Report

Intro

Background

Explanatory Analysis

Assumptions

Demand per minute is the same within 30 min window.

Load data analysis

* Weekday vs weekends
* Peak vs off-peak
* Hourly
* Daily
* Month
* Season
* Temperature \*

Draw conclusion about demand pattern in Orkney

Wind turbine analysis

* Averaged production
* Extreme wind shutdown
* Curtailment
* Peak vs off peak
* Season
* Temperature\*

Draw conclusion about supply pattern of wind turbine in Orkney

Calculation

* Curtailment per half hour
* Average kW can increase per household using DR
* % house hold penetration
* Average spot rate of electricity\*
* Cost of a smart meter
* Cost of DR scheme
* Total value of wind curtailed

Conclusion

Appendix

<https://www.timeanddate.com/weather/uk/kirkwall/historic?month=6&year=2017>

<http://www.orkneyweather.co.uk/>

<http://www.ewea.org/wind-energy-basics/faq/>

