Multiple Grid Energy Consumption of Data Centres

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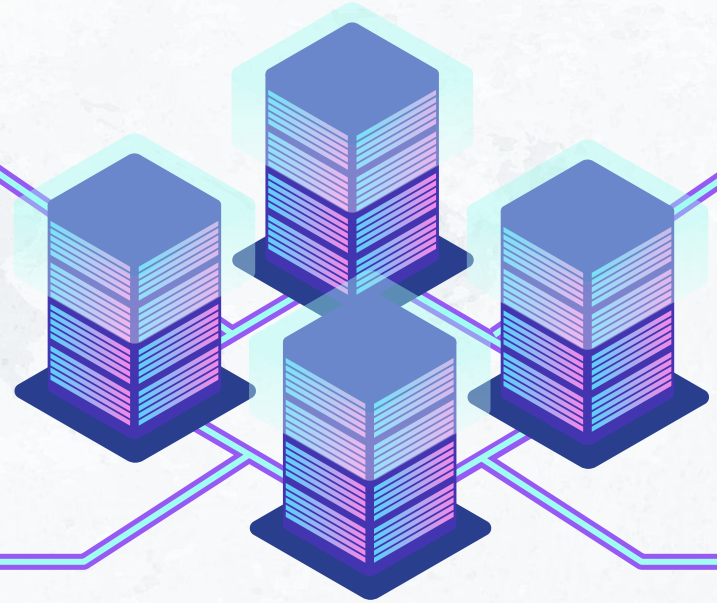
Agenda

1. Datasets

2. ER Diagram



3. Data Integration

4. Next steps

Datasets:

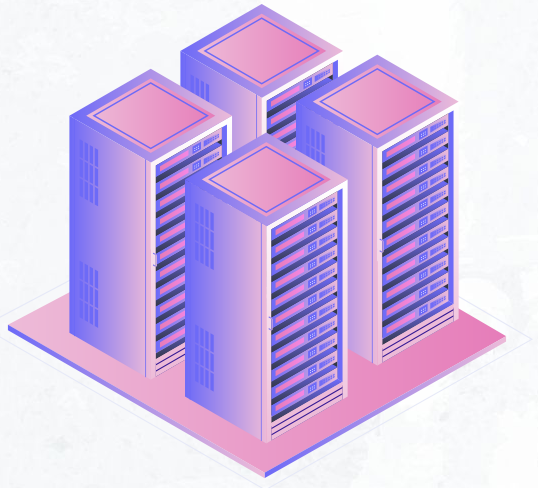
- ➔ Location table
- ➔ Fuel table
- ➔ Energy consumption per state table
- ➔ Energy production per state table
- ➔ Industrial consumption per state table
- ➔ Data Center energy consumption table

Location table

The table consists of data representing various locations along with corresponding information about their geographical coordinates, radiation levels in kilowatt-hours (kWh), average temperature in Celsius, hours of sunlight, and a unique code for the state and a unique id number.

Fuel table

Fuel table consists of 2 columns: id and Fuel (type). It is used to connect Energy consumption and Energy production tables.



Energy consumption table

It offers insights into energy consumption patterns across different states, showcasing the amounts of energy consumed from various sources such as coal, natural gas, petroleum, nuclear, conventional hydroelectric power, and other biomass. It allows for comparative analysis and assessment of energy usage trends among different regions.

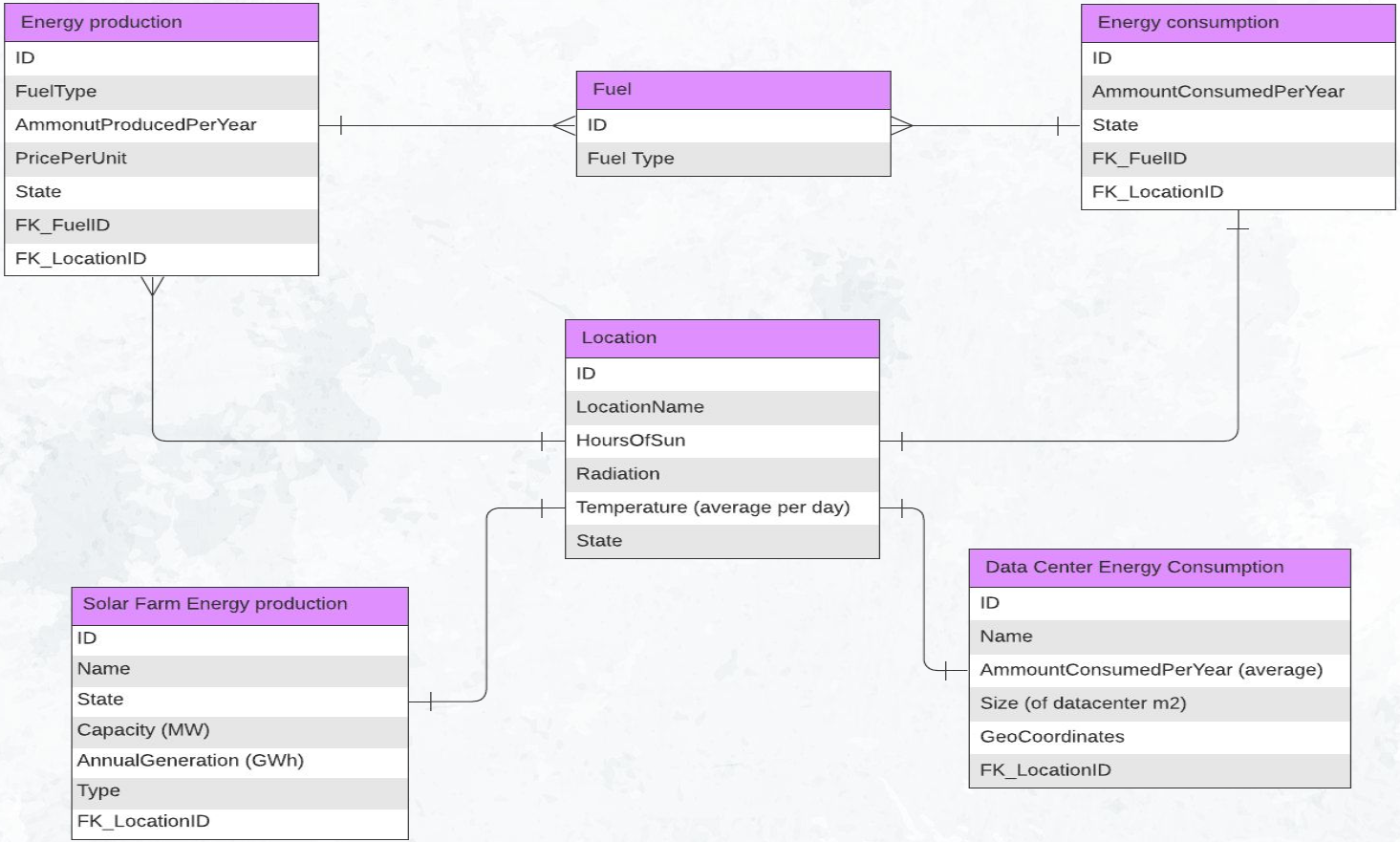
Energy production table

The energy production table contains data pertaining to the generation of energy from different sources within various states or regions. The table consists of three key columns providing information about the state, energy source, and the corresponding energy generation in megawatt-hours (MWh).

Data Center energy consumption table

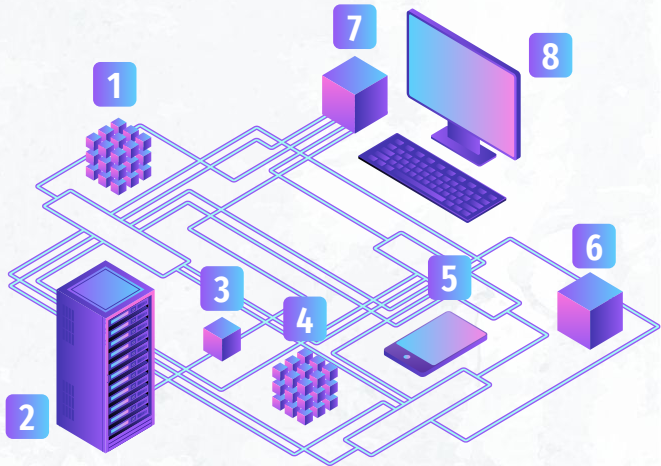
The data center energy consumption table contains information regarding the energy usage of different data centers. The table consists of several columns providing details about each data center's unique identifier, name, annual energy consumption in kilowatt-hours (kWh), size in square meters (m^2), and geographical coordinates.

Entity relationship diagram



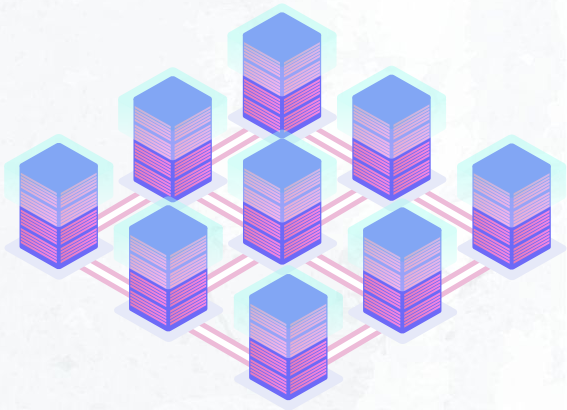
The integration

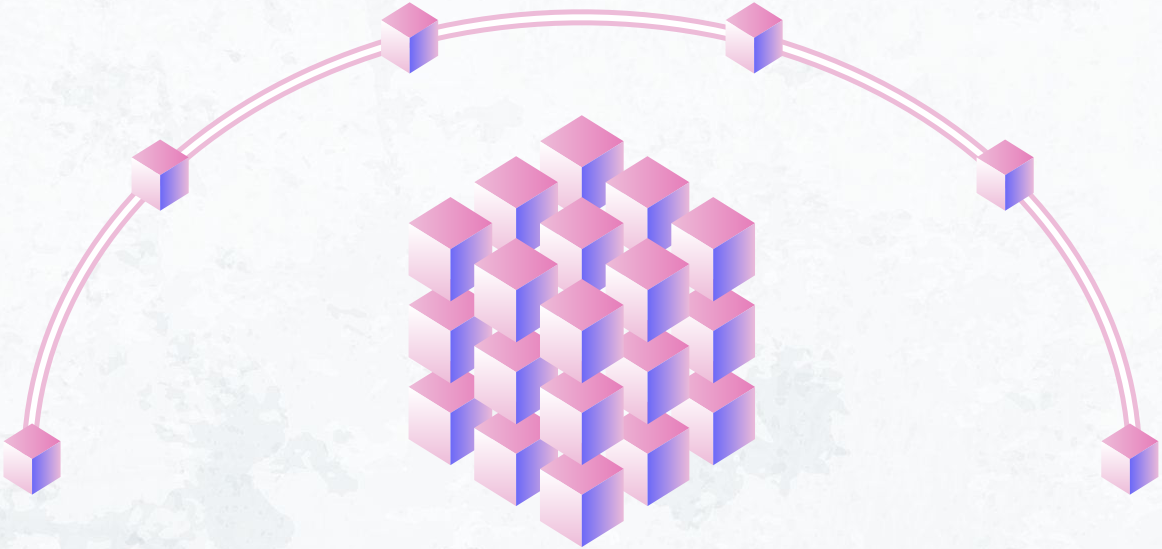
- 4/5 datasets needed to be created by hand
- One dataset was cleaned and adjusted to our needs
- Partial data cleaning was performed on other datasets
- New dataset has been added compared to the first presentation
- ER diagram was changed compared to the first presentation



Plans for the next part

- Clean existing datasets
- Adjust existing data integration
- Start preparing the showcase





Thank you for your attention!