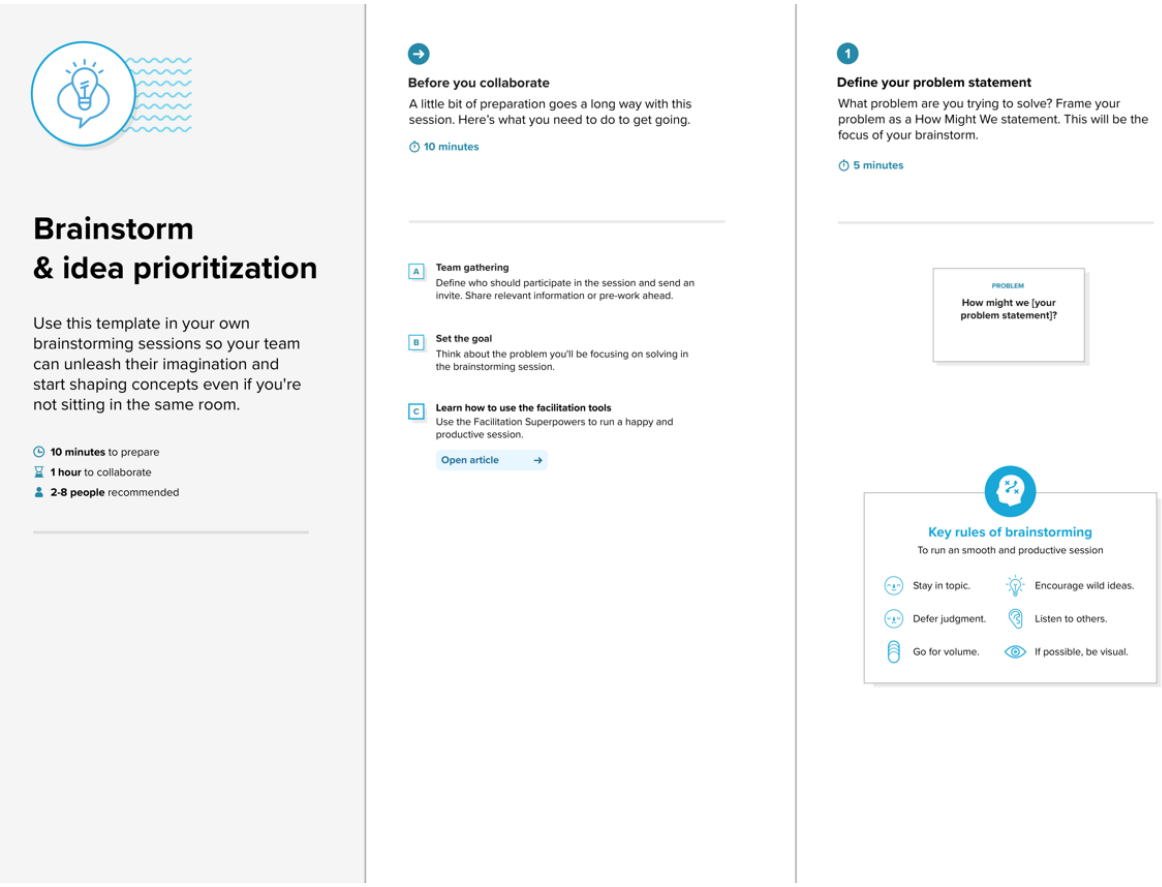
Ideation Phase
Brainstorm & Idea Prioritization Template

Date	16 April 2025
Team ID	PNT2025TMID07432
Project Name	Global-Energy-Trends-A-Comprehensive-Analysis-of-Key-Regions-and-Generation-Modes-using-Power-BI
Maximum Marks	4 Marks

Brainstorm & Idea Prioritization Template:



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

Problem Statement:

Global policymakers, researchers, and energy companies face challenges in understanding how energy generation varies across regions and over time—especially with the global transition toward renewable sources. Key factors such as geography, policy, demand, and resource availability create complex energy trends that are hard to visualize and analyze comprehensively.

Project Goal:

Utilize **Power BI** to perform a comprehensive analysis of global energy trends by:

- Comparing energy generation by mode (renewables, fossil fuels, nuclear, etc.)
- Highlighting regional patterns and shifts over time.
- Supporting data-driven energy planning and sustainability strategies.

Step-2: Brainstorm, Idea Listing and Grouping

Brainstormed Ideas for Implementation

1.Data Collection & Preparation

- Collect global energy generation data from trusted sources (e.g., IEA, World Bank, national databases).
- Include attributes like region, year, energy mode, total generation, and growth rates.
- Clean and normalize datasets for consistency across regions and sources.
- Use Power Query for importing, merging, and transforming data.

2.Data Analysis & Key Metrics

- Compare energy generation by mode across different regions and over time.
- Analyze:
    - Growth trends in renewables vs. fossil fuels
    - Regional dependence on specific energy sources
    - Top energy-producing and consuming countries
- Create DAX measures for:
    - Total generation per region
    - Year-on-year growth
    - Renewable vs. non-renewable share

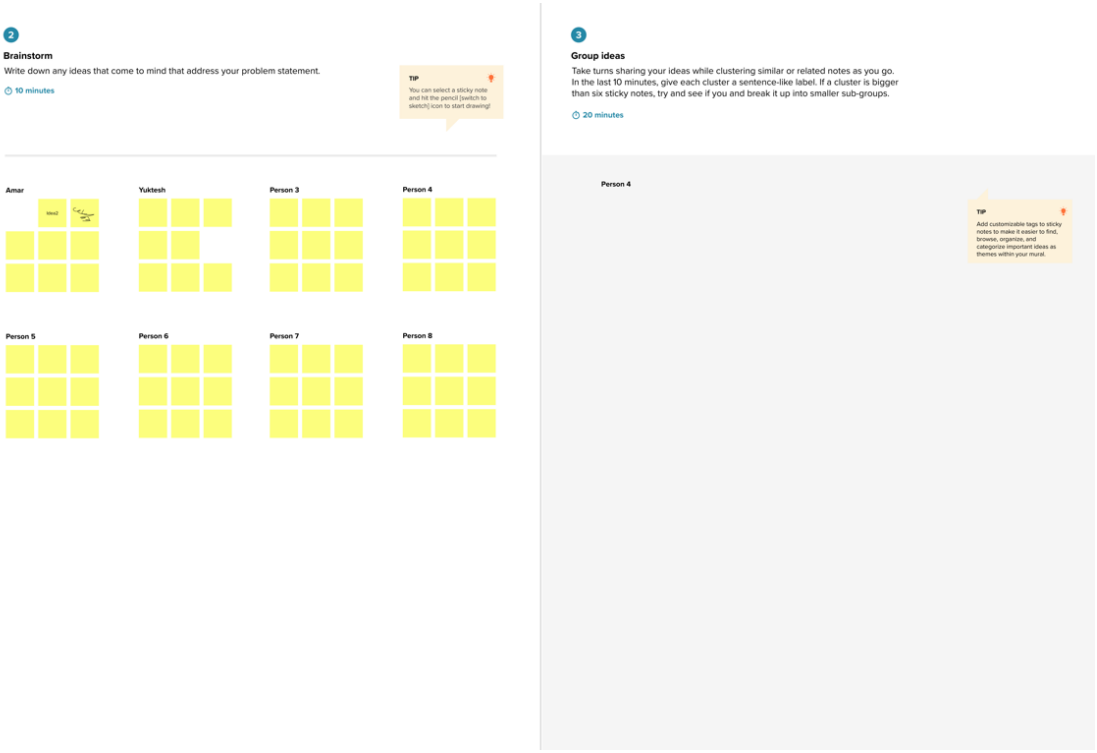
4.Visualization & Dashboard Creation

- **Line Chart**:
  Energy Generation over Time (by Region or Energy Mode)
- **Stacked Area Chart**:
  Renewable vs. Non-renewable Share over Time

- **Map Visual**:
  Global distribution of energy generation (colored by energy type or total volume)
- **Bar Chart**:
  Top 10 Countries by Energy Generation (segmented by mode)
- **Decomposition Tree**:
  Factors contributing to energy trends (region → energy mode → year)
- **Card Visuals**:
    - Total Global Energy Generation
    - % from Renewables
    - Region with Highest Renewable Adoption

5.Predictive Insights & Business Impact

- Project future energy trends using linear projections or historical growth patterns.
- Provide region-specific recommendations:
    - Emerging leaders in renewable energy
    - Areas heavily reliant on fossil fuels
- Help energy companies and governments:
    - Align with global sustainability goals
    - Plan energy transitions and investments



Step-3: Idea Prioritization

Idea	Priority Level	Reason for Priority
Data Cleaning & Transformation	High	Essential for accurate insights and consistency across countries/regions
Line Chart (Energy Trends over Time)	High	Clearly shows historical trends and shifts across energy modes
Stacked Area Chart (Renewable vs Non-renewable)	High	Highlights global sustainability progress and energy mix changes
Map Visual (Regional Distribution)	High	Offers geographic perspective on energy generation patterns
Bar Chart (Top 10 Countries by Generation)	High	Easy comparison across leading nations by energy output
Decomposition Tree (Energy Trend Factors)	High	Breaks down regional/mode-wise contributors to trends
Card Visuals (KPIs: Total Gen, % Renewables, Top Region)	High	Quick snapshot of key global energy metrics
Predictive Insights (Growth Forecasting)	Medium	Adds future-looking value but depends on quality time series data
Real-Time Data Feeds / Live Dashboard	Low	Requires APIs or streaming sources; better suited for future version
Advanced AI-based Forecasting	Low	Needs in-depth modeling and larger datasets for accurate projections

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Prioritize

Your team should all be on the same page about what's important moving forward. Place your ideas on this grid to determine which ideas are important and which are feasible.

20 minutes