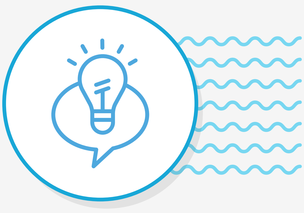
Template

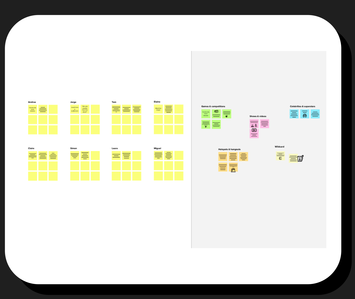


Brainstorm & idea prioritization

Use this template in your own brainstorming sessions so your team can unleash their imagination and start shaping concepts even if you're not sitting in the same room.

- **10 minutes** to prepare
- **1 hour** to collaborate
- **2-8 people** recommended

Share template feedback



Need some inspiration?

See a finished version of this template to kickstart your work.

Open example →

Before you collaborate

A little bit of preparation goes a long way with this session. Here’s what you need to do to get going.

10 minutes

A **Team gathering**
Define who should participate in the session and send an invite. Share relevant information or pre-work ahead.

B **Set the goal**
Think about the problem you'll be focusing on solving in the brainstorming session.

C **Learn how to use the facilitation tools**
Use the Facilitation Superpowers to run a happy and productive session.

Open article →

1

Define your problem statement

What problem are you trying to solve? Frame your problem as a How Might We statement. This will be the focus of your brainstorm.

5 minutes

PROBLEM

How might we predict the energy output of wind turbine based on weather condition?

Key rules of brainstorming

To run an smooth and productive session

- Stay in topic.
- Defer judgment.
- Go for volume.
- Encourage wild ideas.
- Listen to others.
- If possible, be visual.

2

Brainstorm

Write down any ideas that come to mind that address your problem statement.

10 minutes

TIP

You can select a sticky note and hit the pencil [switch to sketch] icon to start drawing!

Renuka Devi M

- Check the direction and speed of wind in different weather conditions.
- Calculate the output energy of the wind turbine in accordance with the frequency of wind speed.
- Look for the number of wind turbines in the windfarm and calculate its existing energy output.
- Analyze the model of the wind turbine.
- The diameter of the rotor of the wind turbine plays a major role in output energy.
- Analyze the performance of the wind turbine.
- Check the height of the wind mill and determine its output.
- Changing climate condition is primarily noted to calculate the output energy.
- Past climate conditions of the wind farms can also been used in the analysis of energy prediction.

Princy Mol Joseph

- **Weather updating table for effective analyse.**
- **Provide extra idea about the energy output for a certain period (Annually) for future use.**
- **Development of a Monte Carlo simulation tool to minimize pollutants emissions.**
- **While forecasting considers Electrical transients, over current, Over voltage conditions.**
- **Factors that influence power output-WIND SPEED, AIR DENSITY BLADE RADIUS, TOWER HEIGHT, ROTOR AREA.**
- **Adequate dispatch of the classical generation with wind power and under constraints.**
- **Performance and thrust forces predicted with reasonable accuracy.**
- **For accuracy confirmation, take feedback (Online form filling) from the local area people.**
- **For better understanding create a GRAPH of energy output w.r.t Time.**

Preethi S

- **It is better to store the dataset in a cloud.**
- **The model obtained for energy prediction gives a very reliable prediction of the energy output for newly supplied weather data.**
- **We predict the energy output with accuracy up to 80%.**
- **Fitted parameter distributions vary depending on average rate time.**
- **RETScreen simulation of the power plant shows that about 23.260 GWh of electricity can be generated in a year if one axis tracking method is employed.**
- **Empirical data and experience presented.**
- **Errors in predicted wind speed and power density quantified across different terrains.**
- **CFD modelling of turbine flow gives 83% as peak aerodynamic efficiency.**
- **The adsorption chiller can be powered by hot water of 55 °C.**

Sivapriya S

- **Wind energy plays an increasing role in the supply of energy world wide**
- **We report on the correlation of the different variables for the energy output.**
- **Uncertainty of the measuring instrument is analyzed in resource assessment.**
- **Assessments based on 10 min averages lead to a resource underestimation.**
- **Presently PV electricity is 30.8% more expensive than grid electricity**
- **An analytic analysis of closed-loop stability and of the convergence and bias properties of the estimator is provided.**
- **Predicted wind speeds compared to long-term measurements at 38 UK sites.**
- **The turbine is symmetrical with respect to a plane perpendicular to its axis of rotation**
- **Solar collector efficiency can reach 0.5 when the hot water temperature is 125 °C.**

Sri Gayathri Devi

- Forecasting the weather condition prior applying the inputs
- Providing inputs like wind speed, wind direction etc
- Forming a theoretical power curve.
- Analyzing the important parameters and correlation of output.
- Checking the efficiency and performance of the turbines.
- Controlling the generator speed, rotation angle, angle of blades.
- Using effective power control mechanism.
- Using larger rotor diameters in order to increase the efficiency.
- Calculating the output power constantly

3

Group ideas

Take turns sharing your ideas while clustering similar or related notes as you go. Once all sticky notes have been grouped, give each cluster a sentence-like label. If a cluster is bigger than six sticky notes, try and see if you and break it up into smaller sub-groups.

20 minutes

Weather Condition

Check the direction and speed of wind in different weather conditions.

Calculate the output energy of the wind turbine in accordance with the frequency of wind speed.

The model obtained for energy prediction gives a very reliable prediction of the energy output for newly supplied weather data.

The adsorption chiller can be powered by hot water of 55 °C.

Forecasting the weather condition prior applying the inputs

Output Energy

Look for the number of wind turbines in the windfarm and calculate its existing energy output.

The diameter of the rotor of the wind turbine plays a major role in output energy.

Adequate dispatch of the classical generation with wind power and under constraints.

We report on the correlation of the different variables for the energy output.

Calculating the output power constantly

Hassle Free

Development of a Monte Carlo simulation tool to minimize pollutants emissions.

RETScreen simulation of the power plant shows that about 23.260 GWh of electricity can be generated in a year if one axis tracking method is employed.

Errors in predicted wind speed and power density quantified across different terrains.

Wind energy plays an increasing role in the supply of energy world wide

Solar collector efficiency can reach 0.5 when the hot water temperature is 125 °C.

Using effective power control mechanism.

TIP

Add customizable tags to sticky notes to make it easier to find, browse, organize, and categorize important ideas as themes within your mural.

Wind Turbine

Analyze the model of the wind turbine.

Analyze the performance of the wind turbine.

Check the height of the wind mill and determine its output.

Predicted wind speeds compared to long-term measurements at 38 UK sites.

The turbine is symmetrical with respect to a plane perpendicular to its axis of rotation

Checking the efficiency and performance of the turbines.

Controlling the generator speed, rotation angle, angle of blades.

Using larger rotor diameters in order to increase the efficiency.

Dataset Analysis

Changing climate condition is primarily noted to calculate the output energy.

Past climate conditions of the wind farms can also been used in the analysis of energy prediction.

Weather updating table for effective analyse.

Provide extra idea about the energy output for a certain period (Annually) for future use.

For accuracy confirmation, take feedback (Online form filling) from the local area people.

An analytic analysis of closed-loop stability and of the convergence and bias properties of the estimator is provided.

Influencing Factors

While forecasting considers Electrical transients, over current, Over voltage conditions.

Factors that influence power output-WIND SPEED, AIR DENSITY BLADE RADIUS, TOWER HEIGHT, ROTOR AREA.

Assessments based on 10 min averages lead to a resource underestimation.

Providing inputs like wind speed, wind direction etc

Uncertainty of the measuring instrument is analyzed in resource assessment.

Performance Analysis

Performance and thrust forces predicted with reasonable accuracy.

For better understanding create a GRAPH of energy output w.r.t Time.

Empirical data and experience presented.

Presently PV electricity is 30.8% more expensive than grid electricity

Forming a theoretical power curve.

Cloud

It is better to store the dataset in a cloud.

Accuracy

We predict the energy output with accuracy up to 80%.

Fitted parameter distributions vary depending on average rate time.

CFD modelling of turbine flow gives 83% as peak aerodynamic efficiency.

Analyzing the important parameters and correlation of output.

Checking the efficiency and performance of the turbines.

4

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

Importance

If each of these tasks could get done without any difficulty or cost, which would have the most positive impact?

Check the direction and speed of wind in different weather conditions.

Forecasting the weather condition prior applying the inputs

We report on the correlation of the different variables for the energy output.

Using effective power control mechanism.

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Look for the number of wind turbines in the windfarm and calculate its existing energy output.

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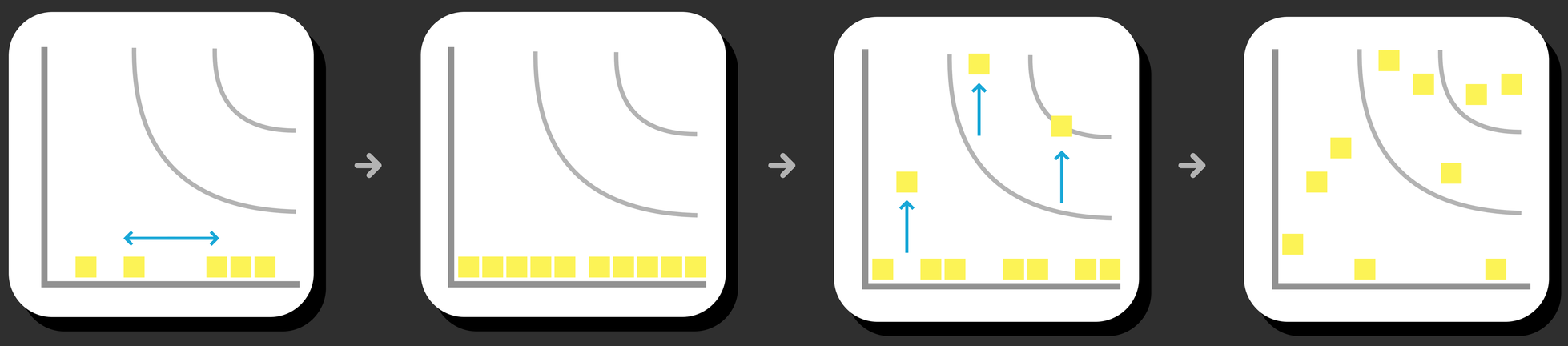
Empirical data and experience presented.

TIP

Participants can use their cursors to point at where sticky notes should go on the grid. The facilitator can confirm the spot by using the laser pointer holding the **H key** on the keyboard.

Feasibility

Regardless of their importance, which tasks are more feasible than others? (Cost, time, effort, complexity, etc.)



After you collaborate

You can export the mural as an image or pdf to share with members of your company who might find it helpful.

Quick add-ons

A **Share the mural**
Share a view link to the mural with stakeholders to keep them in the loop about the outcomes of the session.

B **Export the mural**
Export a copy of the mural as a PNG or PDF to attach to emails, include in slides, or save in your drive.

Keep moving forward

Strategy blueprint
Define the components of a new idea or strategy.

Open the template →

Customer experience journey map
Understand customer needs, motivations, and obstacles for an experience.

Open the template →

Strengths, weaknesses, opportunities & threats
Identify strengths, weaknesses, opportunities, and threats (SWOT) to develop a plan.

Open the template →

Share template feedback