# Stochastic Energy Systems with Mechanism Choices

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## 01

## Introductions

Energy System Fundamentals

## Background

## Energy systems of consumer communities

An energy system used for supplying energy to a group of energy consumer entities, all energy consumptions are in a First-In-First-Out order.

## Examples of Such energy systems

e.g., power plant of an apartment, where each room requires energy supply equally.

## Two parts of energy systems' cost origins

- 1. Energy consumption spending (More energy consumption, more cost)
- 2. Energy supply congestion spending (More waiting supplies, most cost)



## —Someone Famous

"This is a quote, words full of wisdom that someone important said and can make the reader get inspired"







# 98,300,000

Big numbers catch your audience's attention

## 9h 55m 23s

Jupiter's rotation period

333,000

The Sun's mass compared to Earth's

386,000 km

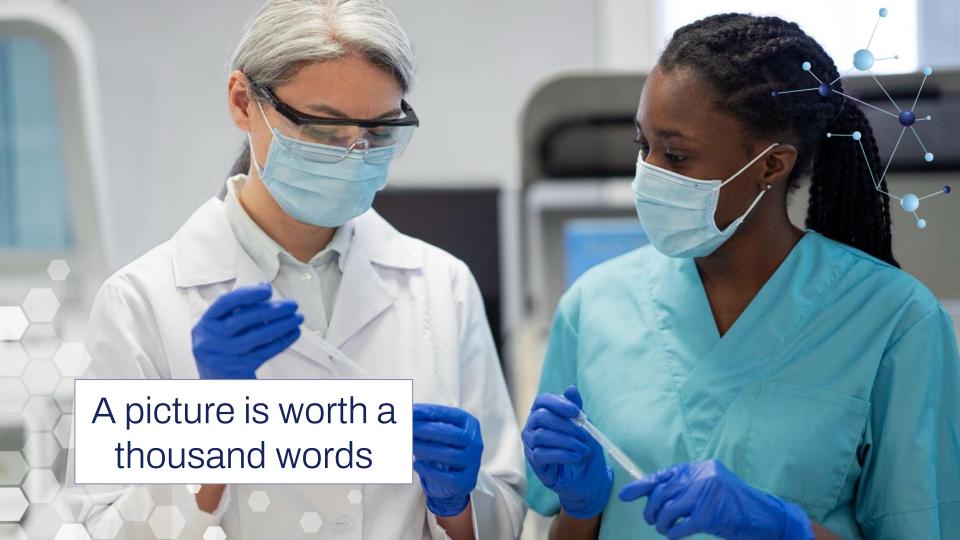
Distance between Earth and the Moon





# A picture always reinforces the concept

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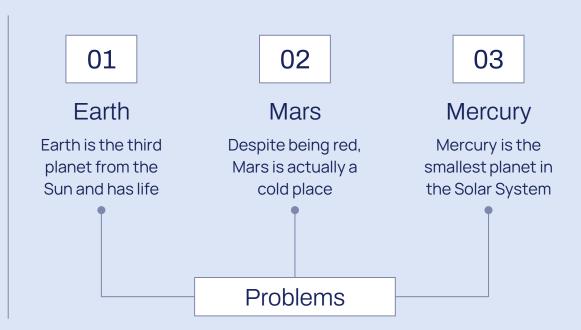


# Awesome words

## Current situation & problems statement

#### Current situation

Jupiter is a gas giant and the biggest planet in the Solar System. It's the fourth-brightest object in the night sky. It was named after the Roman god of the skies and lightning



## Hypotheses



01

## Hypothesis 1

Jupiter is a gas giant and the biggest planet in the Solar System. It's the fourth-brightest object in the night sky 02

## Hypothesis 2

Neptune is the farthest planet from the Sun. It's also the fourth-largest planet by diameter in the Solar System 03

## Hypothesis 3

Earth is the third planet from the Sun and the only one that harbors life in the Solar System. All humans live on this planet



## Study objectives



## Mercury

Mercury is the closest planet to the Sun and the smallest of them all



## Venus

Venus has a beautiful name and is the second planet from the Sun



#### Mars

Despite being red, Mars is actually a cold place. It's full of iron oxide dust



## Reviewing concepts is a good idea



#### Mars

Mars is actually a very cold place



## Mercury

Mercury is the closest planet to the Sun



#### Venus

Venus has extremely high temperatures



## Neptune

Neptune is the farthest planet from the Sun



#### Saturn

Saturn is a gas giant with several rings



## Jupiter

Jupiter is the biggest planet of them all





## Literature review

- AUTHOR. (YEAR). Title of the publication. Publisher
  - Mercury is the closest planet to the Sun and the smallest one in the Solar System
- AUTHOR. (YEAR). Title of the publication. Publisher
  - o Mars is full of iron oxide dust, which gives the planet its reddish cast
- AUTHOR. (YEAR). Title of the publication. Publisher
  - Jupiter is a gas giant and the biggest planet in the Solar System
- AUTHOR. (YEAR). Title of the publication. Publisher
  - Venus has a beautiful name and is the second planet from the Sun
- AUTHOR. (YEAR). Title of the publication. Publisher
  - Earth is the third planet from the Sun and harbors life

## Theoretical framework

#### Theoretical framework

### Key terms

- Mercury is small
- Earth harbors life
- Jupiter is quite big

#### Relevant theories

## Theory 1

Saturn is a gas giant and has rings. It's composed mostly of hydrogen and helium

## Theory 2

Neptune is the farthest planet from the Sun and also an ice giant

#### Our framework

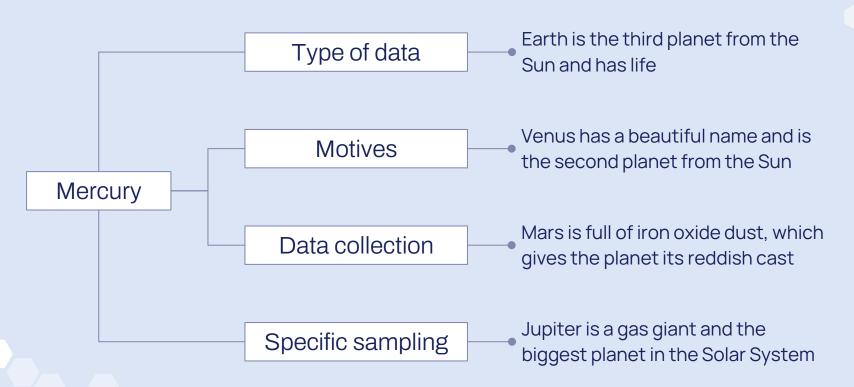
Venus has a beautiful name and is the second planet from the Sun. It's hot and has a poisonous atmosphere

## Schedule

| Task   | Description                     | Date            | J | F | M | А | M | J | Status      |
|--------|---------------------------------|-----------------|---|---|---|---|---|---|-------------|
| Task 1 | Despite being red, Mars is cold | Jan 1 - Feb 15  |   |   |   |   |   |   | Completed   |
| Task 2 | Earth is the planet with life   | Feb 1 - Apr 30  |   |   |   |   |   |   | In progress |
| Task 3 | Venus has a<br>beautiful name   | Mar 15 - Apr 30 |   |   |   |   |   |   | Delayed     |
| Task 4 | Neptune is far<br>away from us  | Apr 20 - May 15 |   |   |   |   |   |   | Not started |
| Task 5 | Jupiter is a huge<br>gas giant  | May 1 - Jun 30  |   |   |   |   |   |   | Not started |



## Methodology





## Analysis & development

#### Phase 01

- Mercury is the closest planet to the Sun and the smallest one in the Solar System—it's a bit larger than the Moon
- Jupiter is a gas giant, the biggest planet in the Solar System and the fourth-brightest object in the night sky
- Neptune is the farthest planet from the Sun. It's also the fourth-largest planet by diameter in the Solar System

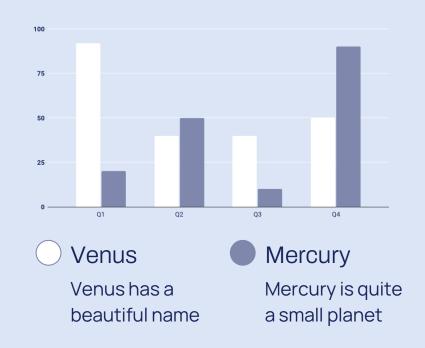
#### Phase 02

- Venus has a beautiful name and is the second planet from the Sun. It's terribly hot—even hotter than Mercury
- Saturn is a gas giant and has several rings. This planet is composed mostly of hydrogen and helium
- Earth is the third planet from the Sun and the only one that harbors life in the Solar System. We all live on this planet

## Analysis & development

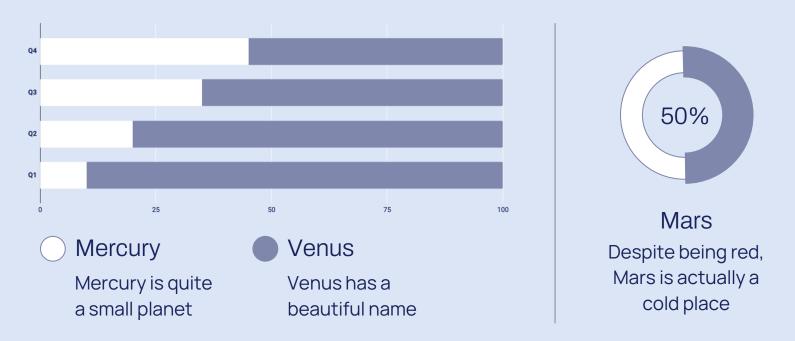
Mercury is the closest planet to the Sun and the smallest one in the Solar System. This planet's name has nothing to do with the liquid metal

- The Sun is the star at the center of the Solar System
- Jupiter is the biggest planet in the entire Solar System
- Saturn is composed mostly of hydrogen and helium



Follow the link in the graph to modify its data and then paste the new one here. For more info, click here

## Analysis of the results



Follow the link in the graph to modify its data and then paste the new one here. For more info, click here

## This is a map





## Discussion

#### Mars & Earth

Despite being red, Mars is actually a cold place. It's full of iron oxide dust, which gives the planet its reddish cast. Earth is the third planet from the Sun and the only one that harbors life in the Solar System. We all live on this planet:

- Ceres is located in the main asteroid belt
- The Moon is Earth's natural satellite
- Neptune is very far from the Sun
- Pluto is now considered a dwarf planet

01

### 1 Discussion 1

Mercury is the closest planet to the Sun and the smallest one in the Solar System—it's only a bit larger than the Moon

02

#### Discussion 2

Venus has a beautiful name and is the second planet from the Sun. It's terribly hot—even hotter than Mercury





01 Mars

Despite being red, Mars is actually a cold place. It's full of iron oxide dust

03 Venus

Venus has a very beautiful name and is the second planet from the Sun. It's terribly hot

02 Saturn

Saturn is a gas giant and has several rings. It's composed mostly of hydrogen and helium

04 Neptune

Neptune is the farthest planet from the Sun and the fourthlargest of them all

## Bibliographical references

Surname, A. (YEAR). *Name of the source*. Publisher





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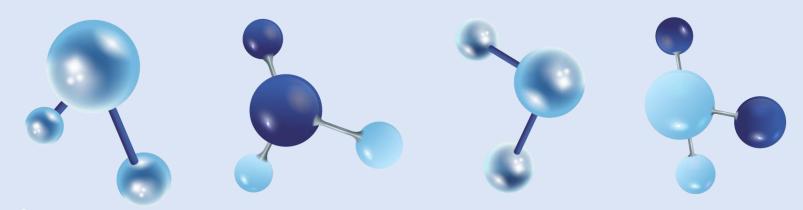


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- Woman in lab working



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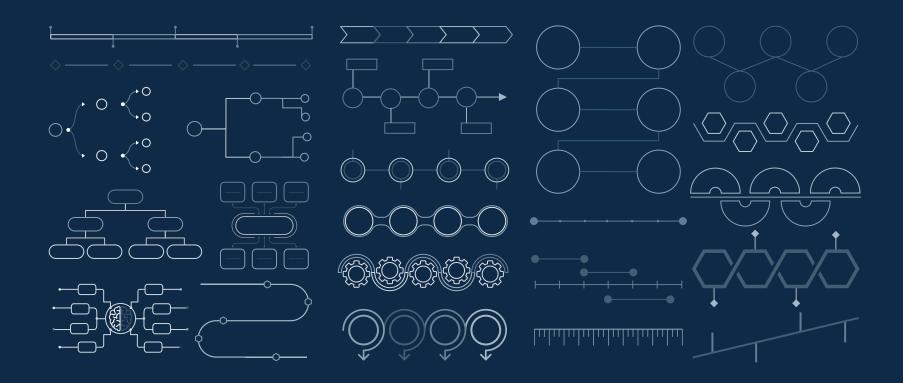
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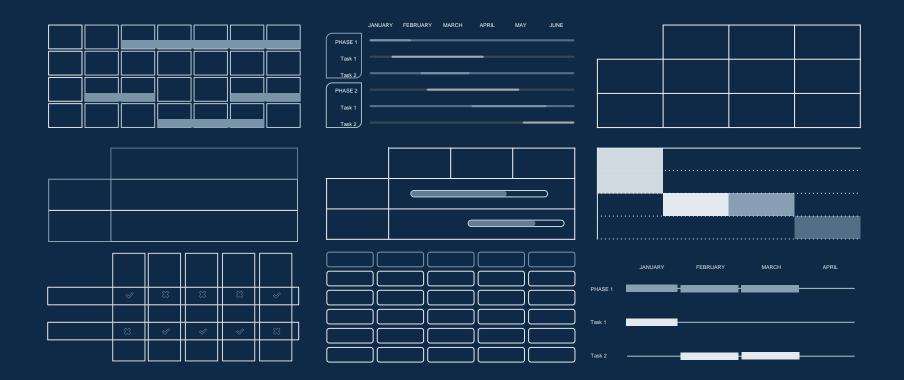
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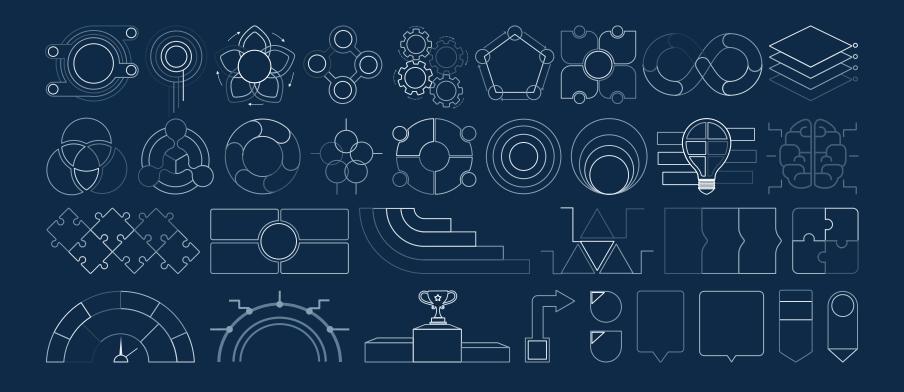
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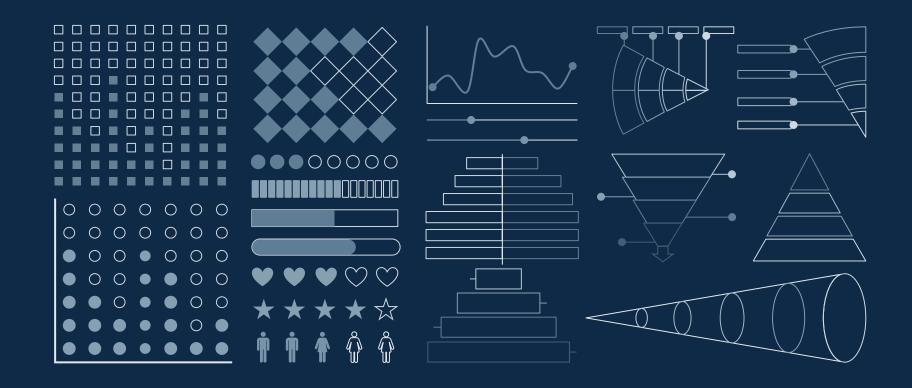












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