

# Moon Mining: Where Innovation Meets Opportunity



Team Members:  
Xinyan HE, Yuxuan JIANG, Xinyu WANG



# Table of content

**1**

**Introduction**

**2**

**Challenges**

**3**

**Mining process**

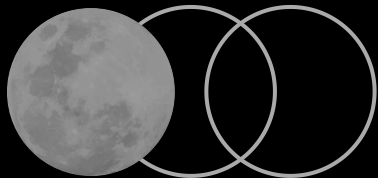
**4**

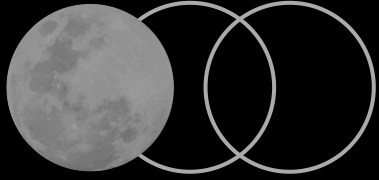
**Added value**

# SWITCH THE MARKET TO THE MOON?



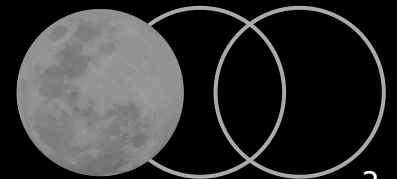
- ❑ Moon Rabbit is a leading rare earths metals mining company that has established a strong reputation for its expertise in extracting these valuable metals. However, the company is now setting its sights on a new frontier: the moon.
- ❑ REMs are vital to emerging technologies , at the current stage, 90% of the REMS are produced by china. Nevertheless, China has claimed that its reserves may last only for 15 -20 years.





## **Business Objective:**

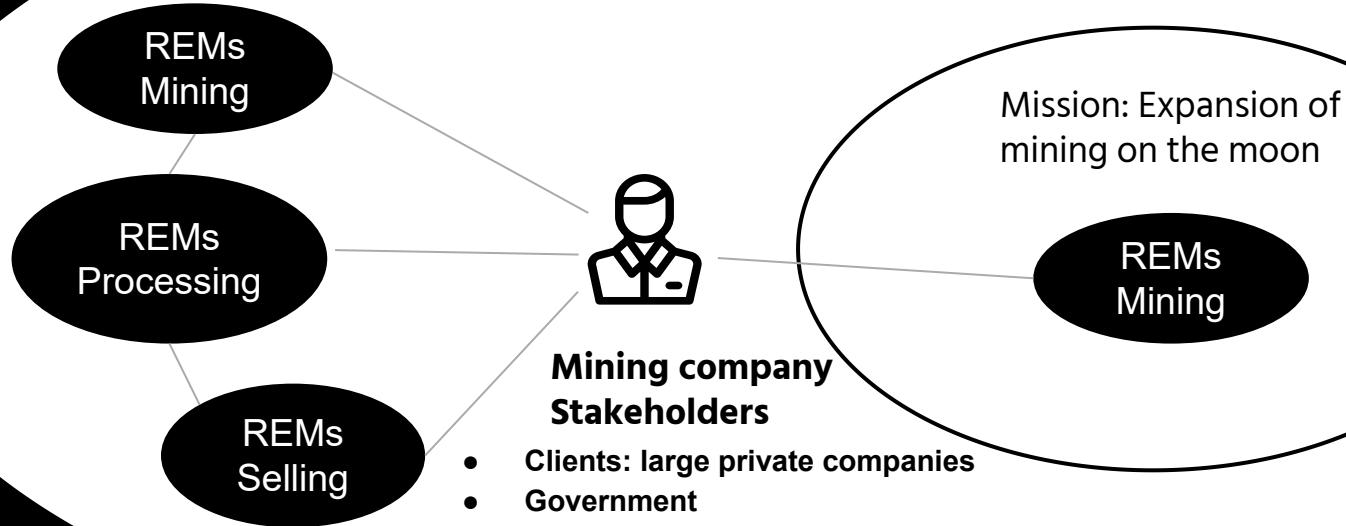
**Helping large private companies and governments mine rare earths on the moon to make profits**



# AS - IS On Earth

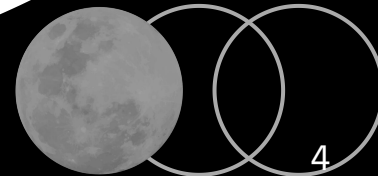
# TO - BE On Moon

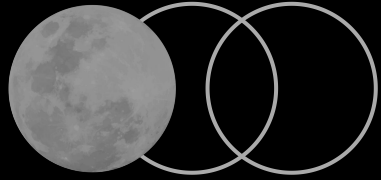
## Industry Transformation



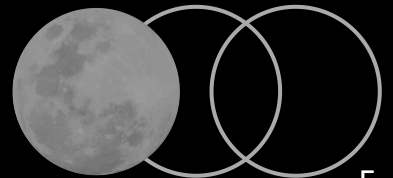
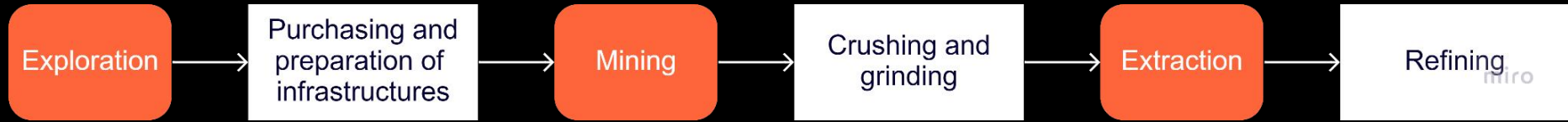
### Mining company Stakeholders

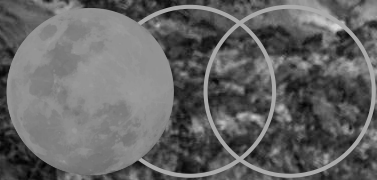
- Clients: large private companies
- Government
- Energy companies (water company, electricity company...)
- Infrastructure manufacturing companies



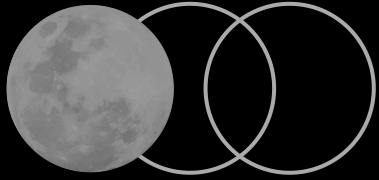


# AS - IS: The current steps to mining REMs on the earth





# Challenges on the moon



# How to mine?

## SOLUTION 1

**Sending excavation machines to the Moon**

**Humans operate machines remotely from Earth**

## SOLUTION 2

**Sending excavation machines and astronauts to the Moon**

**Humans operate machines on the moon**

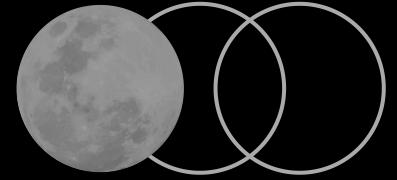
## SOLUTION 3

**Sending excavation machines to the Moon**

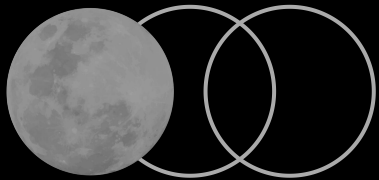
**Launching a manned spacecraft with astronauts into orbit around the Moon**

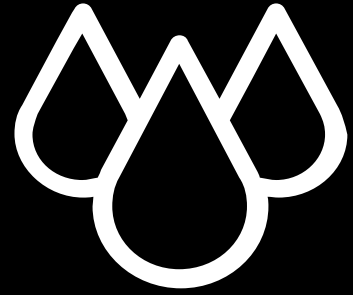


# How to mine?

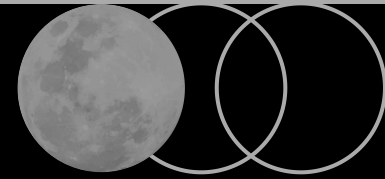


## SOLUTION 3





# Fuel problem



## High Cost

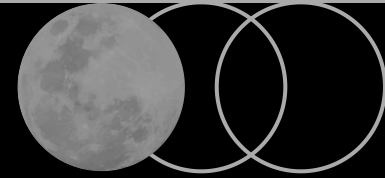
of launching and transporting fuel from Earth

## Fuel

is heavy and requires a lot of energy to transport  
cannot be replenished



# Fuel problem

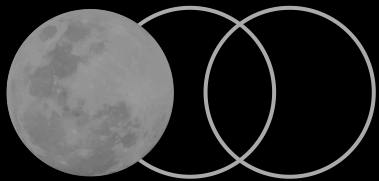
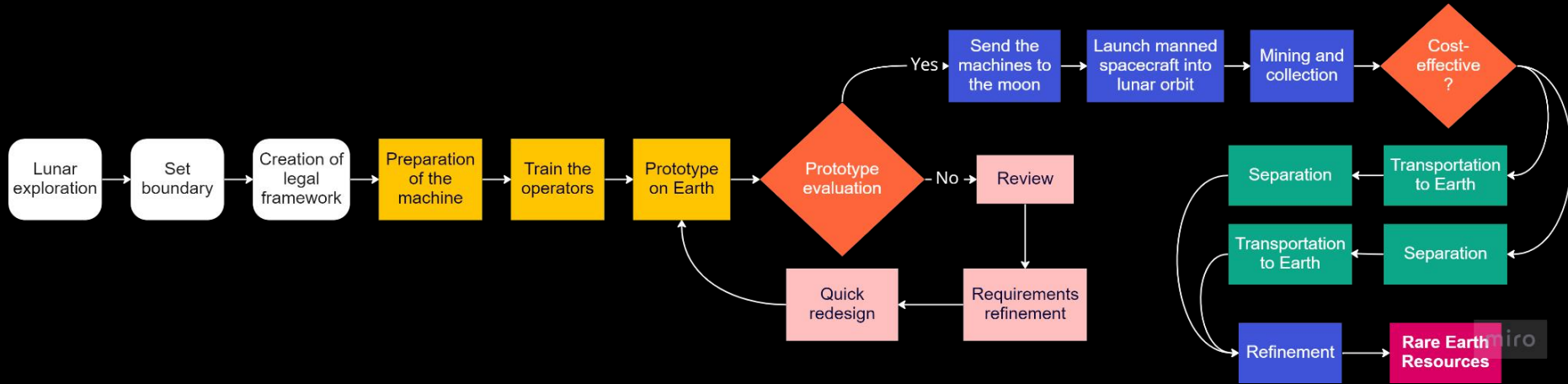


**Best solution: Use Solar Energy to produce fuel through a process —Electrolysis ( $\text{H}_2\text{O}=\text{H}_2+\text{O}_2$ )**

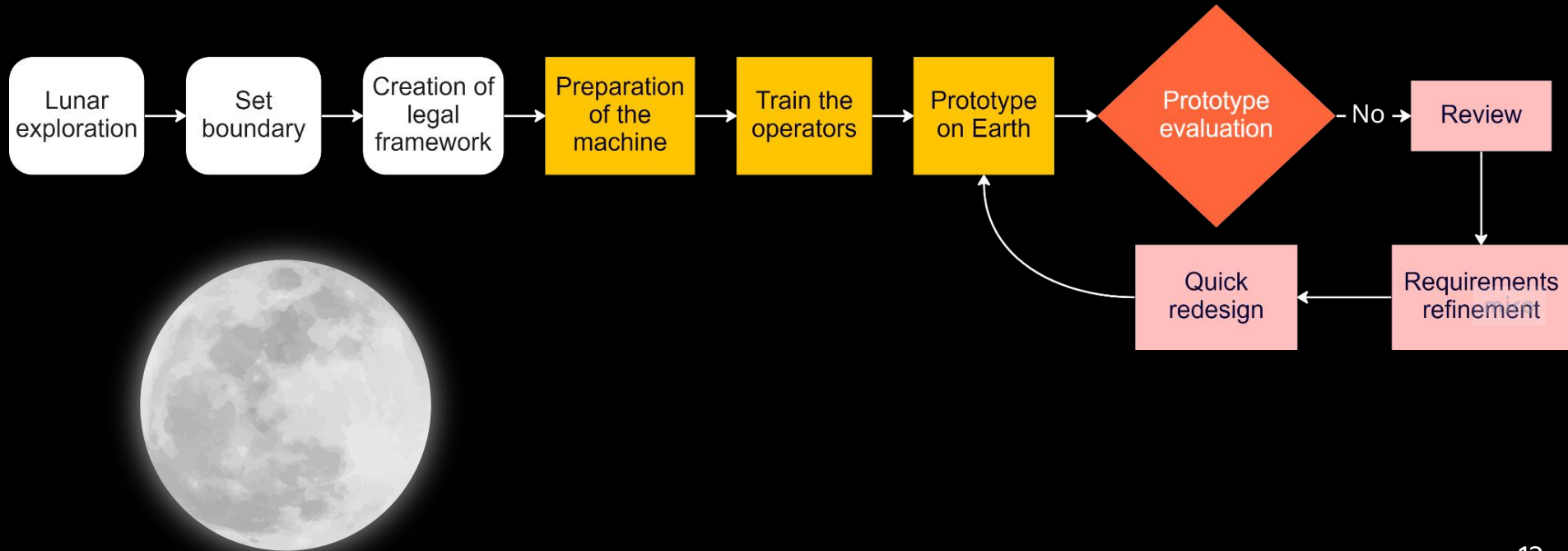
## **Solar Energy:**

- **does not require any fuel to be transported from Earth.**
- **solar panels are lightweight and compact**

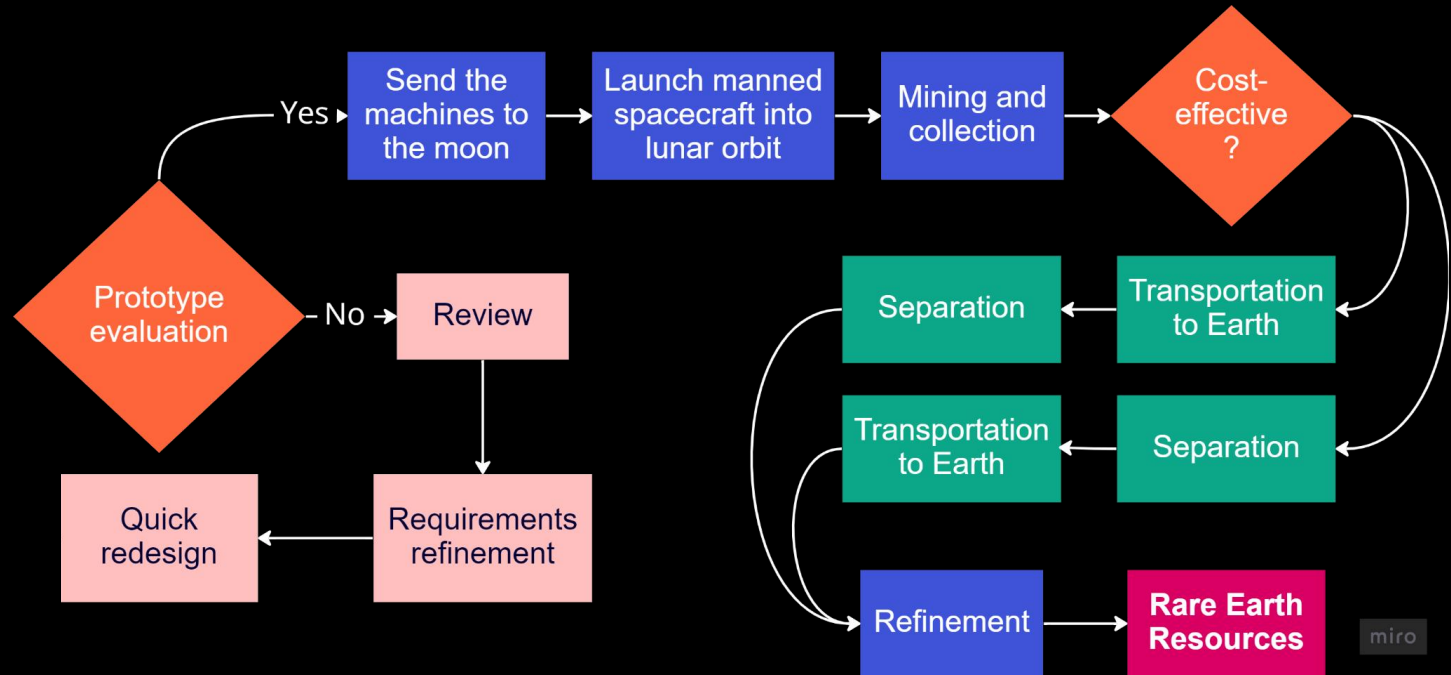
# Mining Process on the Moon



# Mining Process on the Moon



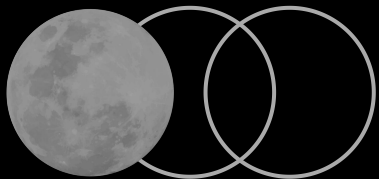
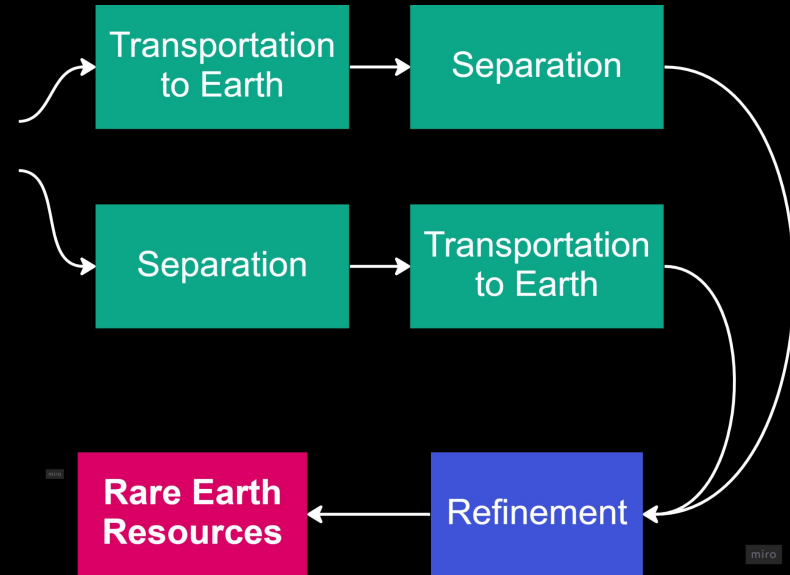
# Mining Process on the Moon



miro

# Mining Process on the Moon

1. Round trip between the Moon and Earth
2. Cost of the machines
3. Complexity of separation



# ***Make a big profit !***

**\$20 to \$30 billion**

the cost of a lunar mission

**\$100 billion**

the value of the rare earth metals on the moon

**70%-80%**

rate of return





## **Create new job opportunities**

**1**

**Geologist**

**2**

**Mining  
Engineer**

**3**

**Astronaut**

**4**

**Communication  
Specialist**

# Balance Of Economic And Social Benefits



---

**Thanks  
For Your  
Attention!**

---

