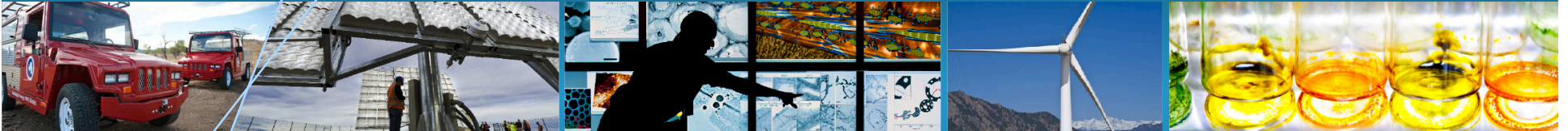# OpenEI: Energy Information
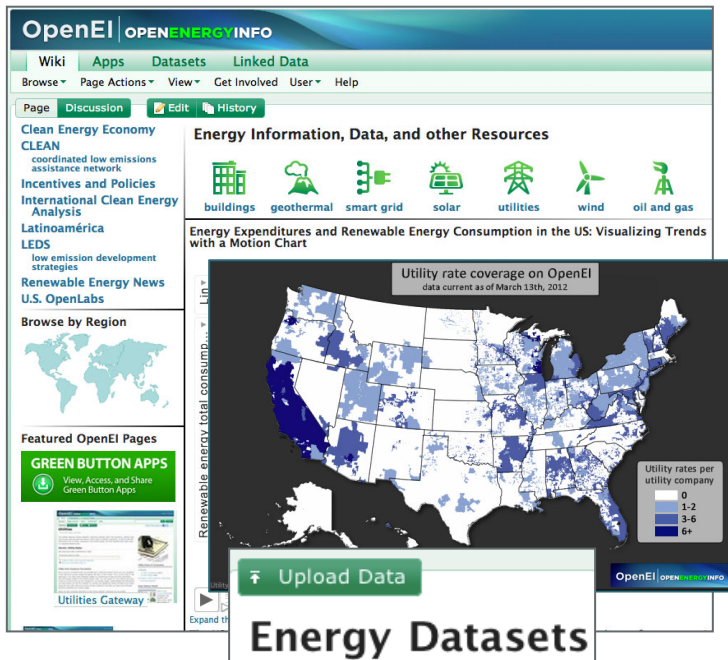
Linked Open Data Success Stories

Jon Weers

May 16th, 2012

IMPACT AND OVERVIEW

OPEN GOV
Open Government Initiative
OpenEI supports the U.S. Department of Energy's fulfillment of open government standards: transparency, public participation, and collaboration.

Data Analysis and Visualization Group Project Lead:
Debbie Brodt-Giles, NREL
Debbie.brodt.giles@nrel.gov

Project Description
OpenEI is a free and open knowledge sharing platform created to facilitate access to energy-related data, models, tools, and information.

Sponsored by the Department of Energy, and developed by the National Renewable Energy Lab, in support of the **Open Government Initiative**, OpenEI strives to make energy-related data and information searchable, accessible, useful to both people and machines.

Built utilizing the standards and practices of the **Linked Open Data** community, the OpenEI platform is much more robust and powerful than typical web sites and databases. All users can search, edit, contribute, and access data in OpenEI; all for free.

📈 OpenEI Statistics *

- 756,000+ web visits from 210+ countries
- **Over 800 datasets**
- Creation of **over 56,000 content pages**
- Upload of over 4,600 images and files
- More than 450,000 contributor actions
- Over 586,000 unique visitors
- More than 3,400 registered users
- Over 8,000 Twitter followers
- More than 500 Facebook fans
- Over 17.2 million RDF triples

per Google Analytics as of April 30, 2012

Project History and Timeline

Sep. 2009	Launched OpenEI: Wiki
Dec. 2009	OpenEI confirmed as DOE's Open Government Initiative (OGI)
Apr. 2010	Recognized by White House as a Flagship Open Government Initiative
Oct. 2010	Launched OpenEI: Datasets
Jan. 2011	Featured on White House Innovations Gallery
Jan. 2012	Launched OpenEI: Apps

A PLATFORM OF PLATFORMS

OpenEI consists of several open source platforms which have been custom-integrated for optimal collaboration and to allow a seamless user experience.

- **Wiki** – Built upon the same underlying technology as Wikipedia
- **Datasets** – Utilizes Drupal and Amazon data storage services
- **Linked Open Data** – Semantic wiki extensions and a Virtuoso triple store
- **Apps** – Simile Exhibit based display of extracted wiki data
- **Community** – Drupal Commons install currently in beta

On the cloud!

amazon web services™

LINKED OPEN DATA ON OPENEI

http://en.openei.org

High-Profile LOD Projects on OpenEI

- Policy and Regulatory Overview integration (Country Pages)

- Geothermal Regulatory Roadmap & Exploration Database

- Utility Rate Database

- ISGAN Smart Grid Glossary
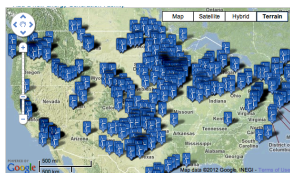
- Map of Wind Farms

LINKED OPEN DATA: COUNTRY PAGES

OpenEI country pages are rich with semantic integration.
Content is consumed from numerous linked open data providers.

GEOTHERMAL: STORING DATA IN THE WIKI

http://en.openei.org

The Geothermal Exploration Database on OpenEI is an example of a project designed from the ground up to leverage the advantages of a semantic wiki as a data structure to solve real world problems.

Location

Power Plants/Projects →   **Geothermal Area** →   **Geothermal Region**

Blundell 1 Power Plant   *Roosevelt Hot Springs*   *Northern Basin & Range*

Exploration Techniques

Category   →   **Subcategory**   →   **Subcategory**   →   **Technique**

Remote Sensing   *Active Sensors*   *Radar*   InSAR

Activities

Source   +   **Geothermal Area**   +   **Exploration Technique**

(Reference)   *Dixie Valley Area*   *Water Sampling*

OPENEI: UTILITY RATE DATABASE

http://en.openei.org
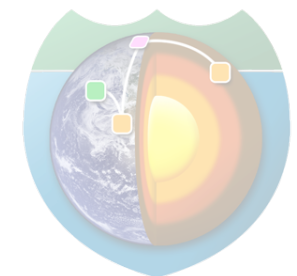
The OpenEI **Utility Rate Database** features over **3,600 utility rates,**
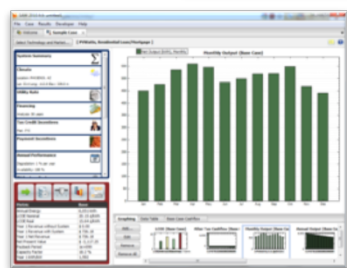
{"incentive_name": {
      "type": "literal",
      "value": "Interconnection
Standards (Utah)" }   ,
    "incentive_page": {
      "type": "uri",
      "value": "http://openei.org/wiki/
Interconnection_Standards_(Utah)" }},

Weekday Schedule

(stored as wiki data objects)

stored in full resolution and complexity.

served as RDF, JSON, CSV, restful API to

internal apps and widgets,
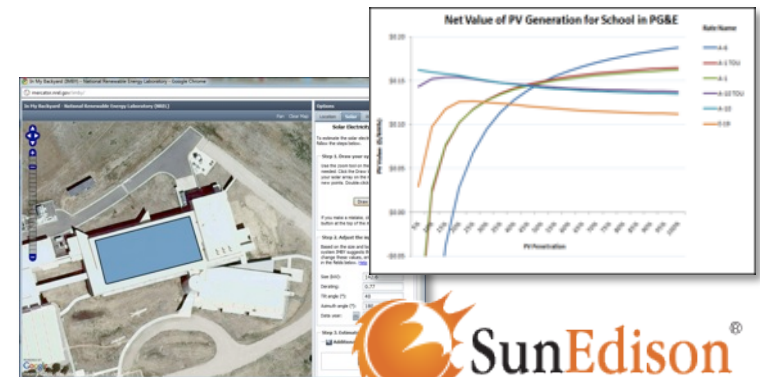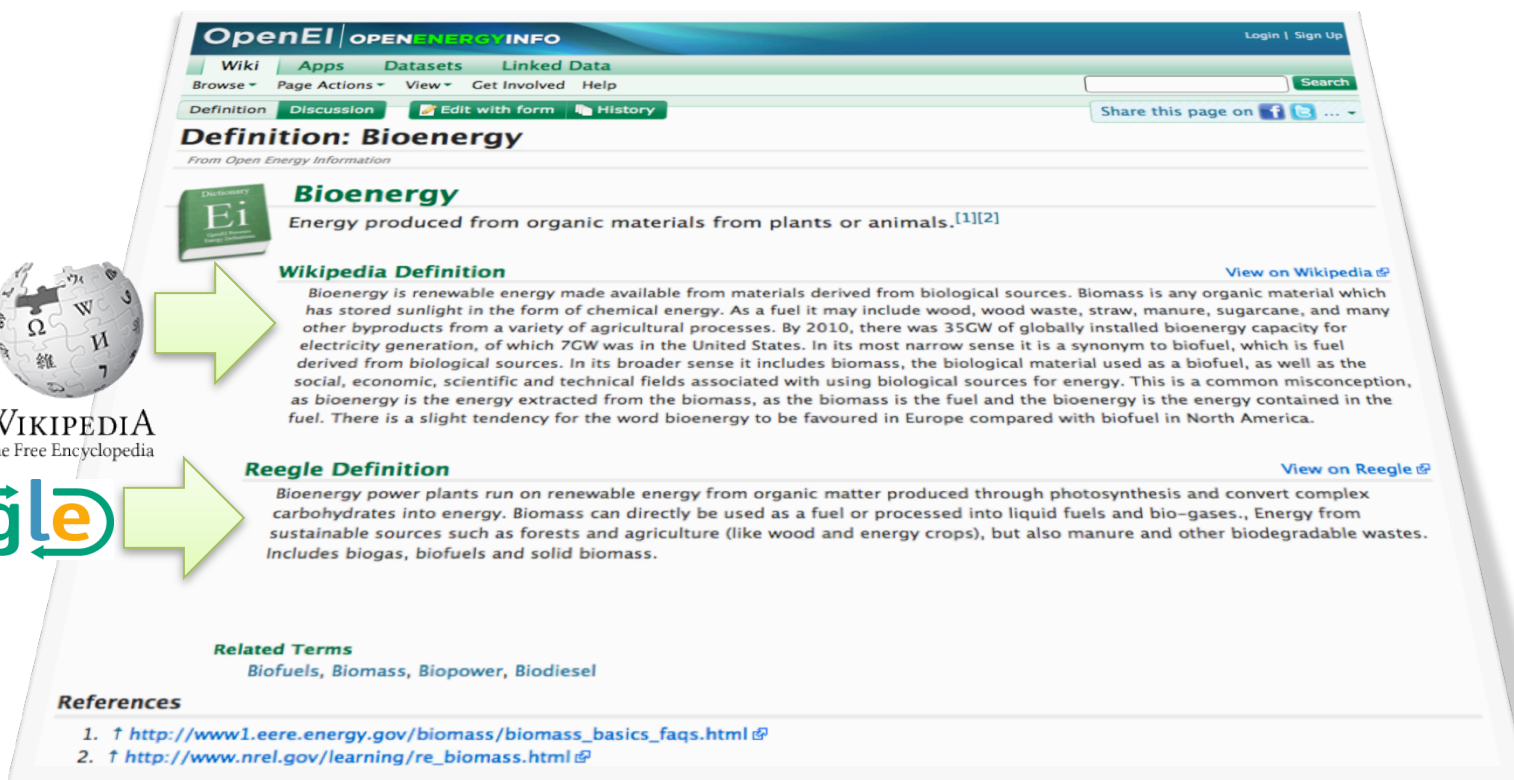
and external sites and industry.

OPENEI: SMART GRID GLOSSARY

http://en.openei.org

Simple LOD Consumption to Empower the Masses

By supplementing our definitions with those of reegle and Wikipedia, OpenEI can empower users to consider multiple sources of information and make informed discoveries without leaving the page. Definitions are just the beginning!

OPENEI: MAP OF WIND FARM

Sometimes simple is best.

OpenEI's **Map of Wind Farms** page is consistently one of the site's most popular pages.

Each wind farm has its own wiki page.

Name	Adair Wind Farm I
Facility	Adair
Sector	Wind energy
Facility Status	In Service
Owner	Shafer Systems
Developer	MidAmerican Energy
Energy Purchaser	Alliant/IES Utilities
Location	Iowa
Coordinates	41.499234°, -94.692628° Display map
Generating Capacity (MW)	0.23
Number of Units	1
Commercial Online Date	1994
Wind Turbine Manufacturer	Vestas
References	[1]

Thank You!
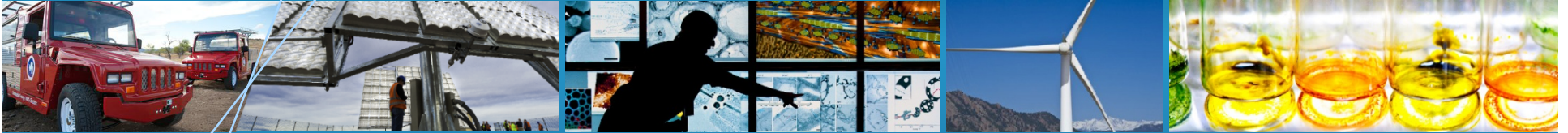
This work was funded by the US Department of Energy

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