

WOW! Investment Committee

# WIND TURBINE MARKET

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## PROPOSAL - RESEARCH

### ■ WIND RESOURCE

High wind speeds yield more power. The further away from the ground, the faster the wind.

In 2019, US wind turbines reduced CO2 emissions by an estimated 198m metric tons

### ■ POTENTIAL

The US has enough wind to generate 68,000 TWh, yet the US require only 3,802 TWh

In 2019, wind energy purchase contracts averaged 1.8c/kWh, compared with residential prices of 13.2c/kWh in 2020

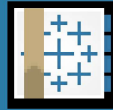
The Return of Investment for wind power can reach 18-20:1 (2013 study)

## RECOMMENDATION ON INVESTMENT

- YES - GREEN MEANS 'GO'
- MIDAMERICAN ENERGY CO
- AVANGRID RENEWABLES LLC



## FINDINGS & INSIGHTS FROM TABLEAU



LAB\_Group\_combined\_v1.9.twbx



## OVERCOMING CHALLENGES

- Python not reading Wind Turbine csv due to encoding (0x1f error). A solution was located using an online search.
- Having not used Tableau for a number of weeks, we had forgotten much of our knowledge. However with persistence we got through.
- Knowledge is King and not having the domain knowledge we found it difficult to understand the data. However research, patience, & renaming some columns helped.
- We were unable to upload the csv file (produced from Jupyter Notebook) to PostgreSQL. Our workaround was using SQL queries within Jupyter.

## REFLECTION

- We found the LAB Guidelines difficult to understand what was required. Next time we would document milestones required.
- Having seen each member of Team 2 'specialise' in an area, we would look to do the same next time.
- We completed the Data Wrangling and high level analysis as a collective and we believe this worked well and would do again.
- Next time we would use Trello to manage tasks and assignments. While Slack we would create a thread for different streams/themes.

## THANK YOU!



