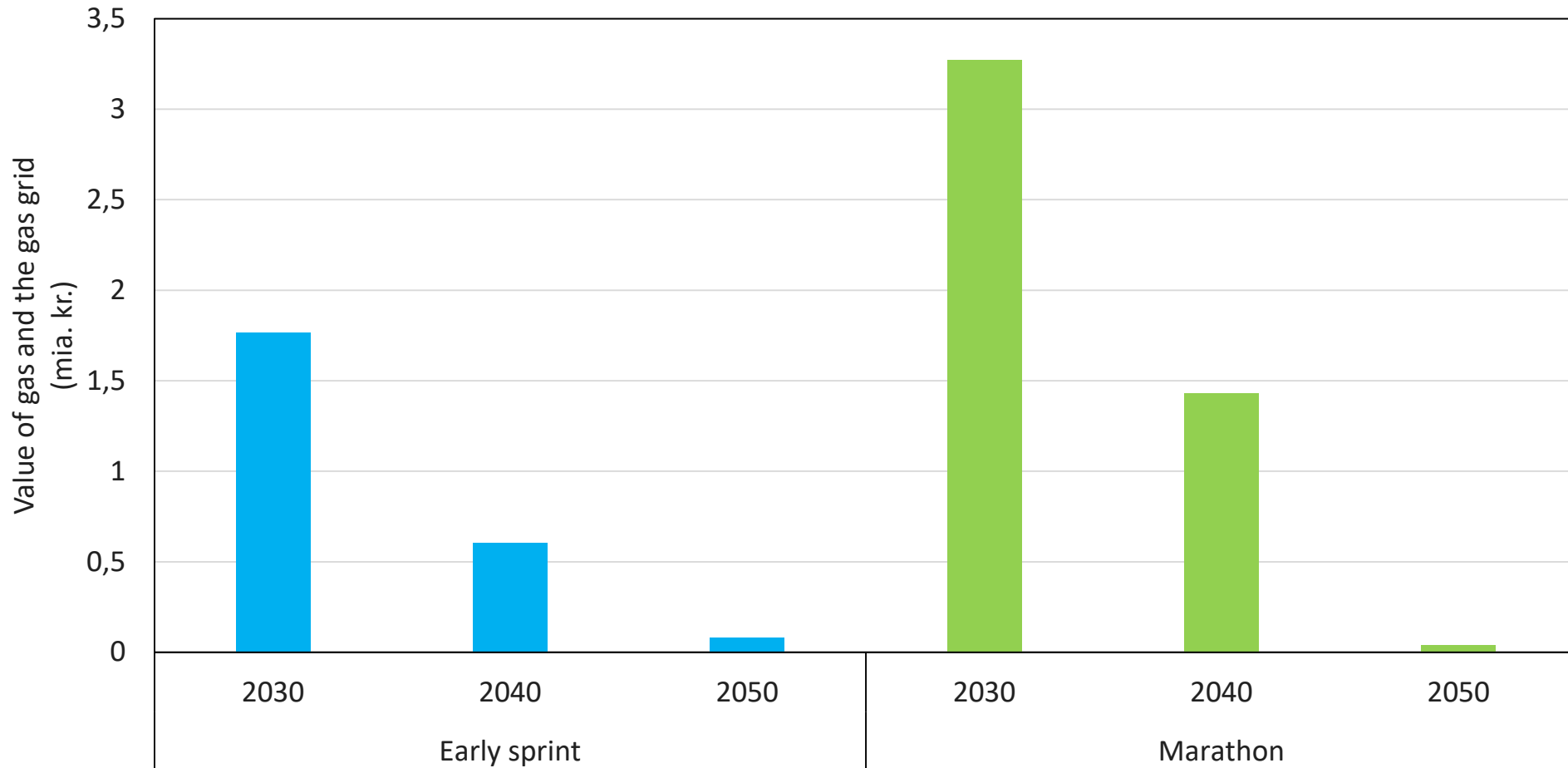


WP4

Value of the gas grid

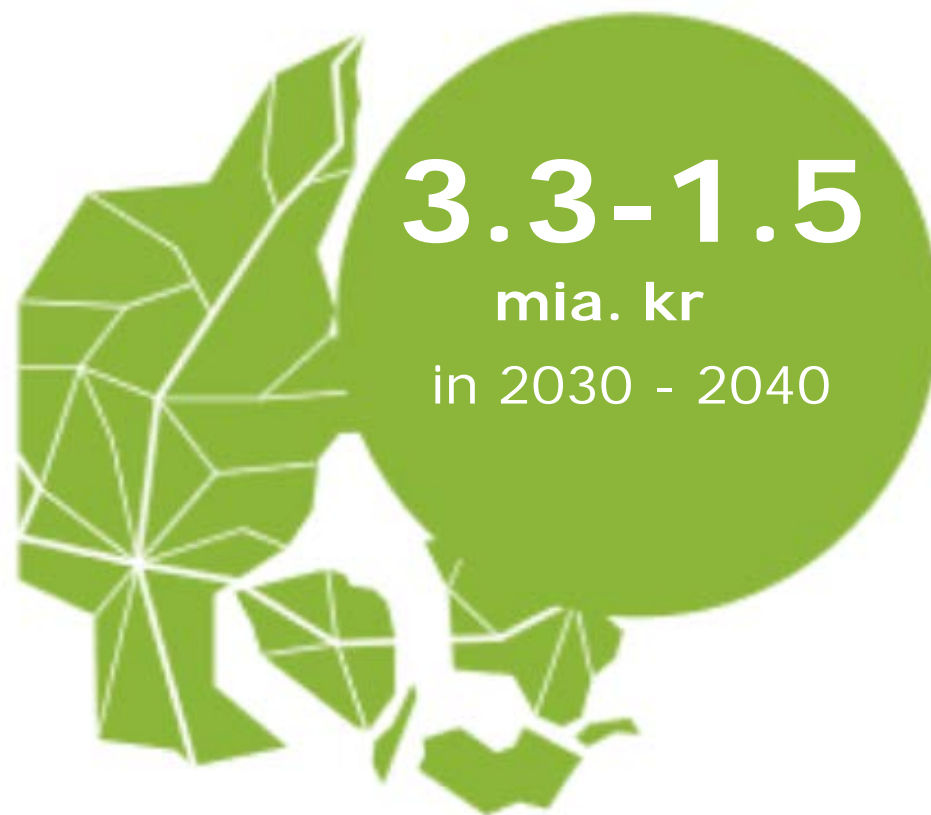
Value of gas and the gas grid

- scenarios with and without use of CH₄



Value of gas and the gas grid

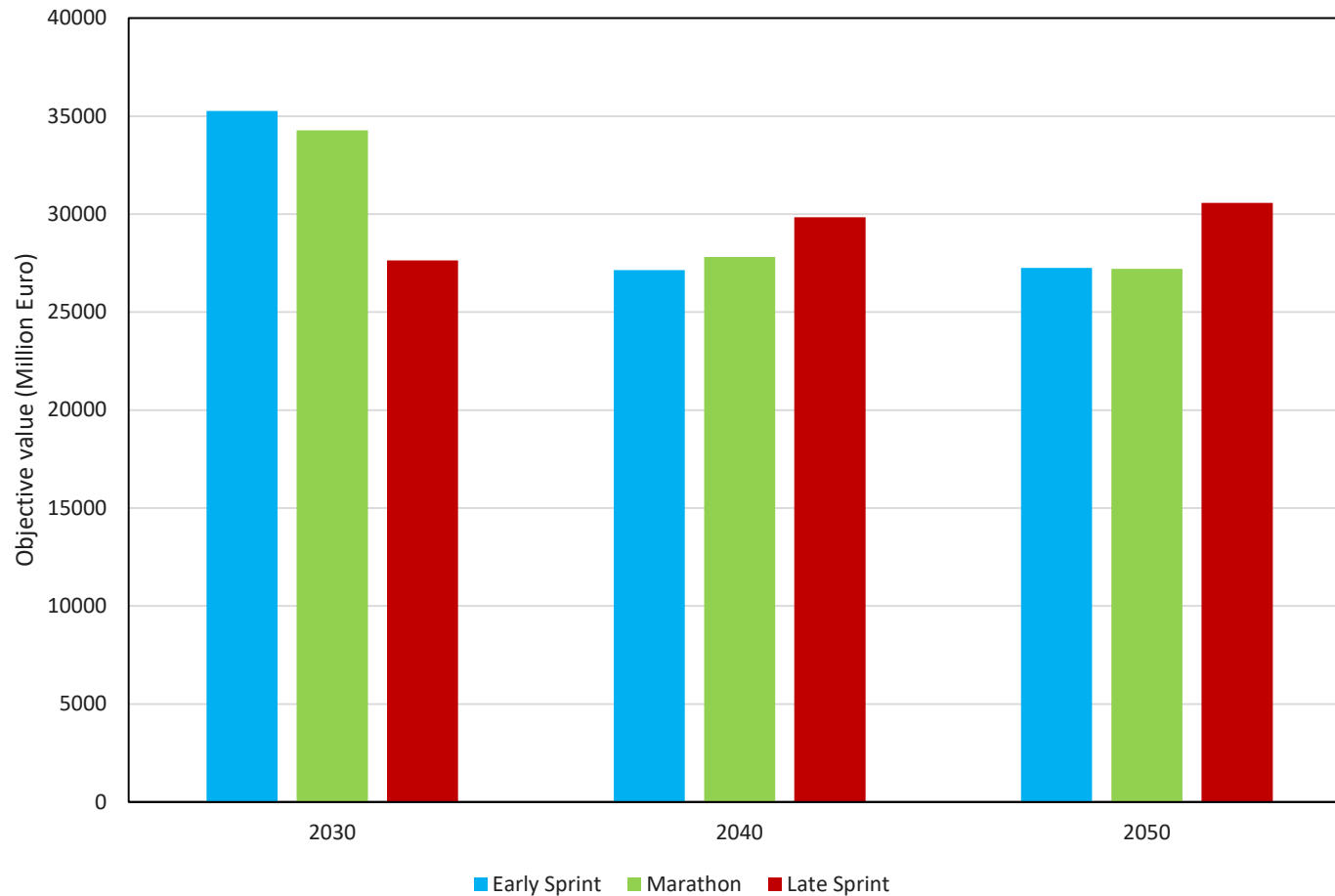
- Marathon scenario with and without use of CH₄



Energinet
Grøn gas Danmark
year: 2035



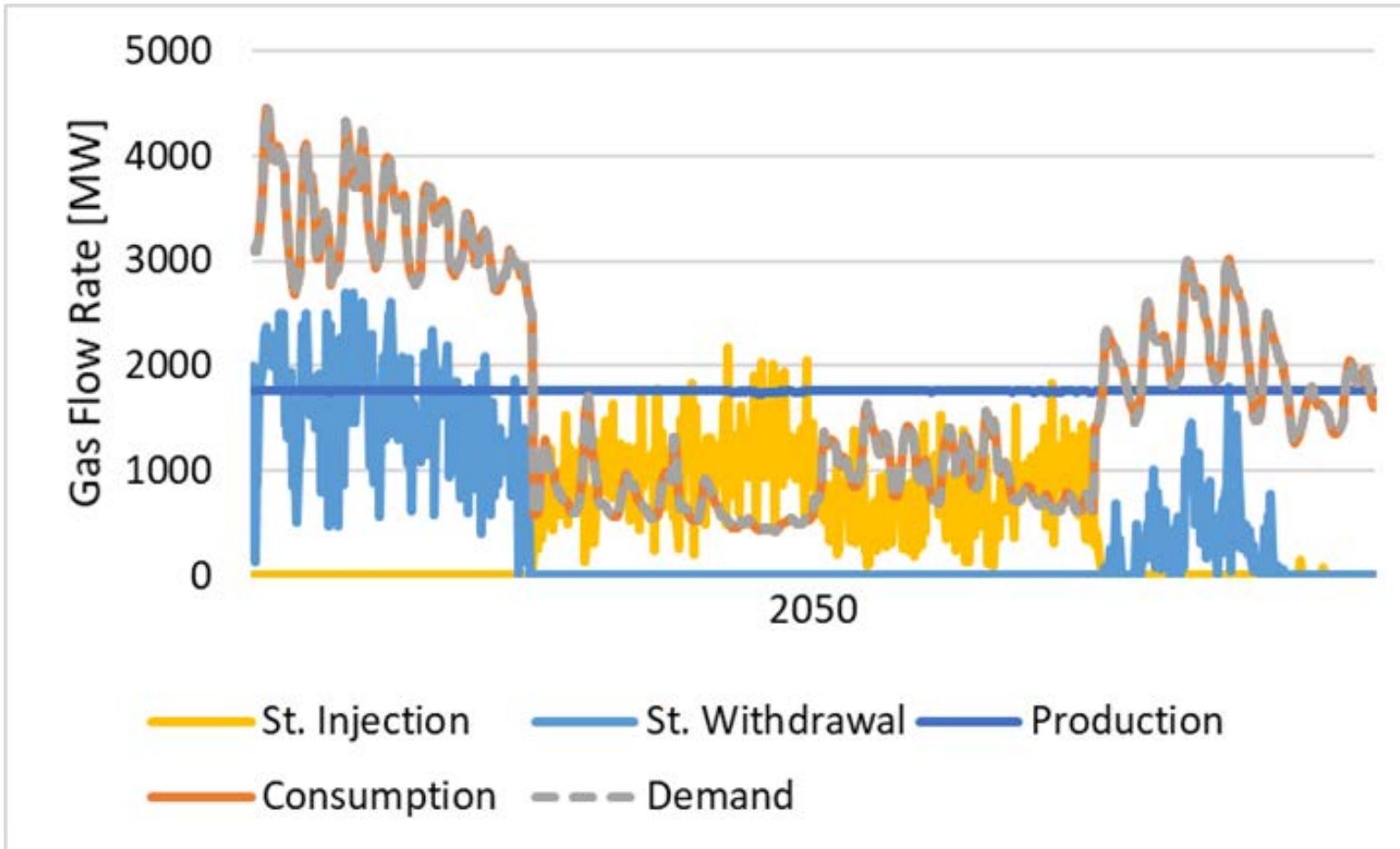
Annual objective value - all countries



- It is not so much more expensive to go for the more ambitious energy and climate scenarios when you look at the full period

Storage use

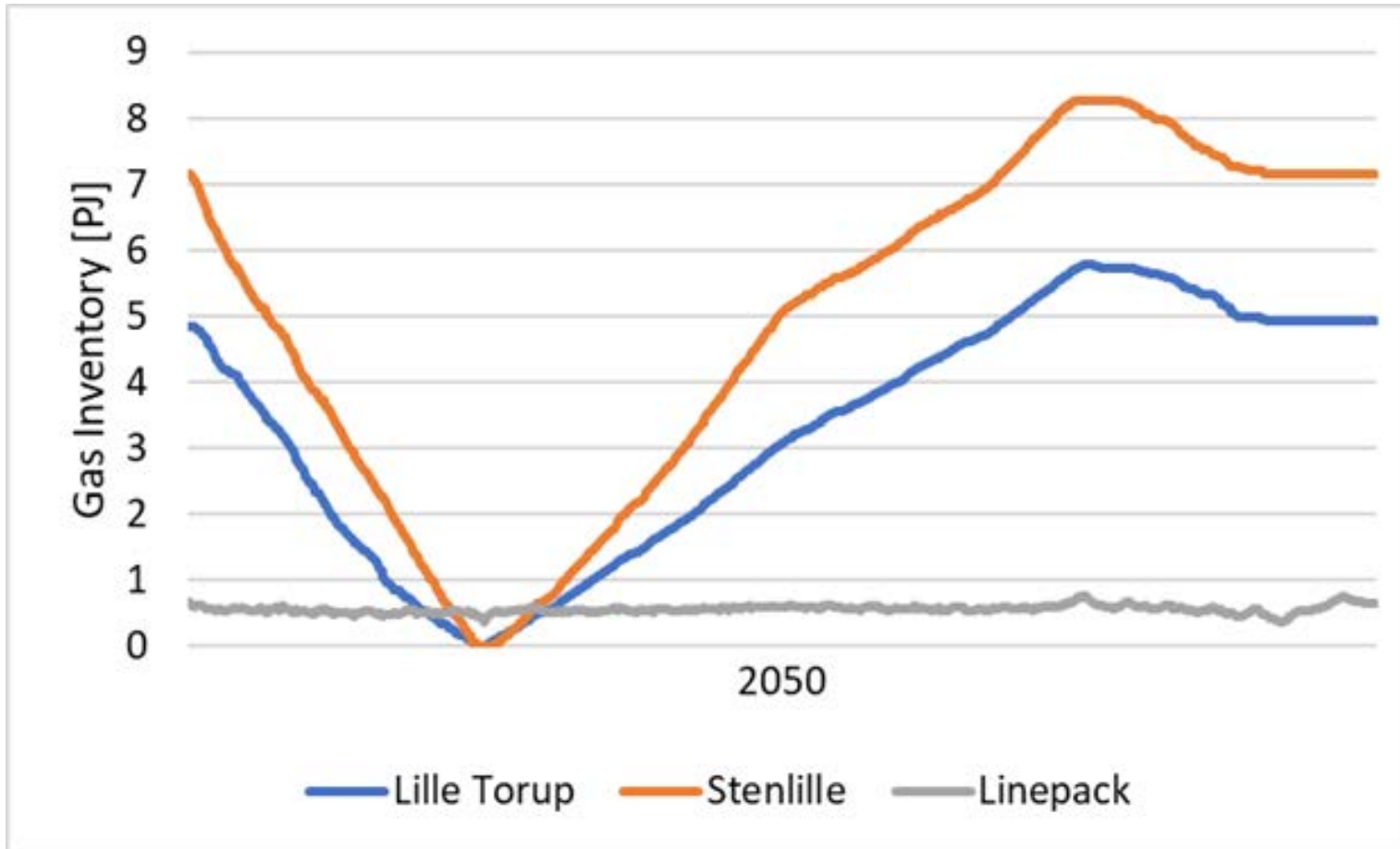
Master thesis - Mourad Boucenna



- Injection during summer and
- withdrawal during winter

Gas grid - line pack and storage

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- No bottle necks in 2050
- Line pack is not enough - (also not when combining distr and trans grid)
- Storage is needed too
- One storage may be enough, so one might be converted to H2 or for transmission

Conclusion

- The gas grid (CH₄) has high value for society, although the consumption decreases
- There will not be problems with bottlenecks for DK consumption
- Storages are still needed, but one might be enough for biomethane

To do's

- **before final conference:**
 - include OptiFlow and more fuel production options
 - include export analysis (e.g. to DE)
 - analyse regulation scenarios
 - further technical alternatives and sensitivity analyses (including bioCO₂ emissions iLUC+biochar? 20 yr GWP? Biomass prices?)
 - assess stranded assets
- **before end March:**
 - further analysis of CH₄/H₂ grid value: (closing parts?, converting to H₂?, increased tariffs?, Baltic Pipe influence?, reversible fuel cells? avoided investments in el distr grids?)
 - optimizing DH share and energy savings for individual heating?
- **next project: some of the above? 😊**

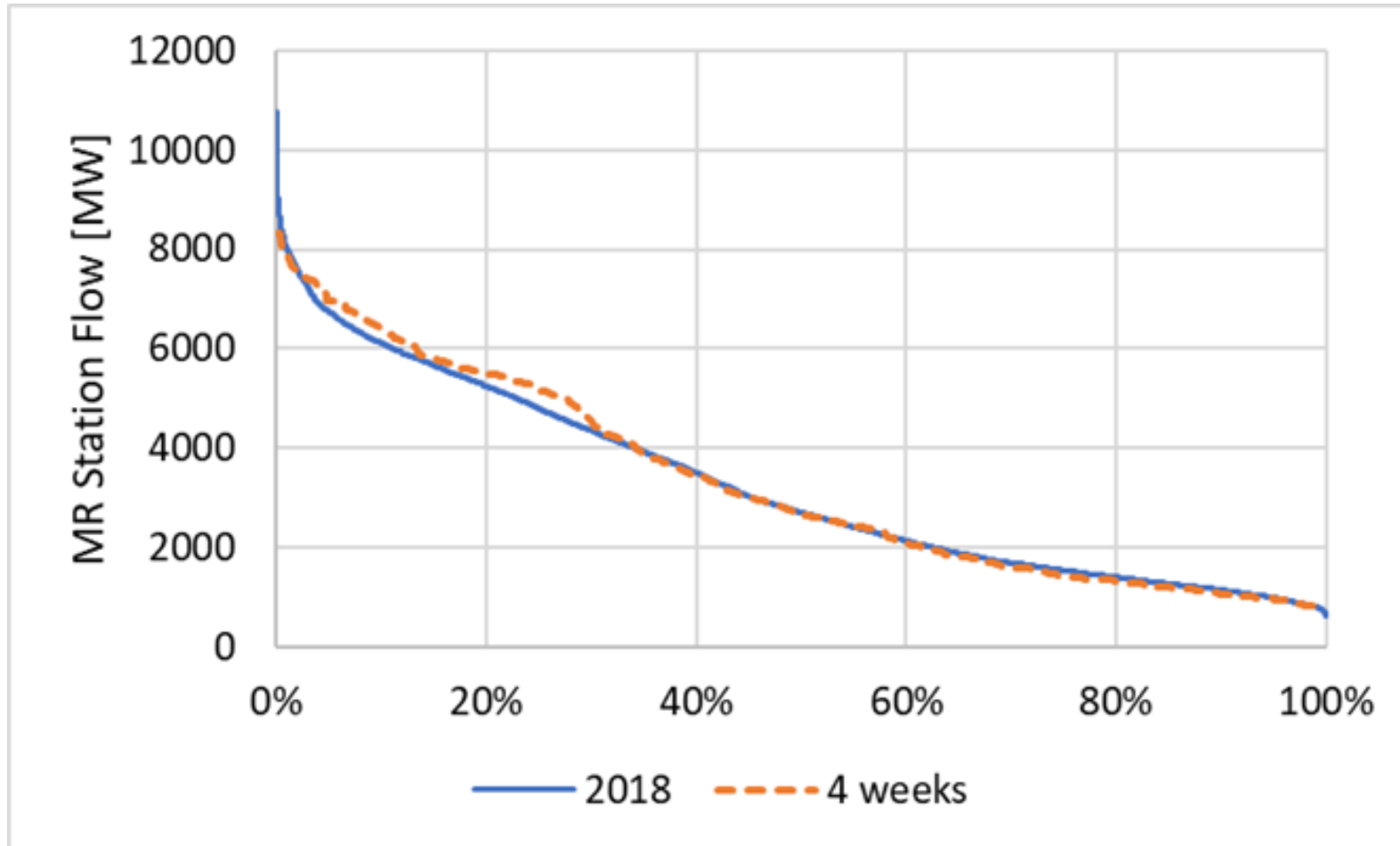
The End

- Questions/ comments?
- Rasmus, Frauke, Ida, Diana, Mason and Mourad

Extras

Extra - validation of model

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- Good fit between load curve modelled (4 weeks) and measured annual data (2018)