TUTORIAL 01 : CAISO OASIS Renewables

Goal

Your mission, should you choose to accept it, is to replicate the following two graphs from the CAISO Renewables Reporting page (http://www.caiso.com/market/Pages/ReportsBulletins/RenewablesReporting.aspx).

Example

Renewables Reporting First Page

Setup

In [1]:
```
import sqlite3
import pandas as pd
import matplotlib
import matplotlib.pyplot as plt
from datetime import datetime
from dateutil import parser
from pandasql import PandaSQL
pdf = PandaSQL('sqlite:///:memory:', persist=True)

# make graphs look modern and pretty
import seaborn as sns
sns.set()

# make tables look pretty
# (cribbed from Brandon Rhodes' tutorials)
from IPython.core.display import HTML
css = open('style-table.css').read() + open('style-notebook.css').read()
HTML('<style>{}</style>'.format(css))
```

Out[1]:

Problem 01: Replicate the 24-Hour Renewables Production Report

Monday, October 28, 2019

24 Hour Production

- [ ] Find the data for this report
- [ ] Create dataframe with this report data
- [ ] Query for this particular day
- [ ] Query for the subtotals
- [ ] Display a plot that looks similar to the graph above

Answer : Find the data for this report

In [ ]:

Answer : Create dataframe with this report data

In [ ]:

Answer : Query for this particular day

In [ ]:

Answer : Query for subtotals

In [ ]:

Answer : Display a plot that looks similar to the graph above

In [ ]:

Problem 02: Replicate the Hourly Average Breakdown

Hourly Average Breakdown

Answer : Display a plot that looks similar to the graph above

In [ ]:

Problem 03 : How ALL the energy sources changing over time?

Answer : Construct a DF with peak_hour, daily_peak, and daily_total for entire timeframe

In [ ]:

The remaining problem parts do not have published solutions

In [26]:
```
# peak hour
```

In [27]:
```
# daily peak
```

In [28]:
```
# daily total
```

Links

- Daily Renewables Watch (http://content.caiso.com/green/renewrpt/DailyRenewablesWatch.pdf)
- CAISO Interface Specification (http://www.caiso.com/Documents/OASIS-InterfaceSpecification_v5_1_8Clean_Independent2019Release.pdf#search=Interface%20Specification)
- Wind Solar RTD & Curtailment (http://www.caiso.com/Documents/Wind_SolarReal-TimeDispatchCurtailmentReportOct21_2019.pdf#search=Real%20Time%20Dispatch)
- Daily Renewables Watch (local) (./resources/docs/DailyRenewablesWatch.pdf)
- CAISO Interface Specification (local) (./resources/docs/OASIS-InterfaceSpecification_v5_1_8Clean_Independent2019Release.pdf)
- Wind Solar RTD & Curtailment (local) (./resources/docs/Wind_SolarReal-TimeDispatchCurtailmentReportOct21_2019.pdf)

In [ ]:

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