Best Practices Around the World
Effectiveness of Carbon Dioxide Capture and Storage (CCS) Technology

Public Works Commission

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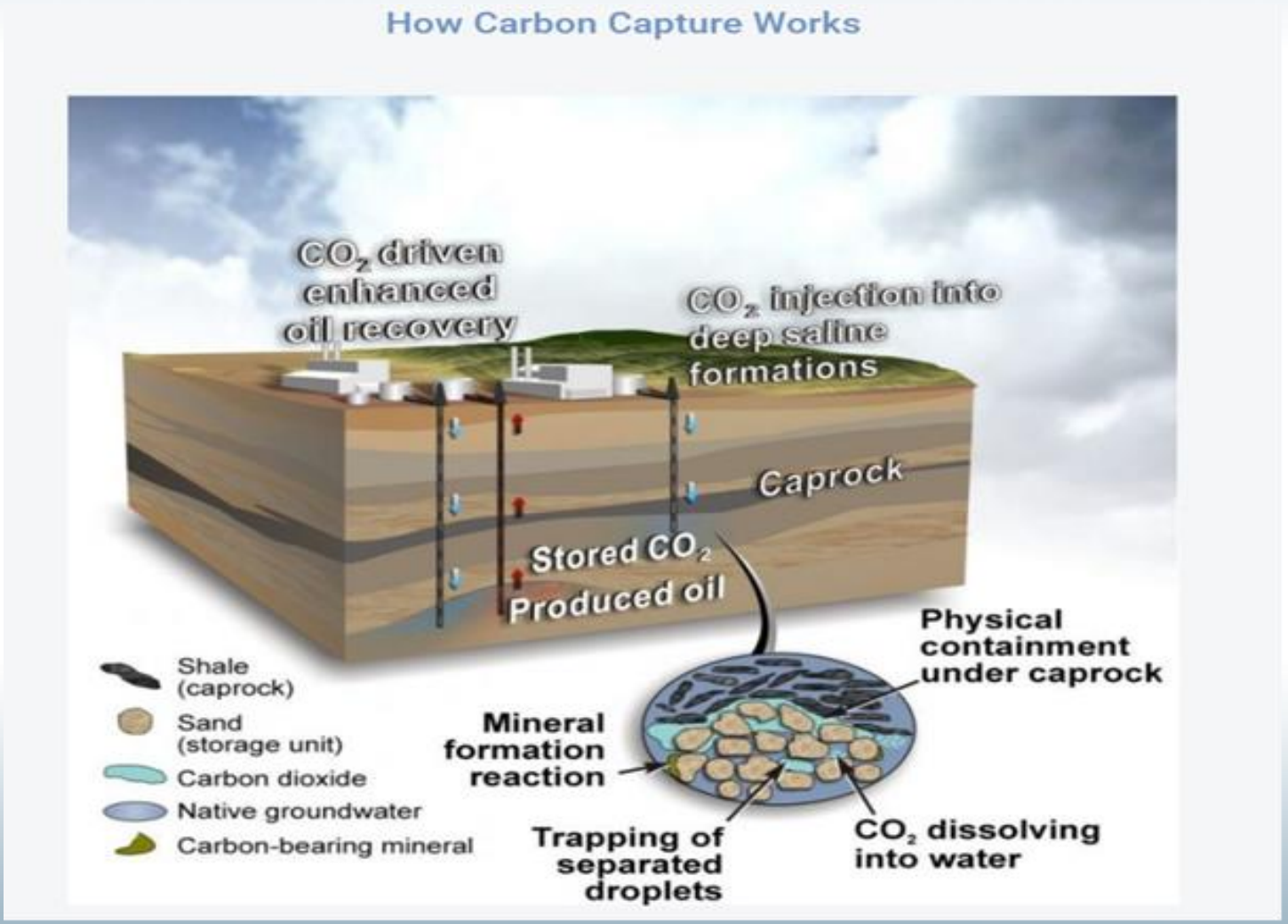
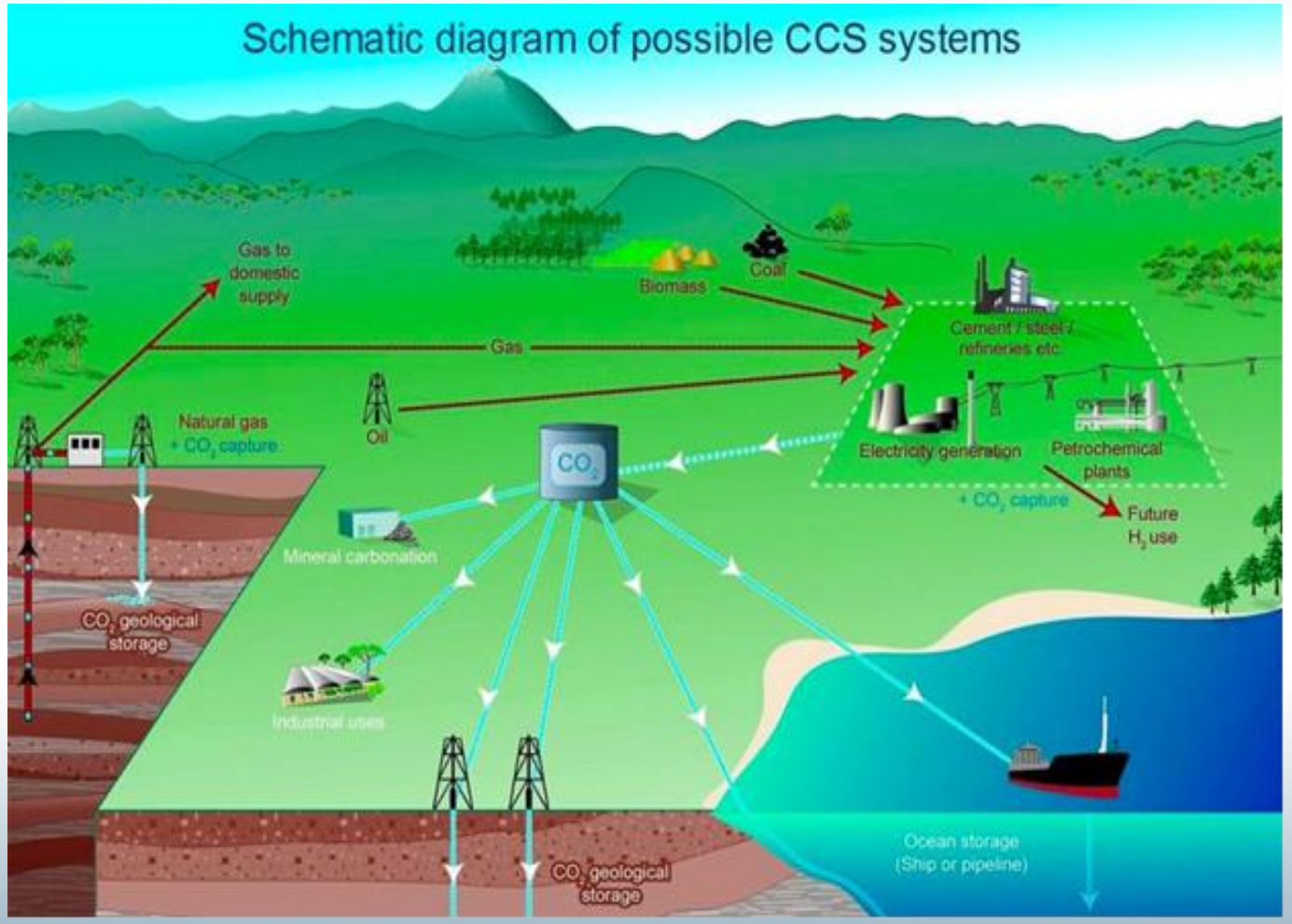
Presentation Outline

- Carbon Capture and Storage Basics
- Intergovernmental Panel on Climate Change (IPCC) and Carbon Capture
- Carbon Capture Systems in the world
- Summary of Pros/Cons
- Discussion

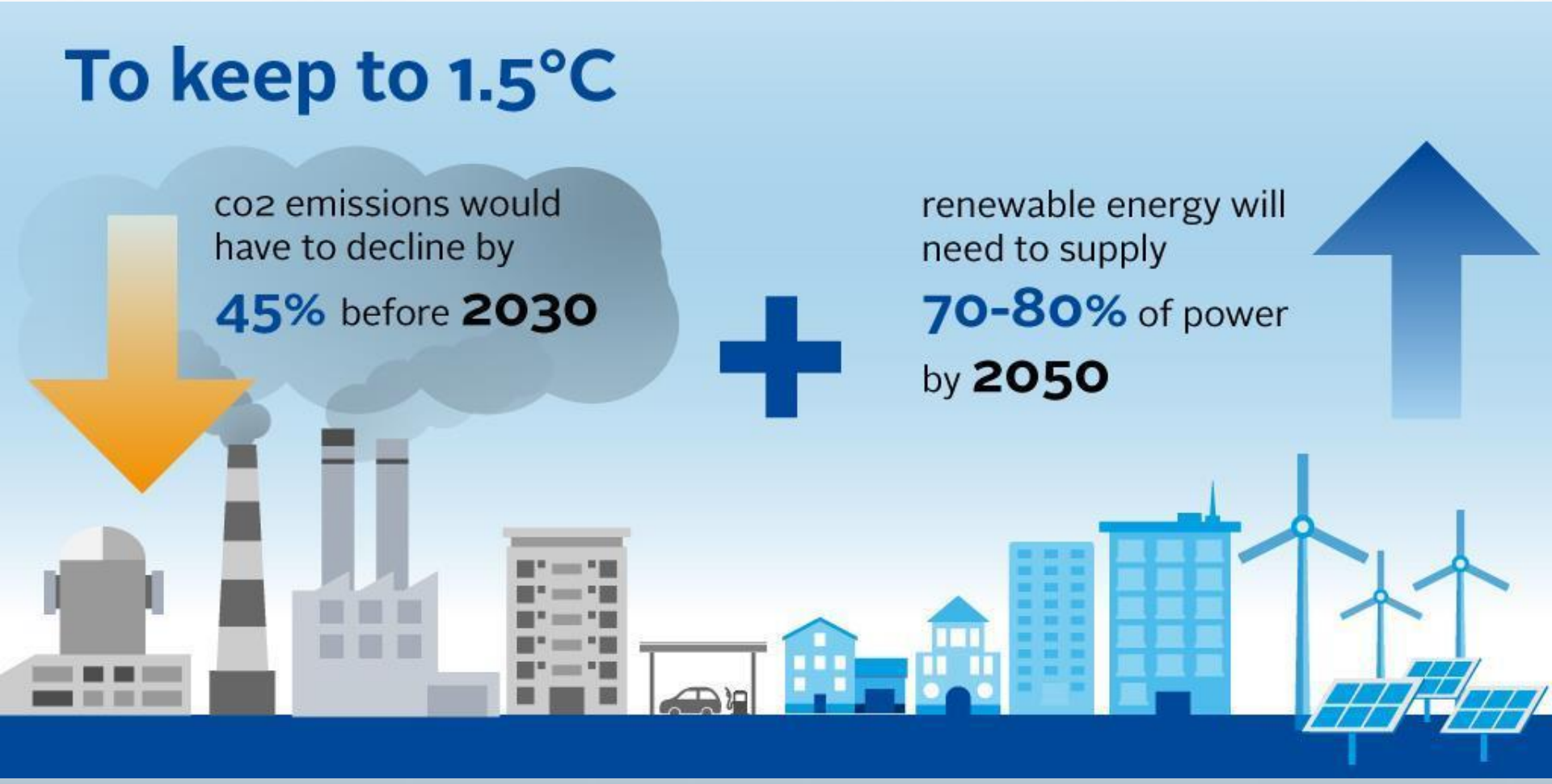
CCS Basics


How Carbon Capture Works
CO_2 driven enhanced oil recovery
CO_2 injection into deep saline formations
Caprock
Stored CO_2
Produced oil
Physical containment under caprock
Mineral formation reaction
Trapping of separated droplets
CO_2 dissolving into water
Shale (caprock)
Sand (storage unit)
Carbon dioxide
Native groundwater
Carbon-bearing mineral

CCS Application and Transportation

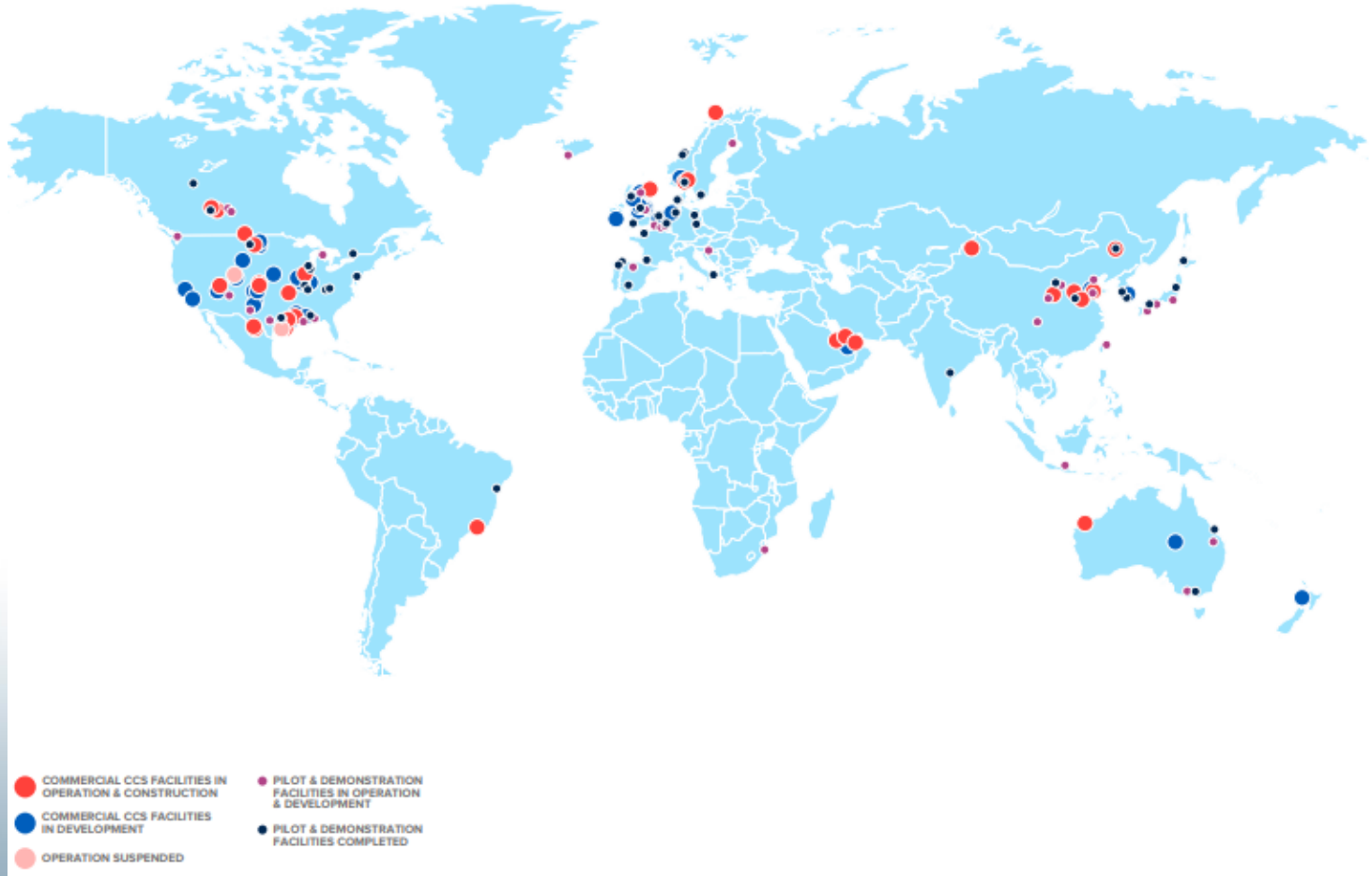


IPCC and Carbon Capture



Global CCS Projects

CCS Projects Worldwide



Existing Carbon Capture Systems

CCS in the United States

- Petra Nova carbon capture and enhanced oil recovery project in Texas.

- Archer Daniels Midland industrial carbon capture and storage project in Illinois.

Existing Carbon Capture Systems

CCS in Australia

- The Gorgon liquefied natural gas (LNG) project in Western Australia.

Summary of Pros/Cons

CCS PROS	CCS CONS
Achieving deep decarbonization.	Preventing the eventual release or capture of CO_2 into the atmosphere.
Developing low-carbon hydrogen generation.	Increasing oil recovery and fracking.
Providing low-carbon dispatchable power.	Costing more in electric expenses compared to solar, wind, and geothermal.
Delivering negative emissions.	Causing for downhole communication or frack hits.

Discussion