SEABORG

Donsö Shipping Meet
August 28-30 2023

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Seaborg is a Danish based developer of a nuclear solution

Founded in **2014**

Privately held and privately funded

120+ employees
25 nationalities
+30 Ph.d's in nuclear, chemistry and materials

HQ in Copenhagen, Denmark
Business offices in South Korea

Developing a 4th generation safe and affordable nuclear solution called the CMSR Power Barge
First deployment before 2030
Commercially deployed in 2030's

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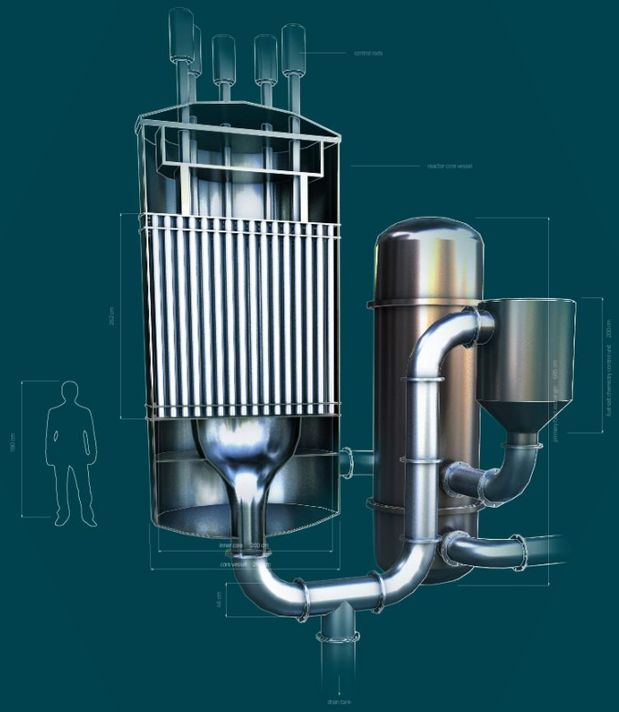
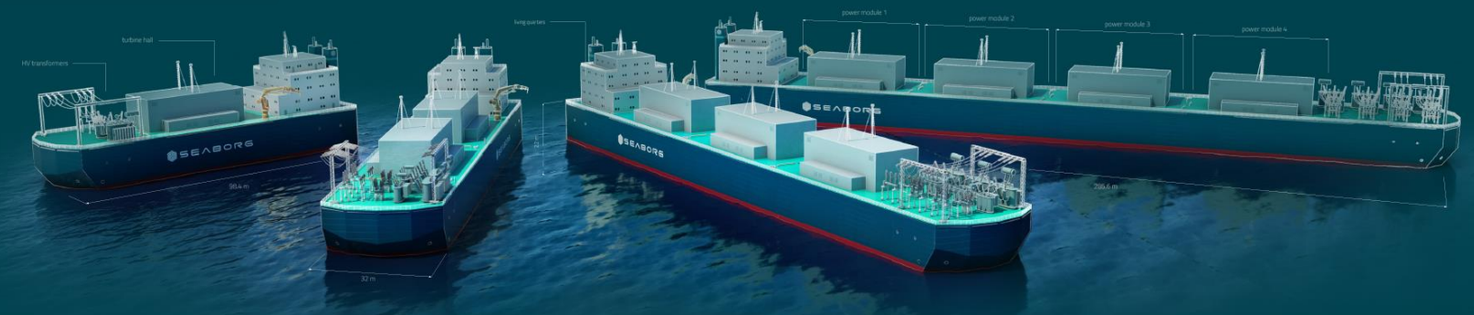
Seaborg in a Nutshell



Developing

The Compact Molten Salt Reactor

- Small modular nuclear reactor
- Deployed on barges
- 200-800 MWe Power Barges
- +90% Capacity Factor
- Inherent safety characteristics due to the properties of the salt
- Zero Carbon emission power production



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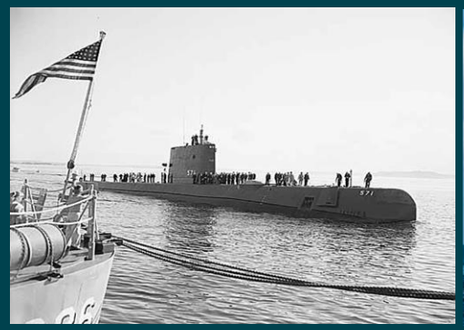
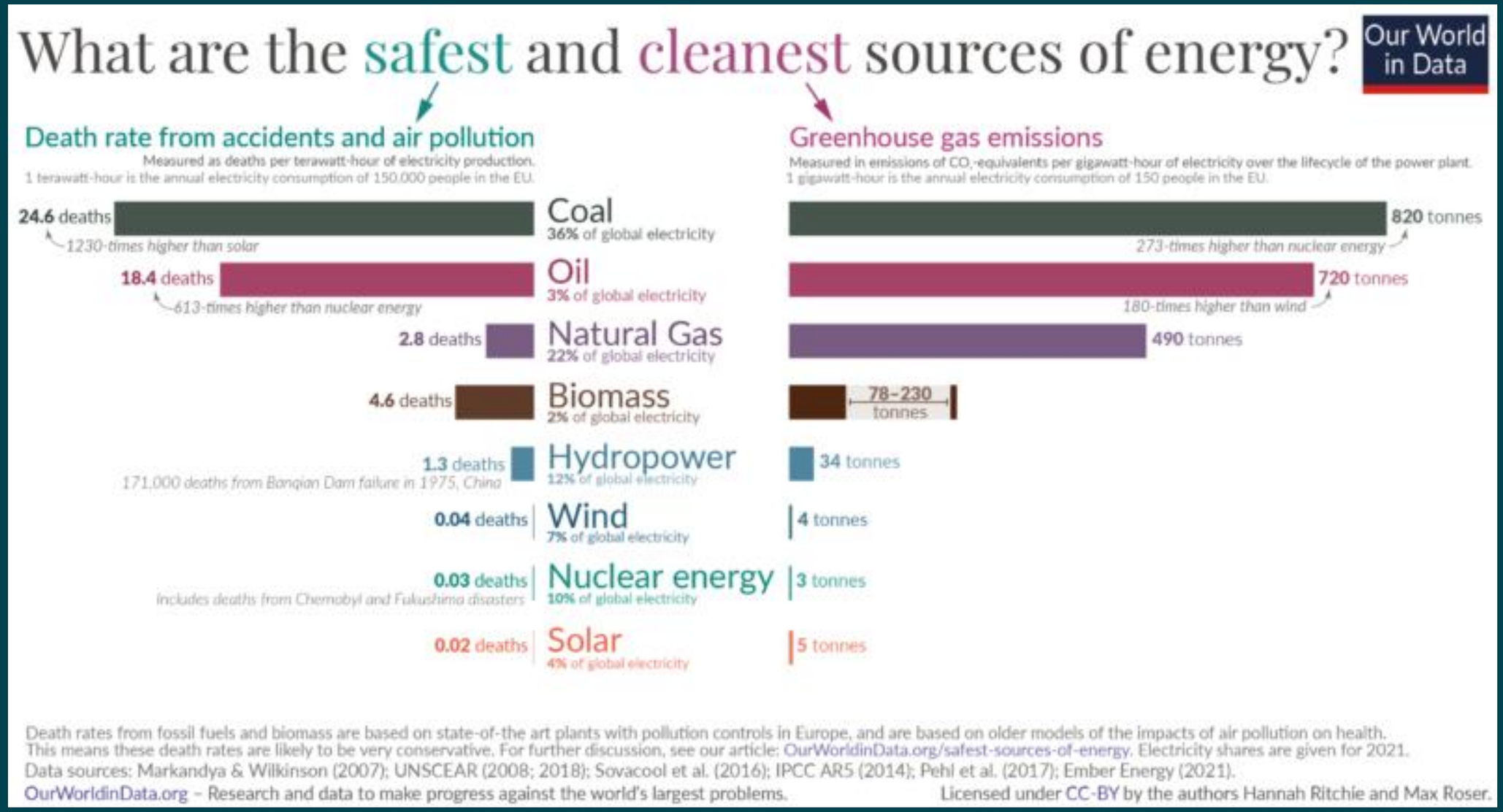
Naval nuclear propulsion track record





- First used in submarine USS Nautilus – 30 September 1954
- Largest aircraft carrier: USS Gerald R. Ford – 337 meters & 100,000 ton displacement
- Nuclear reactor technology based on Pressurized Water Reactor (HEU fuel)
- Reported thermal output in the order of up to approx. 500 MW
- Only two fatal reported accidents:
  - USS Tresher – 10 April 1963: Failure in primary cooling system
  - K-19 - 4 July 1961: Coolant leak resulted in core meltdown

Overview of safest sources of energy



Mandatory nuclear safety considerations

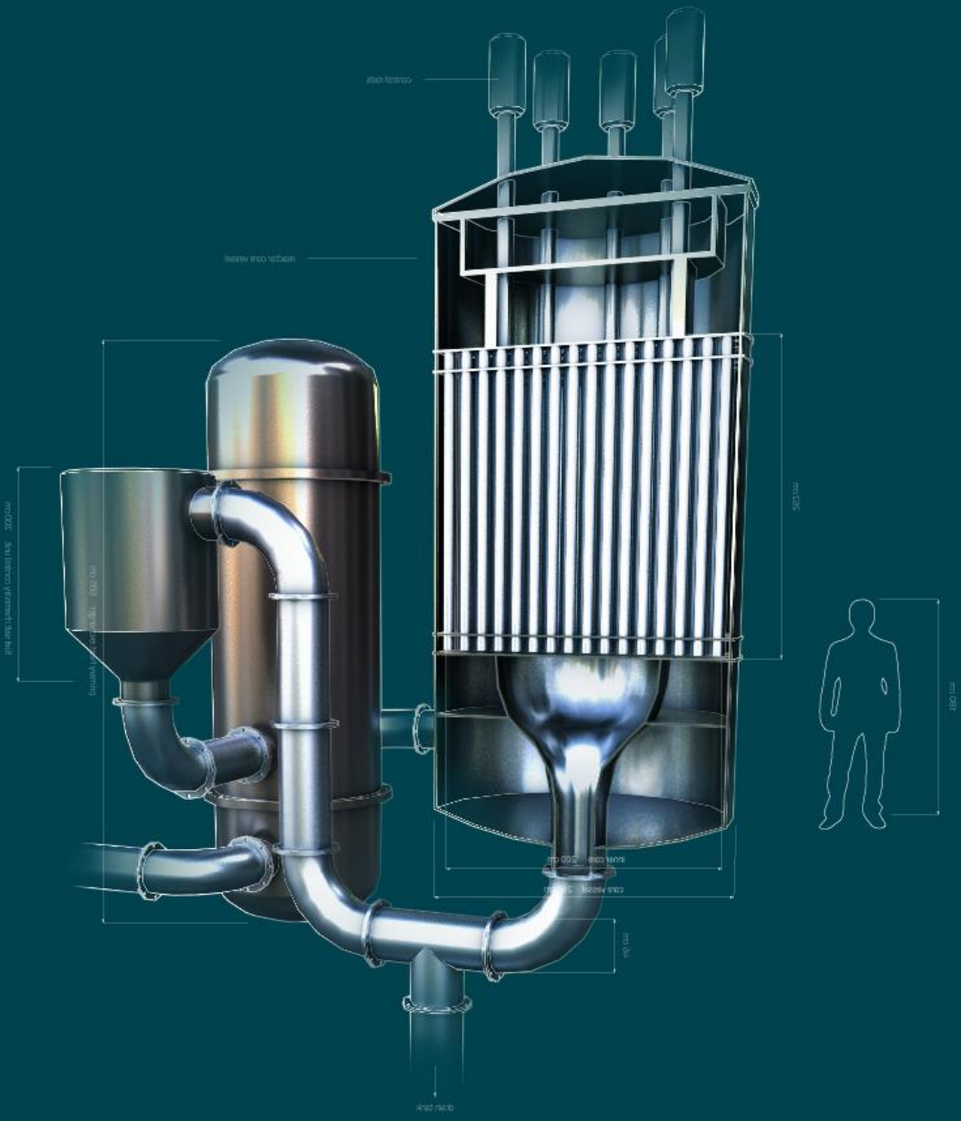
1. Core meltdown
2. Radiation exposure
3. Radioactive waste
4. Nuclear accidents
5. Terrorism and sabotage
6. Cooling system failures
7. Fire hazards
8. Natural disasters
9. Aging infrastructure
10. Human factors
11. Regulatory compliance
12. Public perception
13. Economic considerations

4th Generation nuclear reactor features

- Improved safety
- Reduced waste
- Higher efficiency
- Sustainability
- Proliferation resistence
- Modularity
- Flexible siting
- Longer operation span
- Reduced environmental impact

Seaborgs offering in short

1. **Safe technology – Reactor cannot** melt down or explode
2. Shipyard construction & Modular fabrication ensure **economical attractiveness**
3. **Licensing Approach** allows for fast **international deployment**
4. **Seaborg will be Co-developer and partner** throughout the project



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Safety by the Laws of Nature

Molten fluoride salt gives inherent safety characteristics

The fluoride salt contains the radioactive elements

Physical properties

- Very low solubility in water
- Below 490°C, it is a rock
- Boils at 1,500°C

During operation

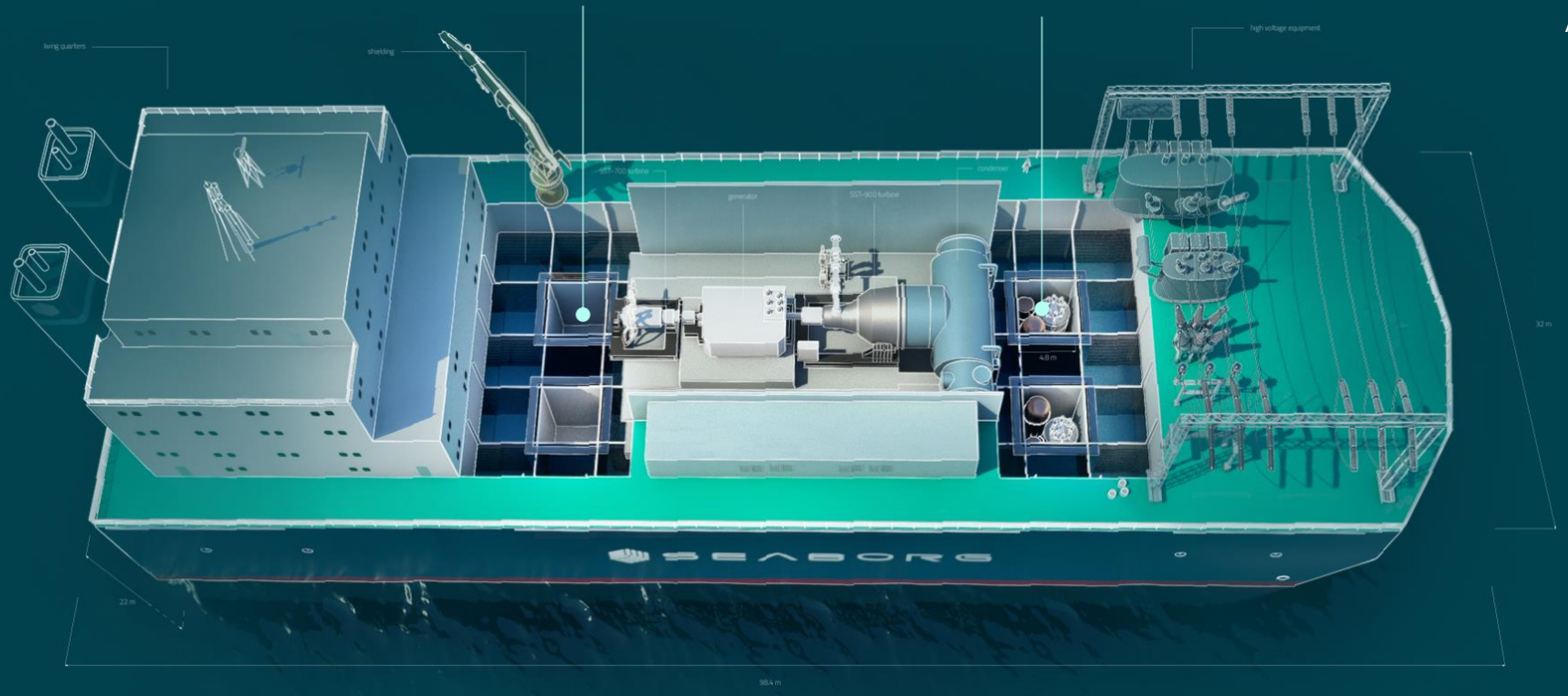
- CMSR operates at 600°C – 700°C
- High retention of fission products

Inside the Power Barge

24 years operational life time

Two empty CMSR compartments
for the **second 12-year fuel cycle**

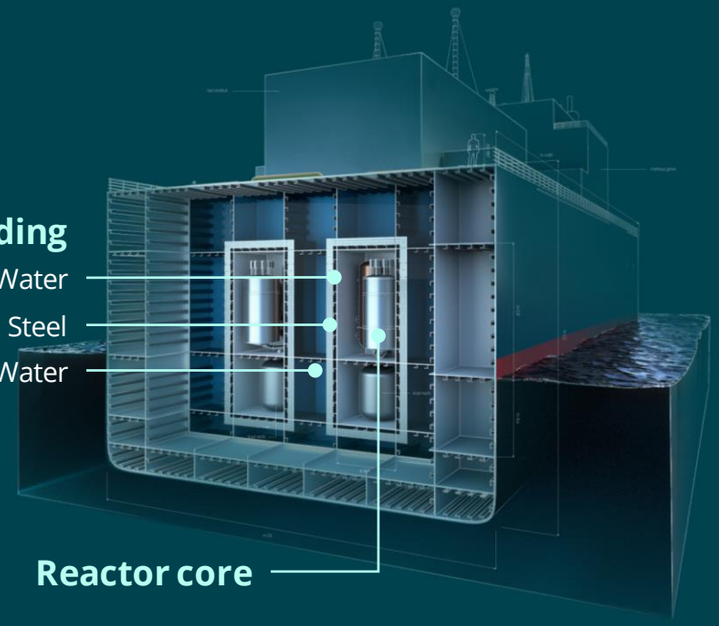
Two CMSRs for the
first 12-year fuel cycle



Accommodation
Control centre

Power module
200 MWe

HV substation



Shielding

Water

Steel

Water

Reactor core

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Commercial Consortium Agreement in place with key partners in the industry

Nuclear energy technology company developing a safe nuclear compact molten salt reactor to be deployed on power barges on a global scale

SAMSUNG HEAVY INDUSTRIES

One of the **Big Three Shipbuilders** in the world.
SHI has 48 years of experiences in engineering, manufacturing, commissioning for vessels, including floating power plants.

Worlds 3rd largest nuclear power operator (≈25 NPPs[1] worldwide). Responsible for 32.6% of South Korea´s electric power supply.

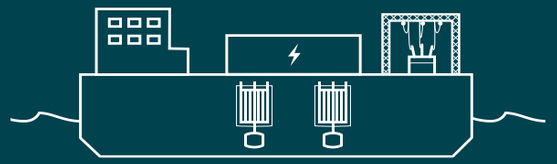
Expertise and resource commitment from KHNP and SHI to deliver and commercialize the CMSR Power Barge - as part of the agreement, all parties will **contribute with equity and CAPEX financing, in a joint effort to develop and commercialize the FOAK CMSR Power Barge.**

The **Consortium Partners** joins one of the worlds **leading shipbuilders** (SHI) and **nuclear power operators** (KHNP) with Seaborg and together, the three companies cover and **add value to every step of the value chain**, to **deliver floating nuclear power barges worldwide**

CMSR	Power Barge	Fuel Cycle	Nuclear Test site	Regulatory and license	Nuclear test and commissioning	Operations and Maintenance	Decommissioning

Note: 1) Nuclear Power Plant

Commercial use cases for the CMSR Power Barge



CMSR Power Barge

Electricity

Grid

Hydrogen

NH_3

Ammonia

CH_3OH

Methanol

Energy carrier: transport and export opportunities

Marine fuel

Fertilizer: agricultural use

Industrial applications: steel and oil refining

Road and air transport fuels

Electricity re-generation: blending hydrogen

Industrial applications: cement

Marine fuel

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Abundant, Cheap and Clean Energy

Scalable technology for **global deployment**

Develop in Denmark

Build in South Korea

Power the world

Electricity

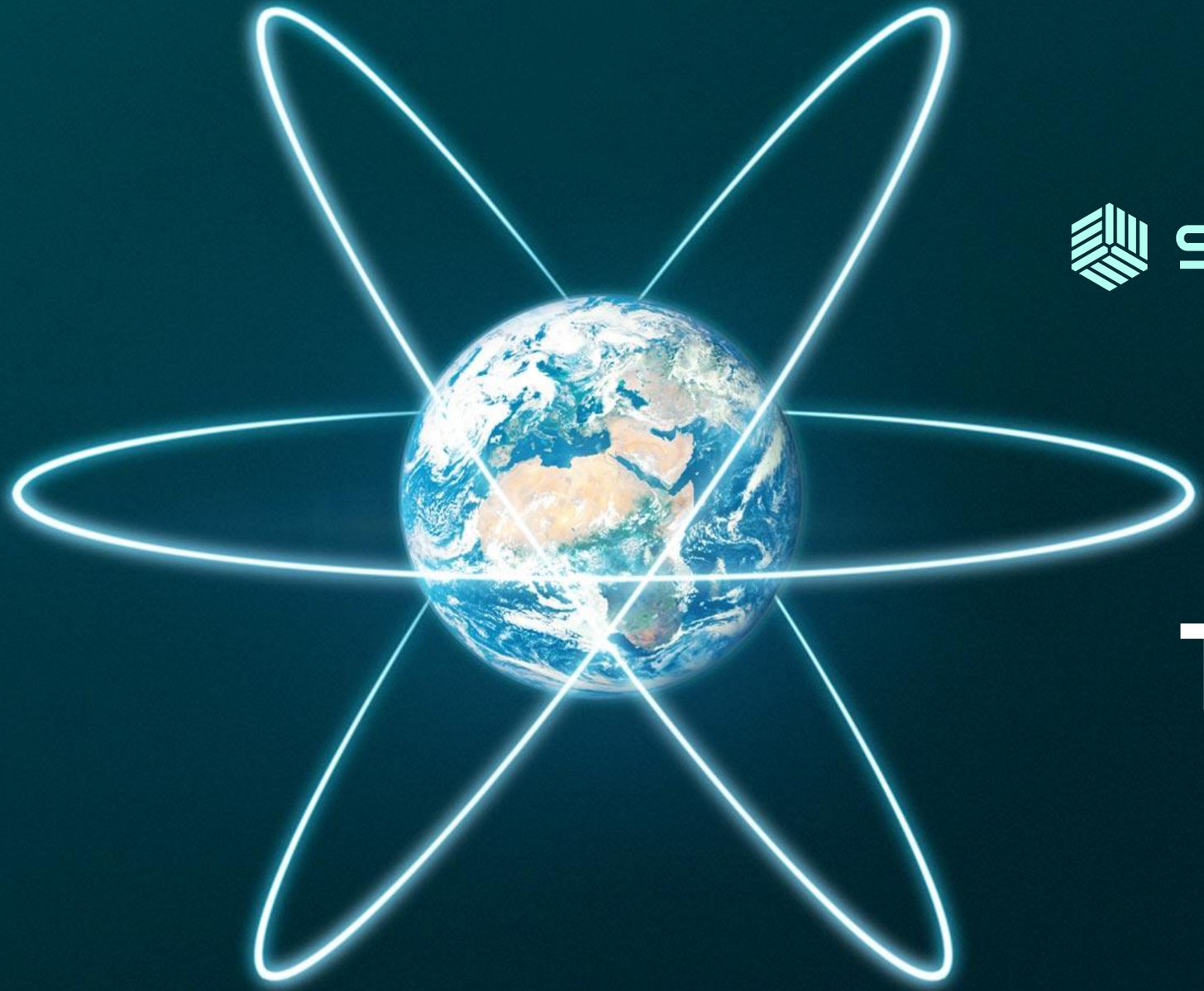
- Replacing coal and gas power
- Solving grid stability
- Powering a clean electrification

Power to X

- Clean process heat for industry
- Production of hydrogen, ammonia and methanol

Desalination

- Production of fresh water



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Rethinking nuclear

Thank you

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