



The National Renewable Energy Laboratory (NREL) is a federal agency focused on finding creative answers to today's energy challenges. From breakthroughs in fundamental science to new clean technologies to integrated energy systems that power our lives, NREL researchers are transforming the way the nation and the world use energy. NREL's main office is located in west of Denver in Golden, Colorado.

NREL and the State of Colorado Chief Data Analytics Challenge - Overview of Relevant Datasets

The National Renewable Energy Laboratory (NREL) is the only federal laboratory dedicated to the research, development, commercialization and deployment of renewable energy and energy efficiency technologies. NREL's main office is located in Golden, Colorado. They publish a wide variety of data for the nation, and some of the more valuable data has been custom subset to Colorado for ease of use, including [Locations of Alternative Fuels Stations](#) and the associated types of fuels available, and [Electric Truck Stations](#). There is also data on the existing potential for various alternative energy sources, such as [Wind Potential for Colorado](#) and [Wind Turbine Locations](#), Solar Potential for Colorado, [Biomass Potential for Colorado](#), and [Biomethane Potential for Colorado](#). NREL also produces data for oil and natural gas, including [Crude Oil Pipelines](#), [Crude Oil Rail Terminals](#) and [Natural Gas Underground Storage for 2014](#). NREL also has two policy-related datasets: [Colorado Energy Profile](#) and [Colorado Alternative Energy Laws and Incentives](#). Participants may find these datasets useful for the Smart Cities or Water Supply categories. More relevant to the Water Supply category is NREL's [weather station datasets](#).

WOW! There's a lot of Data - How Do I get Started?

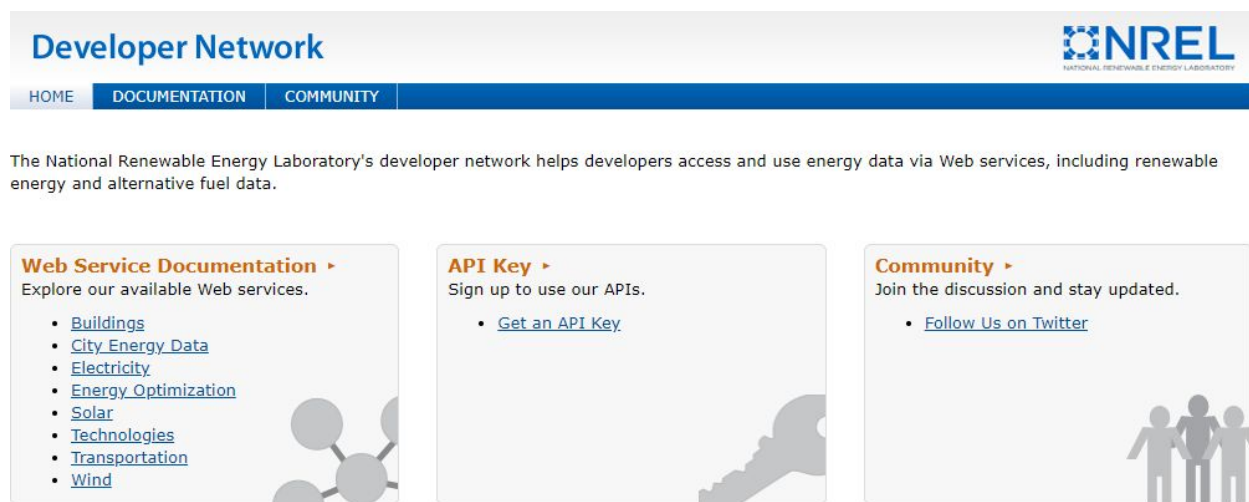
NREL data can be accessed by two means:

1. [CIM](#)
2. [NREL Developer Network](#)

CIM NREL Data:

To find NREL data on the CIM, navigate to CIM and search “NREL” or “national renewable energy laboratory”. You can also search for datasets by exploring categories and tags.

NREL Developer Network:



In the NREL Developer Network, choose a category under “Web Service Documentation”, and explore until you find the dataset you need. Each dataset should provide a request url, request parameters, response fields, and may have an example query.

Working with GIS Data

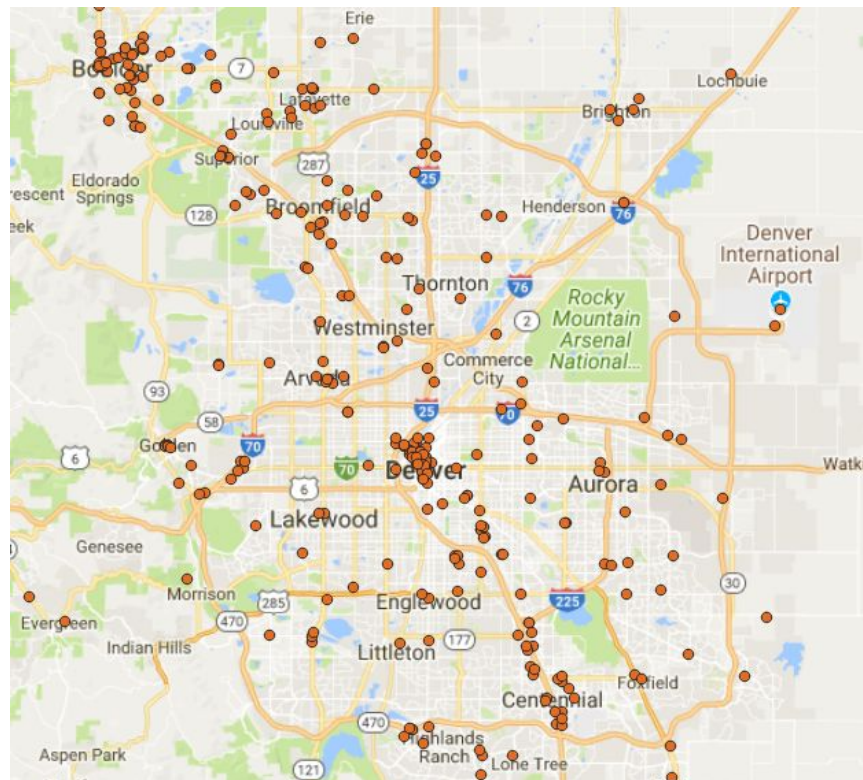
Many of the NREL datasets on CIM contain geospatial data. You have the option to download in KML, KMZ, SHP, and GeoJson, and the original file format. Some may also contain xy data in decimal degree format. Please note that spatial references in GeoJSON and WMS must be edited prior to being used in a webmap. GeoJSON is not available in Internet Explorer.

NREL Metadata

CIM-hosted metadata can be found under the “About” tab when a dataset is being viewed. Data from NREL’s Developer Network does not appear to have accessible metadata beyond field names.

EV Charging Station Data

NREL has provided data on Alternative Fuels and EV Charging stations in Colorado. This dataset contains information on fueling/charging station locations and types all throughout the state, including the xy coordinates (potential for mapping!). The data is only available in csv, xml, rdf, and rss formats - so GIS skills are necessary.

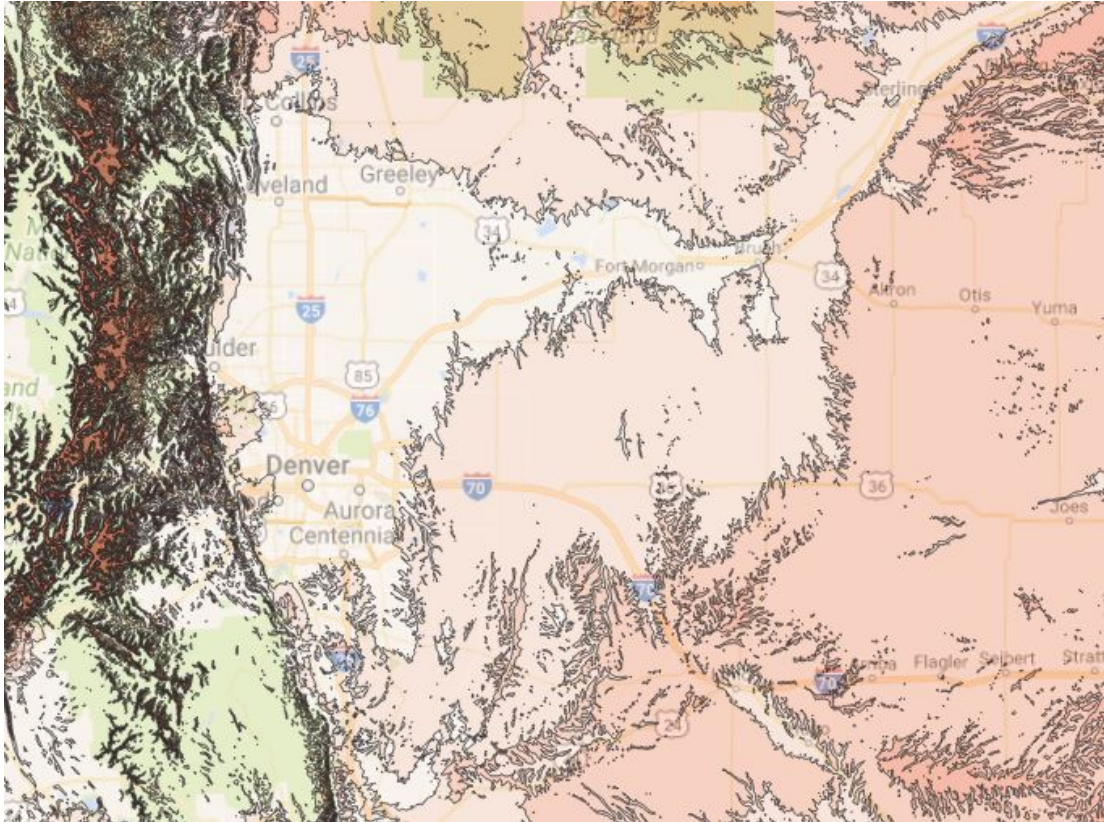


2014 Energy Profile Colorado:

Data collected to measure success of implementing Smart Grid, and other quick facts about Colorado’s national ranking for energy use, production and efficiencies. Compiled in 2014 from the National Renewable Energy Laboratory (NREL). Contains various metrics relevant to energy in Colorado in comparison to national averages. [Location on CIM.](#)

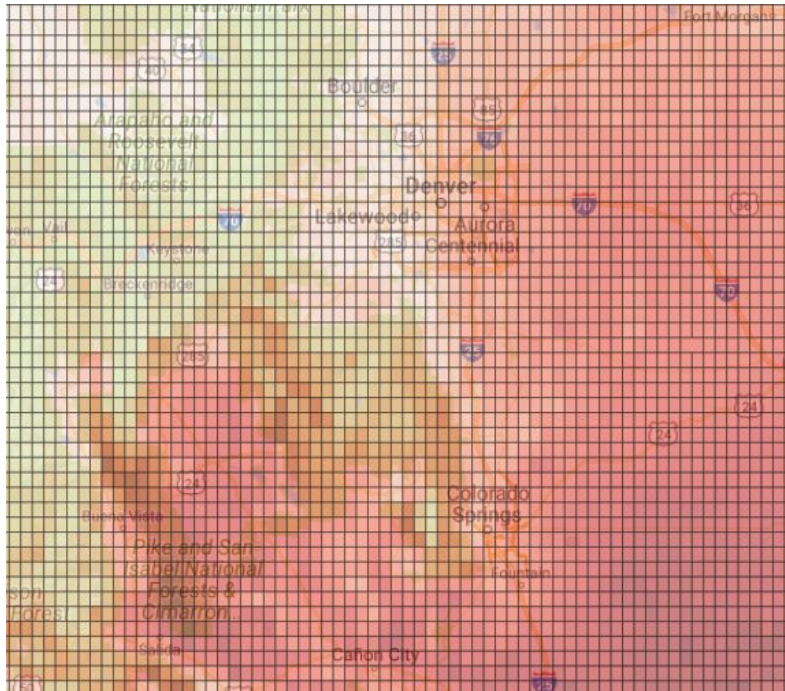
2014 Wind Potential Colorado:

This dataset contains [annual average wind resource potential](#) for the state of Colorado at a 50 meter height. Includes the wind power class, an indicator of likely resource strength. Generated for Colorado by the National Renewable Energy Laboratory (NREL). Navigate to NREL source for most current information.



Solar PV Capacity in Colorado 2015:

This dataset contains [annual average capacity factor](#) from the National Renewable Energy Laboratory (NREL).



NREL Weather Station Data:

NREL has weather stations all across the state. Available datasets include:

- Aurora
- Boulder
- Golden (x3)
- Lowry, Pueblo
- San Luis Valley
- South Park
- Swink

All can be found on the [Colorado Information Marketplace](#). Please note that some files may be too long/large to be opened in Microsoft Excel.

FAQ

If you are having issues, be sure to check out:

<https://developer.nrel.gov/docs/>

<https://developer.nrel.gov/docs/api-key/>

For more NREL data and tools:

<https://www.nrel.gov/research/data-tools.html>

