Buckley

- BEng Mech Engineering – Ireland
- Work: Power systems engineering consultant – 2 years
- MSc SET – TU Delft – Focus on Solar Energy and Power Systems
- Electrical Engineer – Offshore Floating Photovoltaics – SolarDuck



OFPV Project – Merganser (0,5MW)



Merganser – 0.5 MWp

- World's first certified OFPV prototype in the North Sea

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Merganser – 0.5 MWp

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Achievements & key learnings:

- Prototype certification from Bureau Veritas
- Achieving TRL 7
- Installed in operational environment (North Sea)
- 6 interconnected platforms
- Collaboration with multiple research institutes and university
- Survived summer storm with 7.1 meter wave height

Next Generation Network Netherlands



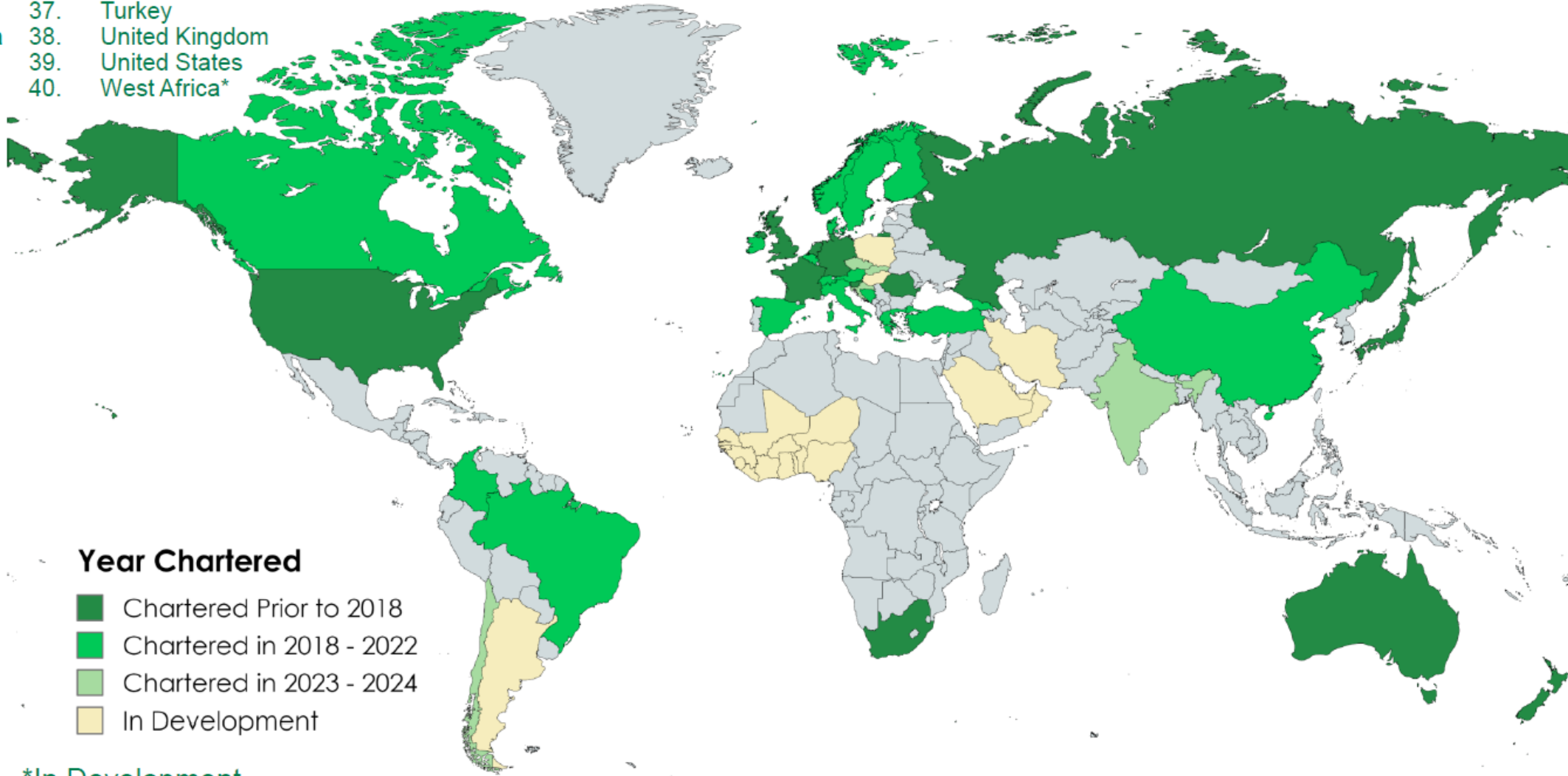
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Current NGN Groups:

- | | | | |
|-----|---------------------------------|-----|----------------|
| 1. | Argentina* | 34. | Spain |
| 2. | Australia | 35. | Sweden |
| 3. | Austria | 36. | Switzerland |
| 4. | Belgium | 37. | Turkey |
| 5. | Bosnia & Herzegovina | 38. | United Kingdom |
| 6. | Brazil | 39. | United States |
| 7. | Canada | 40. | West Africa* |
| 8. | Chile | | |
| 9. | China | | |
| 10. | Colombia | | |
| 11. | Croatia | | |
| 12. | Czech & Slovak | | |
| 13. | Denmark | | |
| 14. | Finland | | |
| 15. | France | | |
| 16. | Georgia | | |
| 17. | Germany | | |
| 18. | Greece | | |
| 19. | Gulf Cooperative Council (GCC)* | | |
| 20. | Hungary* | | |
| 21. | India | | |
| 22. | Iran* | | |
| 23. | Ireland | | |
| 24. | Italy | | |
| 25. | Japan | | |
| 26. | Netherlands | | |
| 27. | New Zealand | | |
| 28. | Norway | | |
| 29. | Poland* | | |
| 30. | Romania | | |
| 31. | Russia | | |
| 32. | Slovenia | | |
| 33. | South Africa | | |



*In Development

Our mission

The Next Generation Network (Young CIGRE) supports young professionals in career development and introduction to CIGRE, regardless of their current job in the energy sector.



Next Generation
Network

Founded: 2014

Objectives

- To encourage active membership of CIGRE NGN both for the benefit of NGN members and the NGN group. → NGN presentations (TUs)
- To support/promote activities, such as technical visits, tutorials, and meetings for the CIGRE NGN. → Teamday events
- To organize appropriate CIGRE NGN networking events → Matchmaking
- To improve communication between CIGRE and NGN members → NGN IEC + DB meeting

Cigre Exhibitor Experience



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Cigre Paris 2024: How did I end up there?



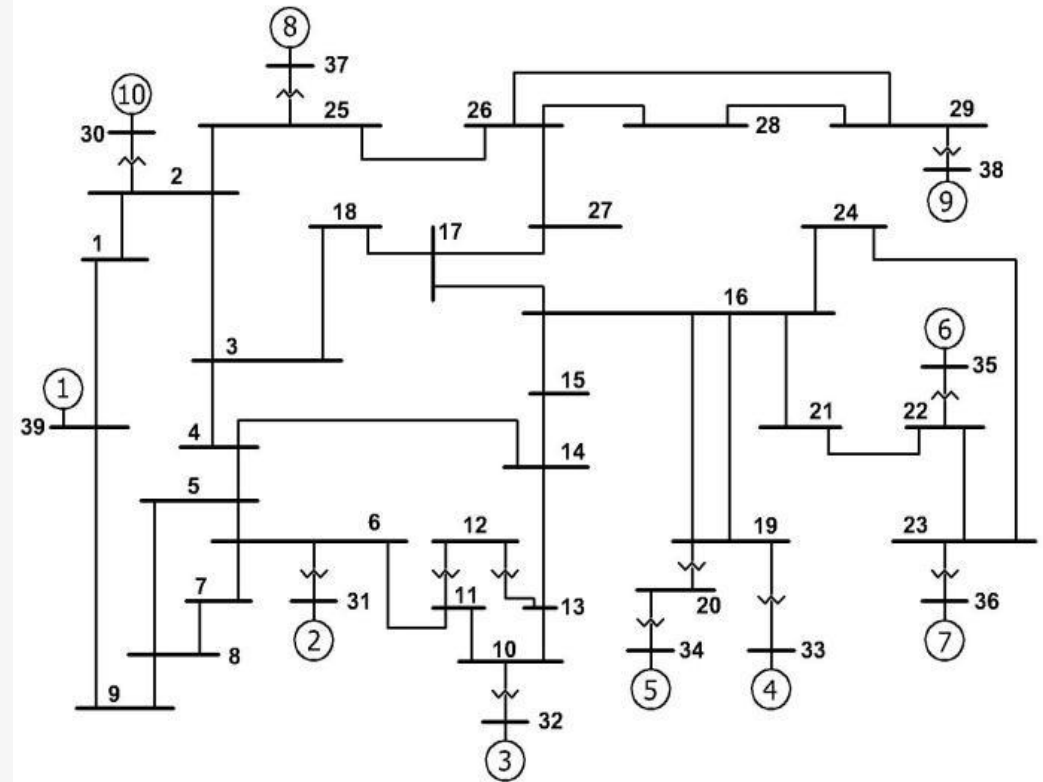
- MSc Thesis – Industry collaboration
- Thesis Defense – Cigre Call for papers
- 1st submission – Summary
 - Accepted
- 2nd Submission – Draft Paper
 - Reviewed by Cigre Panel
- 3rd Submission – Final Paper
 - Accepted
- Before Event – Exhibition Poster Submission



Cigre Paris 2024: Paper Description

- **Research Aim**

- Study effect of reduced inertia on Low Frequency Demand Disconnection (LFDD) scheme
- Propose/investigate additional proactive measures and LFDD improvements



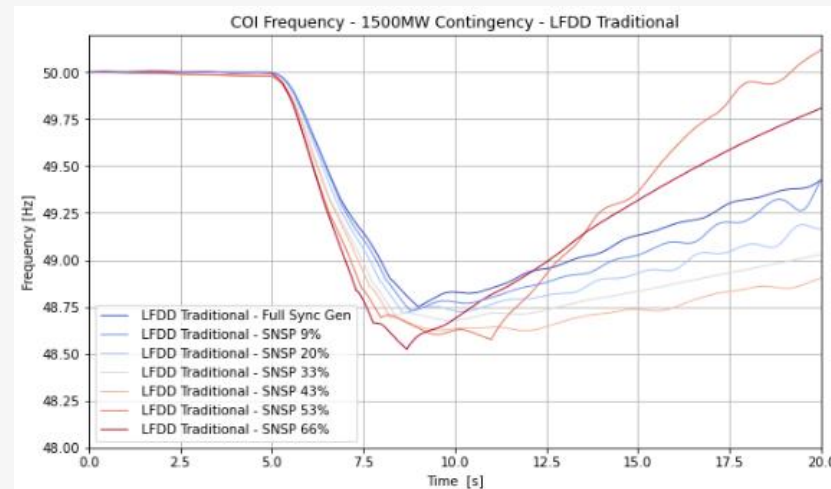
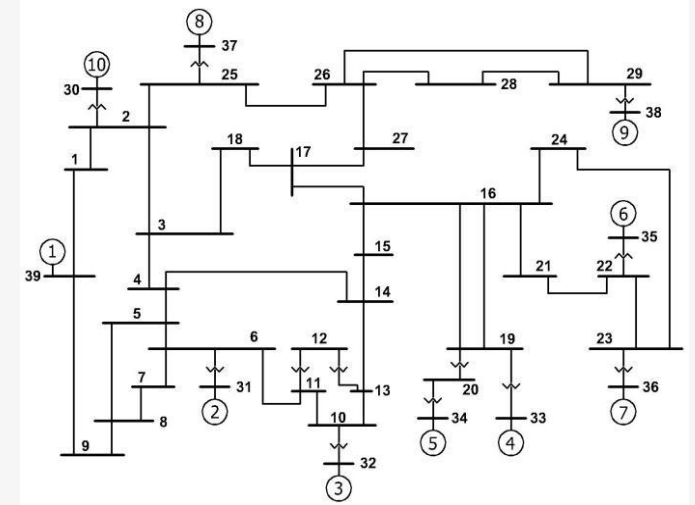
Cigre Paris 2024: Paper Description

- **Research Aim**

- Study effect of reduced inertia on Low Frequency Demand Disconnection (LFDD) scheme
- Propose/investigate additional proactive measures and LFDD improvements

- **Focus Areas**

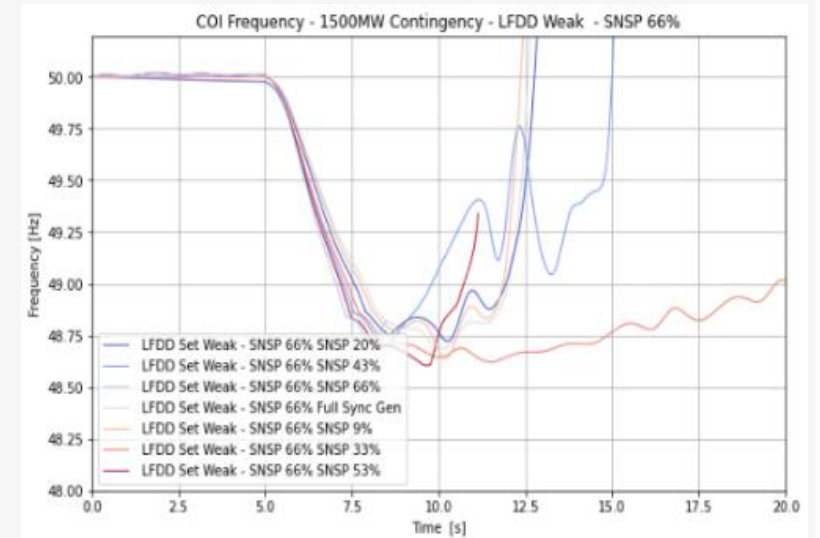
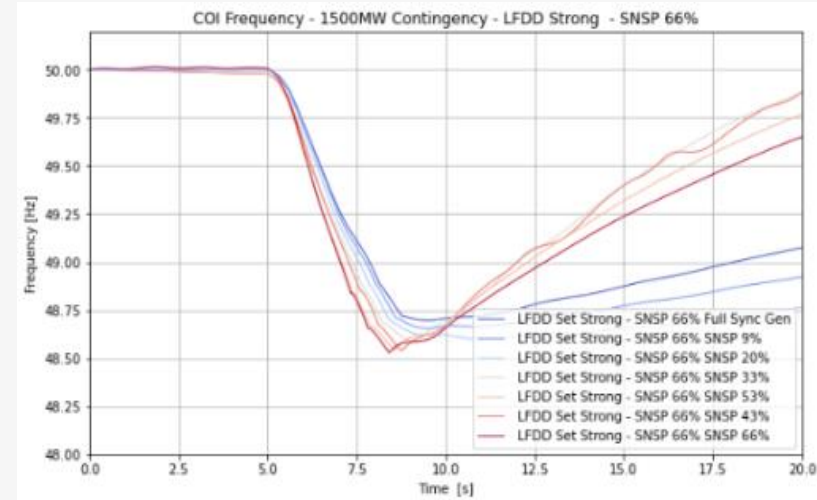
- System Strength as input to LFDD bus selection
- Proactive RoCoF based disconnection before 49Hz
- Effect of LFDD at locations with high DER penetration
- Adaptive load Shedding Schemes



Cigre Paris 2024: Paper Description

• Conclusions

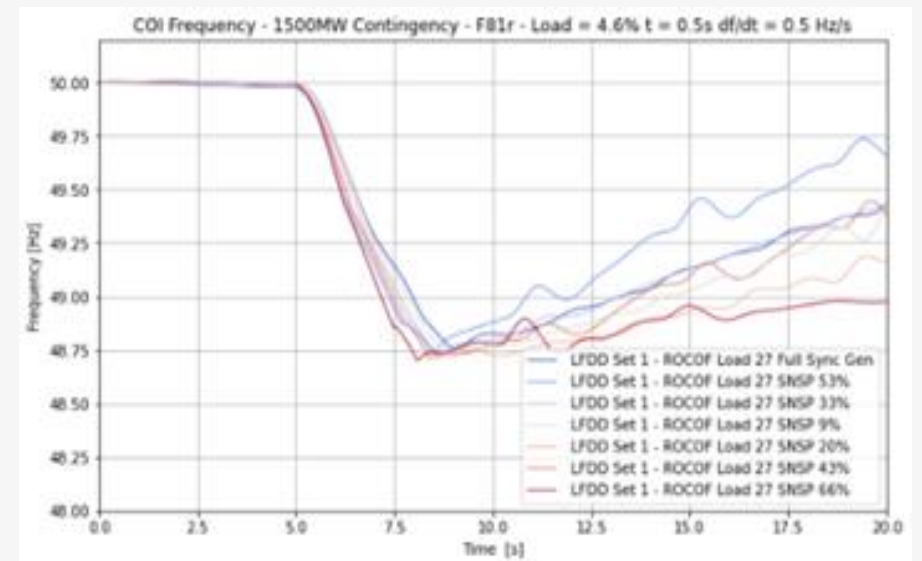
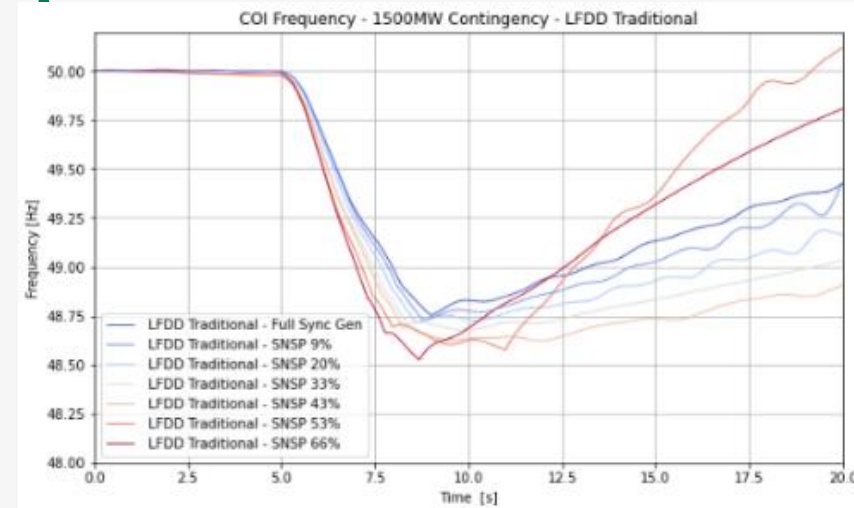
- Considering system strength and active DER generation at LFDD locations - Improve robustness



Cigre Paris 2024: Paper Description

• Conclusions

- Considering system strength and active DER generation at LFDD locations - Improve robustness
- Proactive RoCoF-based protection or adaptive LFDD scheme - avoid under and over shedding for low inertia system



Cigre Paris 2024: Exhibitor Experience

- Group Discussion
 - Special Reporter – proposes discussion questions
 - Exhibitors prepare and present contributions
 - Full Day session – Auditorium



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- **Group Discussion**
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 - Full Day session – Auditorium
- **Poster Session**
 - 4 hour exhibition session
 - 1 screen per exhibitor
 - Open to public
 - Open discussions / questions





Cigre Paris 2024: Key Takeaways

- Positive, Enthusiastic, Open Atmosphere
- Industry Focus – Highly relevant papers and discussions
 - 140 Contribution Submissions – C2 Study Committee
- Practical and Proactive contributions
- Global Network – National Grids of ranging amount of renewables
- Exhibitors eager to connect and collaborate

Connect / Questions

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