



U.S. DEPARTMENT OF
ENERGY

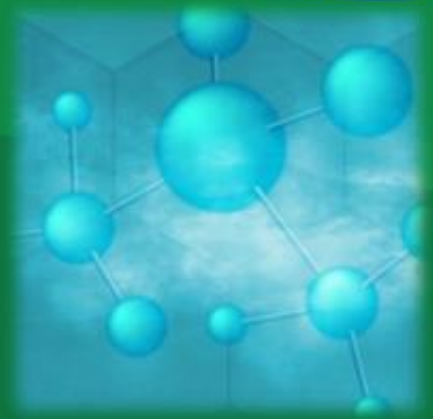
Fossil Energy and
Carbon Management

UT Energy Week: Hydrogen Storage and the Power Sector Panel

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Fossil Energy and Carbon Management (FECM)

Office of Fossil Energy and Carbon Management

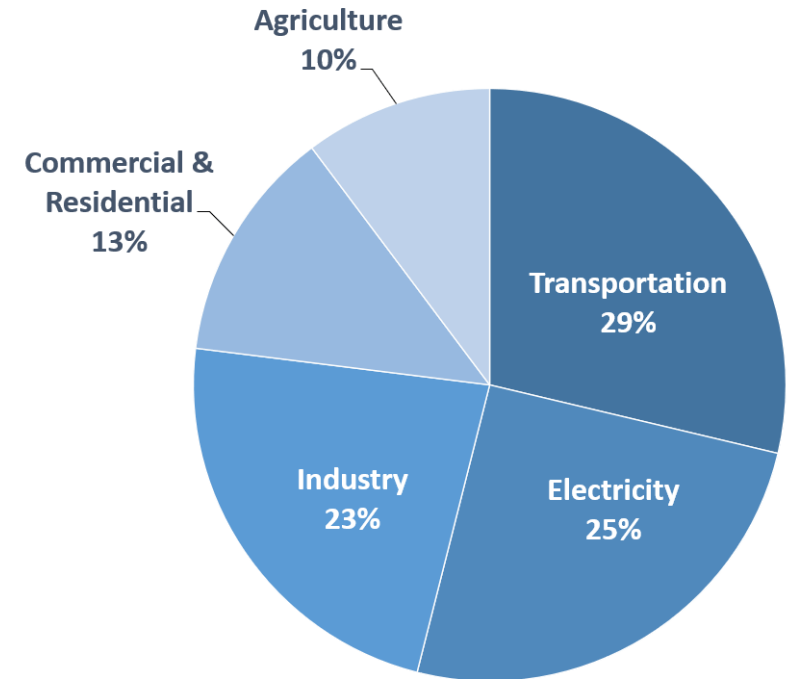
DOE-FE is now DOE-FECM

New name for our office reflects our new vision to achieve decarbonization and carbon management

- Administration Goals:

- 50% emissions reduction by 2030
- CO₂ emissions-free power sector by 2035
- Net zero emissions economy by no later than 2050

Total U.S. Greenhouse Gas Emissions by Economic Sector in 2019



U.S. Environmental Protection Agency (2021). Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2019

FECM Mission: Deep Decarbonization and Environmental Justice

Minimize environmental impacts of fossil fuels; achieve net-zero emissions.

Priority Technology Areas

1. Point source carbon capture
2. Carbon dioxide (CO₂) removal
3. CO₂ conversion into products
4. Reliable CO₂ storage
5. Hydrogen production (non-electrolytic)

Office of Carbon Management
(FECM-20)

6. Critical mineral production from industrial and mining waste
7. Methane mitigation

Office of Resource Sustainability
(FECM-30)

Supporting Legacy Communities (Justice)

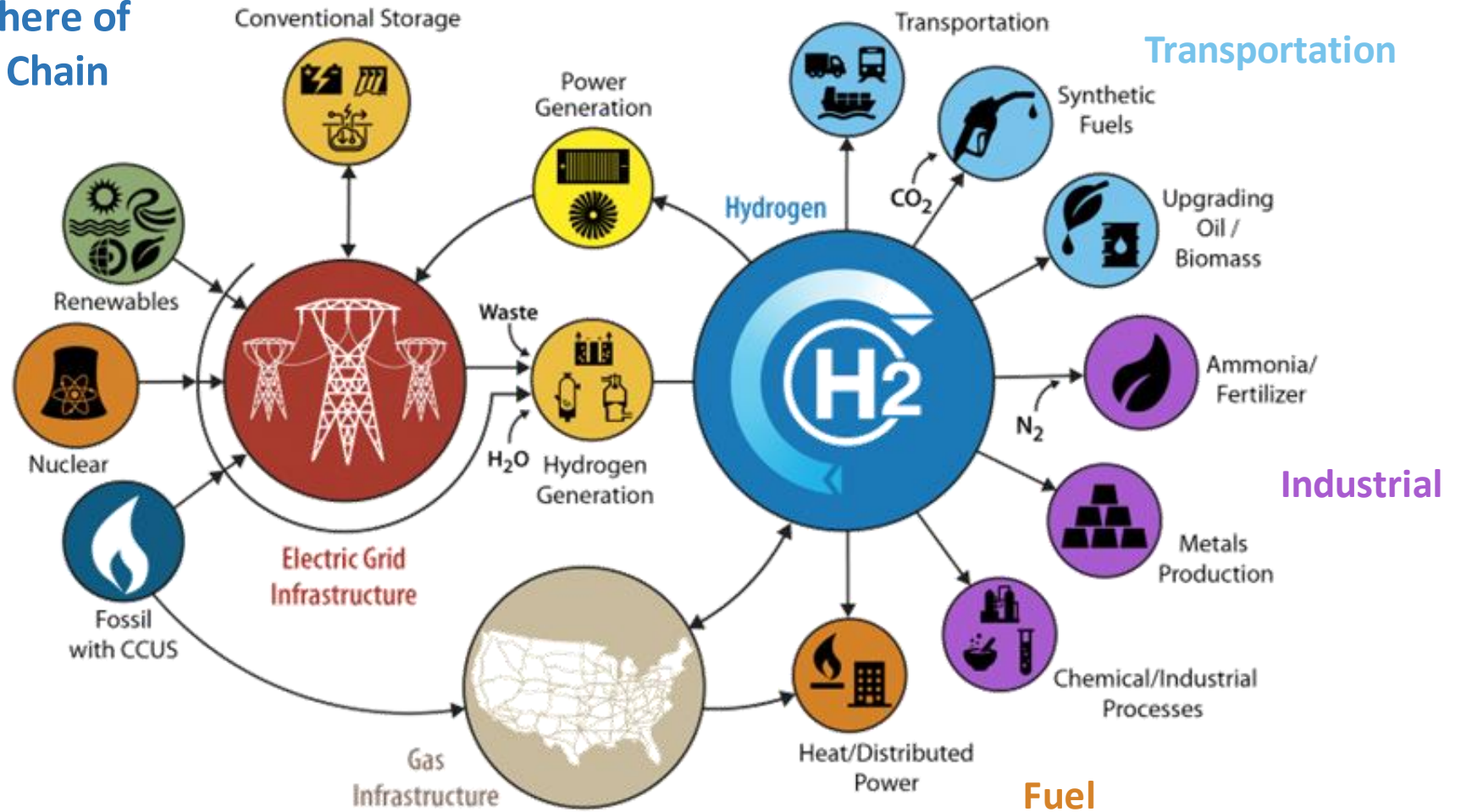
- Good-paying jobs
- Job growth acceleration
- Healthy economic transitions
- Improve community conditions

Address hardest-to-decarbonize applications in the electricity and industrial sectors



Hydrogen Supply Chain

The How, Why, and Where of the Hydrogen Supply Chain



Why Hydrogen?

- Versatile fuel that offers a path to sustainable long-term economic growth (potential to meet 14% of U.S. total energy demand by 2050).
- Serves as a sustainable fuel for transportation, production of electricity, and heat for homes.
- Enable zero or near-zero emissions in transportation, stationary or remote power, and portable power applications.
- Integrated approach from all energy sectors (fossil, nuclear, and renewable energy systems) to realize the full potential and benefits of hydrogen
- **NEED:** Provide clean hydrogen at competitive cost to decarbonize power, transportation and industry.

Department of Energy Hydrogen Program Plan 2020



Vision

The Program's vision is a prosperous future for the nation, in which clean hydrogen energy technologies are affordable, widely available and reliable, and are an integral part of multiple sectors of the economy across the country.

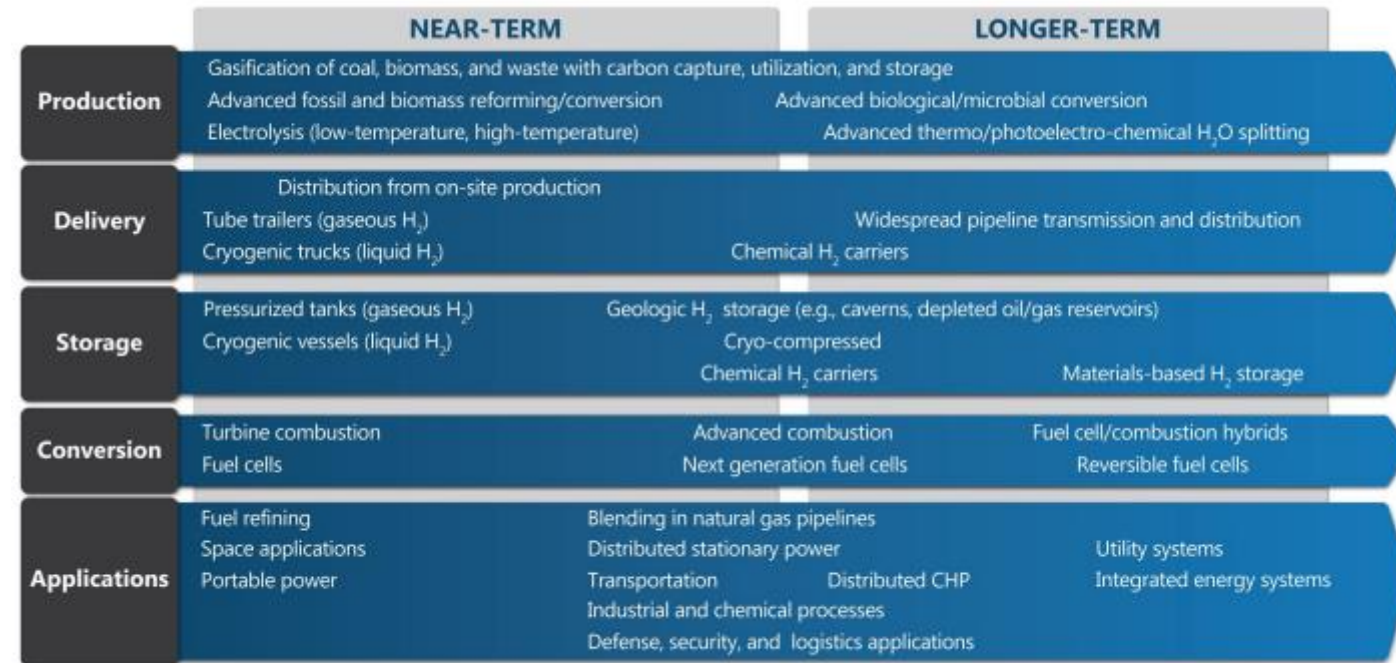
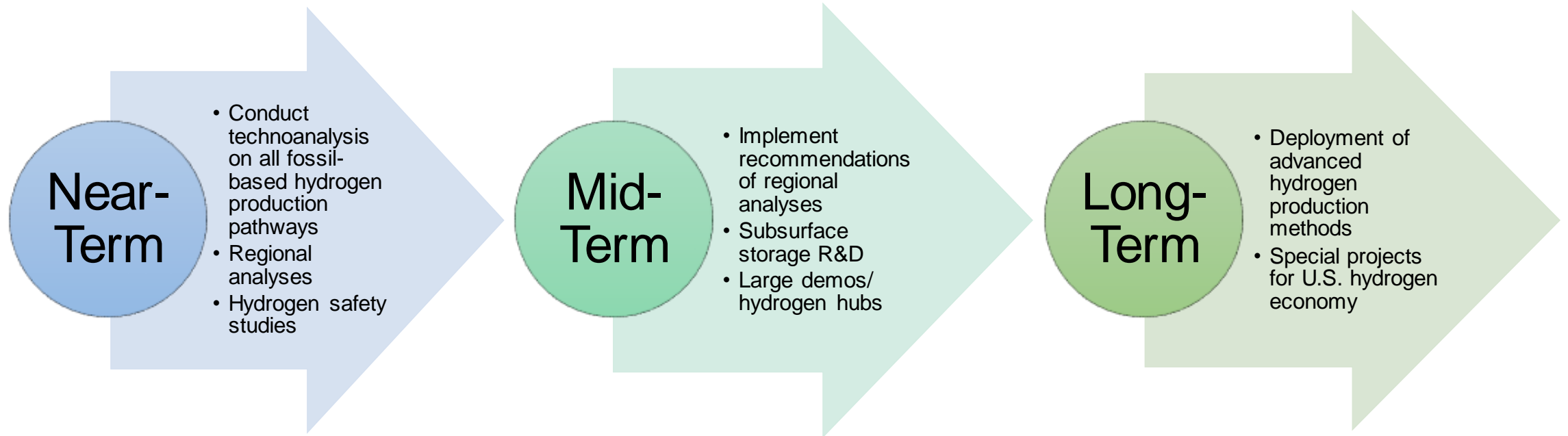


Figure 2. Key hydrogen technology options

Source: <https://www.hydrogen.energy.gov/pdfs/hydrogen-program-plan-2020.pdf>

FECM's Clean Hydrogen Strategy



Panel Discussion

