November 16, 2017

Analysis of Global Energy Usage

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Global Energy efficiency usage already challenges our lives. As the human population and economy grows, so does our demand for energy. Some energy from fossil fuels (like Coal, Peat and Oil Shale) unfortunately are not replaceable energy, yet currently 80% global energy comes from burning fossil fuels. An estimation for fossil fuel reserves is only 50-120 years. In addition, burning fossil fuels product more carbon dioxide, which contributes to global warming. NASA Earth observatory predicted the global warming for next century is at least 20 times faster. (http://developmenteducation.ie/feature/the-energy-debate-renewable-energy-cannot-replace-fossil-fuels/, April, 21, 2017)

Since then we found the impact of shortage energy for our lives, we already spent a decade to look for renewable energy and better solution for energy conservation.

Methods:

1.We will define data into following five categories in our analysis: Coal, Peat and Oil Shale/ Oil/ Natural Gas, Manufactured Gas and Recovered Gas/ Electricity and Heat/ Biofuels and Waste.

2.We will do data mining, web scraping to form the data sets which will suitable for our analysis.

3.Use R and neo4j db as our tool in our analysis. (could be more)

4.Use statistic methods, mapping in our results. (could be more)

Goals:

1.We propose to analyze the changes in global energy usage (replacement and replacement energy), per capital use and energy trading flows to better understand the progress for energy efficiency usage, we what actions need to be taken to ensure that economic stability can be maintained in the future.

2. Observation of two largest population countries China and Indian energy consuming, since they are developing theology and economic in their highest speed. We will see what energy problems than other countries. In our research of data sets, we are going to discover the shortage of their energy reservation and what strategy they use.

3.To discover which countries are energy suppliers / consumer, what relationship they bound together.

Data:

Data will include United Nations Energy Statistics 1990-2016:
https://www.kaggle.com/unitednations/international-energy-statistics/data

And the web API from www.eia.gov .

Challenges:

1. Data do not have consistency by years and category for each country.
2. There are many subcategories in the data set.
3. Topic is broad.