Project Overview

• The goal is to help grid planners and policy makers understand the costs and benefits of deploying SMRs at substations in California.

• The tool will be able to make comparisons and create a general overview of statistics on SMR placement.
System Architecture

Front End
- Google Maps API
- HTML/CSS/JS
- User

API
- Gunicorn
- Flask

Back End
- Python
- SQLite
- Scikit-Learn
Substation Map
Substation Dashboard

Salt Springs Substation Dashboard

Date: 

Energy Demand for Salt Springs Substation

Energy Generation for Salt Springs Substation

- Costs: $446,000,000
- Benefits: $1.6 billion
- Lives Saved: 7,600
- Emissions: -1.16%

Solar Generation 50%  
Wind Generation 50%  
SMR Generation 50%
Overview
Multiple Substations
Model Performance

- Arbitrary Day
- Arbitrary Substation in Kings County
- Mean Squared Error
  - 0.065
- $R^2$
  - 88.8%
What’s left to do?

- Integrating stats from the back end.
- Make the overview dynamic.
- Continue generating endpoints for the API.
- Utilize the machine learning model.
- Generate necessary statistics.
Questions?