

Using "Linked Open Data" to share clean energy data and knowledge

Florian Bauer
Operations & IT Director
REEEP



Linked Open Data

Linked Open Data: An explanation based on Tim Berners-Lee's 5-star deployment scheme

Sharing data

A widespread deployment of renewable energy requires appropriate regulatory, financial and market frameworks as well as specific technical expertise. Therefore, knowledge sharing and information dissemination between stakeholders is essential.

Global S&L information and knowledge sharing helps countries improve their energy efficiency, sparks collaboration, reduces policy-making, encourages technology transfer, and provides the critical input of increased global energy efficiency for appliances, lighting, and equipment and sustainable production and consumption.

The difference

- Stores all information in its own database
- Other sites have similar design pattern => Duplication of effort and resources
- Each site responsible for updating information => No central authority to be prevented with conflicting information
- Silos are often linked to sources => Each silo can have its own data and report supplemental data
- Improved data capture, connectivity or provides users with consistent information across multiple sites
- Other Websites can consume LOD resources to present new content in existing and redesigned ways

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How we do it!

Consuming content

From:

- Worldbank
- UN-data
- Eurostat
- OpenEI
- DBpedia
- ...

For:

- Country Profiles
- Glossary
- Actors

Publishing content

Datasets on:

- Policy reviews
- Project outcomes
- Actors
- Thesaurus

Benefits of LOD

- encourages reuse
- reduces redundancy
- splits responsibilities for datasets
- enables network effects (mashups)

Thank you!

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Sharing data



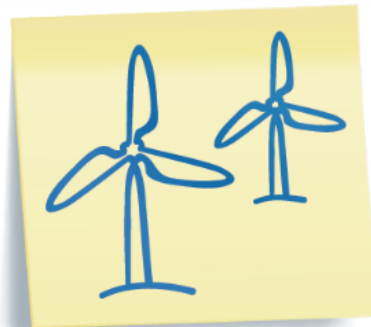
A widespread deployment of renewable energy requires appropriate regulatory, financial and market frameworks as well as specific technical expertise. Therefore, **knowledge sharing and information dissemination between stakeholders is essential.**

(<http://www.un-energy.org>)



Global S&L information and **knowledge sharing helps countries improve their energy efficiency** knowledge base and expertise; sparks collaborations; educates policy makers; encourages technology transfer; and promotes the shared goal of increased global energy efficiency for appliances, lighting, and equipment and sustainable production and consumption.

(<http://www.clasponline.org>)





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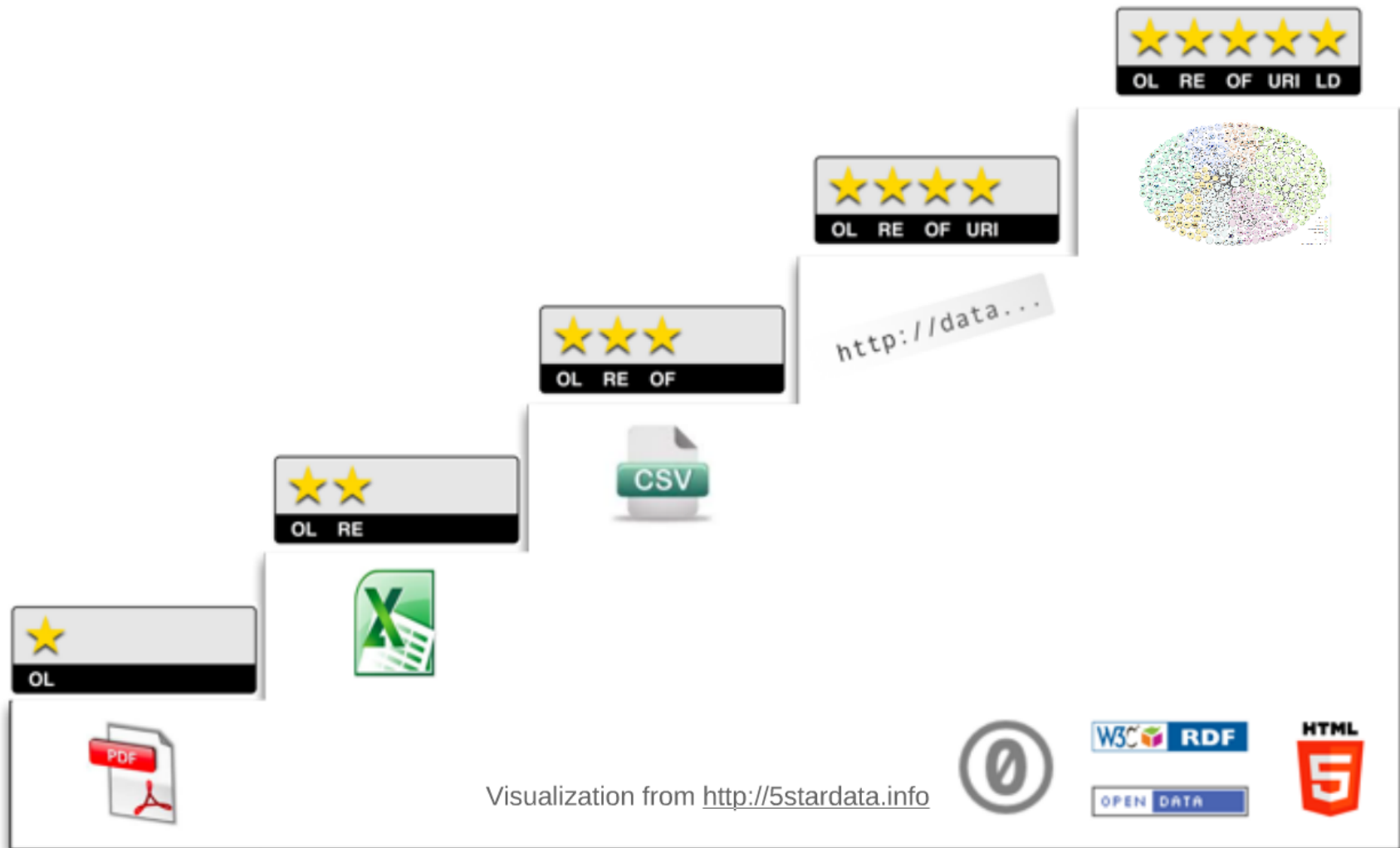
(<http://www.clasponline.org>)

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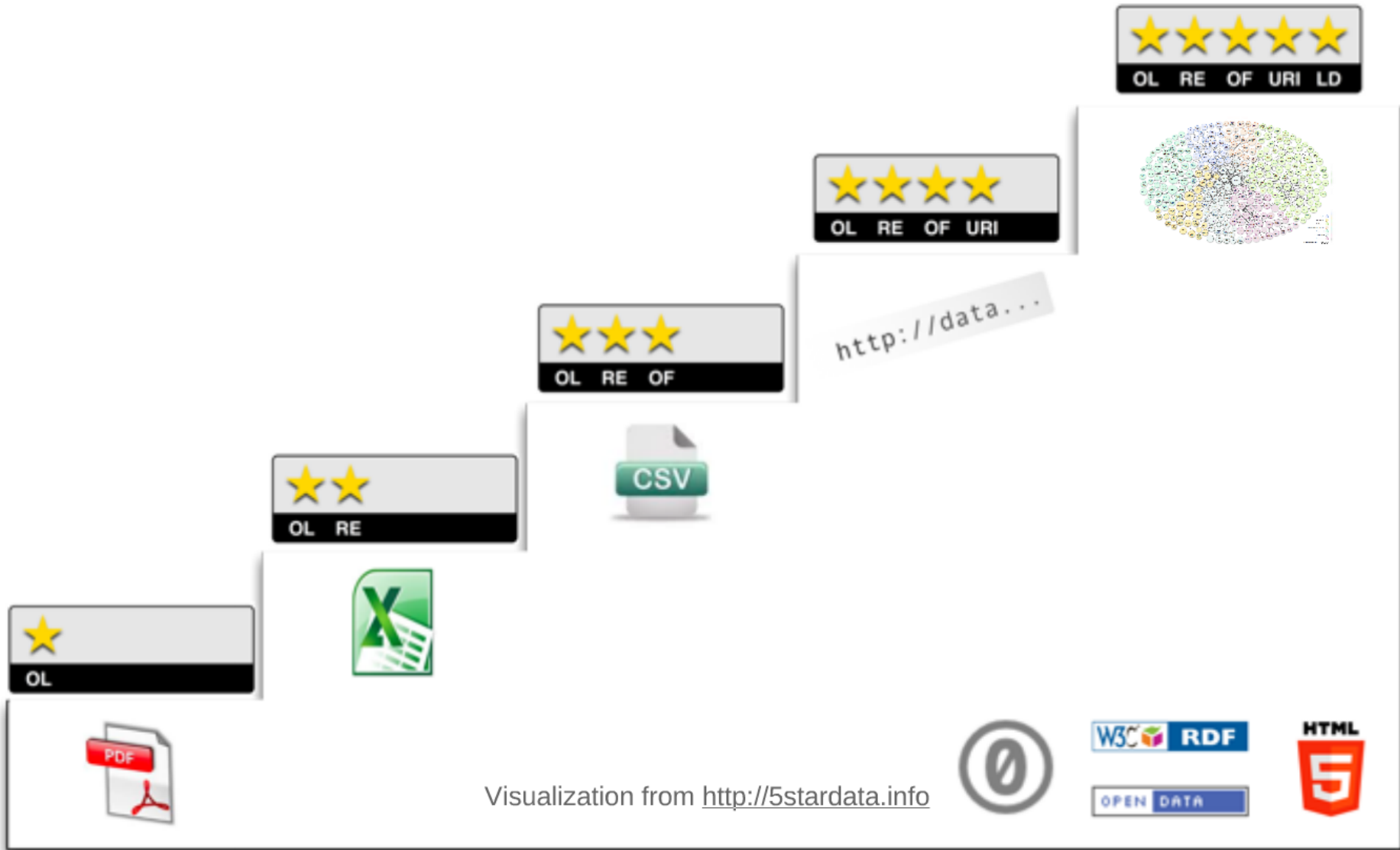
Linked Open Data

Linked Open Data: An explanation based on Tim Berners-Lee's 5-star deployment scheme



Visualization from <http://5stardata.info>

Linked Open Data: An explanation based on Tim Berners-Lee's 5-star deployment scheme





Visualizati



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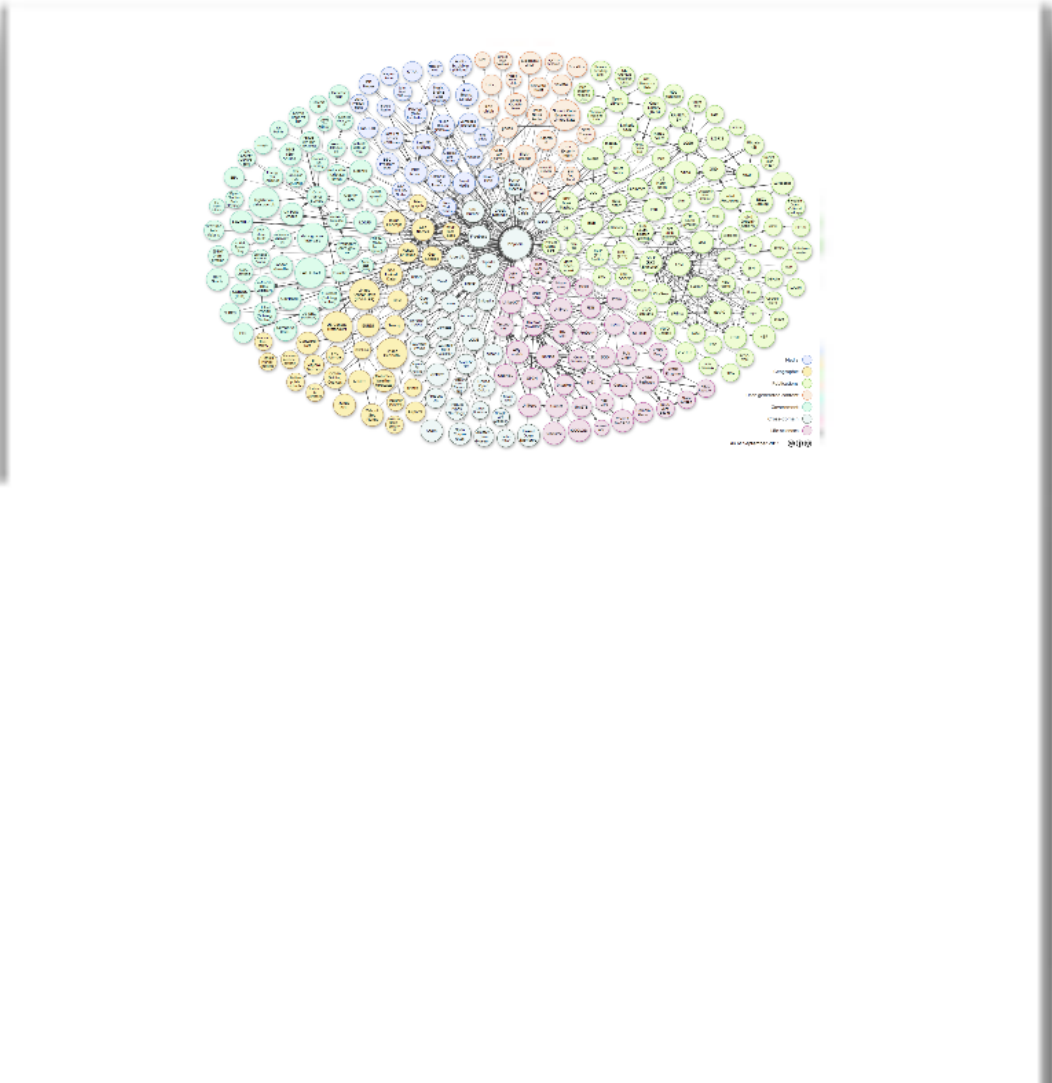
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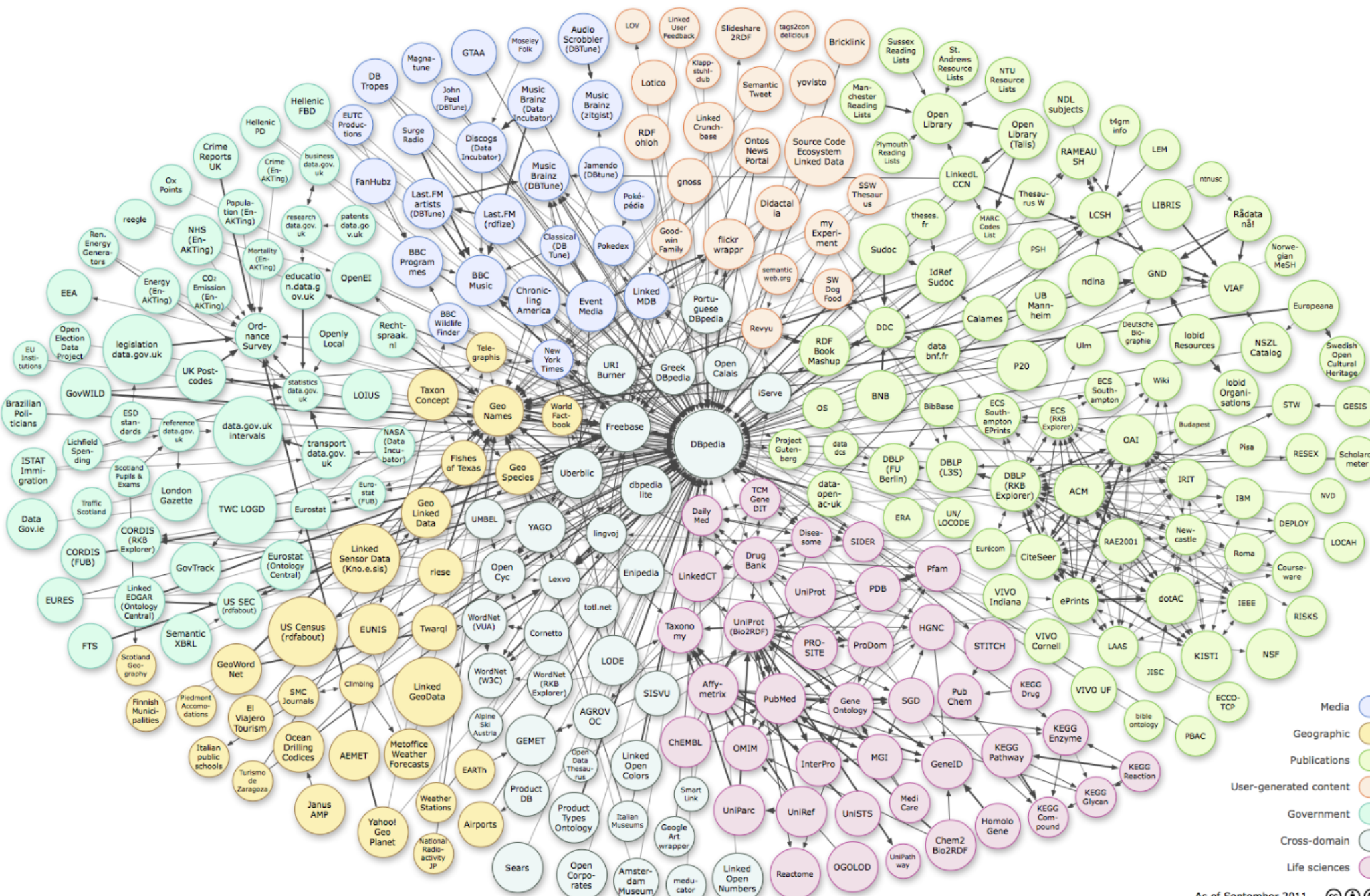
OL RE OF

`http://data...`





`http://data...`



- Media ●
- Geographic ●
- Publications ●
- User-generated content ●
- Government ●
- Cross-domain ●
- Life sciences ●

The difference



- Stores all information in its own database
- Other sites have similar design pattern => **Duplication of effort and information**
- Both sites responsible for updating information => **Potential for online community to be presented with conflicting information**



- Datasets are shared behind the scenes => **Each site can focus on key data and import supplemental data**
- Imported data updates automatically => **Provides users with consistent information across multiple sites**
- Other Websites can consume LOD resources to present new content in exciting and unanticipated ways

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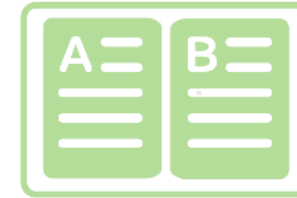
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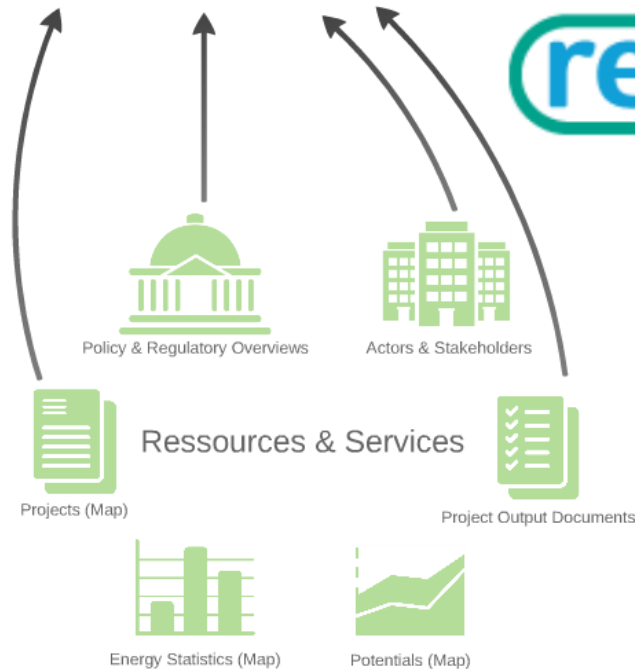
Country Energy Profiles



Clean Energy Search



Glossary / Thesaurus



Home reegle Data Thesaurus



Clean Energy Datasets - free for re-use

Include clean energy datasets including actors, project outcome documents, country policy reports and more than 3000 clean energy terms from our thesaurus into your website or application by using reegle's Linked Open Data facilities. Datasets are published using the Open Government Data License for public sector information and are therefore free for re-use.

reegle Data

Our data sets on:

- clean energy stakeholders
- project output documents
- country policy reports

[reegle Data](#)

Thesaurus

> 3.000 energy terms including:

- Definition
- Links to other definitions
- A lot of synonyms
- References to related terms

[Thesaurus](#)

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Clean Energy Search

Search the web for reliable clean energy information



feed-in tariffs spain|

Search

What's special about this reegle search?



- ⇒ Carefully pre-selected sources for reliable results
- ⇒ Refinement options for tailored results
- ⇒ Direct link to reegle's glossary
- ⇒ Websearch powered by google

ain

search



feed-in tariffs spain

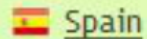
search



Results language



Country profile



Refine search

feed-in tariffs

- hydropower feed-in tariffs
- electricity meters
- wind feed-in tariffs
- renewable energies
- photovoltaic feed-in tariffs

About 93,500 results (0.38 seconds)

Feed-in tariff - Wikipedia, the free encyclopedia

The rapid deployment of renewable energy under **feed-in tariffs** seen in countries like Germany, Denmark and **Spain** has undoubtedly contributed to reducing ...

en.wikipedia.org

Spain Announces New Solar Feed In Tariff Projects : Renewable ...

Feb 23, 2009 ... **Spain Announces New Solar Feed In Tariff Projects : Renewable Energy News : Energy Matters - Solar Power Australia.**

www.energymatters.com.au

Spain Makes Changes to Solar Tariff | Renewable Energy News ...

Sep 29, 2008 ... After many nerve-wracking weeks for **Spain's** solar industry, the Spanish ... The country's solar **feed-in tariffs** are now set at €0.32-0.34 per ...

www.renewableenergyworld.com

Solar power in Spain - Wikipedia, the free encyclopedia

The Spanish **feed in tariff**, made under Real Decreto 661/2007, differs from the German model in that it offers the option of ...

en.wikipedia.org

Refine search

wind feed-in tariffs

- feed-in tariffs
- wind power targets
- on-shore windparks
- off-shore windparks
- grids

feed-in tariffs

- hydropower feed-in tariffs
- electricity meters
- wind feed-in tariffs
- renewable energies
- photovoltaic feed-in tariffs

wind

- windpower

en.wikipedia.org

A Policymaker's Guide to Feed-in Tariff Policy Design

Feed-in tariffs (FITs) are the most widely used policy in the world for Figure 13 . Spanish sliding FIT for offshore wind (2008), with a cap and floor on the total ...

www.nrel.gov

Feeding the grid

Using feed-in tariffs to capitalize on renewable energy established feed-in laws (Denmark, Germany and Spain) have the overwhelming majority of jobs ...

pubs.pembina.org

Financial incentives for photovoltaics - Wikipedia, the free ...

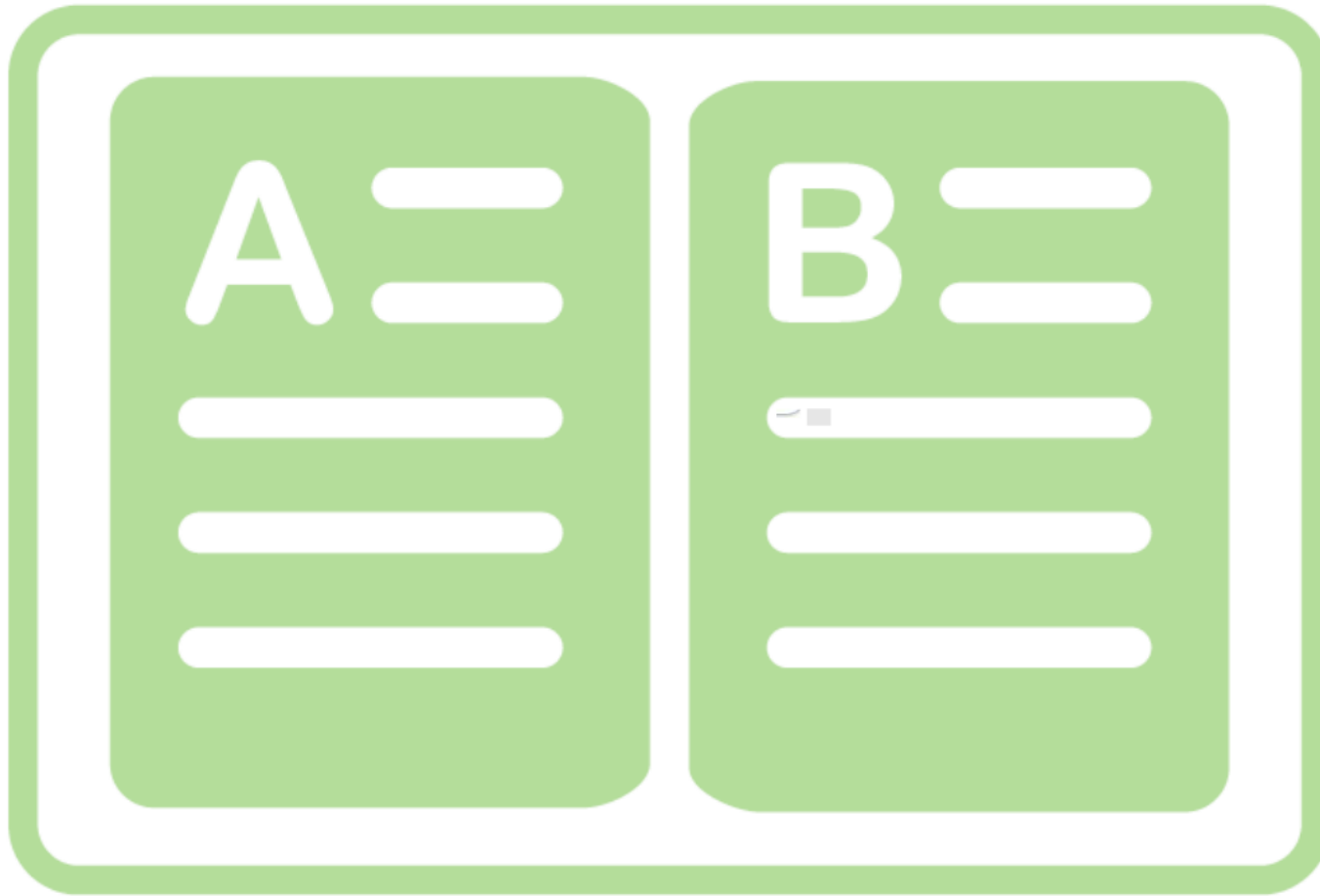
In October 2008, Spain, Italy, Greece and France introduced feed-in tariffs. ... was replaced with the 2009 Feed-In Tariff program for renewable energy (FIT). ...

en.wikipedia.org

Renewable Energy Focus - Status of feed-in tariffs in Europe 2010

Feb 14, 2011 ... The use of feed-in tariffs (FiTs) to pay for renewable generation now ... The UK renewable energy industry welcomes today's announcement of the feed-in tariff ... The council was founded by Germany, Spain, and Slovenia and ...

www.renewableenergyfocus.com



Glossary / Thesaurus

Type a term ...



A B **C** D E F G H I J K L M N O P Q R S T U V W X Y Z

climate change

Synonyms: climate variability

reegle definition:

Climate variability refers to variations in the mean state and other statistics (such as standard deviations, the occurrence of extremes, etc.) of the climate on all spatial and temporal scales beyond that of individual weather events. Variability may be due to natural internal processes within the climate system (internal variability), or to variations in natural or anthropogenic external forcing (external variability).(IPCC)

Wikipedia definition:

Global warming is the increase in the average temperature of Earth's near-surface air and oceans since the mid-20th century and its projected continuation. According to the 2007 Fourth Assessment Report by the Intergovernmental Panel on Climate Change (IPCC), global surface temperature increased 0.74 ± 0.18 °C during the 20th century. Most of the observed temperature increase since the middle of the 20th century has been caused by increasing



Find more information on
climate change
in reegle's energy search



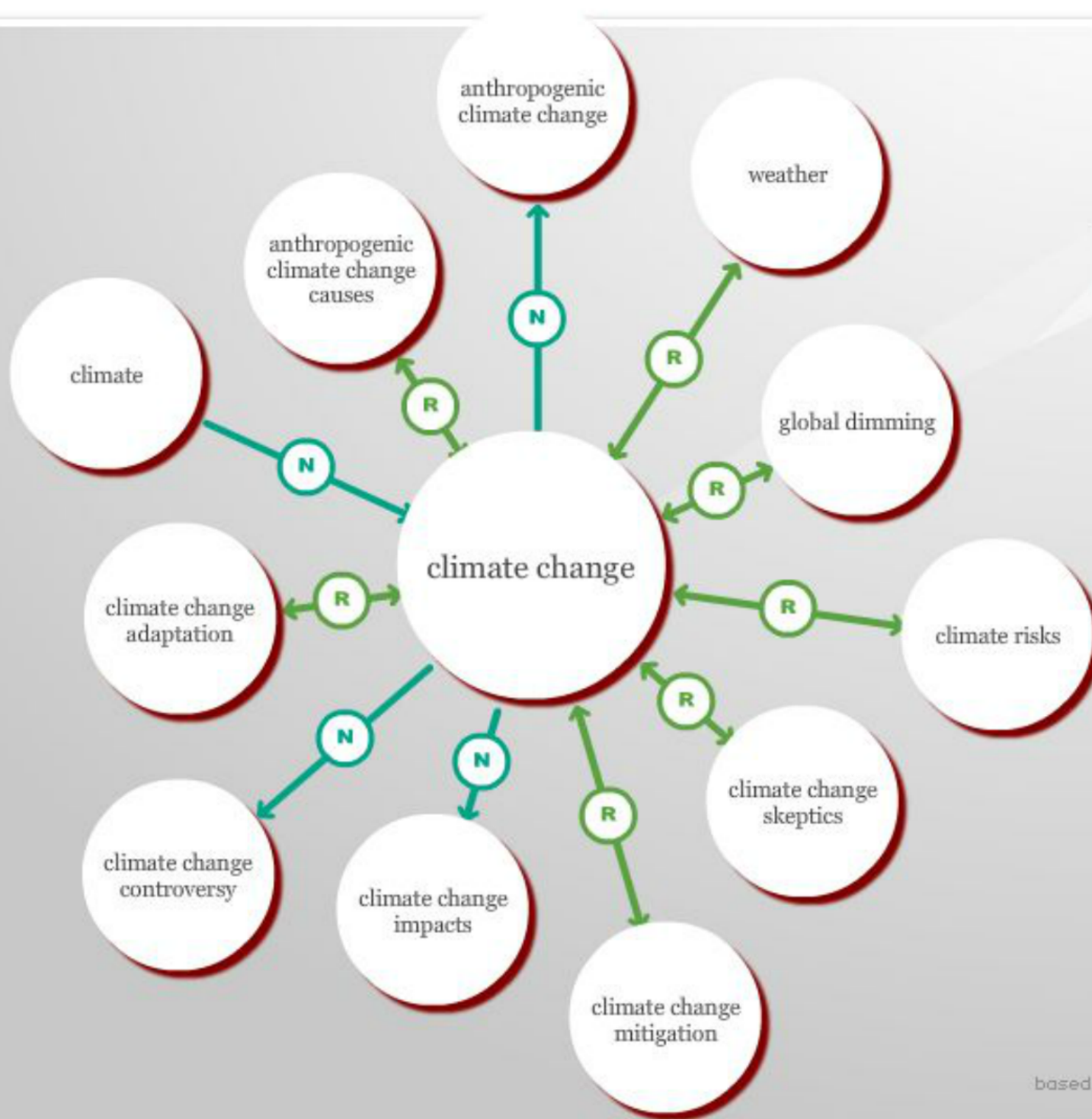
Add reegle to your site



Get RDF



Print glossary term



Show definition
Show definition



Country Energy Profiles



Pick a country and find all relevant clean energy information:



Type or select a country ...

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

Most viewed country energy profiles

India
 Policy and Regulatory Overview - Energy Statistics (20) - Project Outputs (36) - Stakeholders (47) - DFID Projects (2) - Renewable Resource Maps (27) - Programs (61) - Tools (21) - Links (10)

China
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Brazil
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South Africa
 Policy and Regulatory Overview - Energy Statistics (21) - Project Outputs (13) - Stakeholders (15) - Programs (33) - Tools (12) - Links (10)

Brazil

Brazil officially became the Republic of Brazil in 1889, following a military revolution. It is the world's fifth largest country, with a population of over 200 million. It is the only Portuguese speaking country in the Americas and the largest Spanish speaking country in the world. Bounded by the Atlantic Ocean on the east, Brazil has a coastline of over 7,491 kilometers (4,654 mi). It is bordered to the north by Venezuela, Guayana Francesa and the French overseas department of French Guiana, to the northeast by Colombia, to the west by Guyana and Peru, to the southwest by Argentina and Paraguay, and to the south by Uruguay. It is made up of 26 states and 1 Federal Territory, such as Fernando de Noronha, Páramo, São Carlos, Foz de Iguaçu, and Brasília and Açores, etc. The country with all other South American countries apart from Ecuador and Chile. Brazil was a colony of Portugal from the landing of Pedro Álvares Cabral in 1500 and later when it was elevated to independence with Portugal's support. The word 'Brazil' is sometimes used to refer to ... and more.

Source: [World Bank](#)

- Policy and Regulatory Overview
- Energy Statistics (19)
- Project Outputs (34)
- Stakeholders (12)
- Renewable Resource Maps (2)
- Programs (43)
- Tools (23)
- Links (10)

Capital	Brasília
Language	Portuguese, English, Spanish
ISO Code	BR, BRA
Area	8,511,965 km²
Population	192,371,818 (2007)



Pick a country and find all relevant clean energy information:



Type or select a country ...



A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

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Source: [dbpedia](#)

Capital	Brasilia
Language	Portuguese language
ISO Code	BR, BRA
Area	8.514.877 km ²
Population	192.272.890 (2009)

Policy and Regulatory Overview

Energy Statistics (19)

Project Outputs (34)

Stakeholders (12)

Renewable Resource Maps (2)

Programs (43)

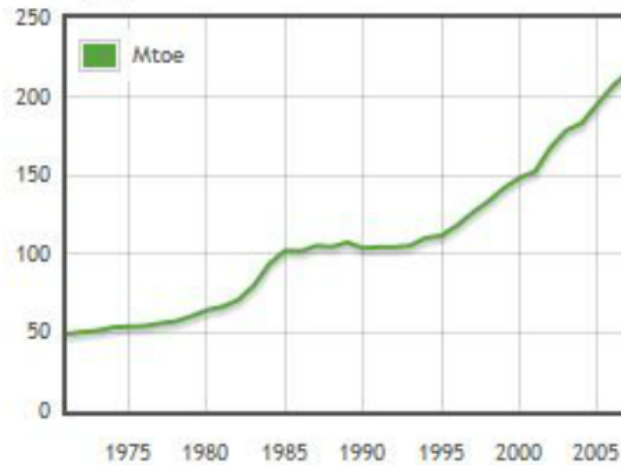
Tools (23)

Links (10)



Energy production and use

Energy production



Source: World Bank Data

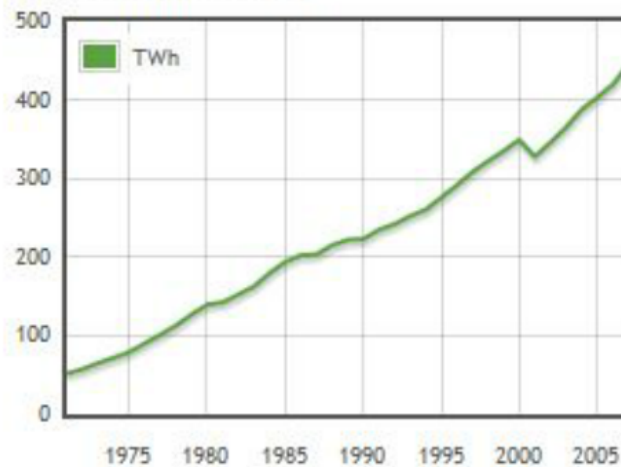
Energy use



Source: World Bank Data

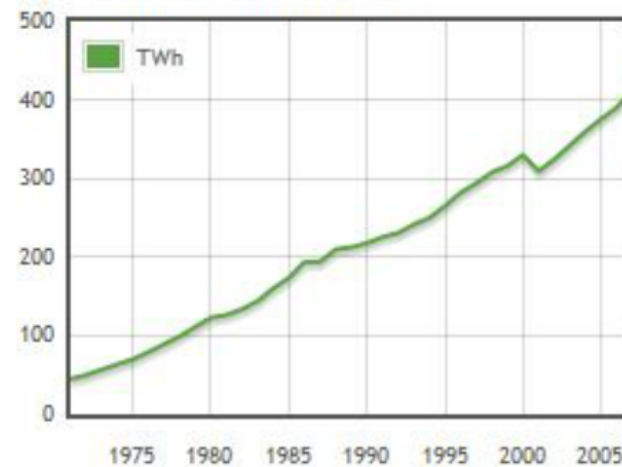
Electricity

Electricity production



Source: World Bank Data

Electric power consumption



Source: World Bank Data



Policy & Regulatory Overviews



Actors & Stakeholders

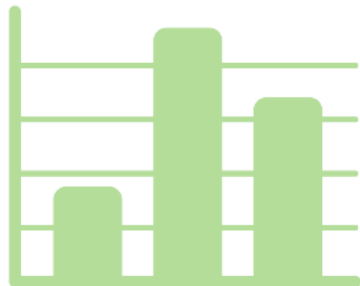
Ressources & Services



Projects (Map)



Project Output Documents



Energy Statistics (Map)



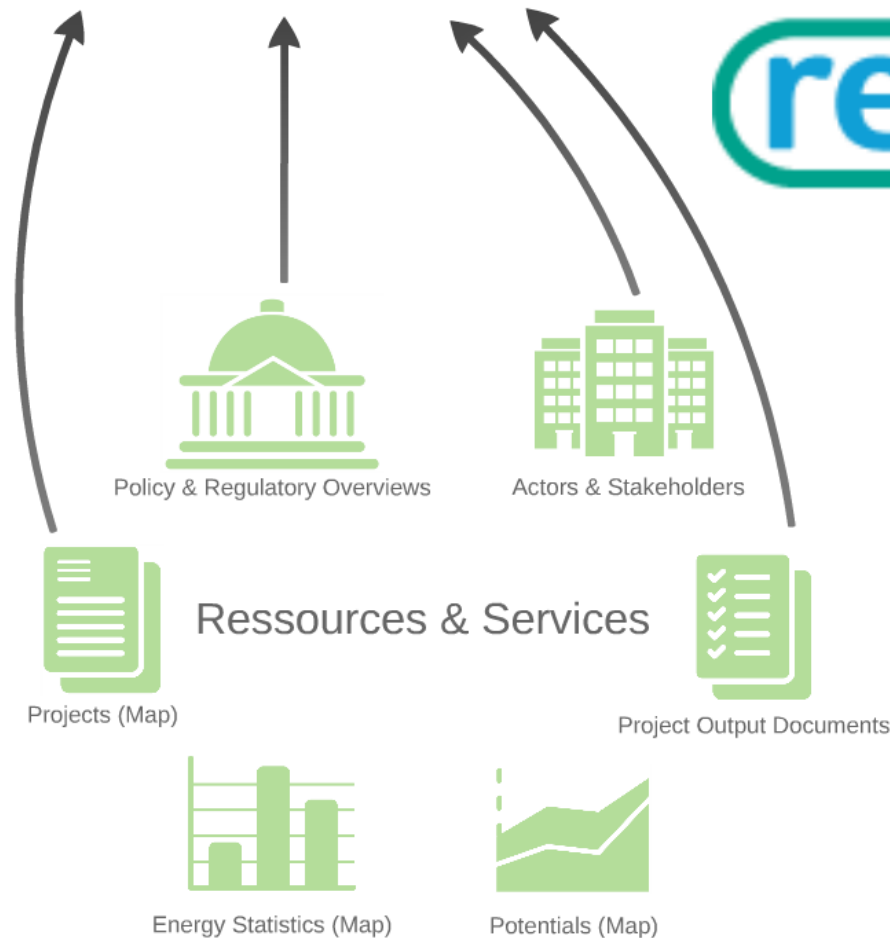
Potentials (Map)



Clean Energy Search



Country Energy Profiles



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Clean Energy Datasets -

include clean energy datasets including actors, > 3,000 clean energy terms from our thesaurus, Open Data facilities. Datasets are published using information and are therefore free for re-use.

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Get data sets on:

- clean energy stakeholders
- project output documents
- country policy reports

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Thesaurus

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Thesaurus

> 3.000 energy-terms including:

- ⇒ Definition
- ⇒ Links to other definitions
- ⇒ List of synonyms
- ⇒ References to related terms

[Thesaurus](#)

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How we do it!

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- OpenEI
- DBPedia
- ...

For:

- Country Profiles
- Glossary
- Actors



Publishing content

Datasets on:

- Policy reviews
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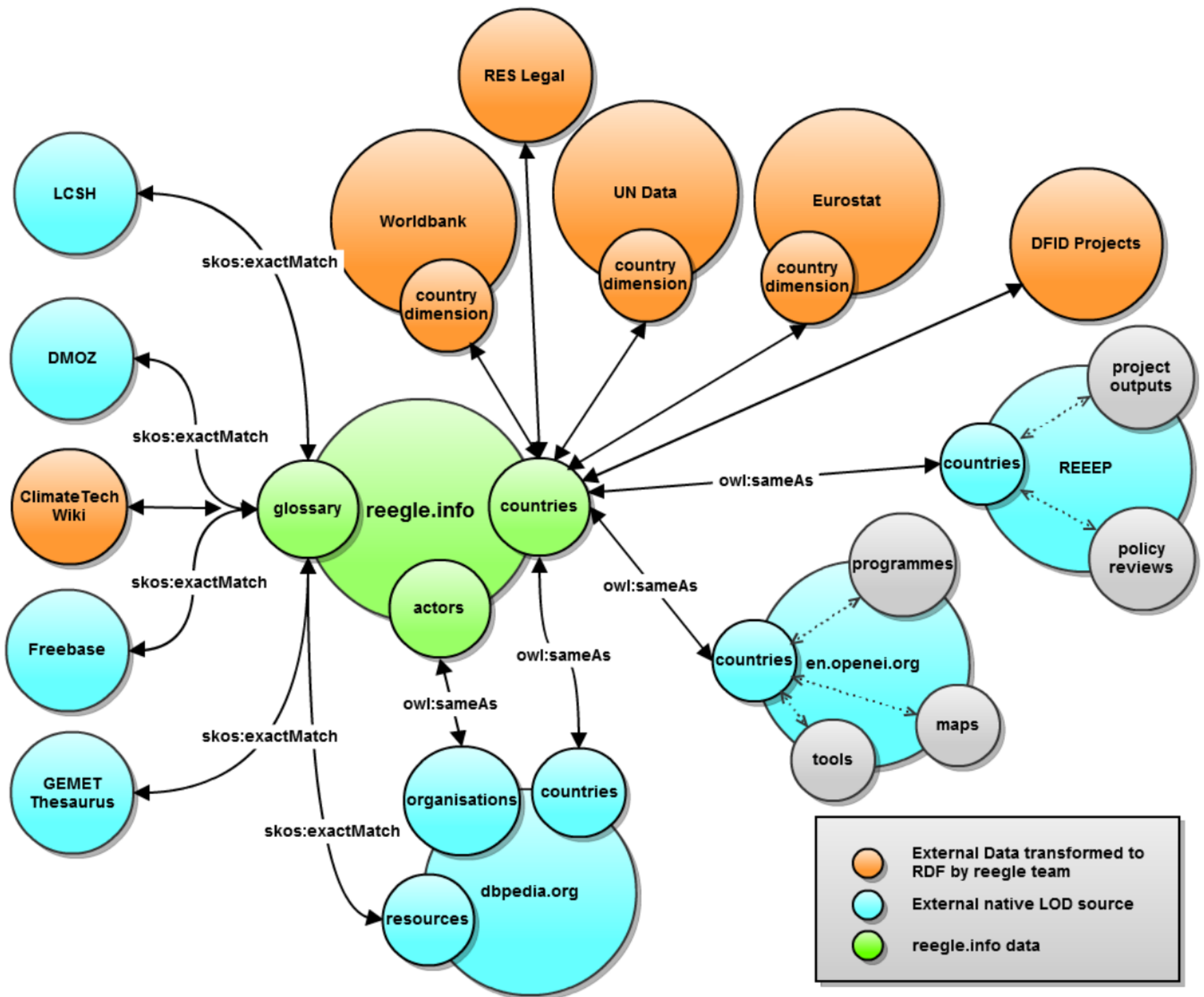


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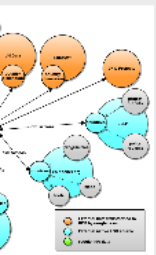
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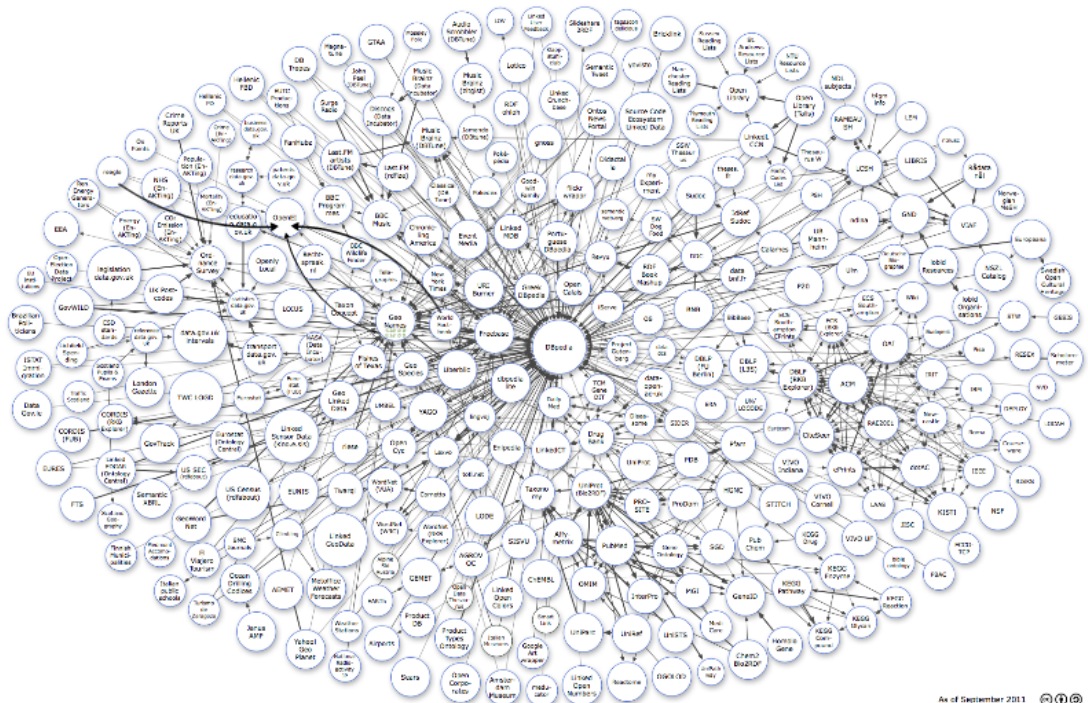


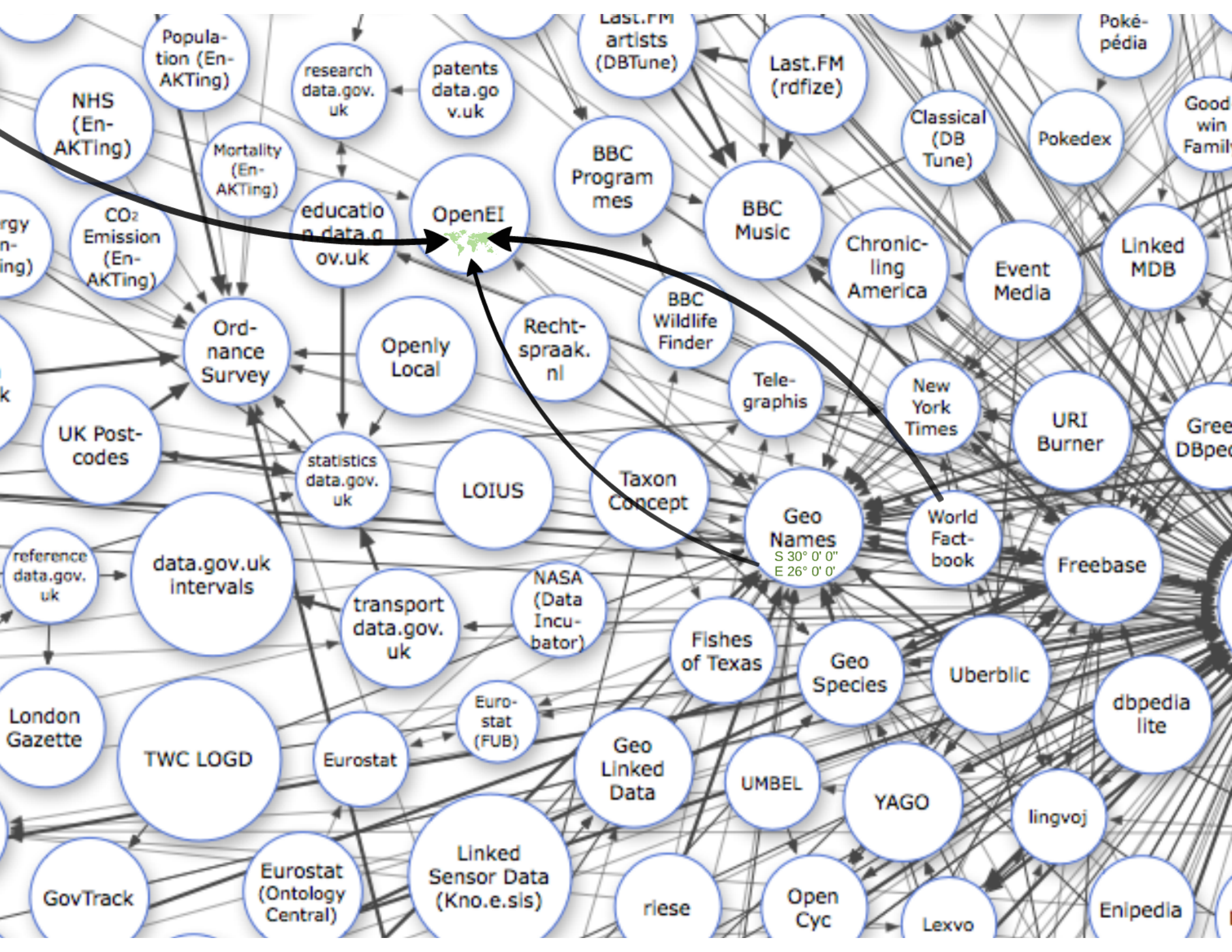
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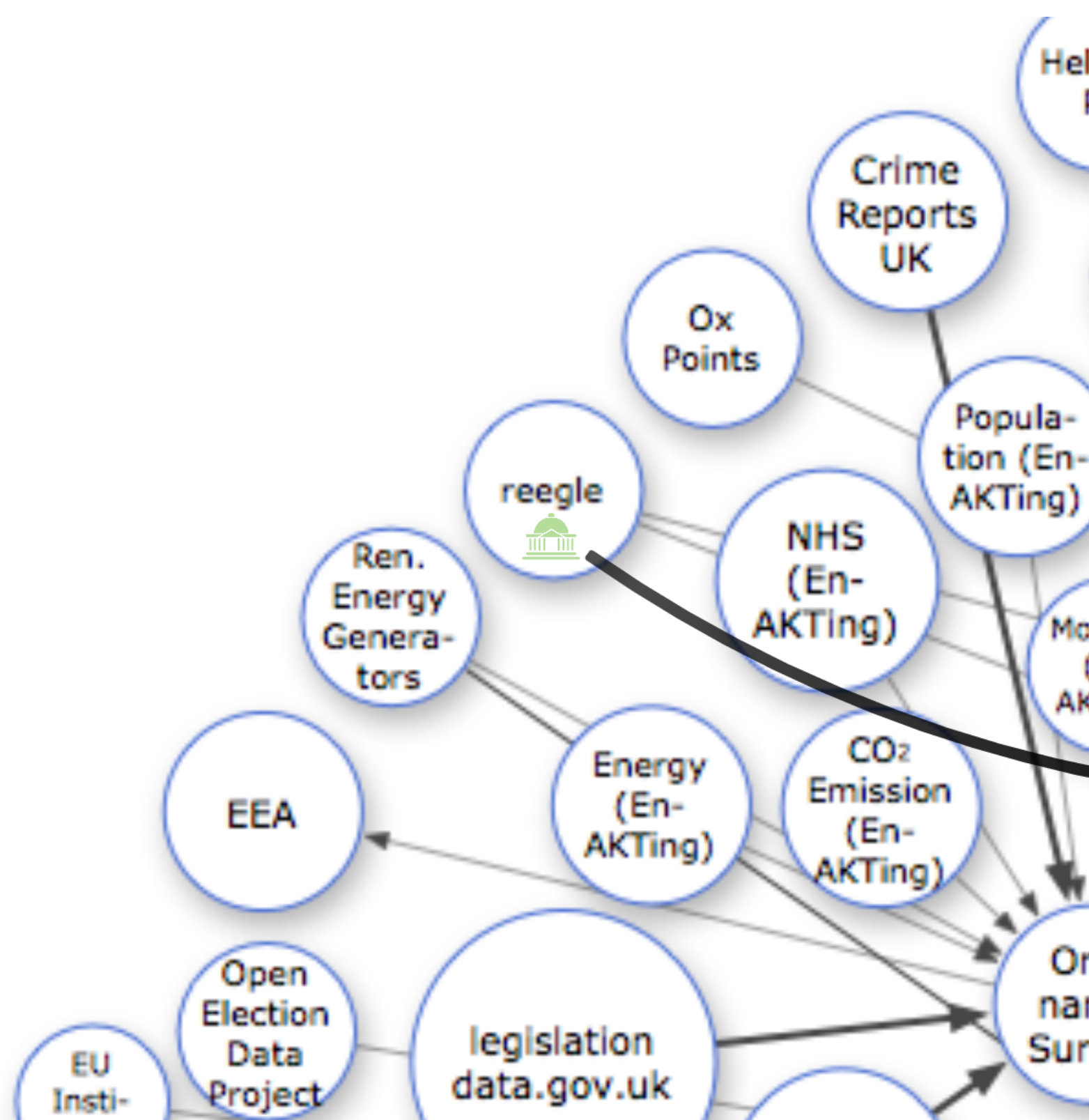


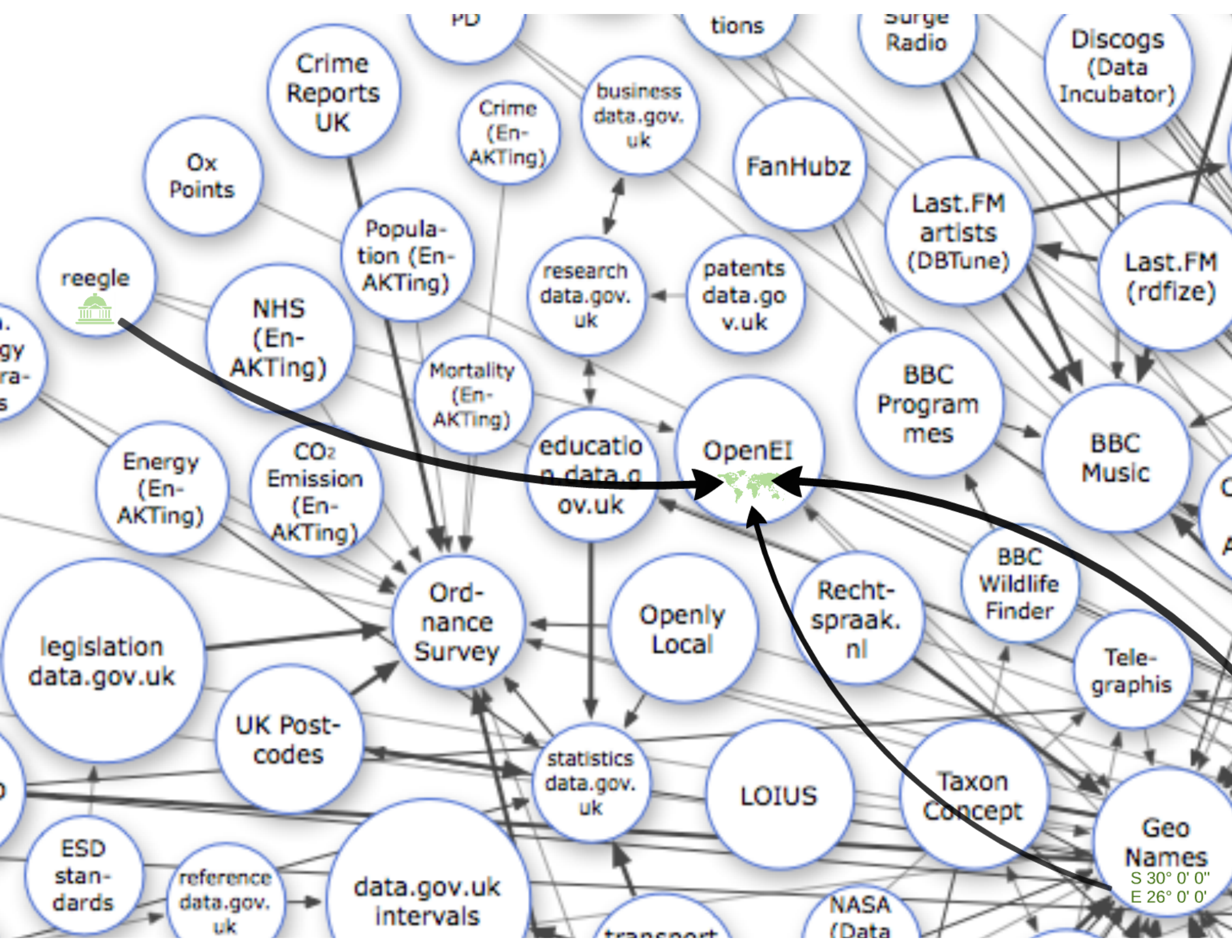
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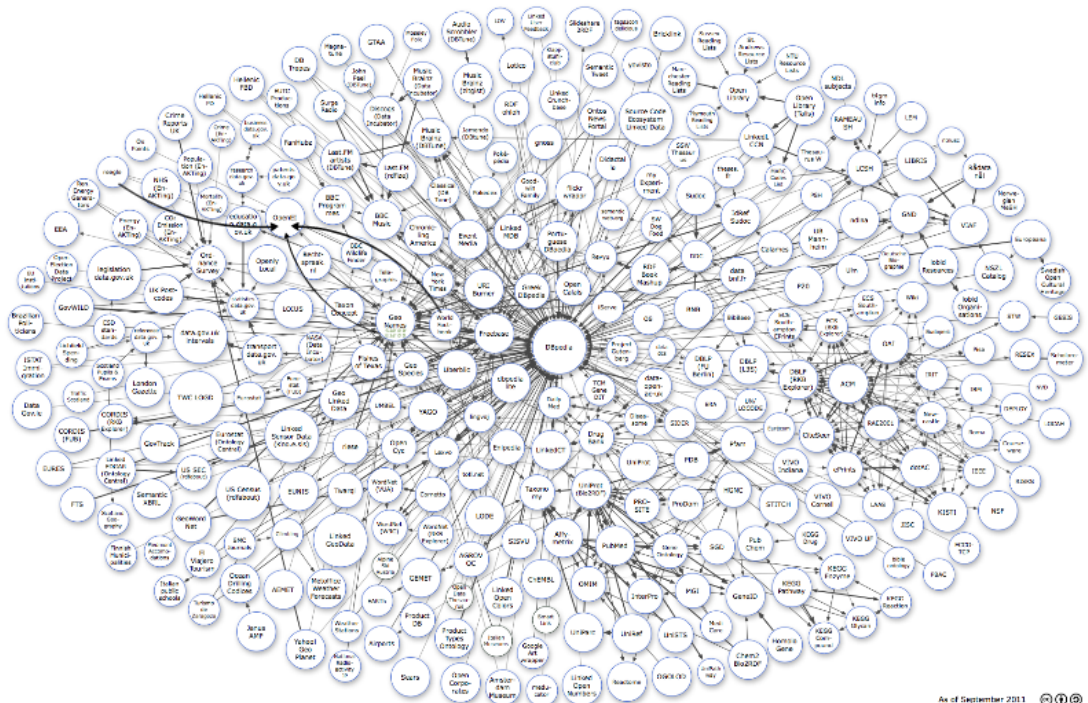






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www.**reegle**.info

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