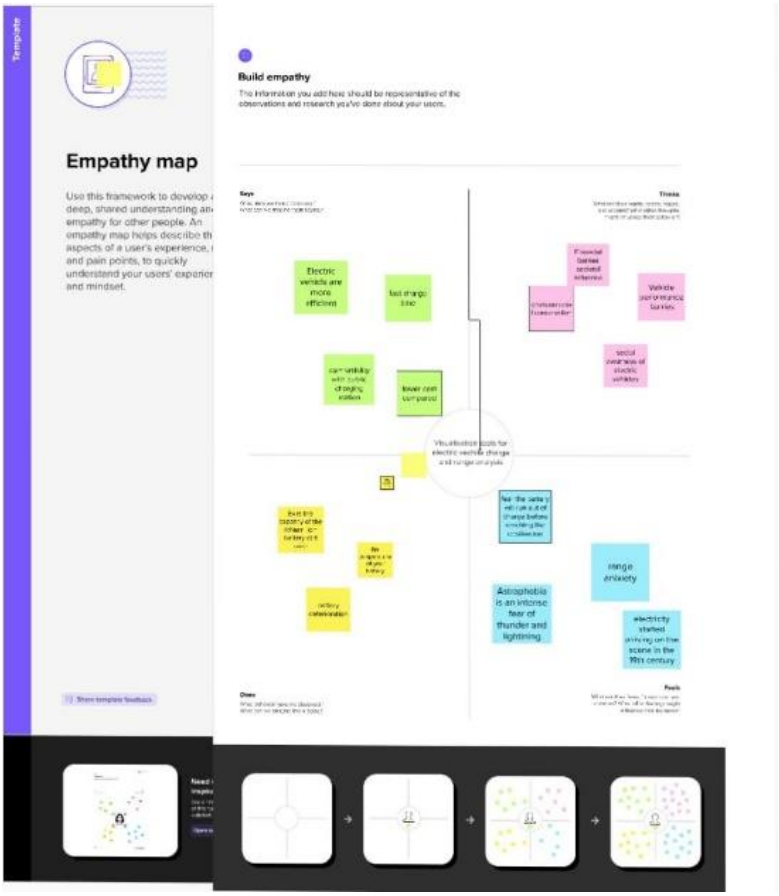
**INTRODUCTION**:

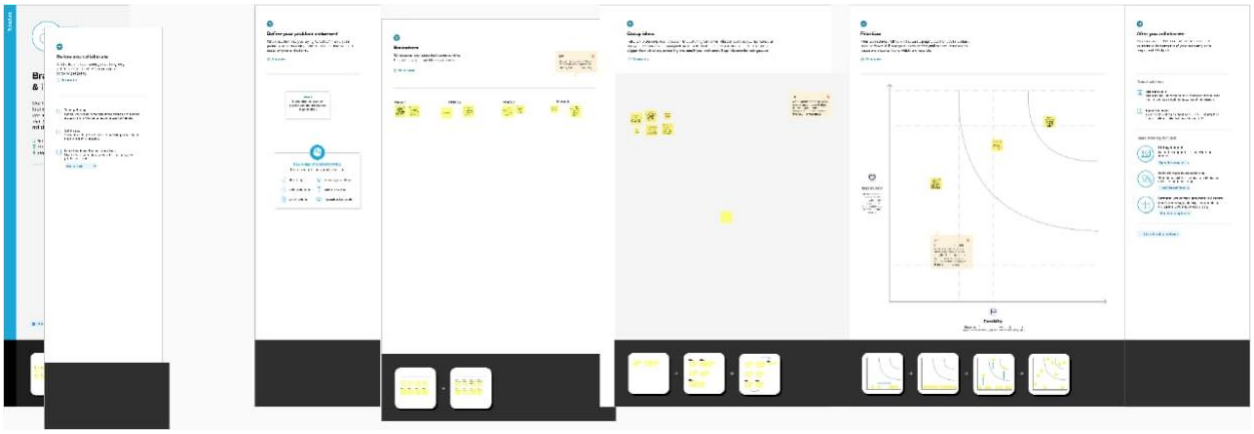
- **OVERVIEW**:
  - Analysis of large-scale electric vehicles charging behavior using Data visualization.
  - This tool may be useful for researches and companies involved in the market, municipalities and planners, and other stakeholders.
- **PURPOSE:**
  - Electric vehicles use electricity to charge their batteries instead of using fossil fuels like petrol or diesel.
  - Electric vehicles are more efficient and that combined with the electricity cost means that charging an electric vehicle is cheaper than filling  or diesel for your travel requirements problem.

**DEFINITION & DESIGN THINKING**:

- **EMPATHY MAP:**



❖ **IDEATION & BRAINSTORMING MAP:**



**RESULT:**

**ADVANTAGES & DISADVANTAGES:**

- **ADVANTAGES:**

  - Easily sharing informations.
  - Interactualy explore opportunities.
  - Visualize patterns and relationships.
  - By charging frequently, reduces the emissions that add environmental change and smog, improving public health and reducing ecological damage.
  - Charging your EV sustainable power.
  - Frequency regulation.
  - Voltage regulation
  - The impact of EVs discharging on the grid economy.
  - Reduction of peak loads.

- **DISADVANTAGES:**

  - The overloading of components.
  - Power quality.
  - Air pollution has adverse effect on human health. Create more emissions.
  - The raw material for making the car have to be mined, and the process of mining creates a lots of greenhouse gases.
  - Then the raw materials have to be refined before they can be used which emits more greenhouse gas.

**APPLICATIONS:**

- Building sustainable cities and communities.
- EVS is significant for the development of EVs. Sustainable transport is an important part.
- Many countries have taken measures promote the development of EVS.
- Renewable energy storage.
- Wearable technology.

**CONCLUSION:**

- Many opportunities are being created for large and small Industries as a result of vehicle decorbanization.
- The vehicle that can be powered by an electric motor that draws electricity from a battery and is capable of being charged from an external source and have an electric motor instead of an internal combustion engine.
- The new EVs are combined electrical storage and propulsion Systems with electronic sensors, controls, and actuators,Integrated closely with software, secure data transfer to form a comprehensive solution.

**FUTURE SCOPE:**

- Most Indian buyers believe that an electric vehicle will be ready by 2023, but the majority also believe that it would no longer be available until 2025.
- Consumers in India are looking for a lower price for EVs than those in other countries, with the global average tipping price for EVS being $36,000.
- By 2022, India GDP is predicted to increase by a staggering 25%. The best aspect is that, in addition to decreasing pollution, EVs can reduce oil imports by $60 billion by 2030.
- The EV charging station market Is expected to grow 5 to 7 times in the next 5 years. It was valued at 5 billion dollors in 2020 and optimistic predictions see it reach around 35 billion by 2026, which would make EVS represent 15% of all car sales worldwide within 5 years.

**APPENDIX:**