## Ideation Phase

## Brainstorm & Idea Prioritization Template

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| Date | 31 January 2025 |
| Team ID | PNT2025TMID00584 |
| Project Name | Global Energy Trends: A Comprehensive Analysis of Key Regions and Generation Modes using Power BI |
| Maximum Marks | 4 Marks |

### Step-1: Team Gathering, Collaboration, and Selecting the Problem Statement

**Objective**: Identify key areas of focus for the Power BI dashboard on global energy trends.

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**Problem Statement**:

- How can we effectively analyze global energy trends using Power BI?

- What are the key regions and energy generation modes to focus on?

- How can we visualize the transition to renewable energy sources?

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## Step-2: Brainstorming, Idea Listing, and Grouping

## Potential Ideas:

**1. Key Regions for Analysis**:
- North America
- Europe
- Asia-Pacific
- Middle East & Africa
- Latin America

**2. Energy Generation Modes:**
- Fossil Fuels (Coal, Natural Gas, Oil)
- Renewable Energy (Solar, Wind, Hydro, Geothermal, Biomass)
- Nuclear Energy

**3. Data Insights and Metrics:**
- CO2 Emissions by Region and Energy Source
- Renewable Energy Growth Trends
- Energy Consumption vs. Production
- Government Policies and Incentives Impact

**4. Visualization Techniques in Power BI:**
- Interactive Trend Graphs
- Heat Maps for Regional Analysis
- Pie Charts for Energy Mix Breakdown
- Forecasting Models for Future Energy Trends

**5. Integration of External Data Sources:**
- Global Energy Reports (IEA, EIA, World Bank)
- Real-time Energy Market Data
- Climate Impact Assessments

**Grouping & Categorization:**

- Data Acquisition & Processing (Data sources, ETL, data transformation)

- Key Metrics & Insights (Emissions, energy growth, consumption trends)

- Visualization & Reporting (Charts, dashboards, interactive elements)

- Predictive Analysis & Forecasting (Future energy trends, machine learning models)

## Step-3: Idea Prioritization

Criteria for Prioritization:

- Impact: High-impact insights for decision-making

- Feasibility: Availability of data and Power BI capabilities

- Visualization Effectiveness: Clarity and user engagement

- Relevance to Net-Zero Goals: Focus on renewable energy trends

| Idea | Impact | Feasibility | Visualization Effectiveness | Priority (High/Medium/Low) |
|---|---|---|---|---|
| CO2 Emissions by Region | High | High | High | High |
| Renewable Energy Growth Trends | High | High | High | High |
| Fossil Fuel vs Renewable Energy Mix | High | Medium | High | High |
| Regional Energy Consumption Trends | Medium | High | Medium | Medium |
| Government Policy Impact | High | Low | Medium | Low |

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## Next Steps & Action Plan

- Data Collection: Gather datasets from energy agencies and integrate them into Power BI.

- Dashboard Design: Develop key visualization components for insights.

- Testing & Refinement: Validate insights, improve UI/UX.

- Final Deployment: Share findings through an interactive Power BI dashboard.

Conclusion:
This structured approach ensures that our Power BI analysis of global energy trends is data-driven, impactful, and visually compelling. By prioritizing key metrics and effective visualization techniques, we can better understand and communicate energy transitions globally.