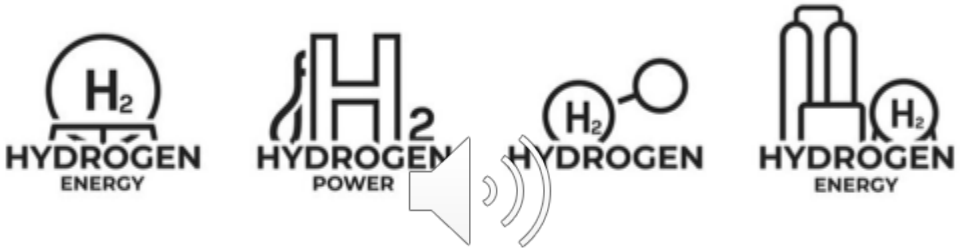
IRENA
International Renewable Energy Agency



GREEN HYDROGEN

GROUP 6

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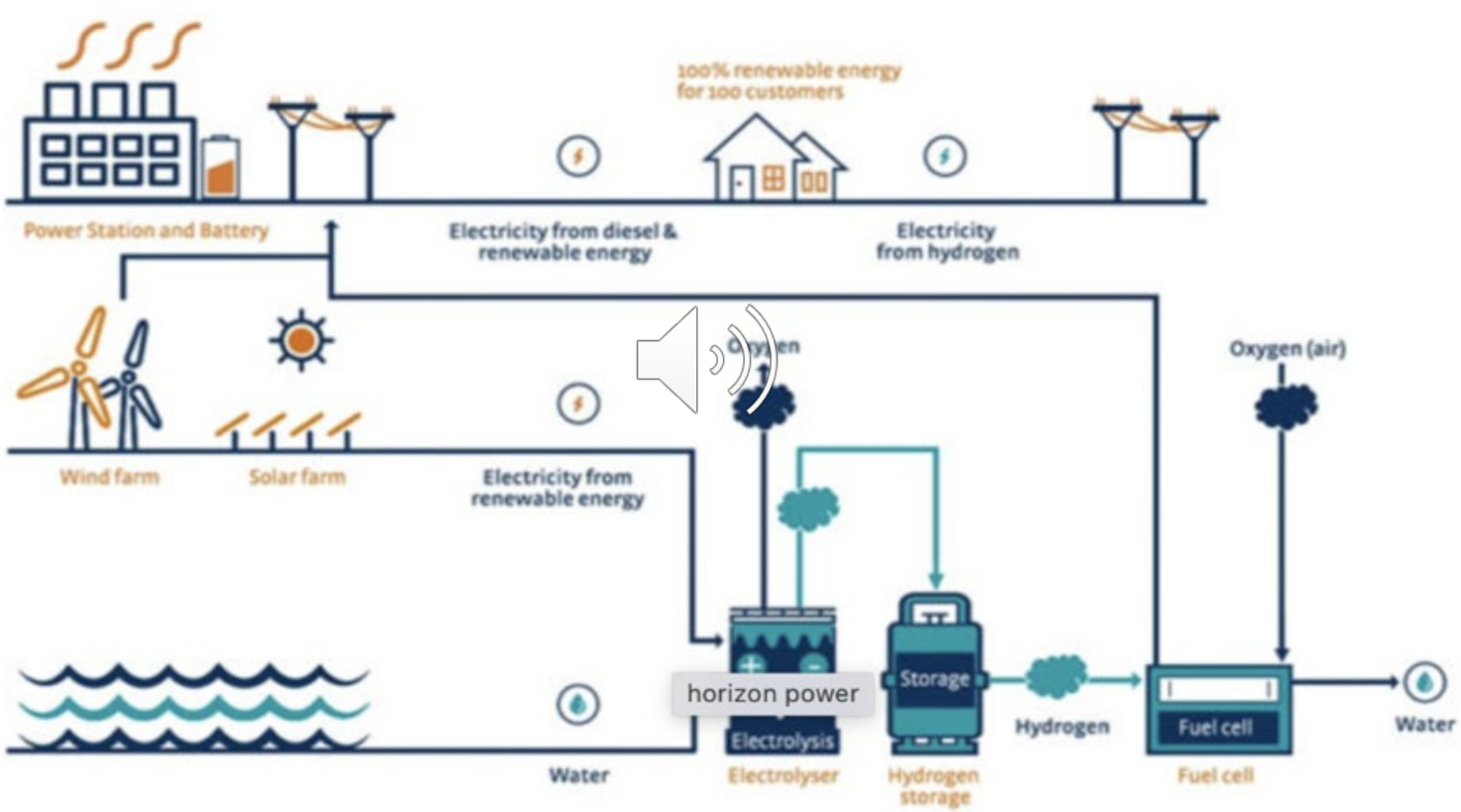
Proposed Innovation



Background Information

Green Hydrogen is produced using renewable energy and electrolysis to split water and is distinct from grey hydrogen, which is produced from methane and releases greenhouse gases into the atmosphere, and blue hydrogen, which captures those emissions and stores them underground to prevent them causing climate change.

Solar Energy

Solar energy is a renewable, inexhaustible and affordable form of energy. It can be used to cook food, heat water, and generate electricity.

Wind Energy

Wind energy (or wind power) describes the process by which wind is used to generate electricity. Wind turbines convert the kinetic energy in the wind into mechanical power. A generator can convert mechanical power into electricity.

Using Green Hydrogen

Storage of excess wind and solar

Surplus electricity

Water splitting

Collecting hydrogen

Compressing

Fuel

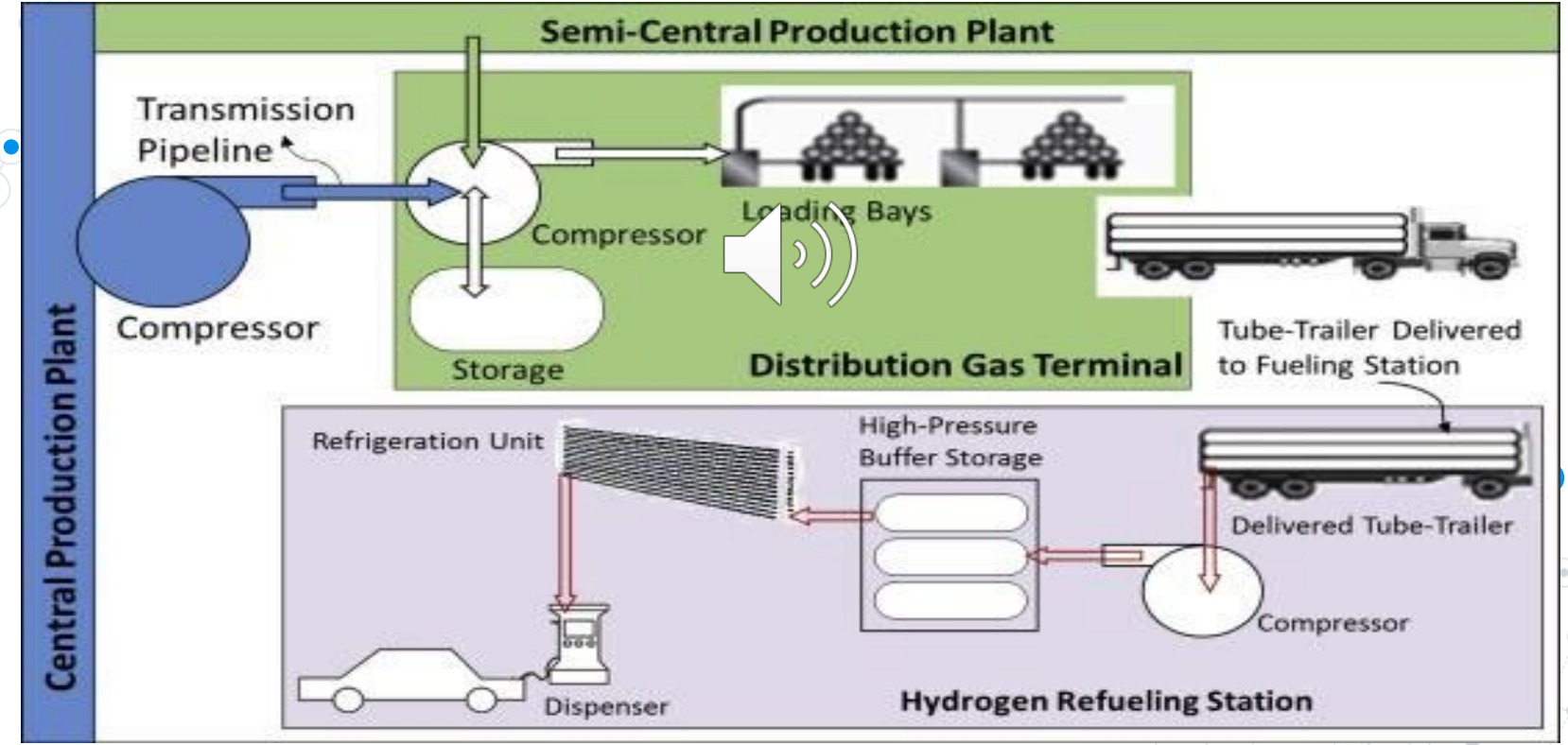
Business models

Energy as a service model	• Offering heating services to local factories • Electrical devices/power subscriptions
Peer to peer trading	• Power trading with the community based groups/local factories
Community ownership model	• Community committees • Local institutions such as churches/hospital

Market Design

- **Redesigning Capacity Markets.**
- **Market Integration of Distributed Energy Resources.**

System Operation



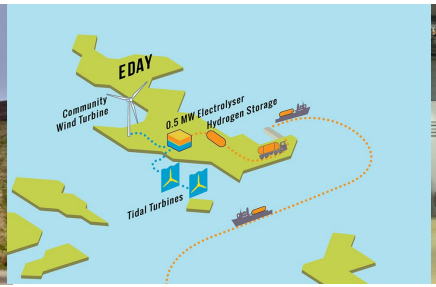
Real World Example

SURF 'N' TURF

What is it?

Multi -stakeholder Collaboration

Innovative



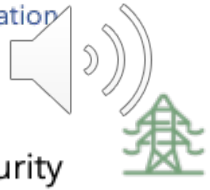
Renewable Power

Capacity Building and Training

The importance of Hydrogen projects to the future

- Integrate more renewables
  Wind and solar PV

- Decarbonize hard-to-abate sectors
  Such as transport , industry and power generation



- Enhance energy security

- Help to achieve a clean, secure and affordable energy future

Conclusion

- The proposed green hydrogen innovation consisted of the wind and solar as the renewable energy sources for producing electricity that will be used by the electrolyser to separate hydrogen and oxygen from the water compound.
- The produced hydrogen will be used for both industrial, commecial and residential applications.
- The importance of hydrogen includes varies aspects such as enhacing energy security and more affordable energy.
- It will decarbonise hard to abate sectors such as transport industries

References

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