

A stylized illustration of a city skyline on the left side of the image. It features several rectangular buildings of varying heights and colors, including shades of orange and red. Each building has a grid of small white squares representing windows. To the right of the buildings are two simplified trees with orange oval canopies and thin red trunks. The background is plain white.

Predicting Building Electricity Usage for New York City



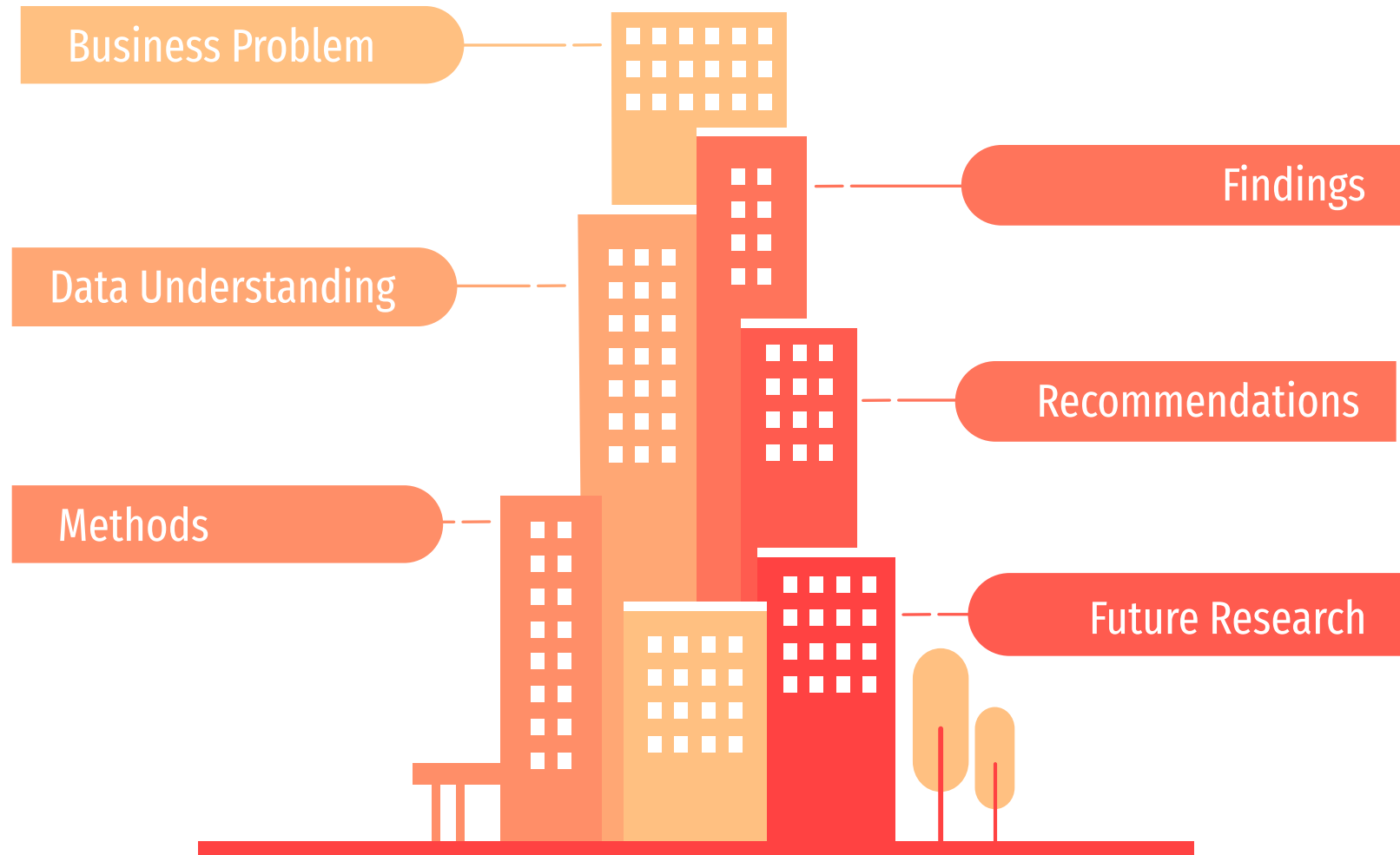
Evan Johnson



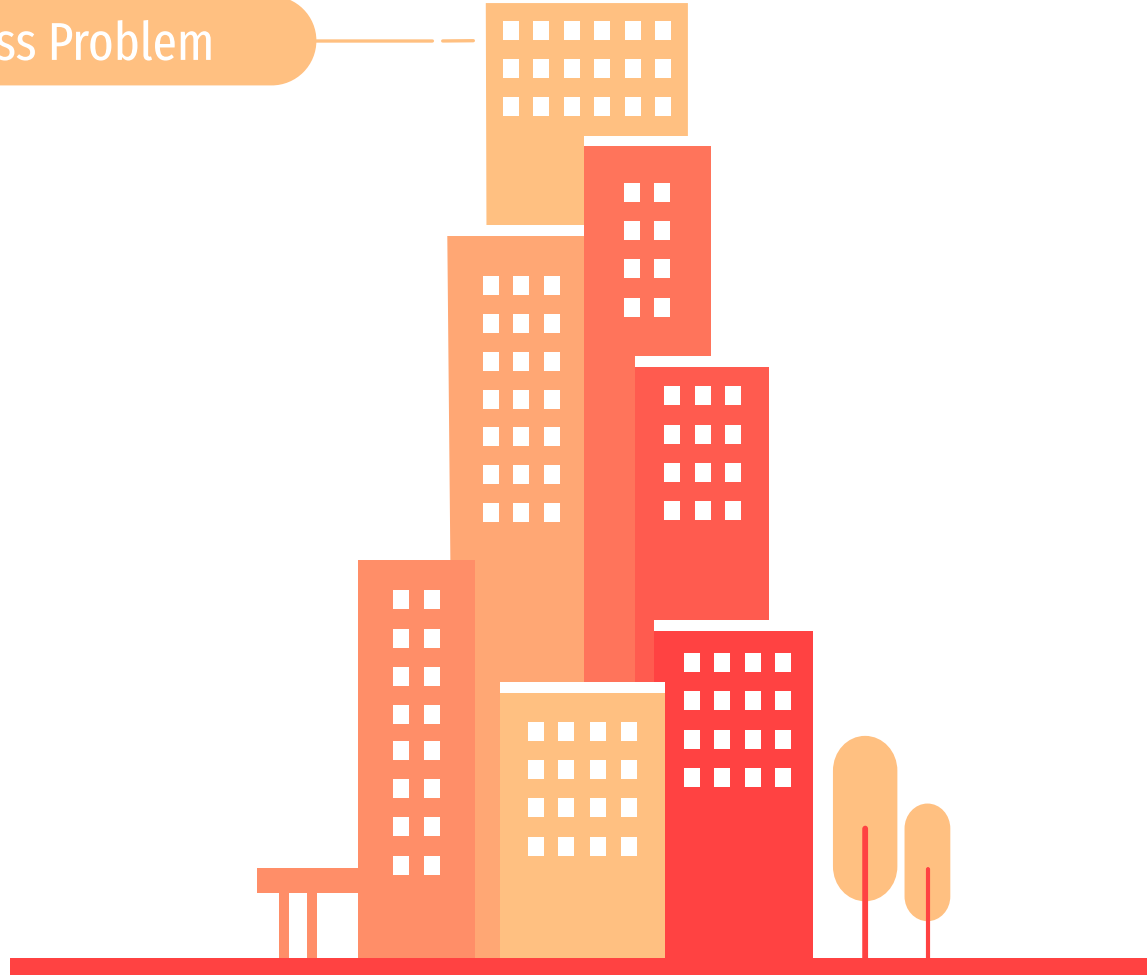
<https://github.com/ewjohn127>



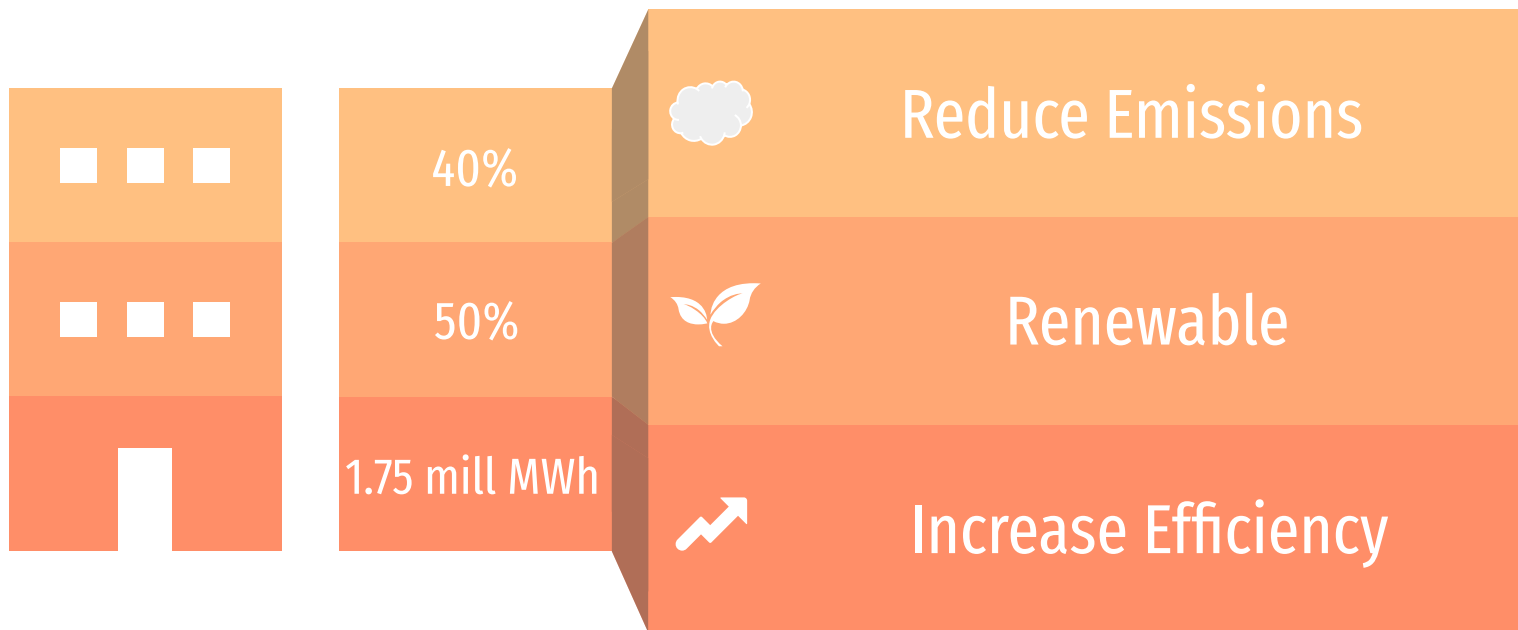
<https://www.linkedin.com/in/evan-johnson-13480947/>



Business Problem



Supporting the 2030 New York State Energy Plan



Supporting the 2030 New York State Energy Plan



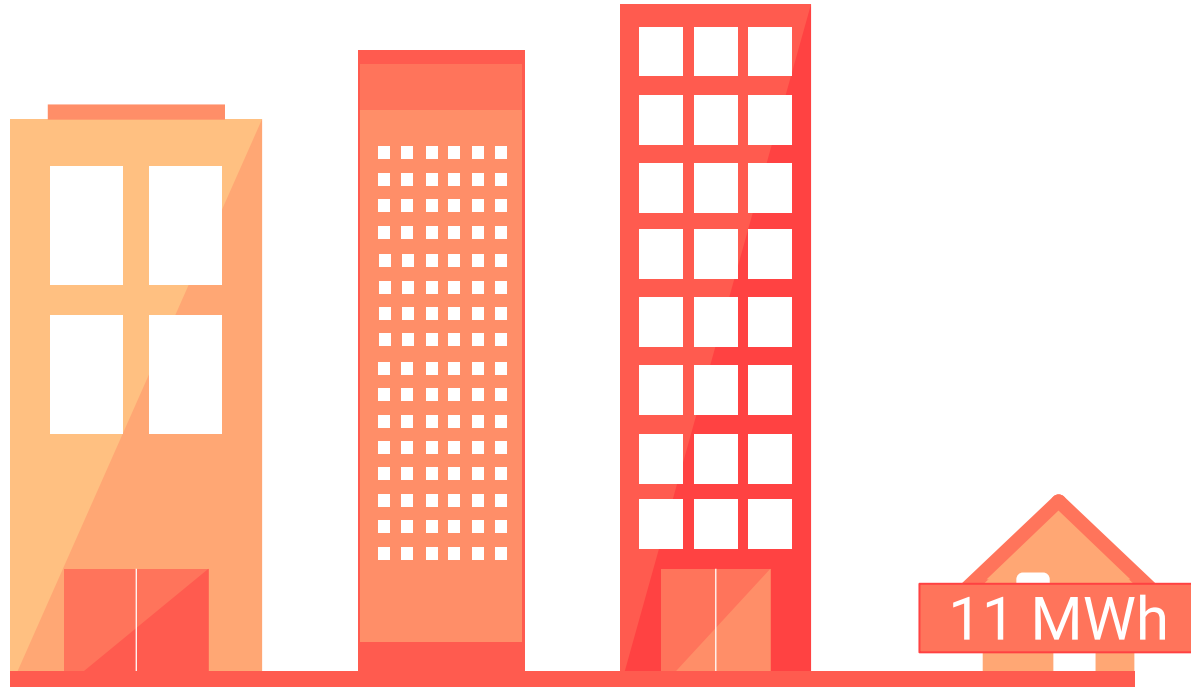
Data Understanding



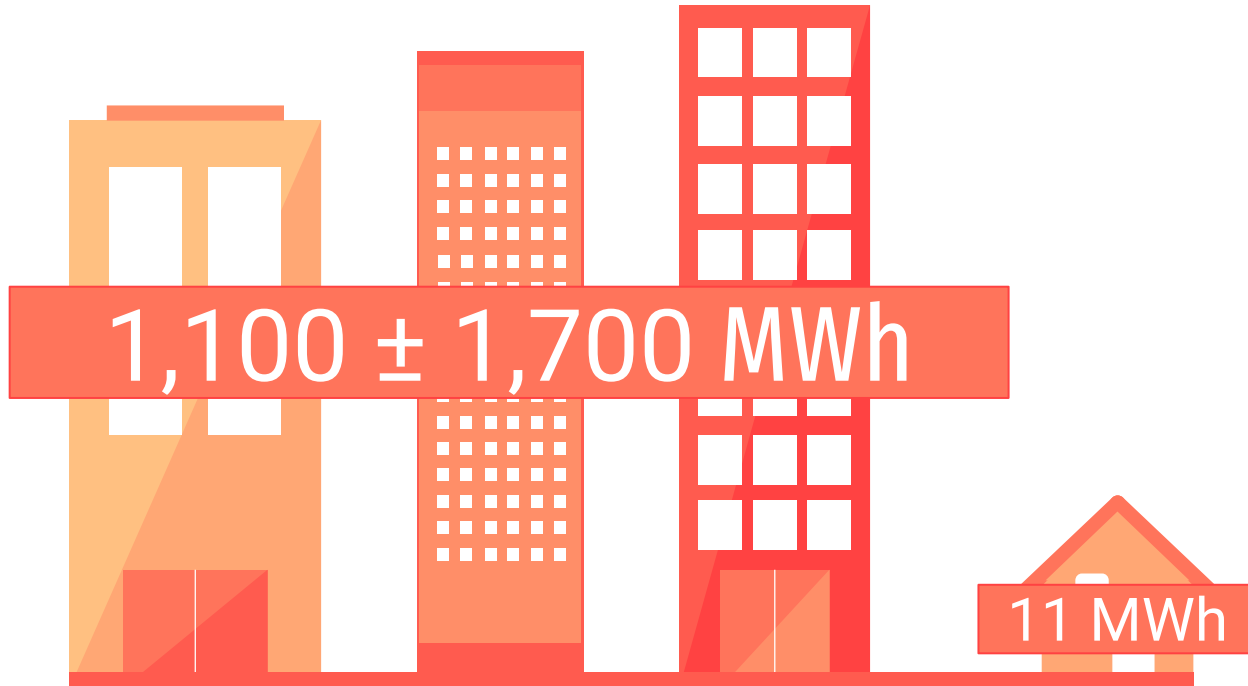
Predicting Annual Electricity Usage



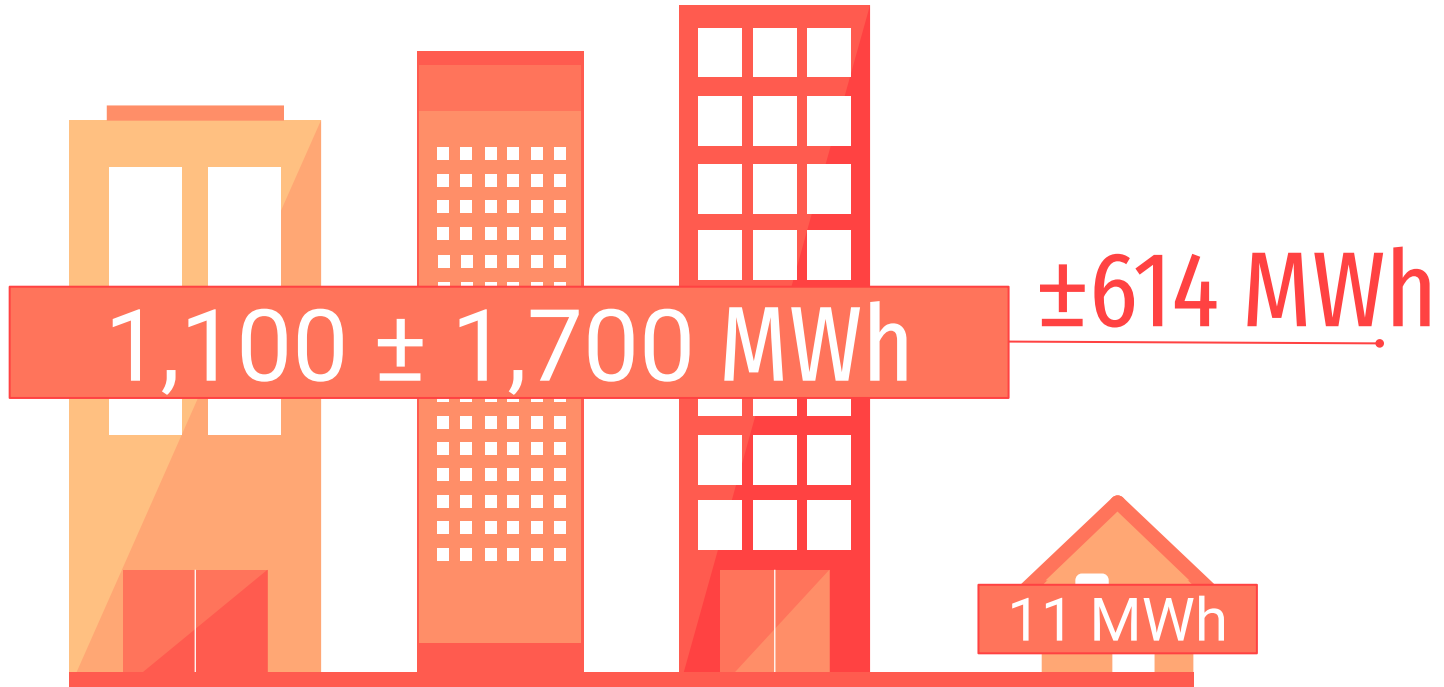
Predicting Annual Electricity Usage



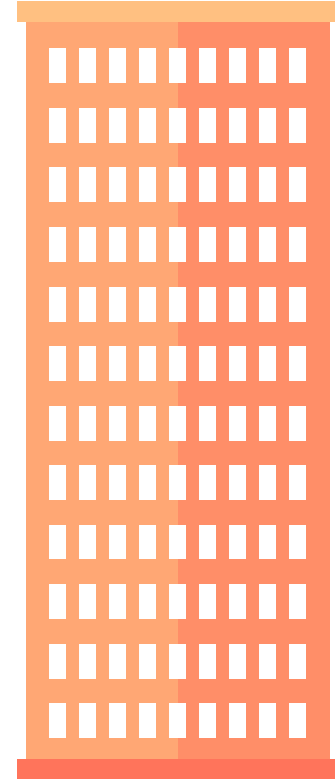
Predicting Annual Electricity Usage



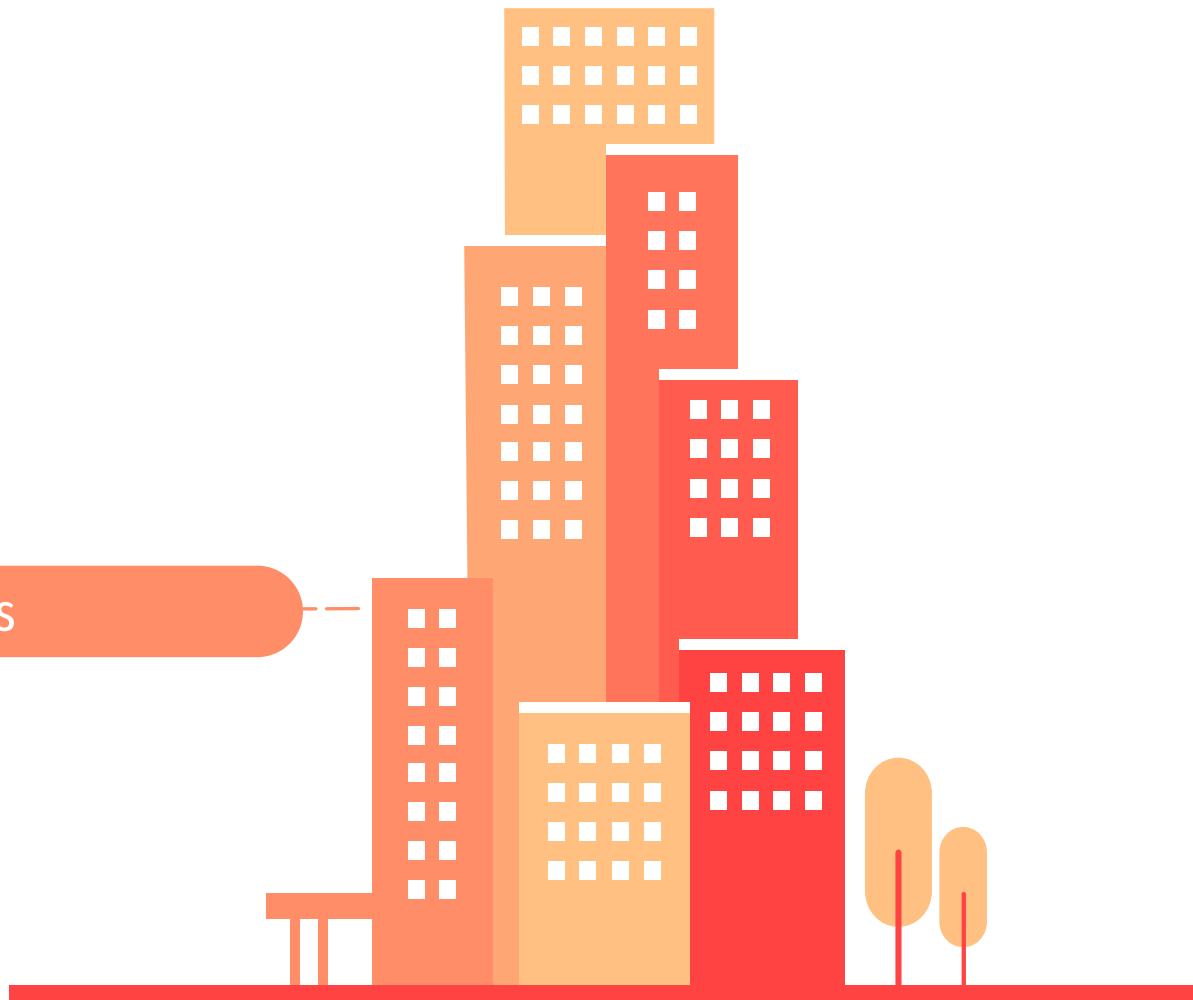
Predicting Annual Electricity Usage



Data Understanding



Methods



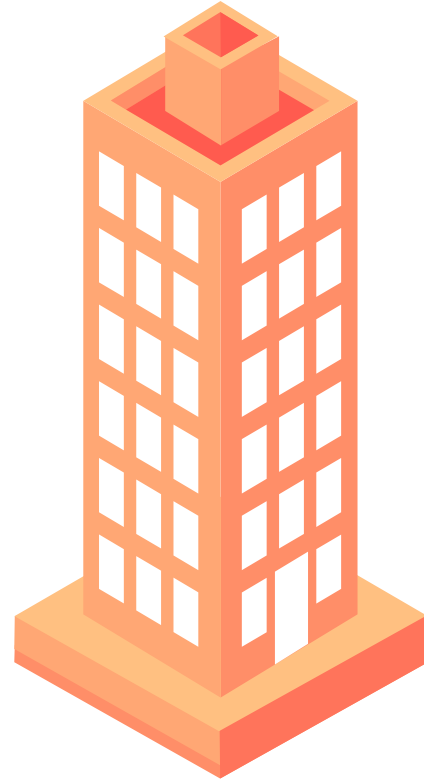
Methods

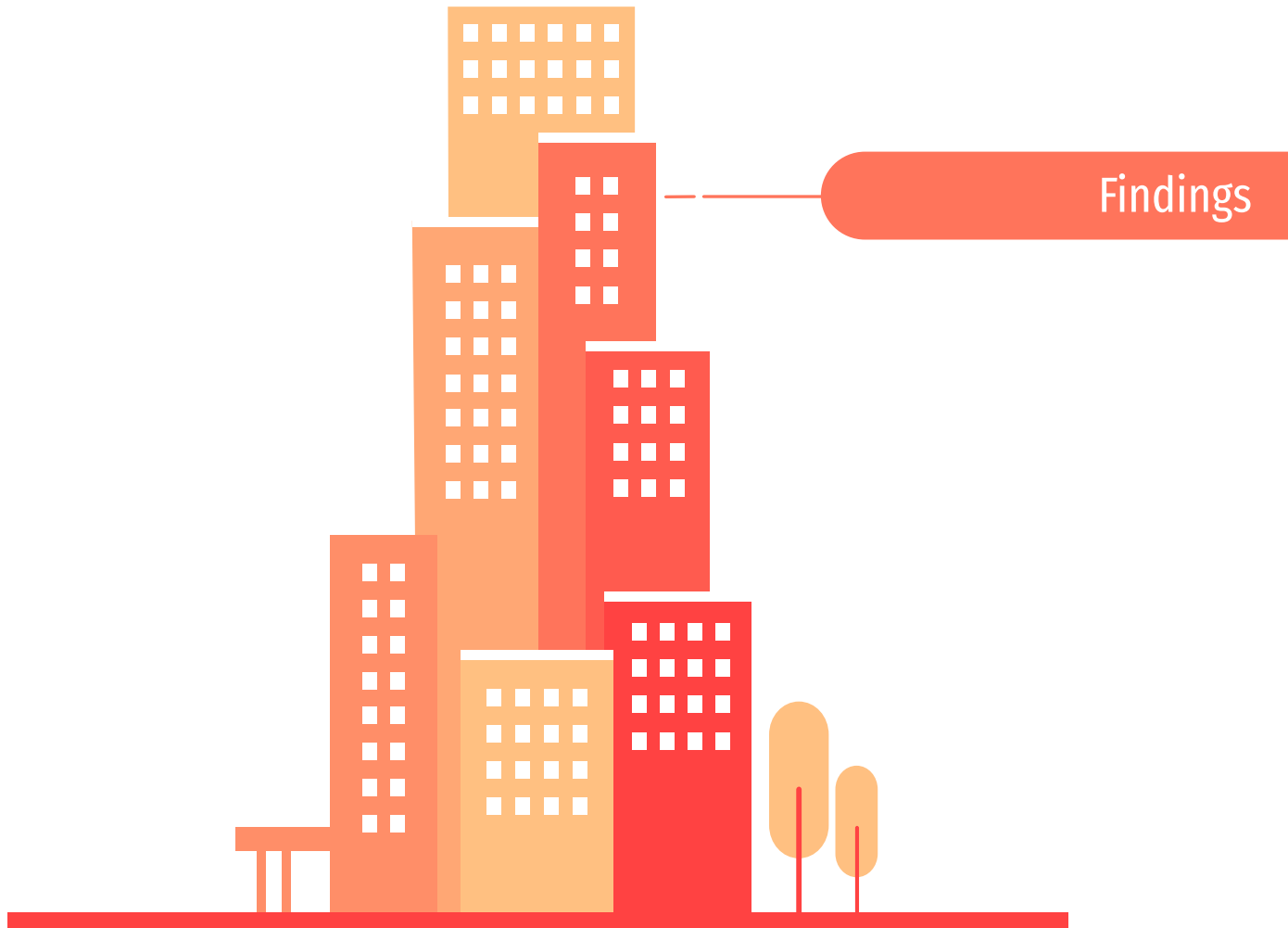


Occupied Buildings Only

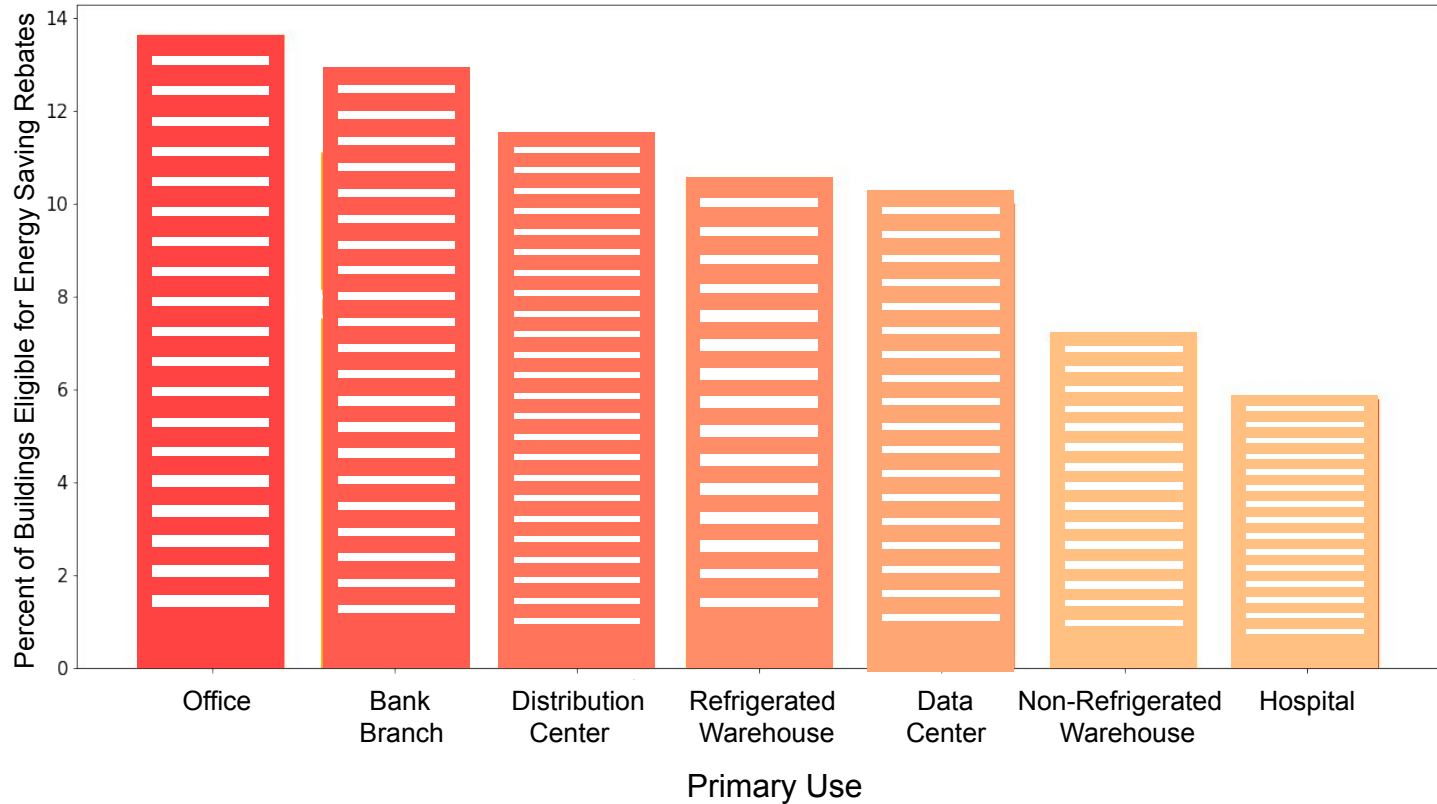


Annual Electricity Calculated from Grid Purchase

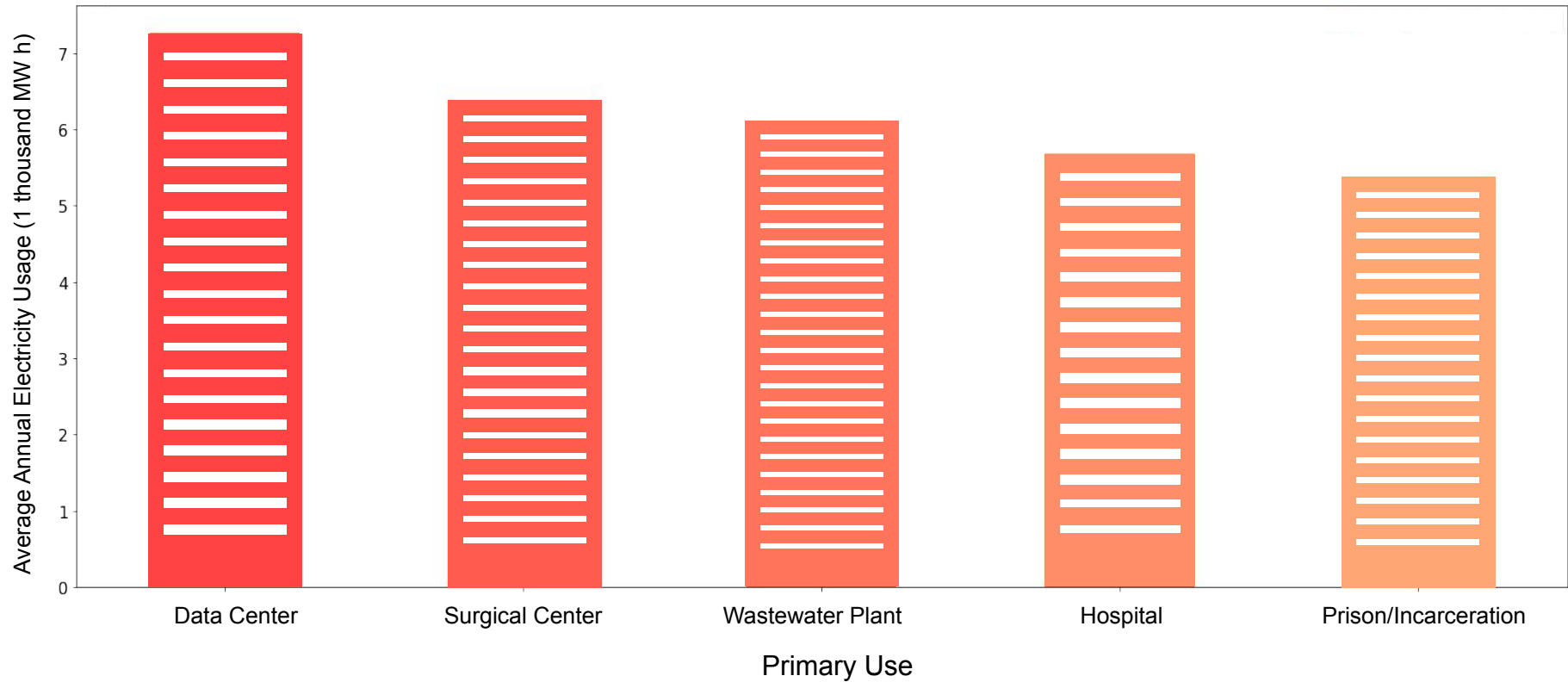




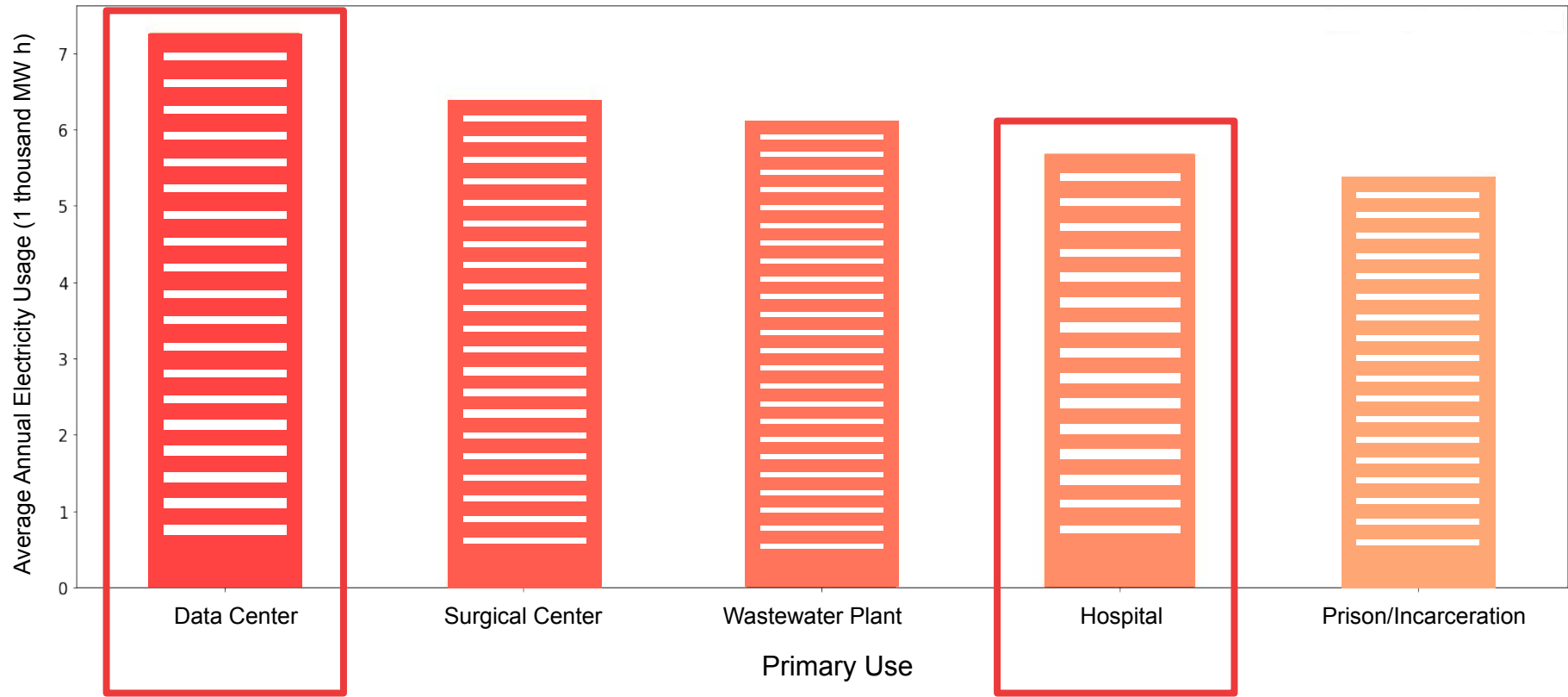
Percentage of Energy Efficient Buildings by Primary Use



Average Annual Electricity Use by Building Type



Average Annual Electricity Use by Building Type





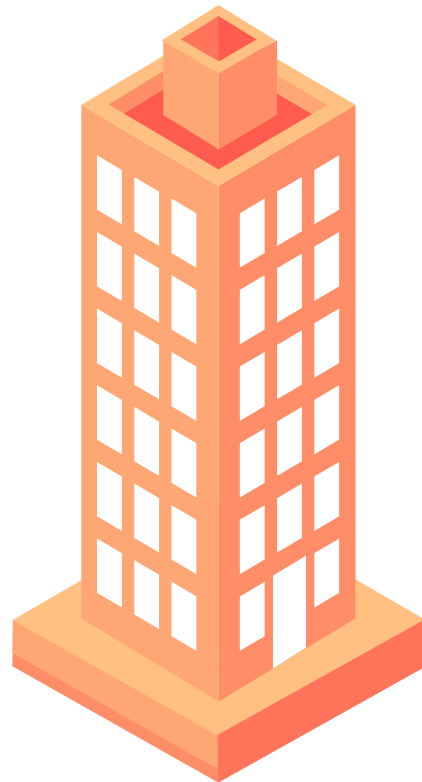
Recommendations



Focus energy efficiency incentive programs on high energy use building types



Identify impact to electrical grid for new buildings





Future Research



Use sub-metering data for specific energy use predictions



Weather Data for Seasonal Understanding



THANK YOU



QUESTIONS?

APPENDIX



PRESENTATION REFERENCES

Average Energy Usage of Residential Home:

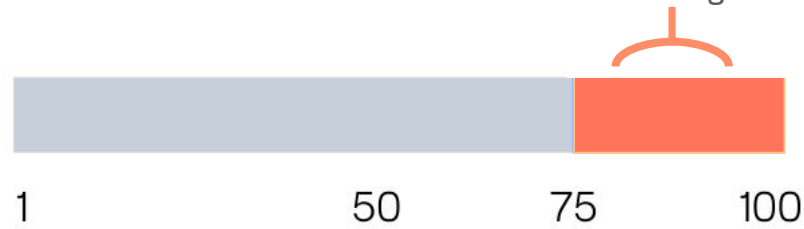
<https://www.eia.gov/tools/faqs/faq.php?id=97&t=3>

NYC State Energy Plan:

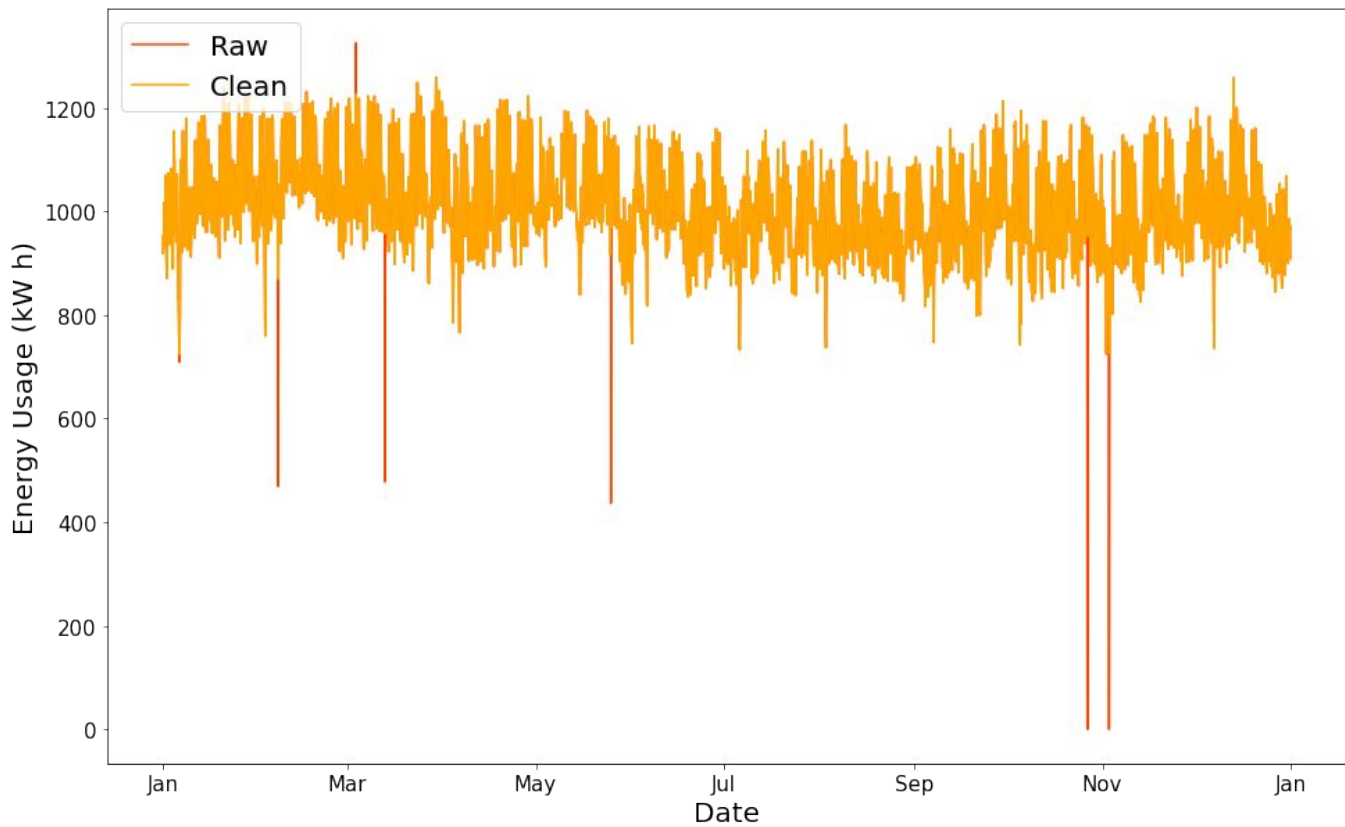
<https://energyplan.ny.gov/>

EnergyStar Score is a Relative Energy Efficiency Metric

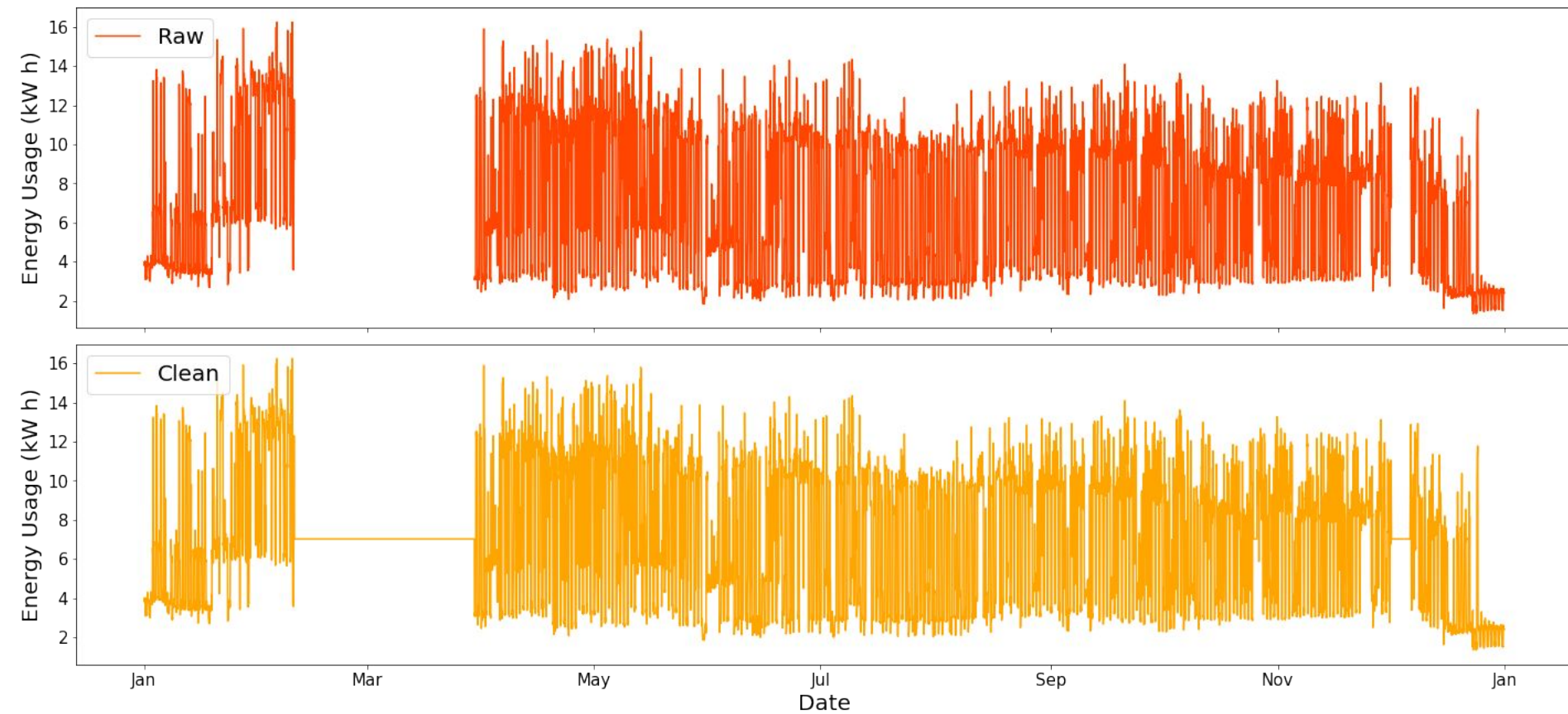
1 to 100 ENERGY STAR Scale



Annual Energy Usage - Minneapolis - Building #1212



Filling In Gaps During Periods of Missing Me



Annual Energy Usage - Toronto - Building #1353

