

An aerial photograph of a vast, dense forest. In the upper center, a small, calm lake is visible, surrounded by trees. A dirt road or path winds through the forest on the right side of the image. The text "Storing energy and Hydrogen economy" is overlaid in the center in a white serif font.

Storing energy and Hydrogen economy

Why?

- It reduces air and water pollution and conserves natural resources.
- **Environmental protection:** Energy conservation helps reduce greenhouse gas emissions and other pollutants, leading to a cleaner and healthier environment.
- **Resource conservation:** By using energy more efficiently, we reduce the need for new energy resources to be developed, which helps conserve natural resources and reduce the impact of energy production on the environment.
- **Cost savings:** Energy-efficient practices and technologies can help reduce energy bills and save households and businesses money.
- **Climate change mitigation:** Reducing energy consumption and transitioning to clean energy sources can help mitigate the impacts of climate change and prevent more severe consequences in the future.



How?

- Switching to energy-efficient light bulbs
- Installing a programmable thermostat to better regulate heating and cooling
- Sealing air leaks in your home to prevent heat loss
- Unplugging electronics when not in use
- Turning off lights in unoccupied rooms
- Planting shade trees to block the sun in the summer
- Insulating your home
- Using a power strip for electronics to reduce standby power usage
- Turning down the thermostat on your water heater.



Where do you save energy?

- **Batteries:** Energy can be stored in batteries for later use in devices such as smartphones, laptops, and electric vehicles.
- **Flywheels:** Flywheels store energy in rotational kinetic energy and can be used to provide backup power during power outages.
- **Pumped Hydroelectric Storage:** This involves pumping water, then releasing the water through a turbine to generate electricity when demand is high.
- **Compressed Air Energy Storage:** This technology compresses air and stores it in underground caves, depleted natural gas reservoirs, or in tanks. The compressed air is then released to drive a turbine and generate electricity when needed.
- **Thermal Energy Storage:** This involves storing excess thermal energy generated by solar or other renewable energy sources. The stored heat can then be used to generate steam and drive a turbine to produce electricity when needed.



Hydrogen economy for future

- The hydrogen economy is a vision for a future in which hydrogen is widely used as a source of clean energy.
- In the future, hydrogen would be produced from renewable sources, such as wind and solar power, and used in fuel cells to power vehicles, homes, and businesses.
- This would reduce dependence on fossil fuels and help mitigate the impacts of climate change.
- The hydrogen economy would also create new opportunities for investment and economic growth and contribute to energy security by diversifying the energy mix.
- While there are still challenges to be addressed, such as the cost and scalability of hydrogen production and storage, the hydrogen economy is seen as a promising way to transition to a cleaner, more sustainable energy system.

