

Norway's Energy Story: Unveiling Insights

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Abstract

This project focuses on visualizing Norway's oil and gas production, export, and related activities using open datasets from trusted sources such as [Norwegian Petroleum](#) and [The Norwegian Offshore Directorate \(Sodir\)](#). Our goal is to provide an insightful story of Norway's energy sector through an interactive web application, highlighting its significance in the global energy market. The app will include multiple visualizations, such as bar charts, line charts, choropleth maps, heatmaps, and Sankey diagrams, each designed to present specific aspects of the data with clarity and precision.

But here's the big question: **Why should we care about Norway's oil and gas? What's at stake?**

Norway's position as a global energy leader is not just about numbers or exports. It's about understanding how one country, with a relatively small population, became a cornerstone of global energy security. It's about discovering the untold stories hidden in decades of data: the shifts, the growth, and the potential turning points that can shape the energy future of Europe and beyond.

Through this project, we're not just analyzing numbers; we're uncovering trends that define the global energy landscape, exposing insights that challenge assumptions, and sparking conversations about the sustainability and geopolitical role of oil and gas in today's world.

What is the Story That You Want to Tell?

Norway's energy story is a tale of strategy, innovation, and resilience. Here's what we aim to explore:

1. The rise of a global energy giant: How did Norway leverage its resources to become one of the world's most significant oil and gas exporters?

2. Regional dynamics: What role do the Barents Sea, North Sea, and Norwegian Sea play in shaping production?
3. The export machine: Where do Norway's petroleum products go, and how does it fuel the economies of other nations?
4. Global positioning: How does Norway compete with oil giants like Saudi Arabia, the USA, and Russia?
5. The future: Can Norway maintain its dominance as the world shifts toward renewable energy?

This story isn't just for historians or energy analysts. It's for anyone who wants to understand how energy powers the world, how it influences geopolitics, and why Norway stands at the center of it all.

Datasets

We plan to use the following datasets (or subsets thereof) for this project:

Production Data:

- 1. Total production per sea area at year-end 2023 -Annual production by fields in different seas (e.g., Barents Sea, North Sea, Norwegian Sea):**
 - Accessible from the "Per Sea Area" section of the Norwegian Petroleum website. [\[link\]](#)
- 2. Production per company in 2023:**
 - Accessible from the "per company" section of the Norwegian Petroleum website. [\[link\]](#)
- 3. Monthly production data (1971–2024):**
 - Accessible from the "Monthly production" section of the Norwegian Petroleum website. [\[link\]](#)
- 4. Total production per field at year-end 2023:**
 - Accessible from the "per field" section of the Norwegian Petroleum website. [\[link\]](#)
- 5. Production per operator in 2023:**
 - Accessible from the "per operator " section of the Norwegian Petroleum website. [\[link\]](#)

Export Data:

1. Export value of petroleum products (1971–2023):

- Accessible from the "Export value" section of the Norwegian Petroleum website. [\[link\]](#)

2. Norwegian oil deliveries in 2023, by first delivery point:

- Accessible from the "oil deliveries in 2023" section of the Norwegian Petroleum website. [\[link\]](#)

3. Norwegian net gas exports in 2023 compared to other gas exporting countries:

- Accessible from the "net gas exports" section of the Norwegian Petroleum website. [\[link\]](#)

Comparative Data:

1. Norway and the 10 largest oil producers in 2023:

- Accessible from the "oil producers" section of the Norwegian Petroleum website. [\[link\]](#)

Additional Sources:

1. Raw data from **Sodir** (The Norwegian Offshore Directorate) for detailed analysis, if necessary:

- Website: <https://www.sodir.no/en/>

Interactive Features:

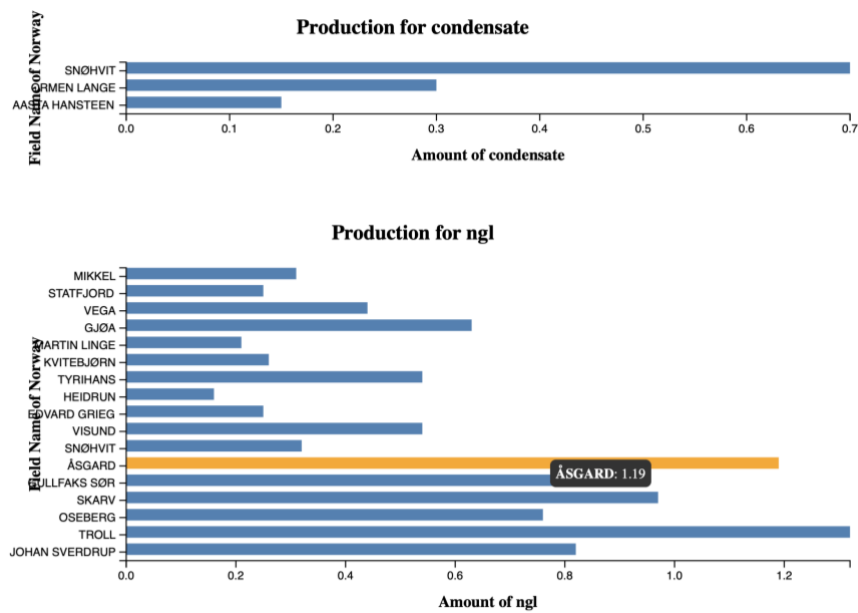
Our visualizations will include the following interactive features to enhance usability:

- **Tooltips:** Provide additional context for data points.
- **Colorbars and Legends:** Ensure clarity and readability.
- **Zoom and Pan:** For detailed exploration of large datasets (e.g., time-series charts).

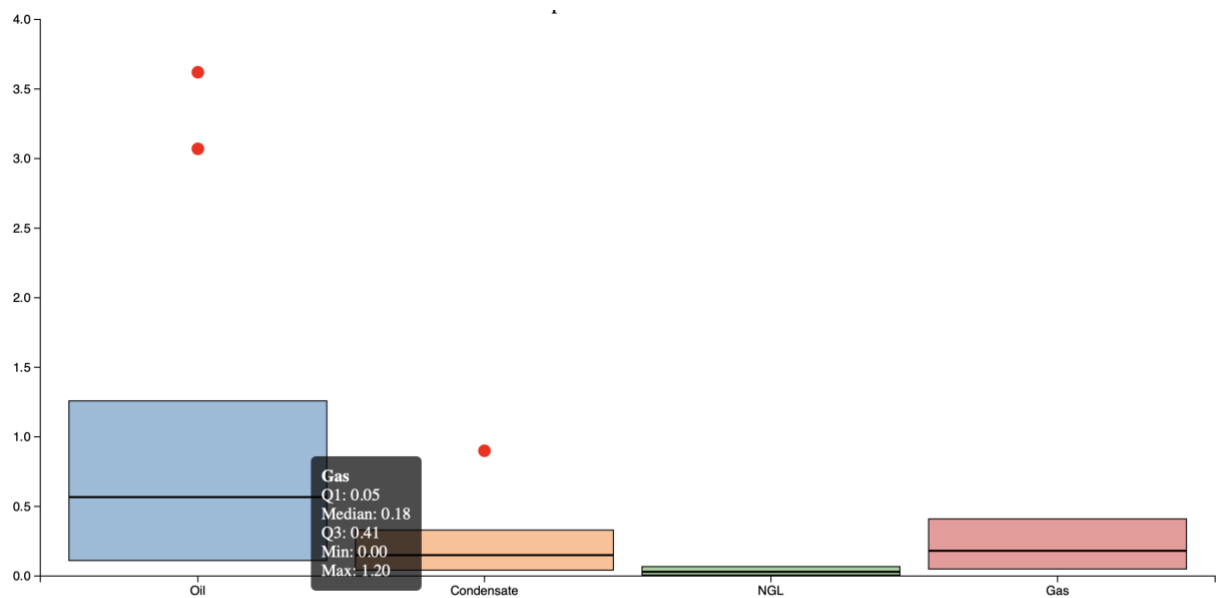
Chart Types

We propose the following visualizations, subject to revision based on team discussions and feedback:

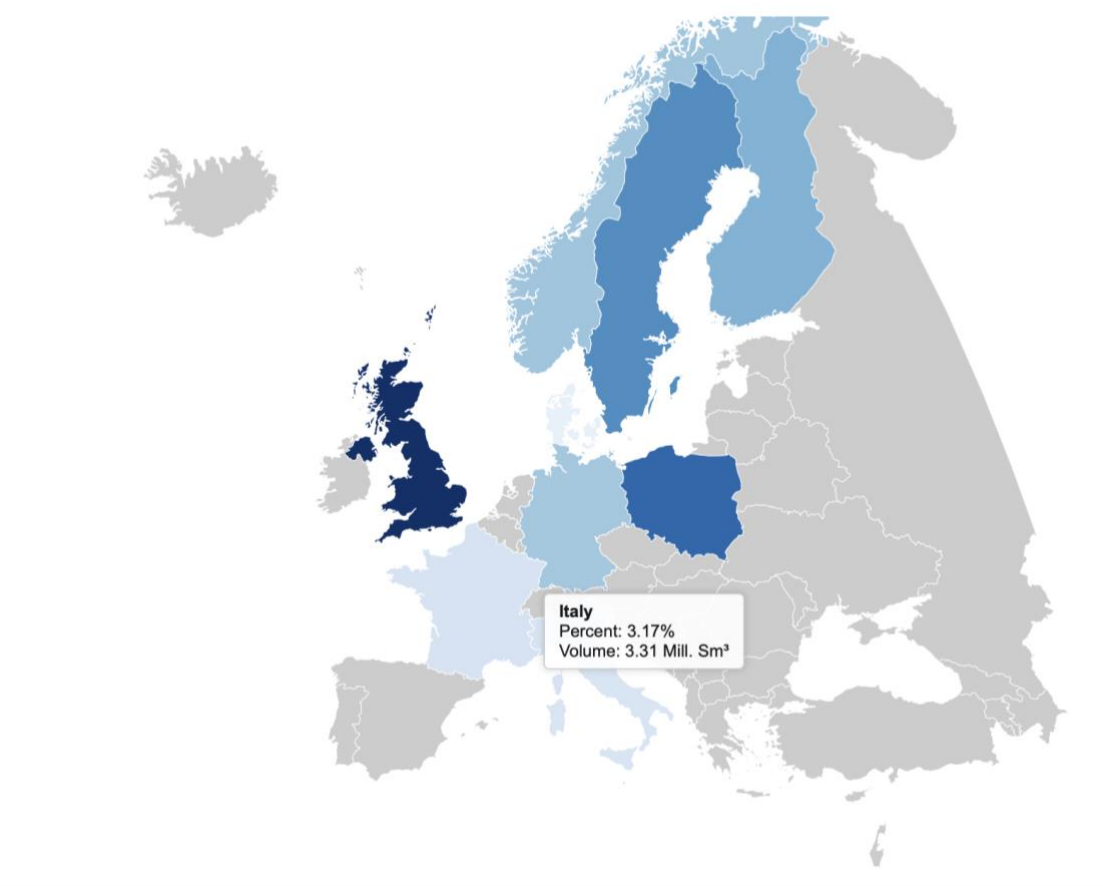
1. Bar Chart: Compare production levels across different fields.



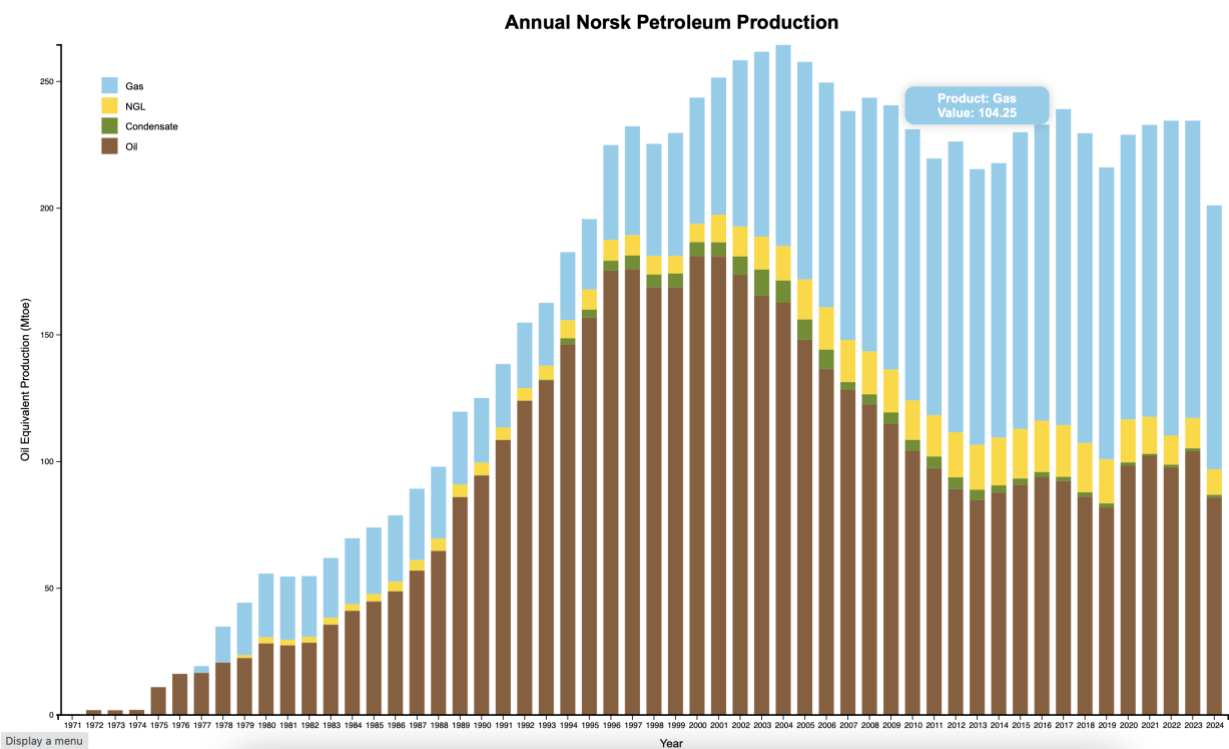
2. Box Plot: Showcase variability in production levels.



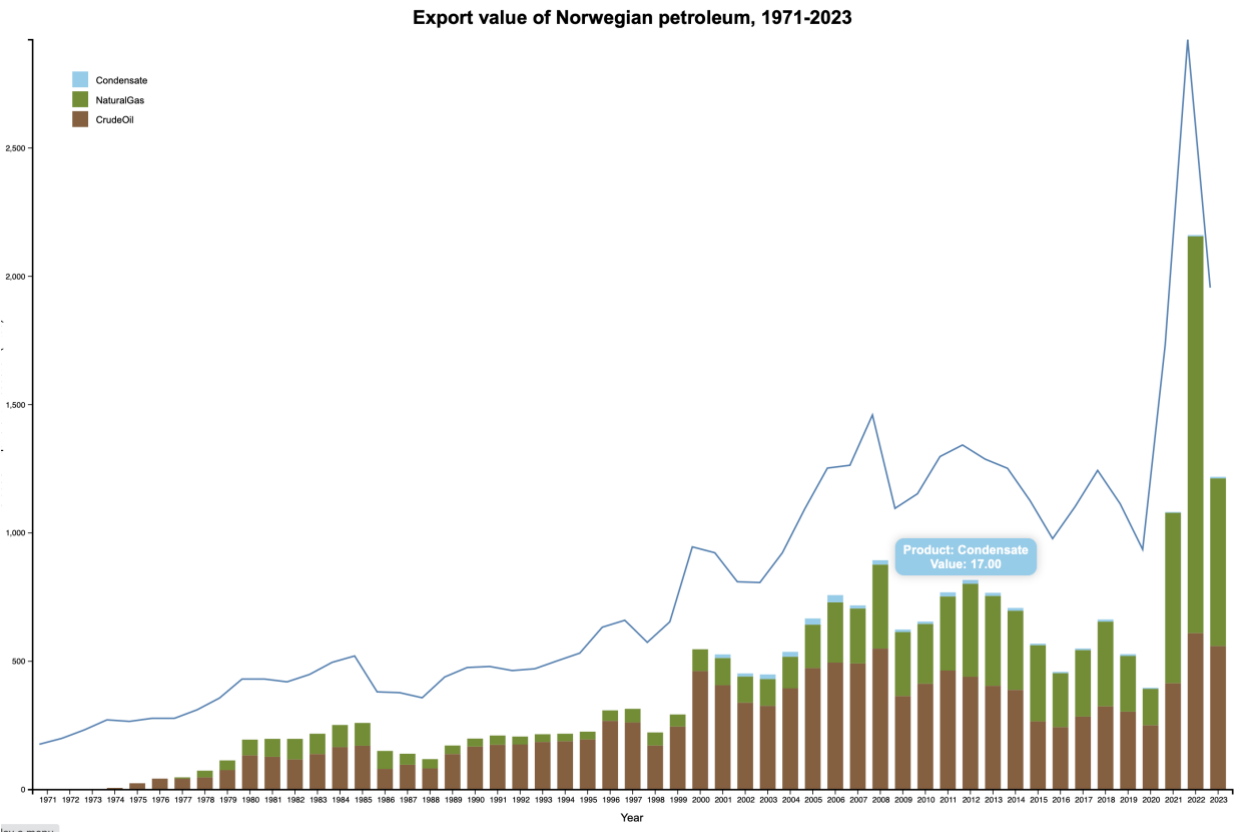
3. Choropleth Map: Highlight geographic distribution of sales.



4. Stacked Bar Chart: Show production trends and the relative contribution of different products.

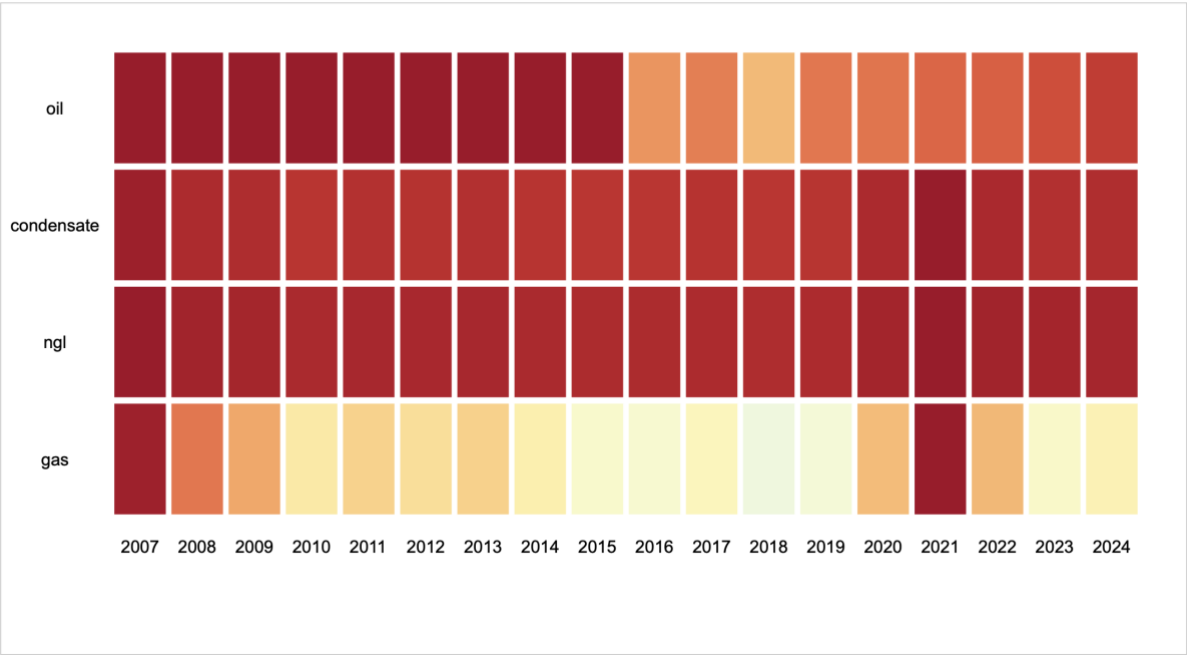


5. Line Chart: Analyze export trends over time.

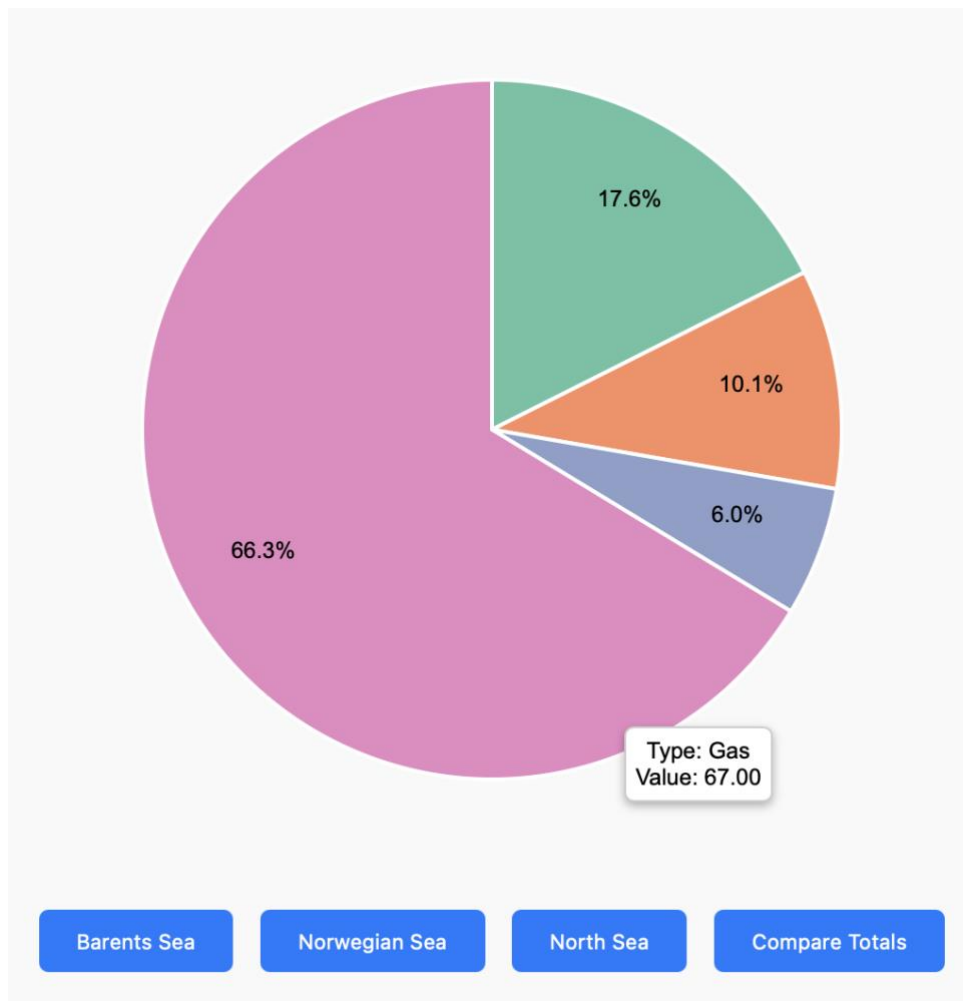


6. Heatmap: Identify production intensity in different regions.

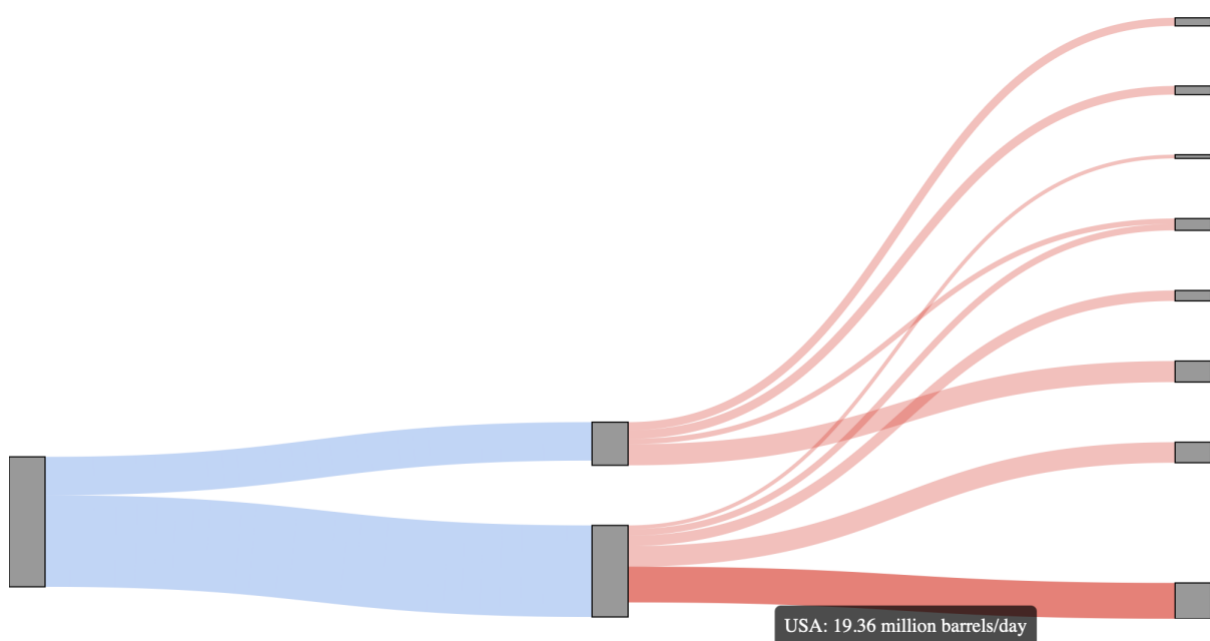
Choose a sea field:



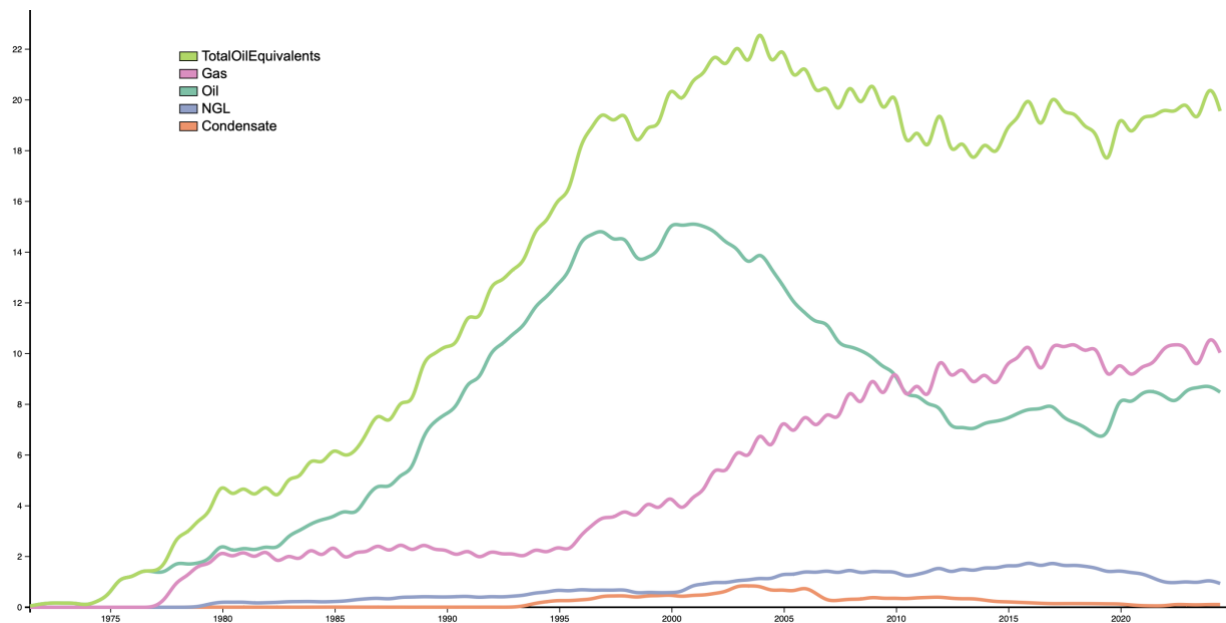
7. Pie Chart: Visualize proportional contributions.



8. Sankey Diagram: Visualize the flow of production shares.



9. Multi-Line Chart: Compare production trends across multiple products.



10. Additional Charts: To be added...

Conclusion

Our interactive web application aims to uncover the story of Norway's energy sector, from production and exports to its global impact. By combining D3.js, and open datasets, we will create a platform that enables users to explore, analyze, and learn from Norway's vast energy data. This project is not just about visualization; it's about making the complex dynamics of the energy world accessible and engaging for everyone.

GitHub:

<https://github.com/Sersoel/norway-energy-Story>