Energy Technology
Budgets, Subsidies & Investments
Analysis
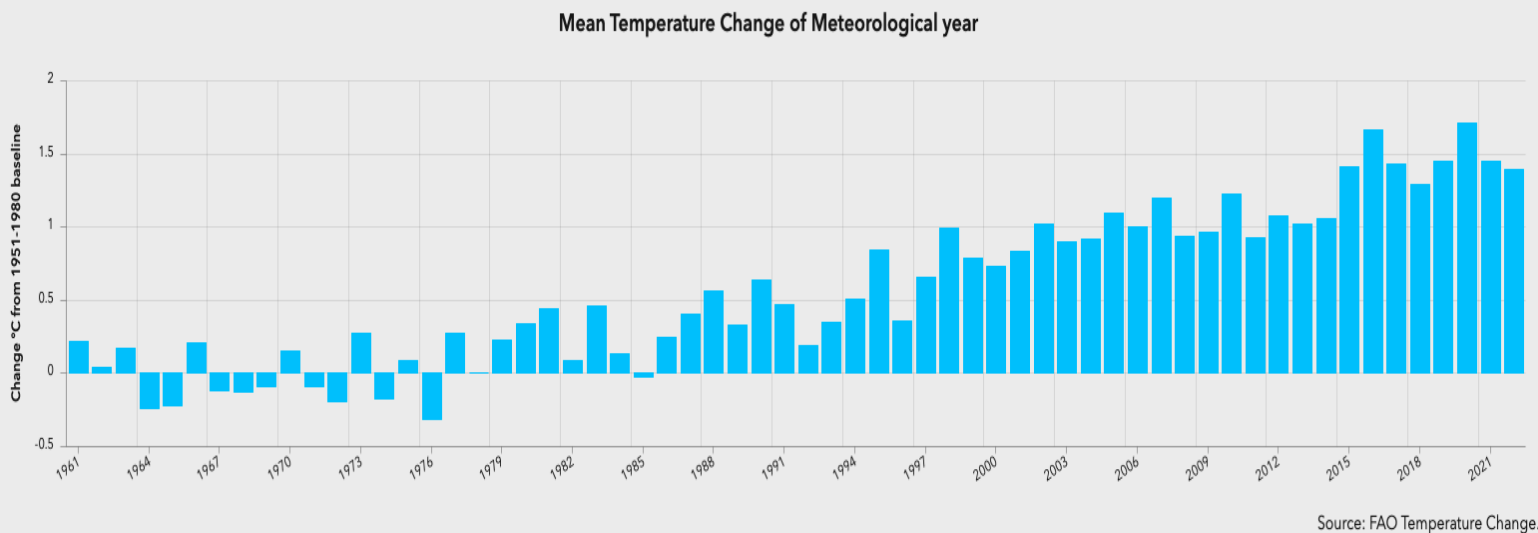
Team: **Fossilers Lodge**
Mentor: Diana
Lead: Sandeep
Hackers:

Context

Global warming is an unwanted but harsh reality and we, as society, need to get serious about the irreversible repercussions of the global temperature increase(YoY) before it's too late.

The energy sector is the source of around three-quarters of greenhouse gas emissions today and holds the key to averting the worst effects of climate change, perhaps the greatest challenge humankind has faced. Reducing global carbon dioxide (CO_2) emissions to net zero by 2050 is consistent with efforts to limit the long-term increase in average global temperatures to 1.5˚C.

Problem Statement(s)

The number of countries announcing pledges to achieve net zero emissions over the coming decades continues to grow. But the pledges by governments to date – even if fully achieved – fall well short of what is required to bring global energy-related carbon dioxide emissions to net zero by 2050.
Our aim with this project is to work towards following:

1. **Comprehensive Data Compilation:** Compile and organize data on RD&D budgets, energy investments, and subsidies across countries and energy sectors into a unified and accessible database.
2. **[Namrata+Iruoma] Investment Impact Assessment:** Analyze the impact of energy investments, including their relationship with RD&D budgets and the influence of subsidies, on the adoption of clean energy technologies and emissions reduction.
3. **[Alejandro] Cross-Country Benchmarking:** Benchmark the performance of countries in terms of investments, RD&D, and subsidies, facilitating peer learning and best practices exchange.
4. **[Mrinal] Sector-Specific Insights:** Provide sector-specific insights into RD&D budgets, investments, and subsidies, enabling targeted strategies for sectors such as renewables, fossil fuels, and energy efficiency.
5. **[Brian]**Nice to have** Subsidy Efficiency Evaluation:** Assess the efficiency of subsidies provided to different energy sectors in achieving sustainability and emissions reduction goals, offering recommendations for optimization.

Project Objective

Data Product Requirements for IEA's Energy Technology Financial Data Explorer

1. **User-Friendly Historical Data Access**: Make it easy for users to explore historical data on energy technology research, development, and deployment (RD&D) budgets. Let them journey back to 1974 effortlessly.

2. **Sector Selection Magic**: Allow users to dive deep into their areas of interest by effortlessly filtering and analyzing data based on energy technology sectors. We want them to feel like they're on a treasure hunt for insights.

3. **Discover Regional Insights**: Empower users to uncover regional spending patterns, giving them the ability to compare and contrast countries and regions effortlessly.

4. **Funding Source Clarity**: Help users see the big picture by distinguishing between different funding sources, whether it's government budgets or contributions from state-owned companies.

5. **Visualize with Ease**: Let users create beautiful and informative data visualizations, so they can tell compelling stories with the data. Data should be their canvas.

6. **Time Travel for Trends**: Allow users to hop in a time machine and track trends in energy technology investment over the years. It's like watching the evolution of technology funding.

7. **Cross-Sector Insights**: Enable users to play the detective by comparing funding across sectors. They should easily spot which sectors are thriving and which ones need more attention.

8. **Long-Term Vision**: Help users plan for the future by offering insights into long-term trends. Show them the roadmap to where investments are headed.

9. **Sector Priorities Unveiled**: Provide a magnifying glass for users to inspect funding allocations within sectors. It's like shining a spotlight on research and development priorities.

10. **Quality Assurance**: Give users confidence in the data by assuring them that it's clean, reliable, and complete. No more guessing games. Use this tool for validation- [RD&D Budget explorer](#)

11. **Stay Updated Together**: Keep things fresh by regularly updating the data. Users should feel like they're on a continuous journey of discovery. The dataset is updated twice a year once in March and another in october. We need to aim to include the October'23 data once that is available.

Architecture/Data flow
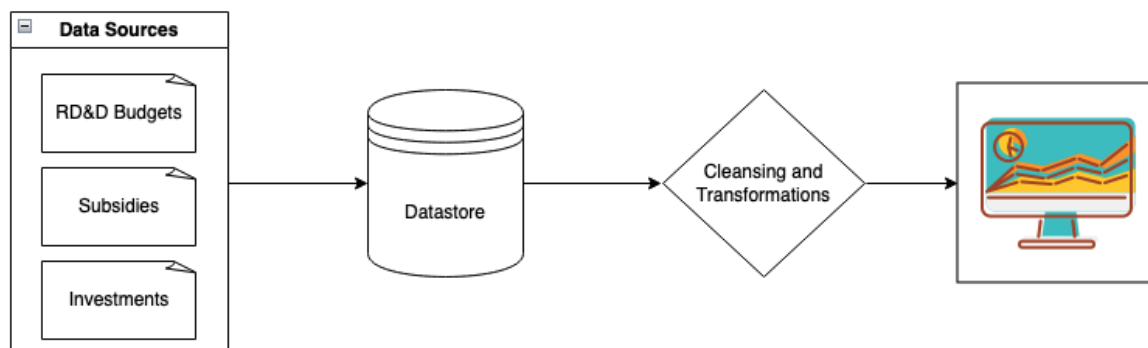
Data

- RD&D Budgets (Data is collected from central or federal government budgets, as well as the budgets of state-owned companies, for spending on a range of sectors including energy efficiency, renewables, nuclear power, fossil fuels, hydrogen and fuel cells, and more)
    - https://www.iea.org/data-and-statistics/data-product/energy-technology-rd-and-d-budget-database-2
- RD&D Budget explorer (Validation tool)
    - https://www.iea.org/data-and-statistics/data-tools/energy-technology-rdd-budgets-data-explorer
- Fossil Fuel subsidies - (Fossil fuel consumption subsidies for select countries, 2010-2021
    -)https://www.iea.org/data-and-statistics/data-product/fossil-fuel-subsidies-database
- Additional Fossil fuel Subsidy data from other sources than IEA
    - https://fossilfuelsubsidytracker.org/
    - https://ourworldindata.org/grapher/fossil-fuel-subsidies
    - https://ourworldindata.org/grapher/fossil-fuel-subsidies-gdp
    - https://ourworldindata.org/grapher/fossil-fuel-subsidies-per-capita
- Investments data from year
    - 2021- https://www.iea.org/data-and-statistics/data-product/world-energy-investment-2021-datafile
    - 2022 - https://www.iea.org/data-and-statistics/data-product/world-energy-investment-2022-datafile-2
    - 2023 - https://www.iea.org/data-and-statistics/data-product/world-energy-investment-2023-datafile-2
- Additional data sets can be found here - https://www.iea.org/data-and-statistics/data-sets

If you'd like to refer to another source (non iea) for policies, you can use this one - https://www.energypolicytracker.org/search-results/?_sfm_date_of_announcement=01012013+19082023