



مركز الملك عبدالله للدراسات والبحوث البترولية
King Abdullah Petroleum Studies and Research Center

Energy Data Transparency advancing energy economics research

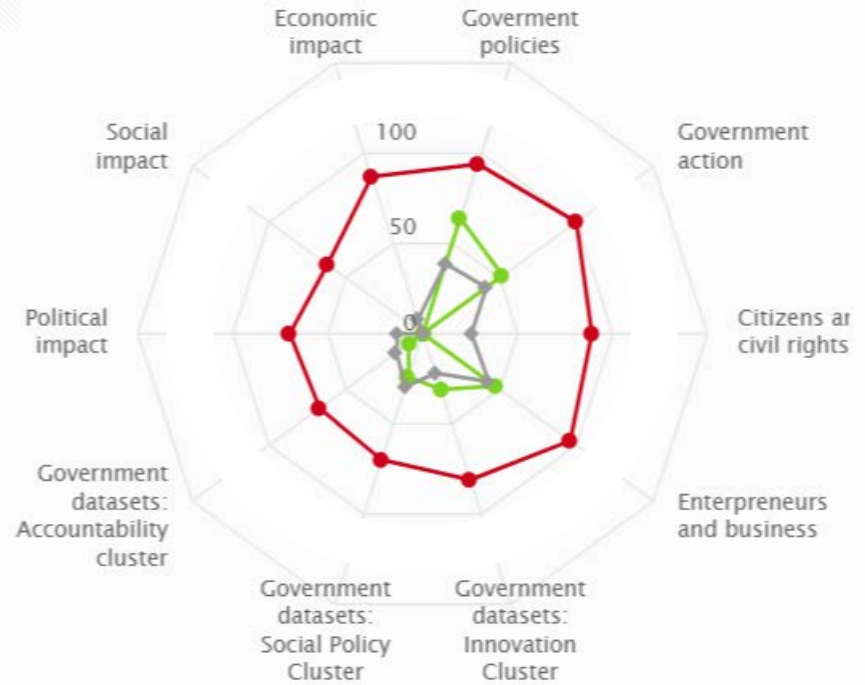
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Head of Information Management
Jun 27, 2017

Middle east regional **open data availability** is in early development stage, “Open Data Barometer” report shows incremental progress, long way to go..

2013



2015



	ODB Rank		ODB Score	
Country	2013	2015	2013	2015
United States	2	2	93	82
Saudi Arabia	67	57	8	18

◆ Saudi Arabia ◆ Middle East & North Africa
◆ United States of America

GCC energy and economics **open data availability** started to grow, critical data coverage is **still incomplete** to develop required insights..

Data Theme	Saudi Arabia	Bahrain	Kuwait	Qatar	UAE	Oman	Total
Crude Oil & Refined Products	█	█	█	█	█	█	█
Natural Gas	█	█	█	█	█	█	█
Coal							█
Nuclear							█
Electricity	█	█	█	█	█	█	█
Renewables	█						█
Transportation	█	█	█	█	█	█	█
Agriculture	█						█
Environment	█						█
Economy	█						█
Demography	█		█	█			█
Trade	█						█
Water	█						█
Policies	█						█

1600
from
150

Less than 50% of data sources grant reuse or republish rights to publish data with models

Model ready data not available, some examples

- Energy consumption by product by sector
- Plant capacities by technology
- National account input output by sector
- Disposable income
- Foreign direct investment data

Policy practitioners are at loss, valuable insights can't be generated by models

Sub Theme	Saudi Arabia	Bahrain	Kuwait	Oman	Qatar	UAE
Budget	█					
Capacity	█	█	█	█	█	█
Communications						
Consumption	█	█	█		█	█
Demography	█					
Emissions						
Exports						
GDP	█	█	█	█	█	█
Housing	█					
Imports	█					
Labor						
Land use	█	█	█	█	█	█
Passengers						
Price	█	█	█	█	█	█
Production	█	█	█	█	█	█
Rainfall						
Reserves	█					
Roads						
Temperature						
Trade	█					
Values	█					
Vehicles						
Wind						
Total	█	█	█	█	█	█

KAPSARC – King Abdullah Petroleum Studies and Research Center, non profit

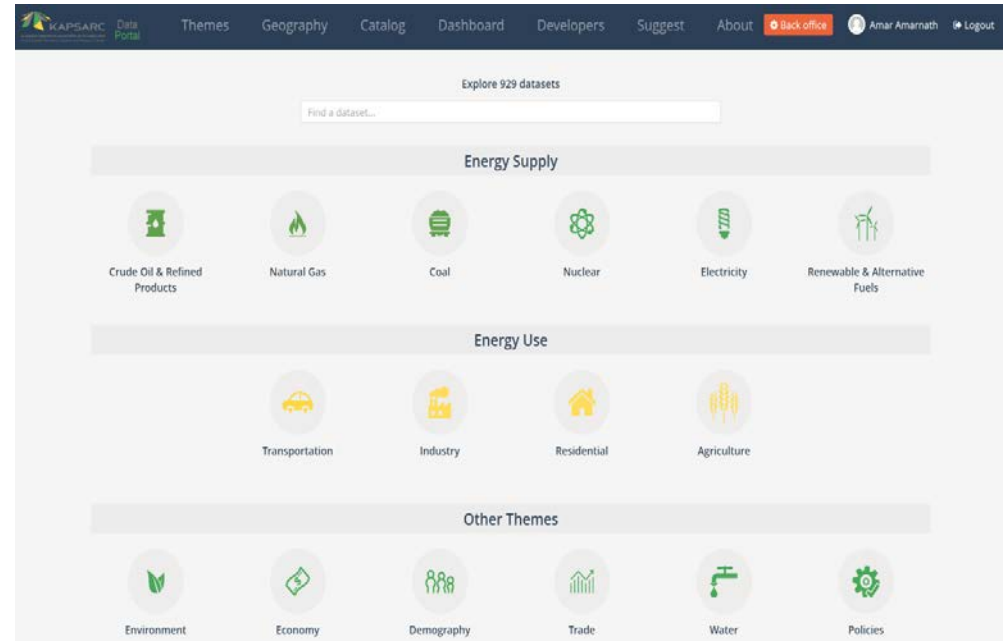
KAPSARC conducts independent research and develops insights. We are focused on finding solutions for the **most effective and productive use of energy** to enable economic and social progress in the region and across the globe.



OpenKAPSARC's data portal initiative was launched in 2016, currently in early stages of data portal development

KAPSARC energy economics data portal development

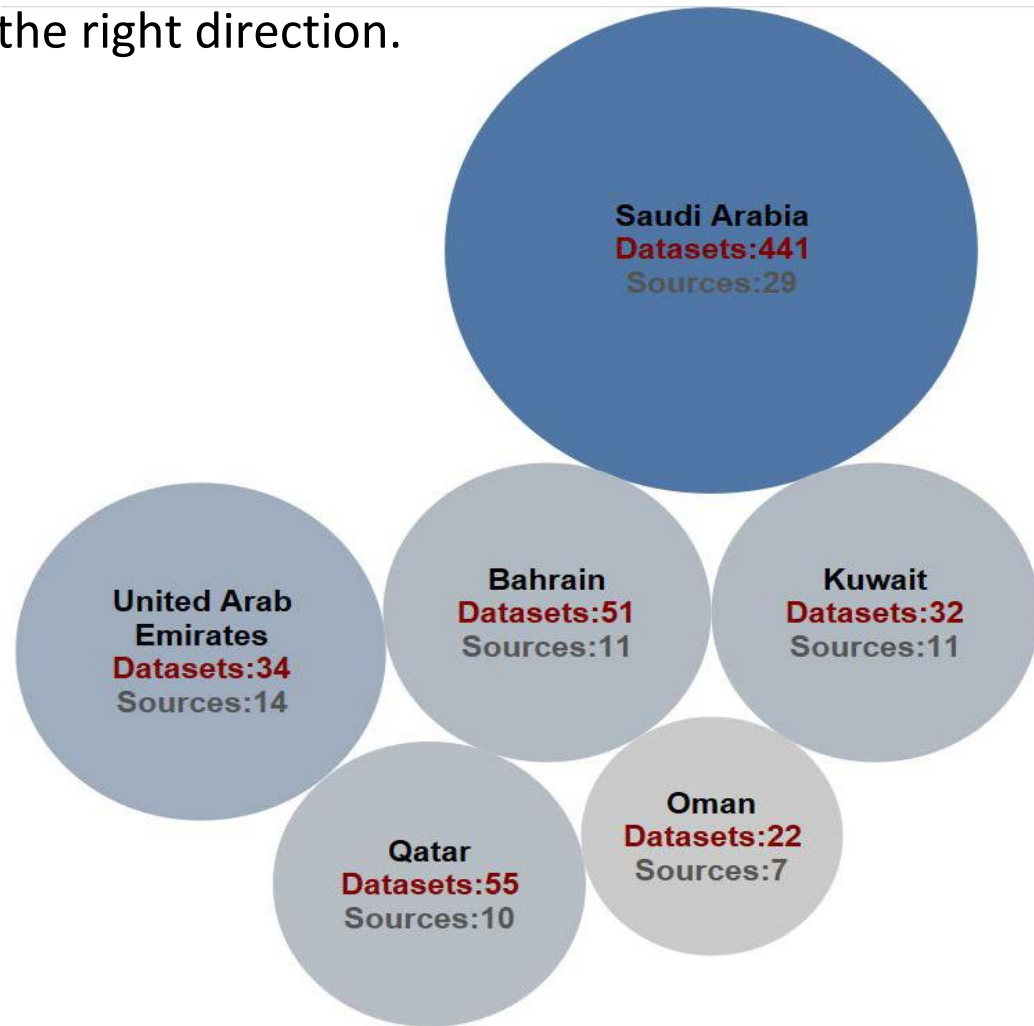
- Vision is to build a prominent data portal in the region for advancing energy research
 - Portal featuring rich regional data (GCC, India and China)
 - KAPSARC energy models supplied with transparent data
 - Data hub capability for regional data sources
 - API first data platform to publish
 - automated data flows that keeps data always current



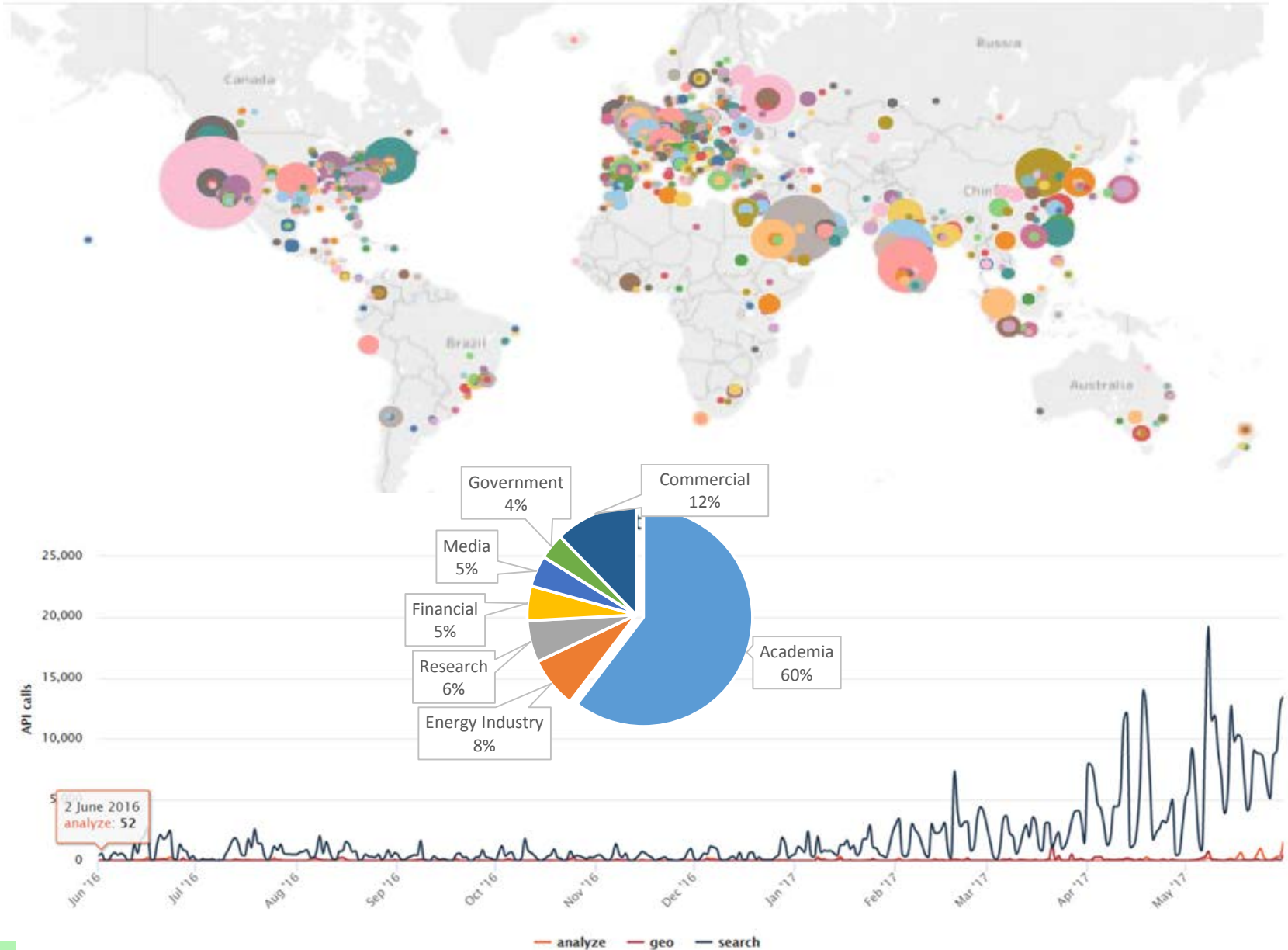
KAPSARC energy economics data portal coverage

- Critical energy data from disparate sources is now available in one easy to use portal, a step in the right direction.

- 150+ global data sources
850+ datasets
- 70+ GCC data sources
600+ datasets
- 15+ India and China data sources
80+ datasets
- Twice as much data is available
open data licenses is not well defined



In 2017, ~350K user actions on KAPSARC data portal, demand for data use is growing..



KAPSARC Open data portal features



Over 850
datasets



Simple one
box search



GCC, India, & China
data coverage



Share and
broadcast



Explore data



Publish your
open data



Make your
data social



Interactive
GIS maps



API first data,
easy data sync



User configured
visualization

Closing the gap of open data supply to meet the demand



- Ease of Use
 - publish granular data in an easy to analyze platform
 - digital open data license be minimum mandate
 - publish model ready data with open APIs
- Collaboration
 - among data sources and data aggregators
 - among data aggregators and data consumers
- Value
 - business models of data consumers
 - strive to increase value of data for effective use



Simple one
box search



Explore data



Make your
data social



Interactive
GIS maps



API first data,
easy data sync

Data quality and policymakers use

Measurable Data Quality dimensions

4Cs

currency (timely)
correctness (accuracy)
completeness
consistent

Data trust improves when data

is traceable back to source
is relevant to user context
is interpretable across systems
definitions are standard, meta data published

- Policymakers decisions are on long trends and future expectations for data.
- Forecasts can change in response to new data based on a piece of data and its importance relative to other data.
- Insights to be published after separating the signal from the noise in the data

Open Data Landscape – simplify licensing terms, adopt API first data platforms



CC0

PDDL

ODC-by

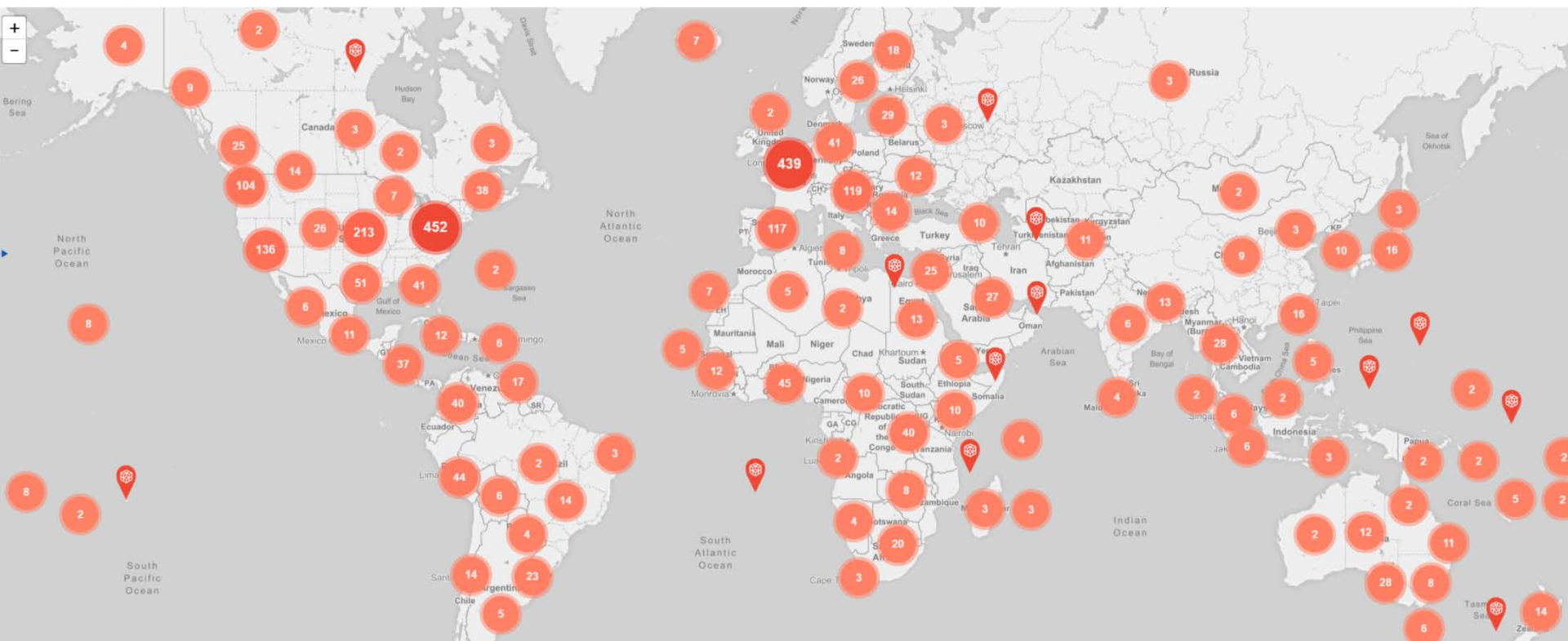
ODbl

CC-BY

CC-BY SA

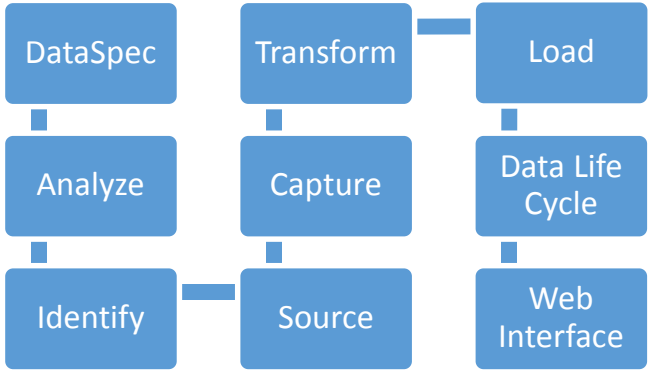
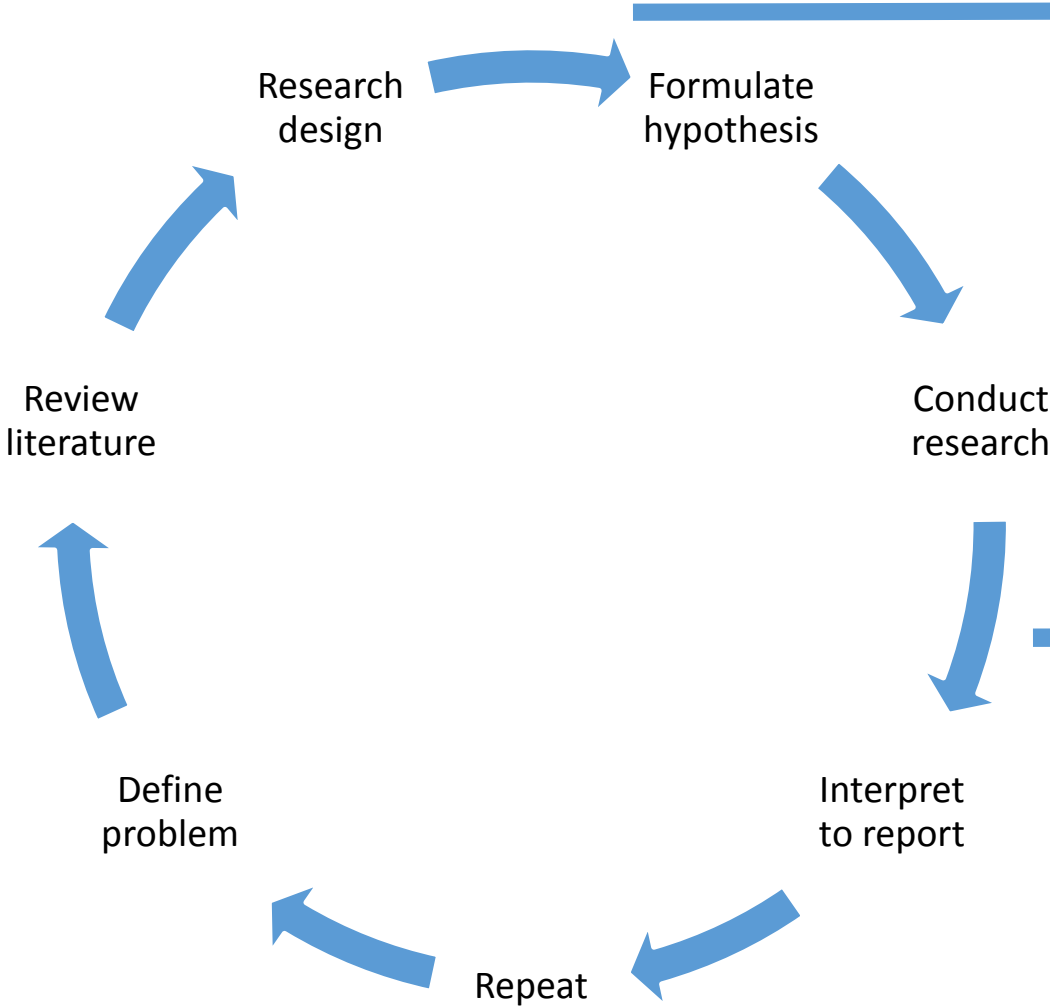
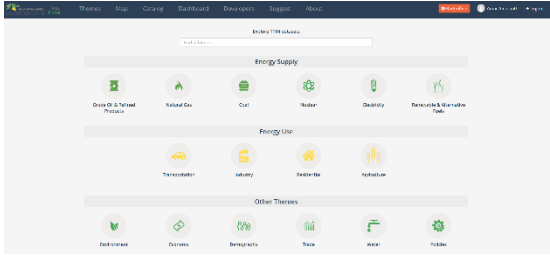
GNU FDL

Open Data Inception - 2600+ Open Data Portals Around the World



Open data use in energy research process

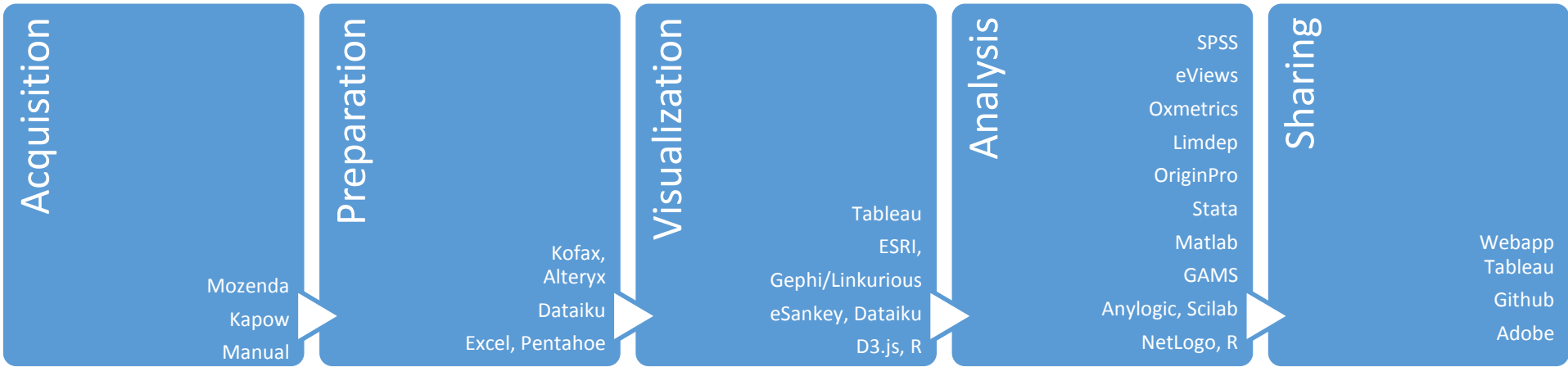
<https://datasource.kapsarc.org>



<https://www.kapsarc.org/openkapsarc>



Data Standardization Process and Data Platforms – Source to Publish



Central Repository
ODS, ESRI Server, Voyager, Neo4J, MarkLogic, SparkR, Elastic Search

Conclusion

- Middle east regional open data initiatives just started
- Policy makers are seeking insights from research community to choose optimal policy decisions, this is driving improvement in data transparency
- Leverage new data technologies, close data gap for greater good
- Wish you well on data standardization, transparency and right insights!

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