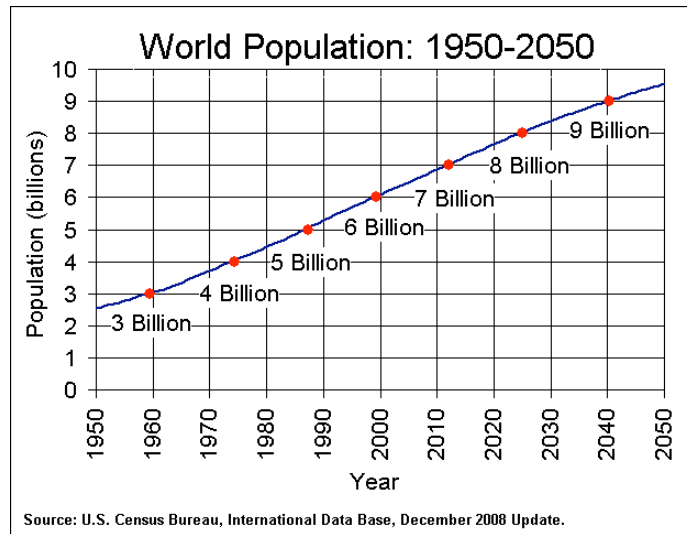


# OpenEI.org: Sharing the World's Energy Information



Debbie Brodt-Giles  
Stuart Macmillan  
Jamey Wood  
February 16, 2011

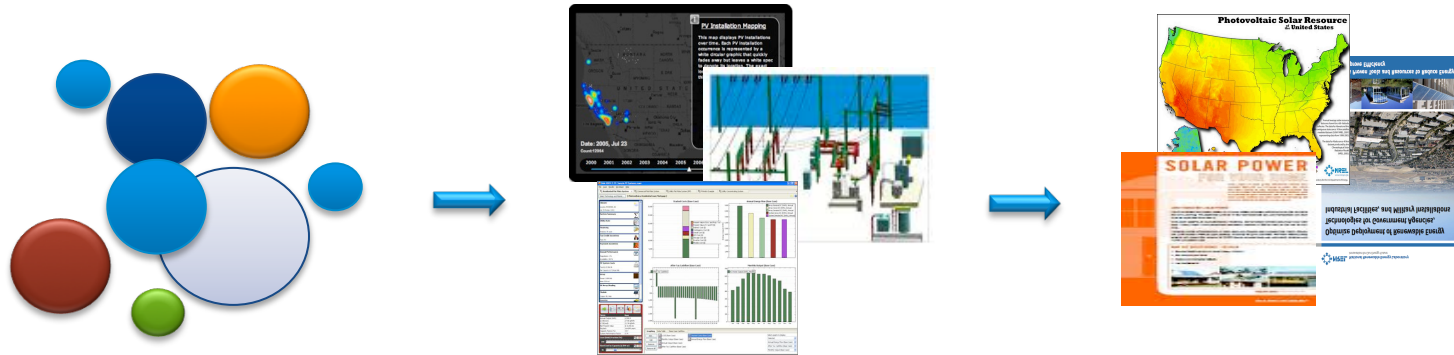
# The Energy Challenge



*How do we meet the growing demand for energy while protecting the planet?*

Adapted from S. Benson 2010

# The Collaboration Challenge



SILO Data

SILO Tools & Models

SILO Knowledge

Digital Tsunami Emerging

Integrated Tools & Models

Collective Intelligence

*We tend to gravitate to familiar SILOS*

Voluntary public resource, created by private agreements



*“small parts loosely joined”*

*Shared standards*  
*Shared infrastructure*  
*Democratized access*  
*Rights to the user*

*A commons can out-innovate closed systems*



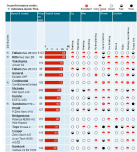
1. Improved access to energy-related information



2. Community support for contributions and collaboration

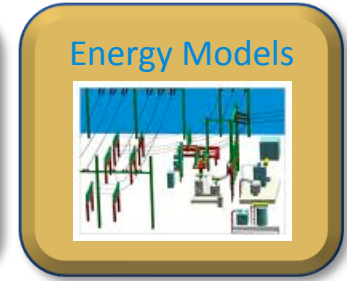
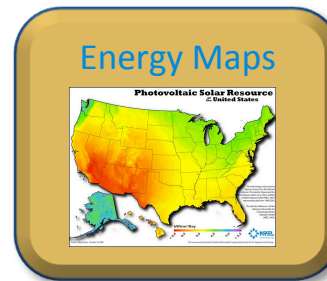
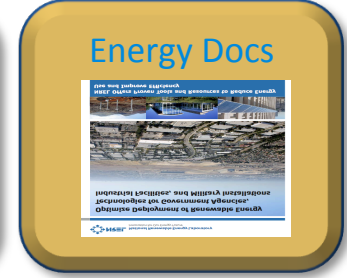
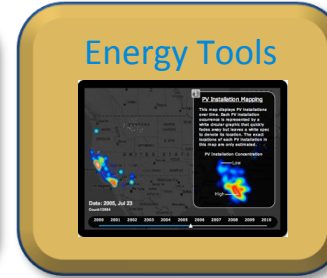
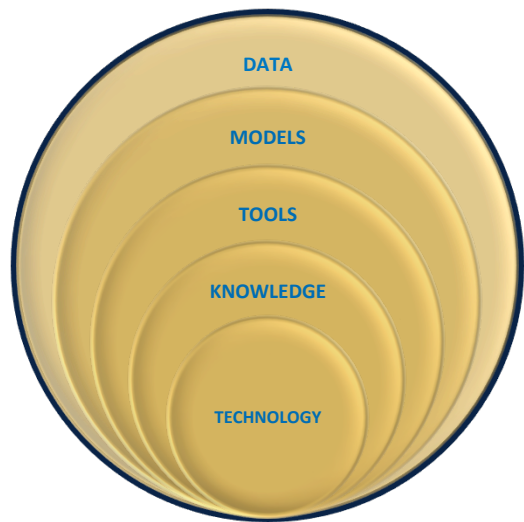


3. Easy, legal, and scalable sharing









4. Actionable assessments of information quality and provenance

# What's In The Commons?











*Published collective intelligence of the community*

# Participation Models

	<b>Collective Production</b> <i>"The Wiki Way"</i>	<b>Distributed Production</b> <i>"The Blog Model"</i>
<b>Authoring</b>	<b>Collective</b>	<b>Single Owner</b>
<b>Distribution</b>	<b>Open</b>	<b>Open</b>
<b>Feedback</b>	<b>Open</b>	<b>Open</b>
<b>Examples</b>	  	  

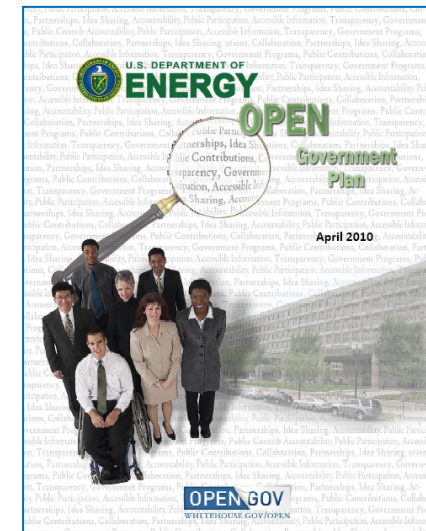
# Participation Models: Continued

	<b>Collective</b> <i>“The Wiki Way”</i>	<b>Aggregated</b> <i>“Emergent Information”</i>	<b>Distributed</b> <i>“The Blog Model”</i>
<b>Create</b>	<b>World</b>	<b>Varies</b>	<b>World</b>
<b>Read</b>	<b>World</b>	<b>Varies</b>	<b>World</b>
<b>Update</b>	<b>World</b>	<b>Owner</b>	<b>Owner</b>
<b>Delete</b>	<b>World</b>	<b>Owner</b>	<b>Owner</b>
<b>Granularity</b>	<b>Element</b>	<b>Element</b>	<b>Item</b>
<b>Examples</b>	  	 	  



# OpenEI: Background

- **Dec 2009:** DOE issues press release to launch OpenEI as its Open Government Initiative
- **April 2010:** OpenEI recognized by the White House as a flagship open government initiative
- **April 2010:** DOE releases its Open Government Plan, which highlights OpenEI
- **December 2010:** OpenEI is featured in the WhiteHouse.gov Open Government Innovations Gallery
- **Ongoing:** Significant attention related to these announcements including USA Today, blogs, and recognition from the Linked Open Data community



## *White House and DOE Open Government Initiative*

# OpenEI: Selected Quotes



“This information platform will allow people across the globe to benefit from the Department of Energy’s clean energy data and technical resources. The true potential of this tool will grow with the public’s participation – as they add new data and share their expertise – to ensure that all communities have access to the information they need to broadly deploy the clean energy resources of the future.”

**Dr. Steven Chu, Secretary of Energy**  
<http://energy.gov/news2009/8381.htm>



“Wow ... Energy linked data portal”

**Tim Berners-Lee, Inventor of the World Wide Web**  
[http://twitter.com/timberners\\_lee/status/7062198463](http://twitter.com/timberners_lee/status/7062198463)



“Love that DOE is doing OpenEI.org”

**Tim O'Reilly, Web 2.0 Pioneer and Founder of O'Reilly Media**  
<http://twitter.com/timoreilly/status/11792155576>

# OpenEI: Current Resources

## Clean Energy Economy

- Companies
- Networking Organizations
- R&D Organizations
- Investor/Financial Organizations
- Policy Organizations
- Generation Facilities
  - Biomass Facilities
  - Geothermal Facilities
  - Solar Power Plants
  - Wind Farm

## Smart Grid

- US Recovery Act Smart Grid Projects

## Incentives

- EE/RE Incentives *(from dsireusa.org)*

## Buildings Gateway

- Utility Rates Database
- Utility Companies *(from EIA)*
- Utility Sales & Revenue Data *(from EIA)*
- Climate Zones

## Solar

- Resource Maps and Tools

## US Open Labs

- Software Tools
- Research Groups
- Scientific Data
- Educational Materials
- Renewable Energy Resources
- Policies and Programs
- Climate Change
- Exploring Impacts

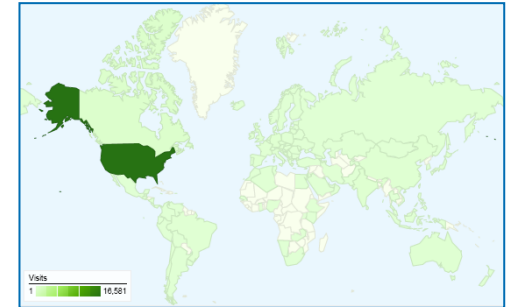
## International

- Renewable Energy Resource Potential
- Project Screening and Design
- Energy Scenario Analysis
- Economic and Environmental Impacts
- Policy and Program Design
- Financing Options
- Technology Performance and Costs
- Learning Resources and Networks

# OpenEI: Community & Statistics

*OpenEI was launched on September 20, 2009*

- More than **280,000** web visits from **190** countries
- Creation of over **300** datasets
- Creation of over **42,000** content pages
- Upload of over **3,400** images and other files
- A total of more than **350,000** contributor actions
- Over **220,000** unique visitors
- More than **2,200** registered users
- Over **7,000** Twitter followers
- More than **350** Facebook fans
- Over **2 million** RDF triples



A screenshot of the OpenEI Facebook page. The page header includes the Facebook logo and the text 'OpenEI is on Facebook'. Below the header, there is a navigation bar with links for 'Home', 'About', 'OpenEI Content', 'OpenEI History', 'Introduction', and 'Photos'. The main content area features several posts from OpenEI, including one titled 'Find Energy Efficiency and Renewable Energy Incentives on OpenEI' and another titled 'Help to Help California Tackle Solar Energy Grid Integration'. The page also shows a list of fans and a 'Like' button.

A screenshot of the OpenEI website's 'Thank You' page. The page features a large 'Thank You for sharing and connecting' message. Below the message, there is a section titled 'OpenEI Facebook Goal Achieved!' which includes a 'facebook.com/achievements' link. The page also contains a 'Join the OpenEI Google Discussion Group' section with a 'Join Now' button, a 'Links' section with links to OpenEI's social media profiles, and a 'Get blog entries by email' section with an email input field and a 'Subscribe' button. The footer of the page includes the text 'OpenEI is on Facebook'.

# OpenEI: Concept and Components

## Distributed Production

<http://en.openei.org/datasets>

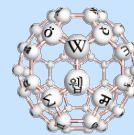
- Web-based submission process
- Contributor-only write access
- Open read access
- Open commenting and rating
- Scalable distributed storage



## Collective Production

<http://en.openei.org/wiki>

- Semantic Wiki
- Open write access
- Open read access
- Forms-based authoring



## Open Distribution

<http://en.openei.org/sparql>

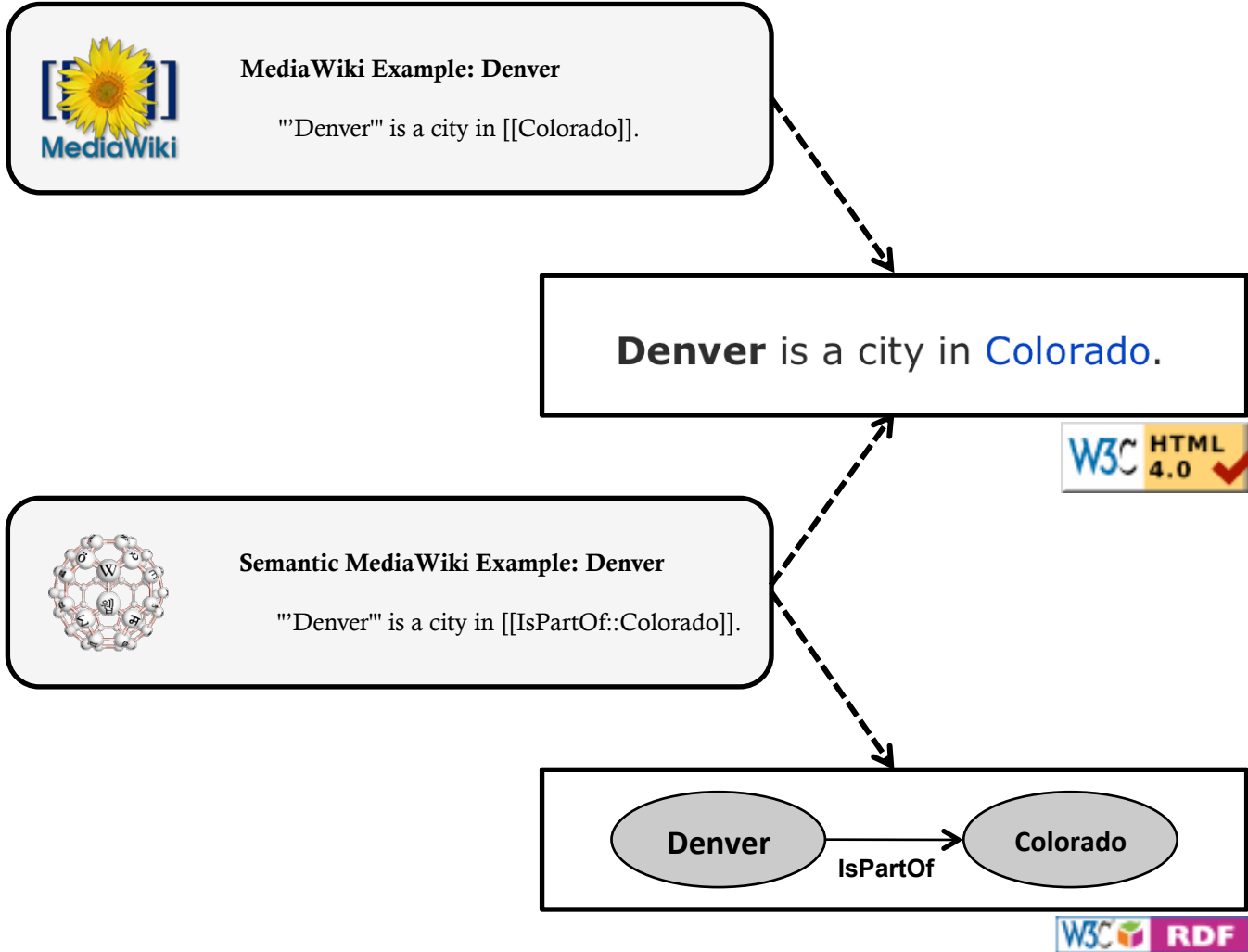
- SPARQL Endpoint
- Linked Open Data (RDF/HTTP)
- Named Graphs for Segmentation



Early  
Access



# Semantic Wikis: A Quick Introduction



- **Semantic MediaWiki**

- <http://semantic-mediawiki.org/>

- **Semantic Forms**

- [http://www.mediawiki.org/wiki/Extension:Semantic\\_Forms](http://www.mediawiki.org/wiki/Extension:Semantic_Forms)

- **Semantic Internal Objects**

- [http://www.mediawiki.org/wiki/Extension:Semantic\\_Internal\\_Objects](http://www.mediawiki.org/wiki/Extension:Semantic_Internal_Objects)

- **Semantic Maps**

- [http://www.mediawiki.org/wiki/Extension:Semantic\\_Maps](http://www.mediawiki.org/wiki/Extension:Semantic_Maps)

- **Semantic Result Formats**

- [http://semantic-mediawiki.org/wiki/Help:Semantic\\_Result\\_Formats](http://semantic-mediawiki.org/wiki/Help:Semantic_Result_Formats)

- **Cite**

- <http://www.mediawiki.org/wiki/Extension:Widgets>

- **MWSearch**

- <http://www.mediawiki.org/wiki/Extension:MWSearch>

- **Widgets**

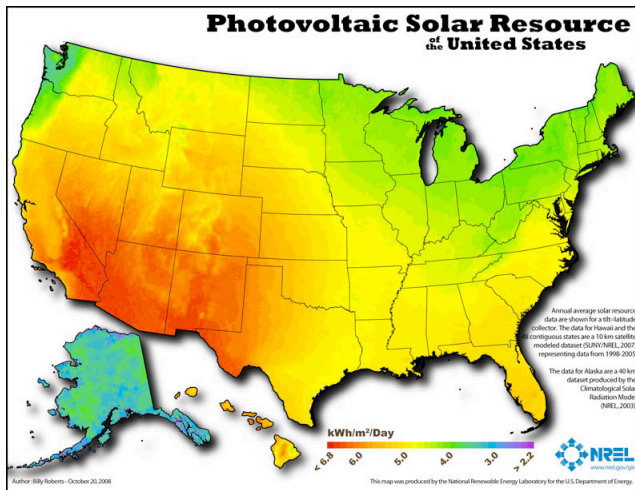
- <http://www.mediawiki.org/wiki/Extension:Widgets>



# OpenEI: Distributed Production Example

<http://en.openei.org/datasets>

Centralized  
Production



Name	Size	Last Modified
SUNY_098052455.csv.gz	572 KB	3/5/07 12:00:00 AM
SUNY_098052465.csv.gz	570 KB	3/5/07 12:00:00 AM
SUNY_098052475.csv.gz	571 KB	3/5/07 12:00:00 AM
SUNY_098052485.csv.gz	569 KB	3/5/07 12:00:00 AM
SUNY_098052495.csv.gz	569 KB	3/5/07 12:00:00 AM
SUNY_098052505.csv.gz	568 KB	3/5/07 12:00:00 AM
SUNY_098052515.csv.gz	569 KB	3/5/07 12:00:00 AM
SUNY_098052525.csv.gz	570 KB	3/5/07 12:00:00 AM
SUNY_098052535.csv.gz	570 KB	3/5/07 12:00:00 AM
SUNY_098052545.csv.gz	570 KB	3/5/07 12:00:00 AM
SUNY_098052555.csv.gz	570 KB	3/5/07 12:00:00 AM
SUNY_098052565.csv.gz	571 KB	3/5/07 12:00:00 AM
SUNY_098052575.csv.gz	570 KB	3/5/07 12:00:00 AM
SUNY_098052585.csv.gz	570 KB	3/5/07 12:00:00 AM
SUNY_098052595.csv.gz	570 KB	3/5/07 12:00:00 AM

**Data Upload:**

No file chosen

Maximum Filesize: 256 MB  
Allowed Extensions: txt zip xml csv xls xlsx

No file chosen

Maximum Filesize: 256 MB  
Allowed Extensions: txt zip xml csv xls xlsx

No file chosen

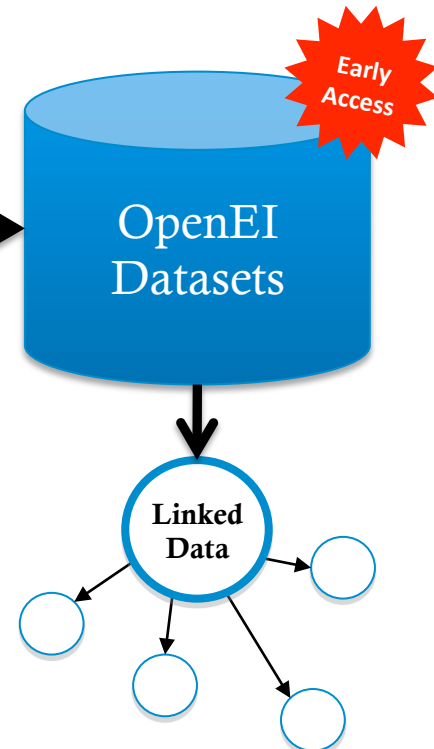
Maximum Filesize: 256 MB  
Allowed Extensions: txt zip xml csv xls xlsx

No file chosen

Maximum Filesize: 256 MB  
Allowed Extensions: txt zip xml csv xls xlsx

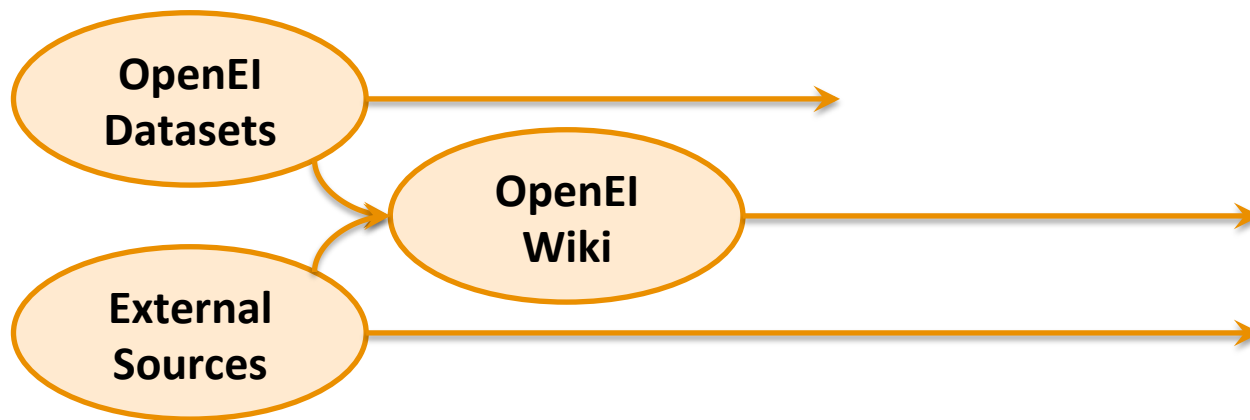
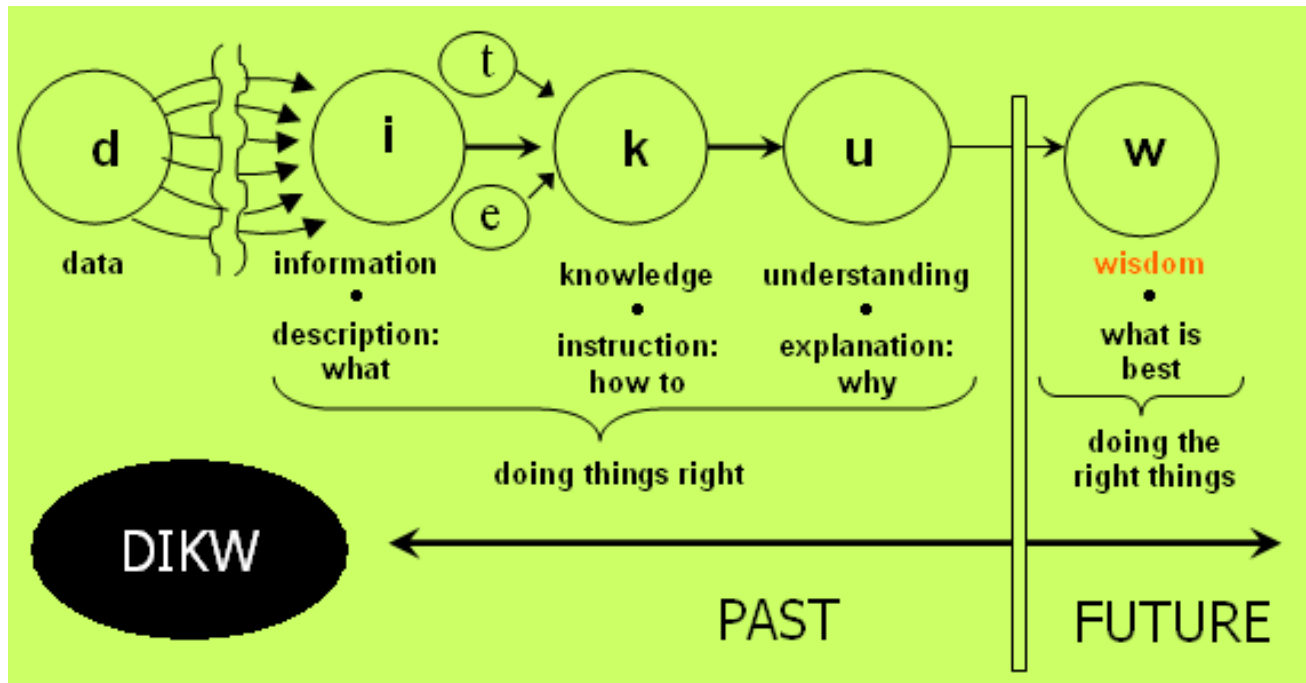
No file chosen

Maximum Filesize: 256 MB  
Allowed Extensions: txt zip xml csv xls xlsx



# OpenEI: The Wisdom Hierarchy

<http://en.wikipedia.org/wiki/File:DIKW.png>



# OpenEI's Information Synergy: An Example

[http://en.openei.org/wiki/OpenEI:Projects/Geographic\\_Pages](http://en.openei.org/wiki/OpenEI:Projects/Geographic_Pages)

## Some State

*From Open Energy Information*

Lorem ipsum dolor sit amet, consectetur adipisicing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat. Duis aute irure dolor in reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur. Excepteur sint occaecat cupidatat non proident, sunt in culpa qui officia deserunt mollit anim id est laborum.

Some State	
Governor	John Doe (D)
Population	10,000,000 (rank: 10)
GDP	\$258.3 billion (rank: 14)
Household Income	\$49,000 (rank: 13)
OpenEI Resources	
Energy Maps	18 (rank: 13)
Energy Datasets	15 (rank: 12)

## Natural Resources

[edit]

### Renewable Energy

[edit]

	Value	Rank	Period	Source
Wind Potential	TBD	TBD	TBD	NREL (via WindPoweringAmerica.gov)
Solar Potential	TBD	TBD	TBD	NREL (?)
Geothermal Potential	TBD	TBD	TBD	?
Hydropower Potential	TBD	TBD	TBD	?

### Conventional Energy

[edit]

	Value	Rank	Period	Source
Coal Reserves	TBD	TBD	TBD	EIA and/or USGS (?)
Natural Gas Reserves	TBD	TBD	TBD	EIA and/or USGS (?)
Oil Reserves	TBD	TBD	TBD	U.S. Department of Education
Uranium Reserves	TBD	TBD	TBD	EIA and/or USGS (?)

### Energy Inventives

[edit]

	Value	Rank	Period	Source
Statewide Renewable Portfolio Standard	TBD	TBD	TBD	(?)
State Programs	TBD	TBD	TBD	(?)
Utility Programs	TBD	TBD	TBD	(?)
Other Programs	TBD	TBD	TBD	(?)

### Public Sector and Nonprofit Entities

[edit]

	Value	Rank	Period	Source
Research Institutions	TBD	TBD	TBD	OpenEI (?)
Research Institution Employees	TBD	TBD	TBD	OpenEI (?)

### Private Sector Entities

[edit]

	Value	Rank	Period	Source
Total Energy Companies	TBD	TBD	TBD	OpenEI (?)
Solar Energy Companies	TBD	TBD	TBD	OpenEI (?)
Wind Energy Companies	TBD	TBD	TBD	OpenEI (?)
Oil and Gas Companies	TBD	TBD	TBD	OpenEI (?)

## About: Western Electricity Coordinating Council Smart Grid Project

An Entity of Type : Smart Grid Projects – Electric Transmission Systems from Named Graph : <http://en.openei.org/lod/graph/wiki>

Property	Value
rdf:type	<ul style="list-style-type: none"><li>swivt:Subject</li><li>openei:wiki/Category-3ASmart_Grid_Projects</li><li>openei:wiki/Category-3ASmart_Grid_Investment_Grant_Projects</li><li>openei:wiki/Category-3ASmart_Grid_Projects_-2D_Electric_Transmission_Systems</li></ul>
rdfs:label	<ul style="list-style-type: none"><li>Western Electricity Coordinating Council Smart Grid Project</li></ul>
rdfs:isDefinedBy	<ul style="list-style-type: none"><li><a href="http://en.openei.org/wiki/Special:ExportRDF/Western_Electricity_Coordinating_Council_Smart_Grid_Project">http://en.openei.org/wiki/Special:ExportRDF/Western_Electricity_Coordinating_Council_Smart_Grid_Project</a></li></ul>
swivt:page	<ul style="list-style-type: none"><li><a href="http://en.openei.org/wiki/Western_Electricity_Coordinating_Council_Smart_Grid_Project">http://en.openei.org/wiki/Western_Electricity_Coordinating_Council_Smart_Grid_Project</a></li></ul>
swivt:wikiNamespace	<ul style="list-style-type: none"><li>0 (xsd:integer)</li></ul>
swivt:wikiPageModificationDate	<ul style="list-style-type: none"><li>2009-12-15 18:38:32 (xsd:date)</li></ul>
openei:wiki/Property-3ACoordinates	<ul style="list-style-type: none"><li>40.7607793°, -111.8910474°</li></ul>
openei:wiki/Property-3AAwardee	<ul style="list-style-type: none"><li>openei:wiki/Western_Electricity_Coordinating_Council</li></ul>
openei:wiki/Property-3AAwardeeHeadquarters	<ul style="list-style-type: none"><li>openei:wiki/Salt_Lake_City,_Utah</li></ul>
openei:wiki/Property-3ACoverageMap	<ul style="list-style-type: none"><li>SmartGridMap-WesternElectricity.JPG</li></ul>
openei:wiki/Property-3AHeadquartersCity	<ul style="list-style-type: none"><li>Salt Lake City</li></ul>
openei:wiki/Property-3AHeadquartersState	<ul style="list-style-type: none"><li>Utah</li></ul>
openei:wiki/Property-3ARecoveryFunding	<ul style="list-style-type: none"><li>53890000.000000 (xsd:double)</li></ul>
openei:wiki/Property-3ATotalValue	<ul style="list-style-type: none"><li>107780000.000000 (xsd:double)</li></ul>
openei:wiki/Property-3AAdditionalBenefitPlaces	<ul style="list-style-type: none"><li>openei:wiki/Colorado</li><li>openei:wiki/New_Mexico</li><li>openei:wiki/South_Dakota</li><li>openei:wiki/Arizona</li><li>openei:wiki/Oregon</li><li>openei:wiki/Washington</li><li>openei:wiki/Montana</li><li>openei:wiki/California</li><li>openei:wiki/Texas</li><li>openei:wiki/Idaho</li><li>openei:wiki/Nevada</li></ul>

# OpenEI: SPARQL Endpoint

<http://en.openei.org/sparql>

Open  
Distribution

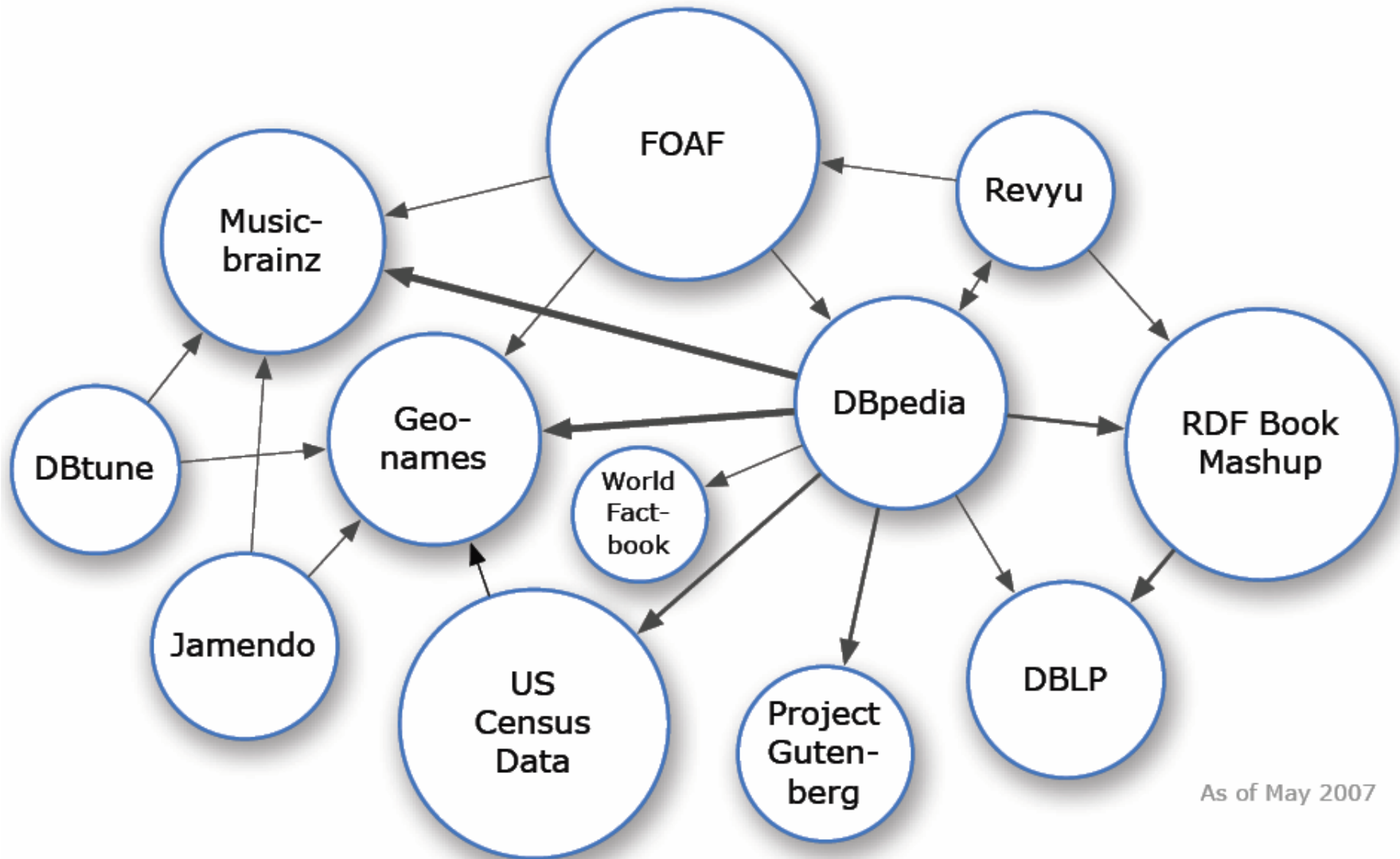
## Welcome

- [Sample 1: Retrieve all entities \(of any type\) in the "Bay Area" region](#)
- [Sample 2: Retrieve all companies \(regardless of region, sector, etc.\)](#)
- [Sample 3: Retrieve all networking organizations \(regardless of region, sector, etc.\)](#)
- [Sample 4: Retrieve all research institutions \(regardless of region, sector, etc.\)](#)
- [Sample 5: Retrieve all energy generation facilities \(regardless of region, sector, etc.\)](#)
- [Sample 6: Retrieve all ARRA Smart Grid projects \(regardless of region, sector, etc.\)](#)

```
PREFIX rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#>
PREFIX rdfs: <http://www.w3.org/2000/01/rdf-schema#>
PREFIX swivt: <http://semantic-mediawiki.org/swivt/1.0#>
PREFIX resource: <http://openei.org/resources/>
PREFIX category: <http://openei.org/resources/Category-3A>
PREFIX property: <http://openei.org/resources/Property-3A>
SELECT ?page ?name ?awardee ?hq_city ?hq_state ?recovery_funding ?total_value
FROM <http://openei.org>
WHERE {
  ?project swivt:page ?page.
  ?project rdf:type category:Smart_Grid_Projects.
  ?project rdfs:label ?name.
  ?project property:Awardee ?awardee.
  ?project property:HeadquartersCity ?hq_city.
  ?project property:HeadquartersState ?hq_state.
  ?project property:RecoveryFunding ?recovery_funding.
  ?project property:TotalValue ?total_value.
}
```

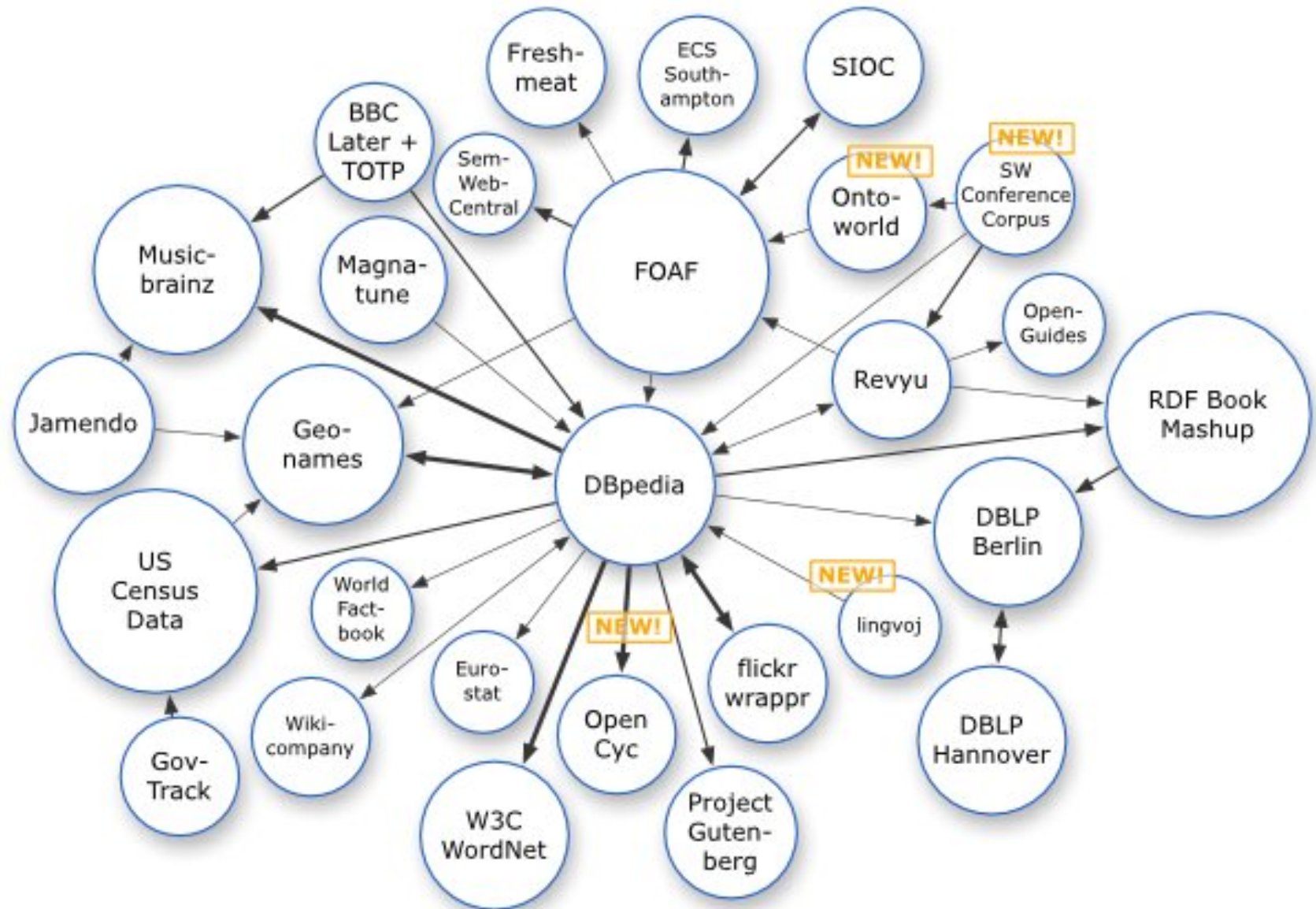
Get Results

# Linked Data 2007



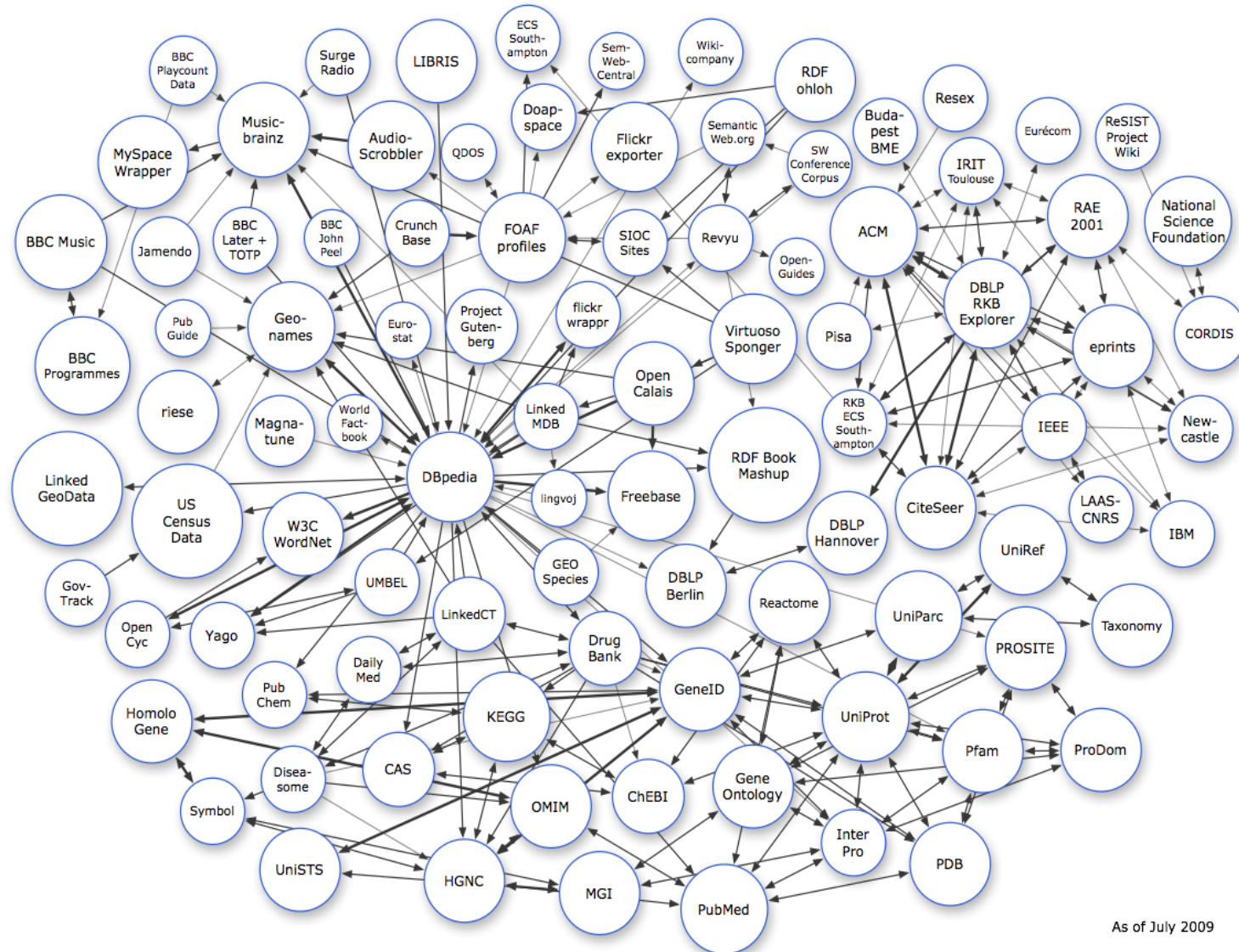
As of May 2007

# Linked Data 2008



# Linked Data 2009

Open  
Distribution

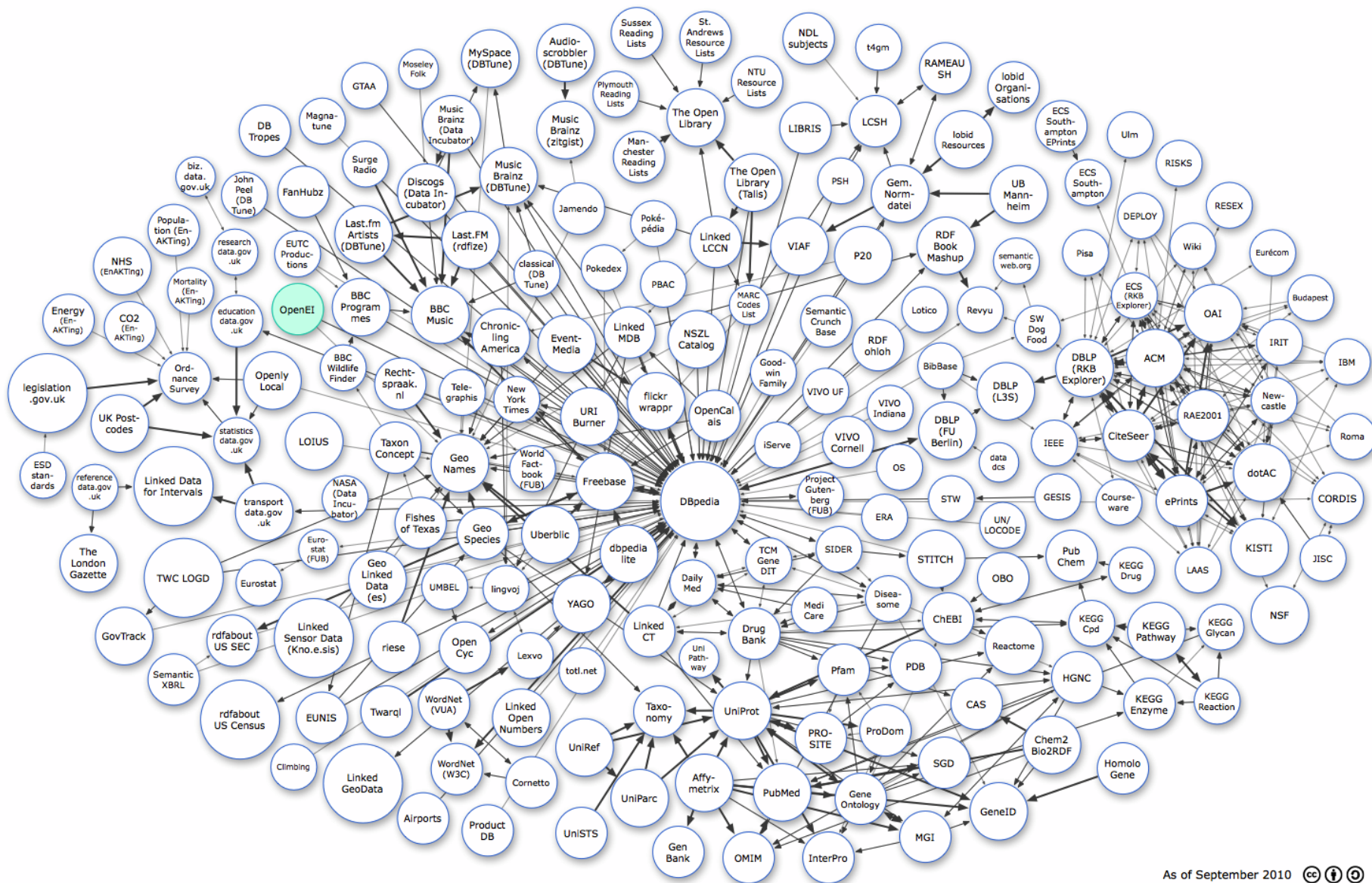






# Linked Data 2010, Continued

Open  
Distribution



# OpenEI: Unique Attributes

Publicly accessible text and information

<http://openei.org/wiki/Gateway:Solar>

Easy formats to read and sort

[http://openei.org/wiki/List\\_of\\_Companies\\_in\\_Solar\\_Sector](http://openei.org/wiki/List_of_Companies_in_Solar_Sector)

Visual mapping of data

[http://openei.org/wiki/Map\\_of\\_Solar\\_Power\\_Plants](http://openei.org/wiki/Map_of_Solar_Power_Plants)

Geographic boundary analysis

[http://openei.org/wiki/California%27s\\_12th\\_congressional\\_district](http://openei.org/wiki/California%27s_12th_congressional_district)

Collaborative, forms-based authoring

[http://openei.org/w/index.php?title=Advanced\\_Energy&action=formedit](http://openei.org/w/index.php?title=Advanced_Energy&action=formedit)

Facility to link external information

<http://openei.org/wiki/Wyoming>

Ability to track changes

[http://openei.org/w/index.php?title=Main\\_Page&action=history](http://openei.org/w/index.php?title=Main_Page&action=history)

Downloadable spreadsheets of information

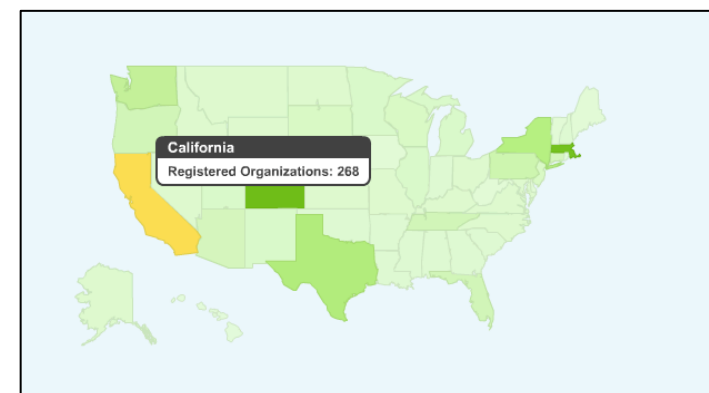
[http://openei.org/wiki/List\\_of\\_Companies\\_in\\_Solar\\_Sector](http://openei.org/wiki/List_of_Companies_in_Solar_Sector)

Machine-readable data services

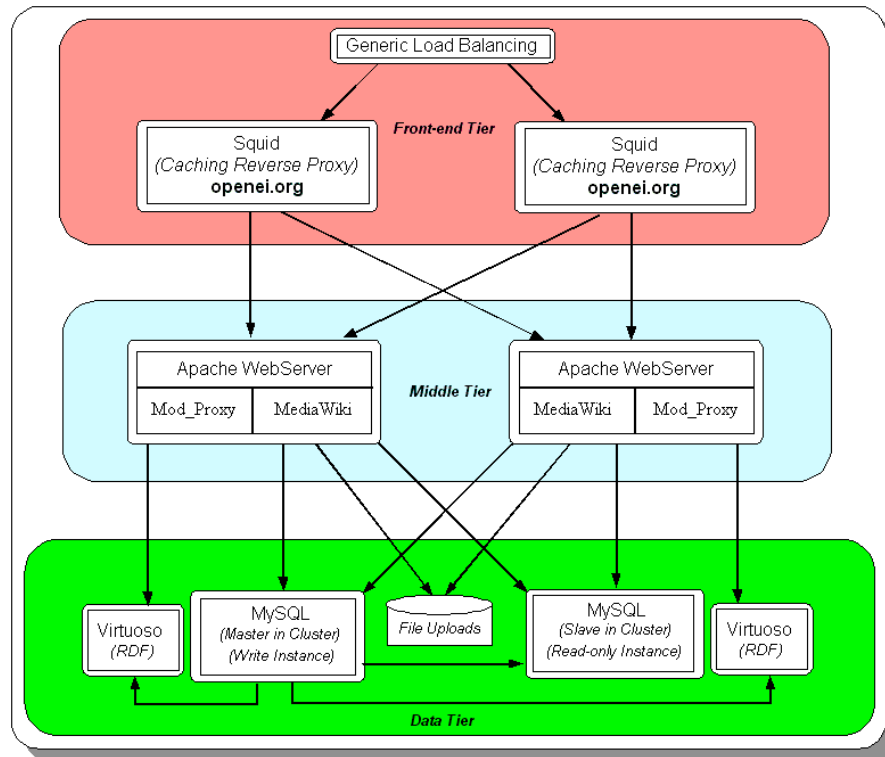
<http://openei.org/sparql>

Companies in the Solar sector: [Download CSV](#)

Company	Address	Place	Zip	Product	Website	Region
List Light Energy, Inc.	3224 McHenry Ave Suite F	Modesto, California	953650		<a href="http://1stlightenergy.com">http://1stlightenergy.com</a>	Southern CA Area
21-Century Silicon, Inc.	1681 Firman Drive, Suite 103	Richardson, Texas	75081-1881	Solar Grade Silicon >99.9999% purity	<a href="http://www.21-CenturySilicon.com">http://www.21-CenturySilicon.com</a>	Texas Area
4th Day Energy	38886 River Belle	Tollhouse, California	93667	Solar electric systems	<a href="http://www.4thdayenergy.com">http://www.4thdayenergy.com</a>	Southern CA Area
A1 Sun, Inc.		Berkeley, California	94707	solar energy systems	<a href="http://www.a1suninc.com/home.html">http://www.a1suninc.com/home.html</a>	Bay Area
A10 Power	775 E. Blithedale Ave., #125	Hill Valley, California	94941	Solar Financing and Integration	<a href="http://www.a10power.com">http://www.a10power.com</a>	Bay Area
ABC Solar, Inc.	24454 Hawthorne Blvd	Torrance, California	90505	Solar power systems, products	<a href="http://www.abc-solar.com/">http://www.abc-solar.com/</a>	Southern CA Area
AC Solar Inc	P.O. Box 128	Florence, Colorado	81226	Solar and wind sales for residential	<a href="http://www.acsolar.com/">http://www.acsolar.com/</a>	Rockies Area
ACME solar works	20738 Brown Lane	Summerdale, Alabama	36580	Solar power systems, products	<a href="http://www.acmesolarworks.net/">http://www.acmesolarworks.net/</a>	
AEE Solar	1155 Redway Drive PO Box 339	Redway, California	95560		<a href="http://www.aeesolar.com/">http://www.aeesolar.com/</a>	Bay Area



# OpenEI : Scalable Deployment



## Heavily based on Wikipedia's deployment architecture:

- <http://dammit.lt/uc/workbook2007.pdf>
- <http://www.nedworks.org/~mark/presentations/san/Wikimedia%20architecture.pdf>

## Recently Highlighted as a “Featured Case Study” for Amazon Web Services:

- <http://aws.amazon.com/solutions/case-studies/openei/>

# OpenEI Data in Action: Example 1

<http://chrisdavis weblog.tudelft.nl/2010/06/12/data-mining-the-us-department-of-energy>



```
PREFIX prop: <http://openei.org/resources/Property-3A>
SELECT SUM(?capacity) AS ?totalCapacity ?onlineDate
WHERE {
  ?plant prop:GeneratingCapacity ?capacity .
  ?plant prop:CommercialOnlineDate ?onlineDate .
}
GROUP BY ?onlineDate
ORDER BY ?onlineDate
```

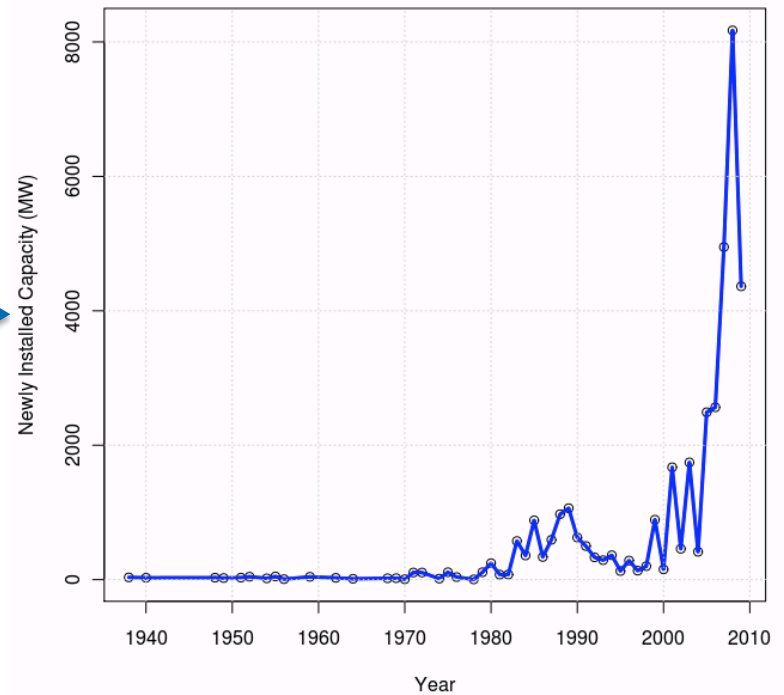


```
### Author: Chris Davis
### E-mail: c.b.davis@tudelft.nl
### Website: http://chrisdavis weblog.tudelft.nl/
### http://wiki.tudelft.nl/bin/view/Main/ChrisDavis
```

```
library(ggplot2)
...
```



Renewable Energy Installed Per Year



Graph Credit: Chris Davis

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<http://chrisdavis.weblog.tudelft.nl/2010/06/12/data-mining-the-us-department-of-energy>

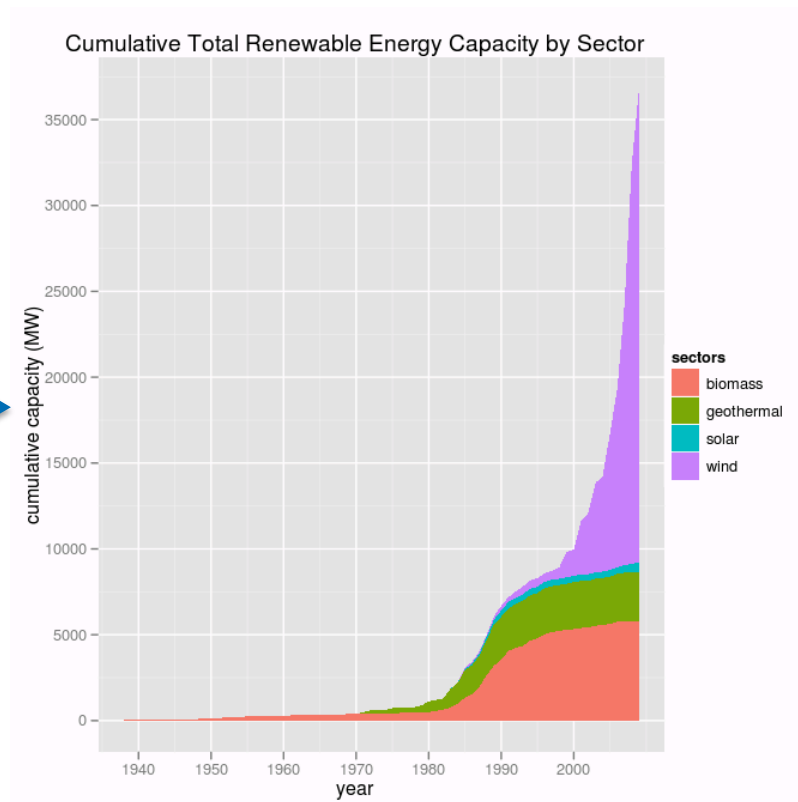


```
PREFIX prop: <http://openei.org/resources/Property-3A>
SELECT SUM(?capacity) AS ?totalCapacity ?onlineDate ?sector
WHERE {
  ?plant prop:GeneratingCapacity ?capacity .
  ?plant prop:CommercialOnlineDate ?onlineDate .
  ?plant prop:Sector ?sector .
}
GROUP BY ?onlineDate ?sector
ORDER BY ?sector ?onlineDate
```



```
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Graph Credit: Chris Davis

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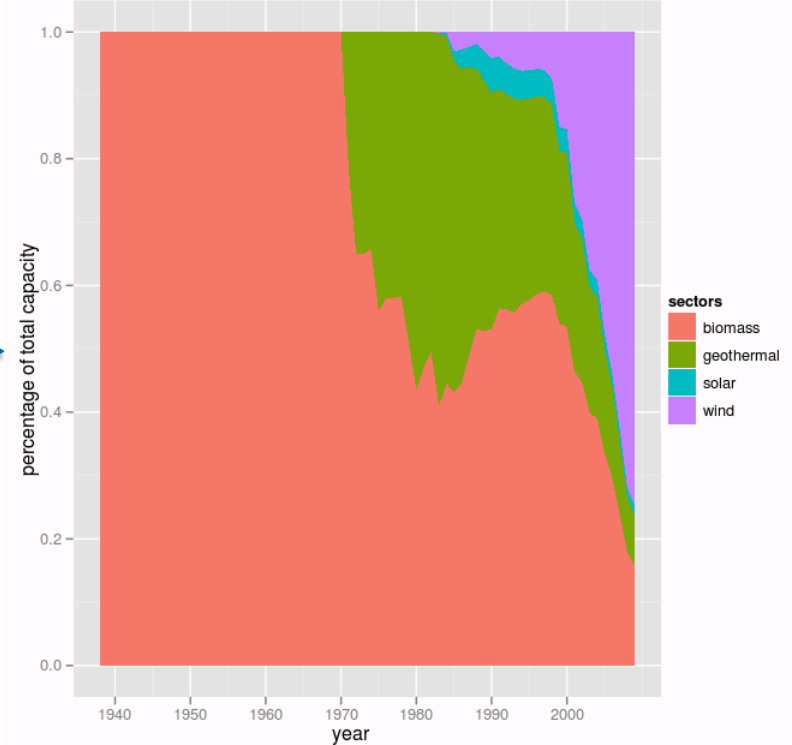


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### Author: Chris Davis
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```

```
library(ggplot2)
...
```



Percentage of Total Renewable Energy Capacity by Sector



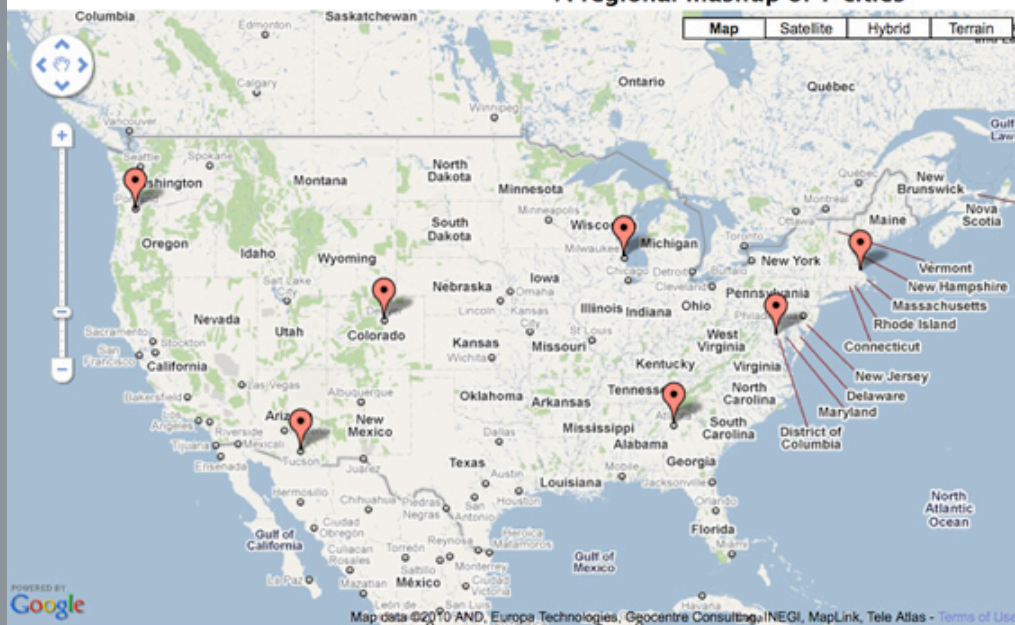
Graph Credit: Chris Davis

# OpenEI Data in Action: Example 2

<http://rmckeel.openei.org/mashathon/>

## Smart Grid: Toward a Transparent Energy Marketplace

### A regional mashup of 7 cities



### Milwaukee, Wisconsin

#### Census

Median Income: \$32,216  
Housing Units: 249,225  
Homeownership Rate: 45.3%

#### Incentives

[View incentives](#)

#### Smart Grid Information

[Milwaukee Smart Grid information](#)

#### Utility Information

Utility Company Name: [Wisconsin Power & Light Co](#)  
[Time of use rate data](#)  
Avg residential kWh usage per year: 10560  
Avg kWh cost in state: 0.1152  
Estimated electricity cost per resident (kWh usage x cost of kWh): \$1216

Sources used: 2005 EIA Residential Energy Consumption Survey on Data.gov via tw.rpi.edu, OpenEI.org, U.S. Census data, SmartGrid.gov

## Smart Grid: Toward a Transparent Energy Marketplace

"A smart grid is socially transformational. As with the Internet or cell phone communications, our experience with electricity will change dramatically...."  
*Reference: Smart Grid System Report, U.S. Department of Energy, July 2009*

Modeled after the [National Renewable Energy Laboratory Alternative Fuels and Advanced Vehicles Data Center](#), this mashup is an evolving collection of Smart-Grid tools, database searches, calculators, and interactive maps to enable consumers to become an integral part of the electric power system.

#### Assumptions



# OpenEI: Open Questions

## • Participation Barriers

### • Licensing

- Having a license (CC Zero) that's more open than Wikipedia's (CC Attribution-Sharealike) means we cannot allow direct imports of Wikipedia content. Should we just align with them? Or adopt a split approach for textual content versus structured data?

### • Registration

- Should we allow anonymous edits within the OpenEI Wiki?

### • User Experience and Learning Curve

## • Motivators

### • Career Advancement and Recognition

- Academic Tenure
- Simple Virtual Rewards (points, badges, "karma")

### • Mandates

- Open Government Initiative

### • Financial Gain

- Value-add goods and services
- Micropayments

### • Public Funding

# OpenEI: TODO List

- **Critical Mass**

- Content
- Community

- **Processes and Culture**

- Participation Motivators
- Curation Practices

- **System Capabilities**

- Improved “Datasets” Mechanism
  - Versioning
  - Format translations
  - File-level hierarchy and metadata
  - File type wizards
- Audience-Specific Tools
  - Traditional Analysts
    - Excel Integration
  - Traditional Developers
    - RESTful Interfaces
  - Data Processors
    - MapReduce Access
- Resource Clustering
- User Experience Improvements
- Partially Protected Data\*
  - Implement via sibling project(s)?