



Nebraska Public Power District

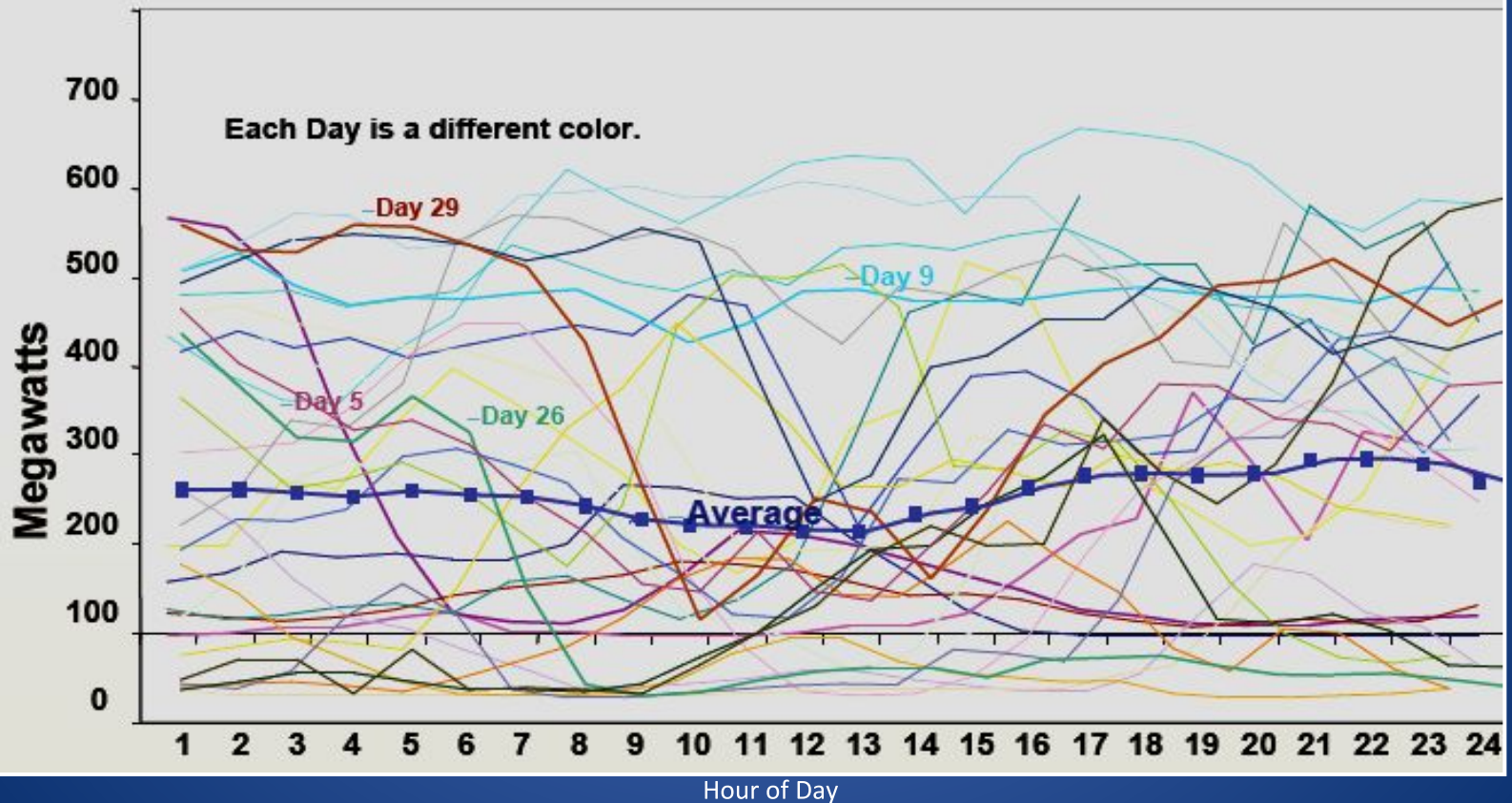
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Energizing the Future

***Compressed Air Energy Storage
(CAES)***

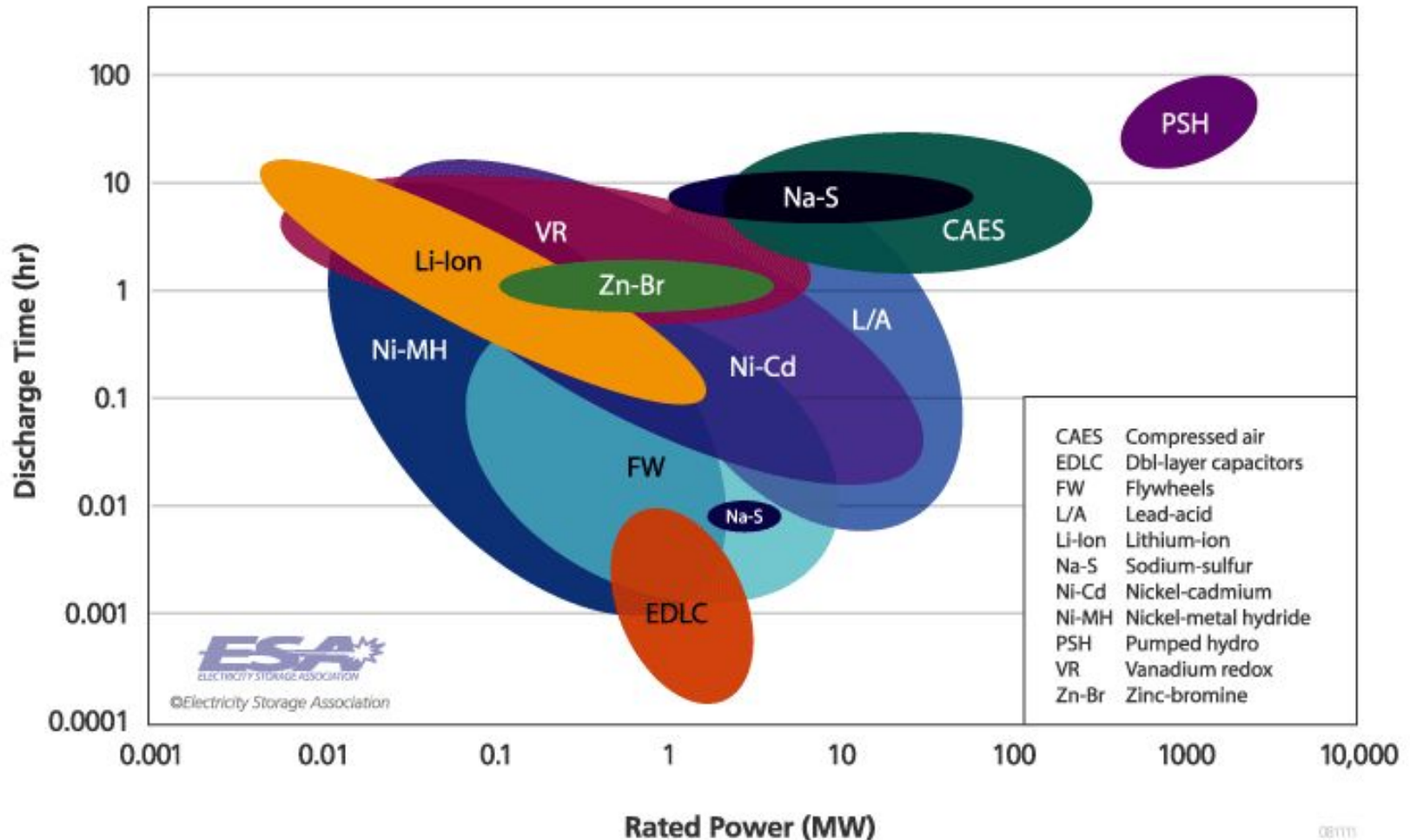
Major Wind Generation Issue

Tehachapi Wind Generation in April – 2005



System Ratings

Installed systems as of November 2008



Energy Storage

Benefit:

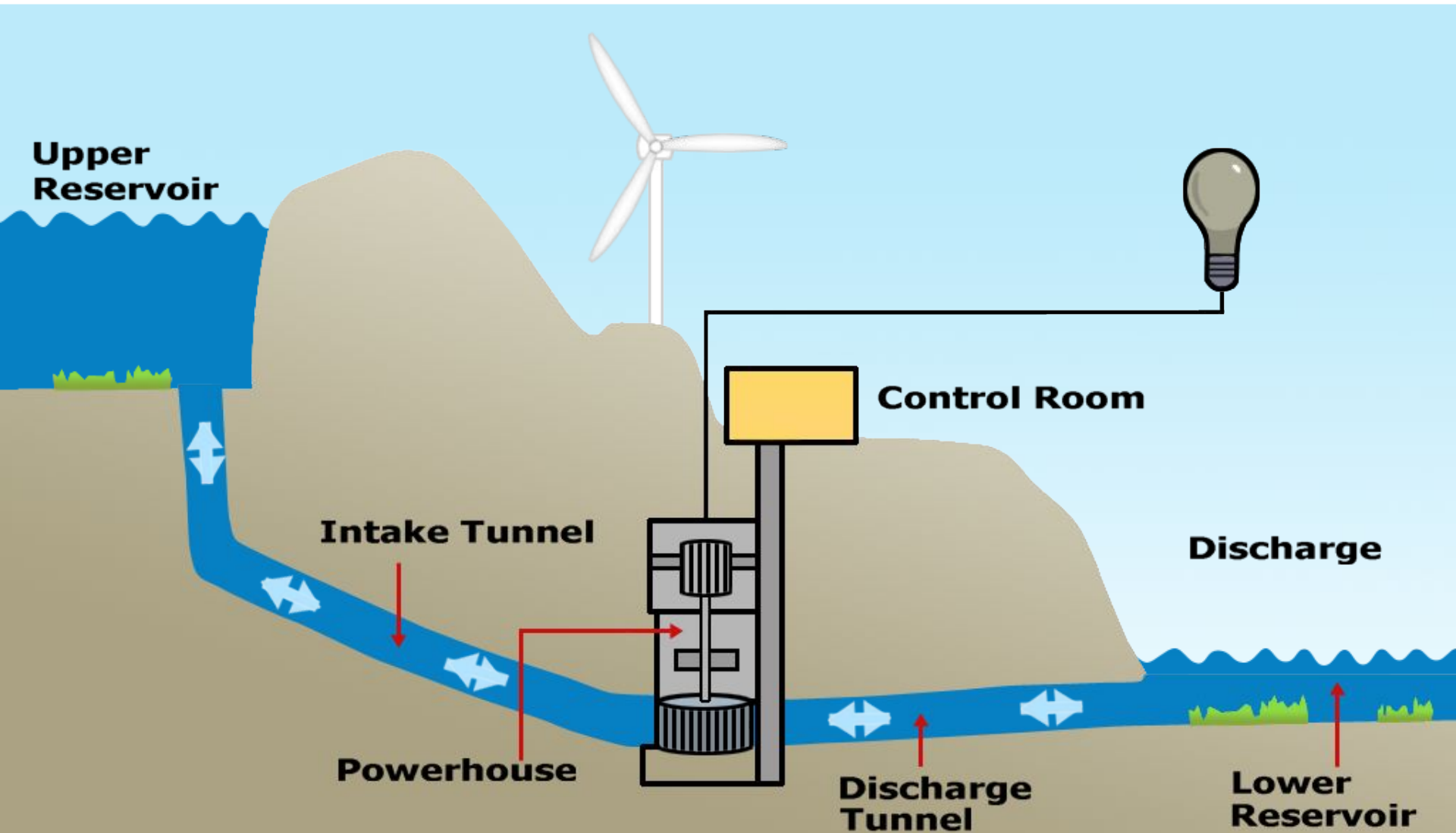
***Help drive the integration
of renewable energy resources
beyond present penetration levels.***

***Help convert non-firm energy
resources to firm, dispatchable
resources.***

Pumped-Storage Hydro Plant



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Upper Reservoir

Intake Tunnel

Powerhouse

Control Room

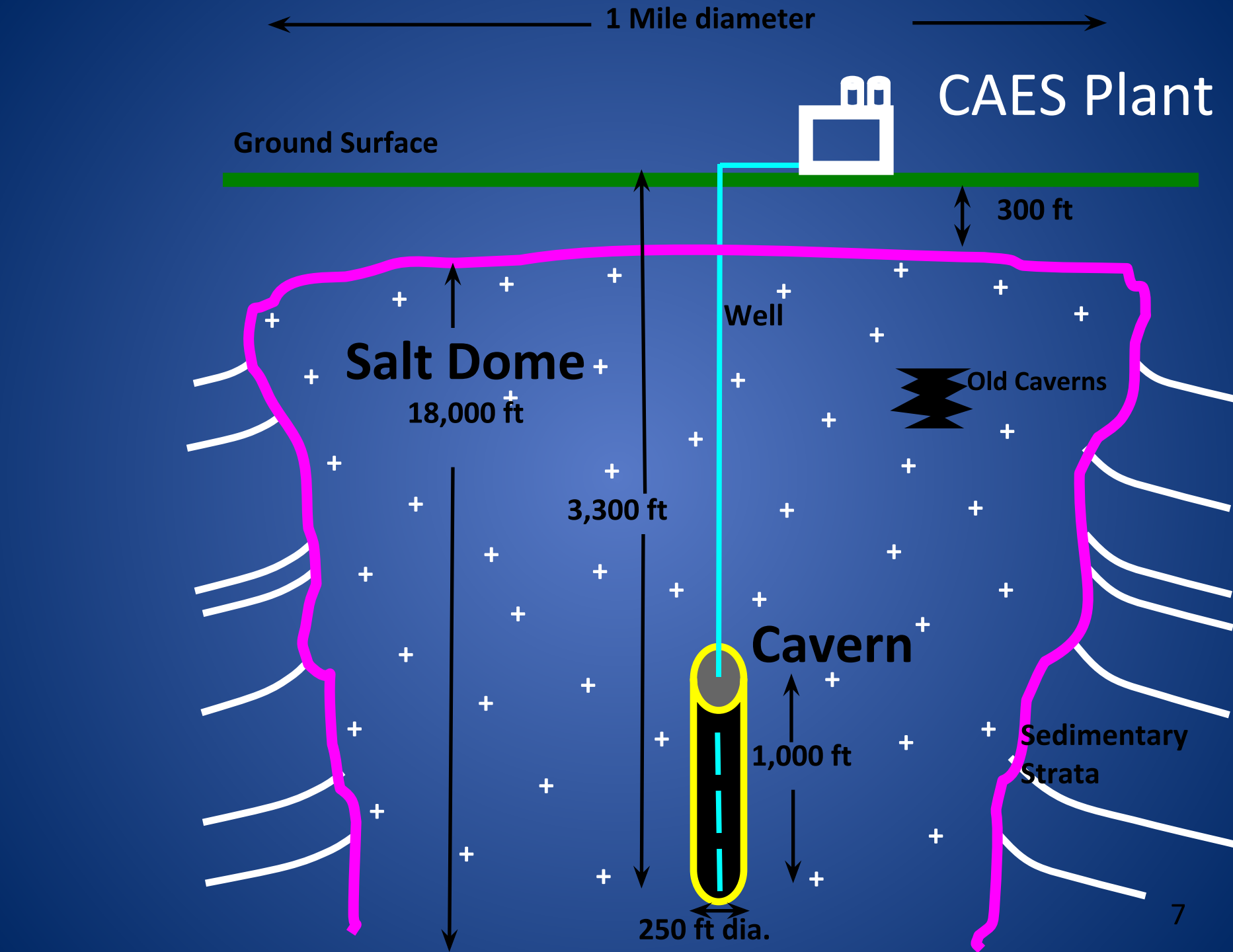
Discharge Tunnel

Discharge

Lower Reservoir

MacIntosh, Alabama







Salt Core

3,300 ft. Deep

MacIntosh Salt
Dome, Alabama
Electric Cooperative

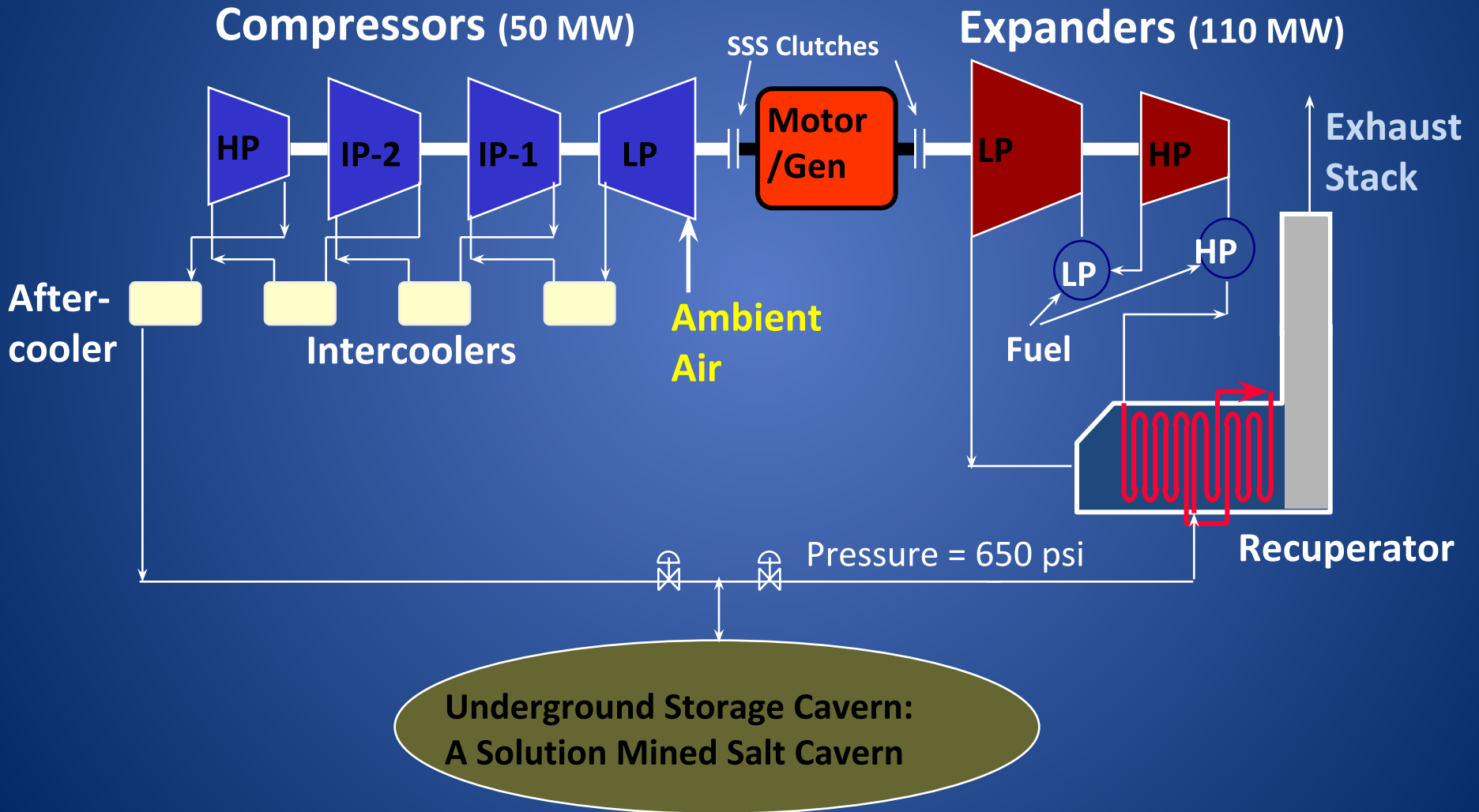
CAES Plant

CAES Injection Wellhead



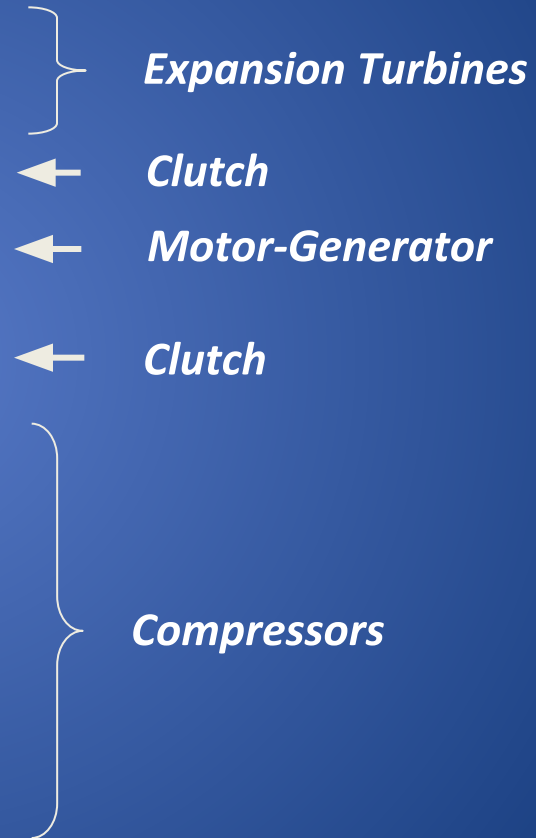
Alabama CAES Plant: Design Schematic

- - - First Generation Design - - -

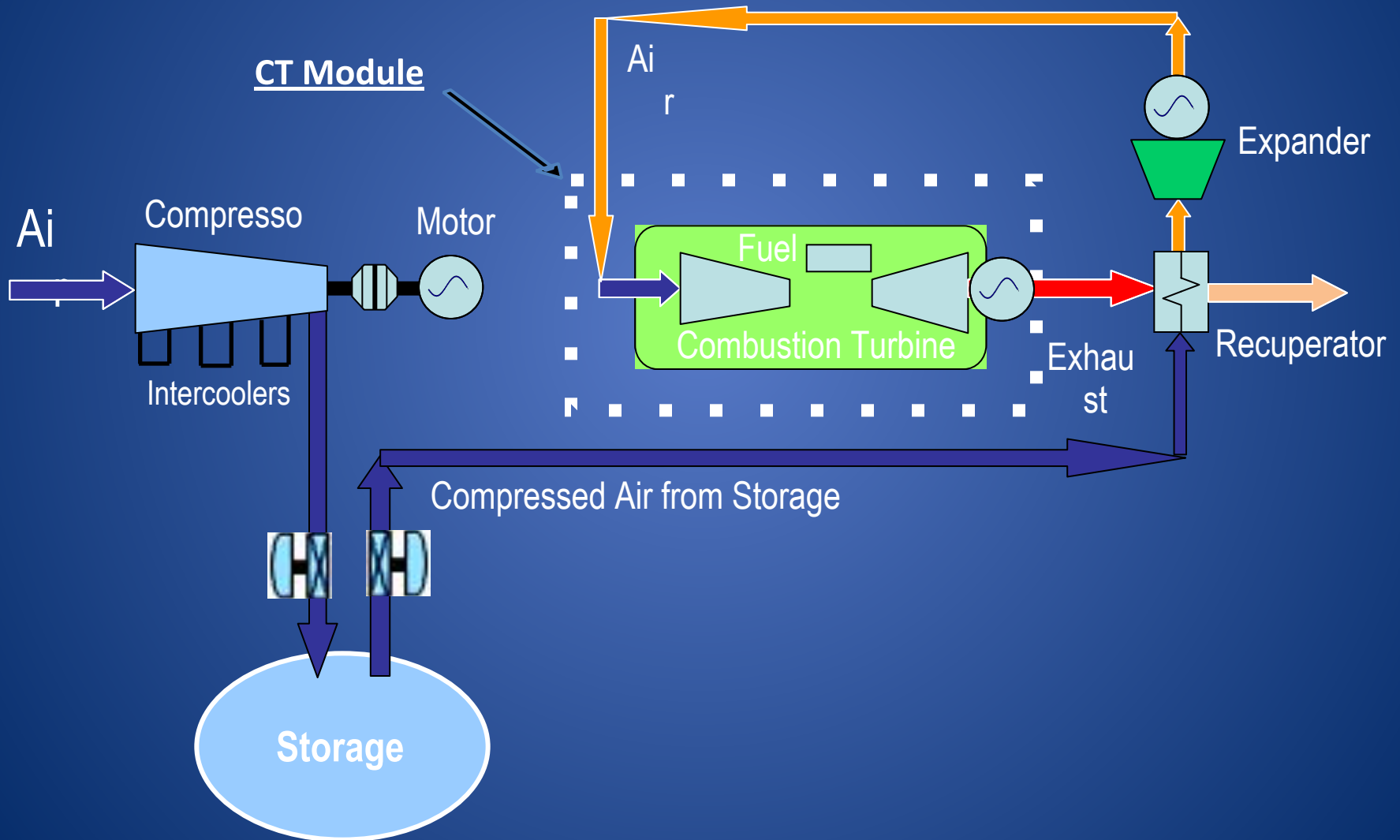


Alabama CAES Plant

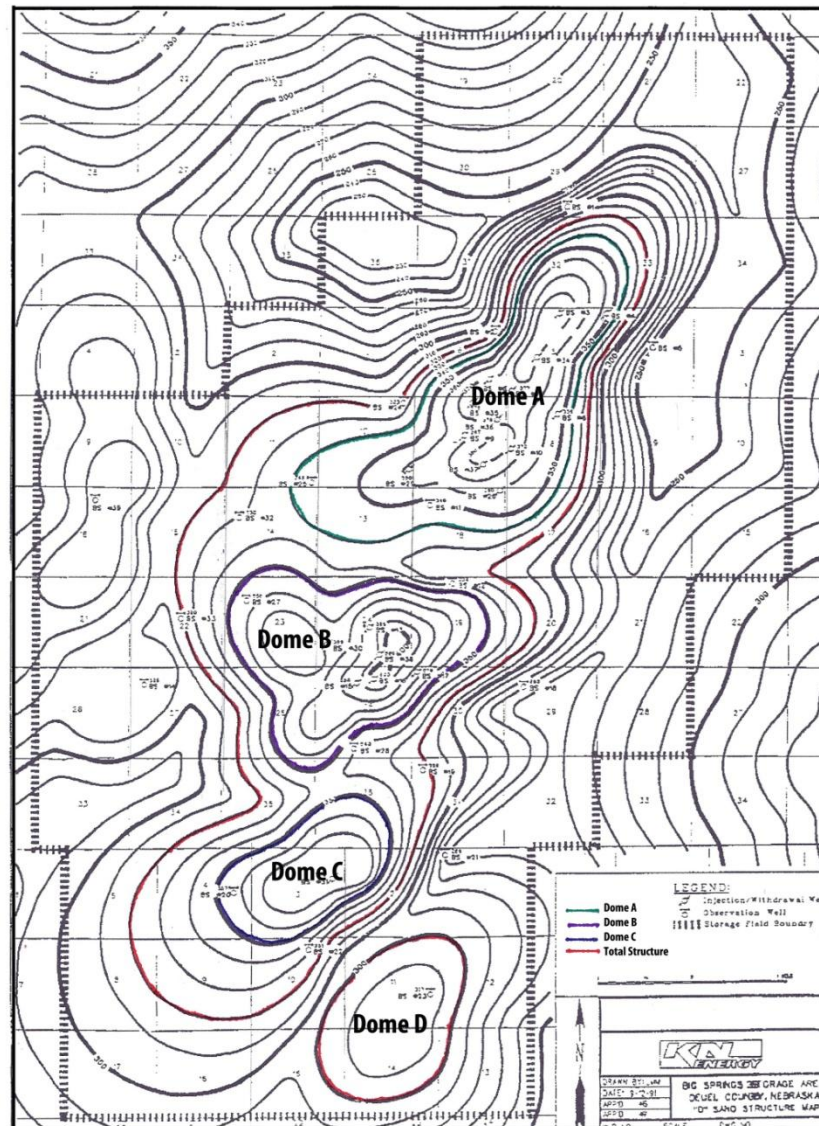
110 MW Turbomachinery Hall



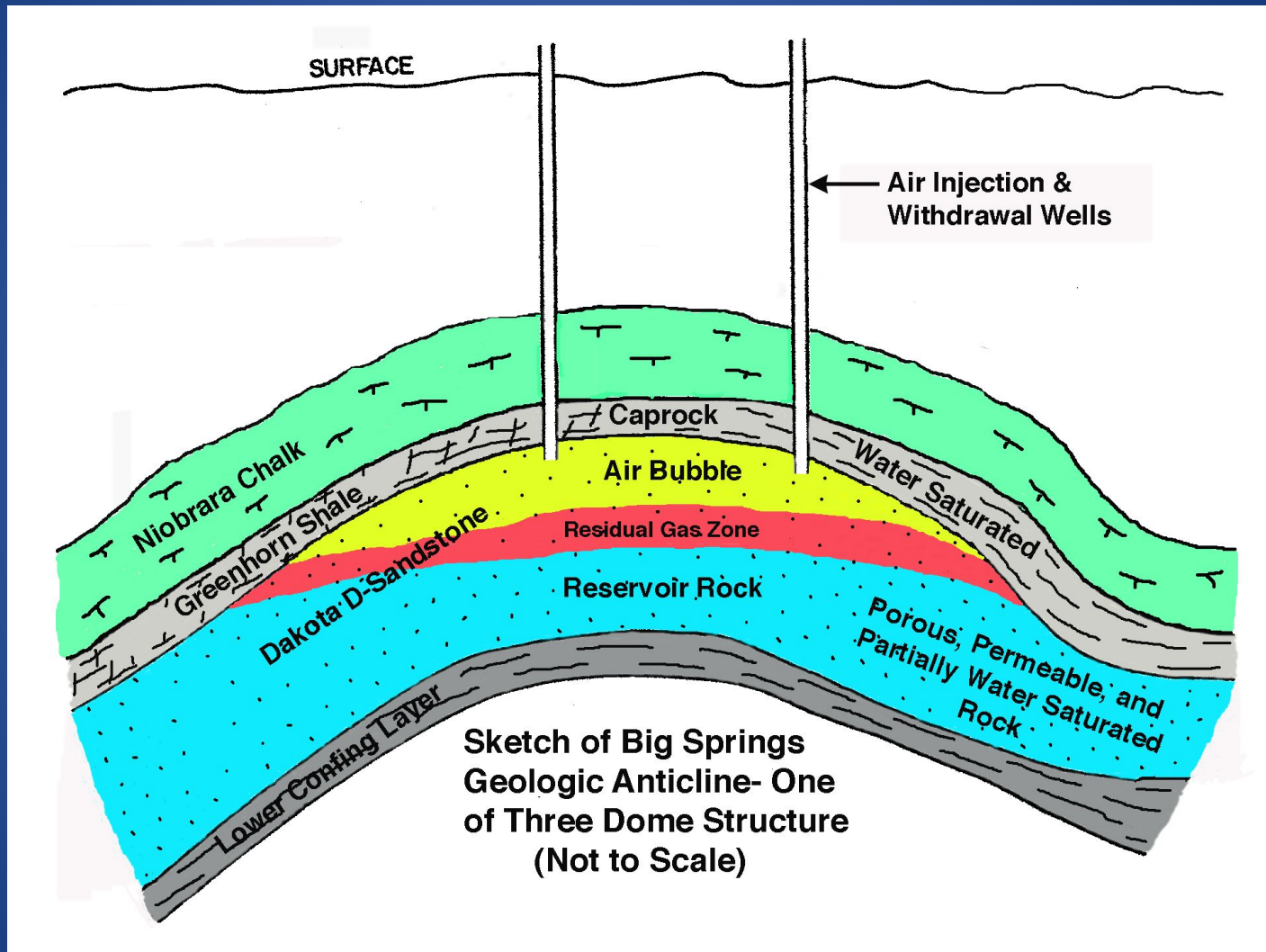
Advanced CAES Plant



Big Springs Gas Storage Unit



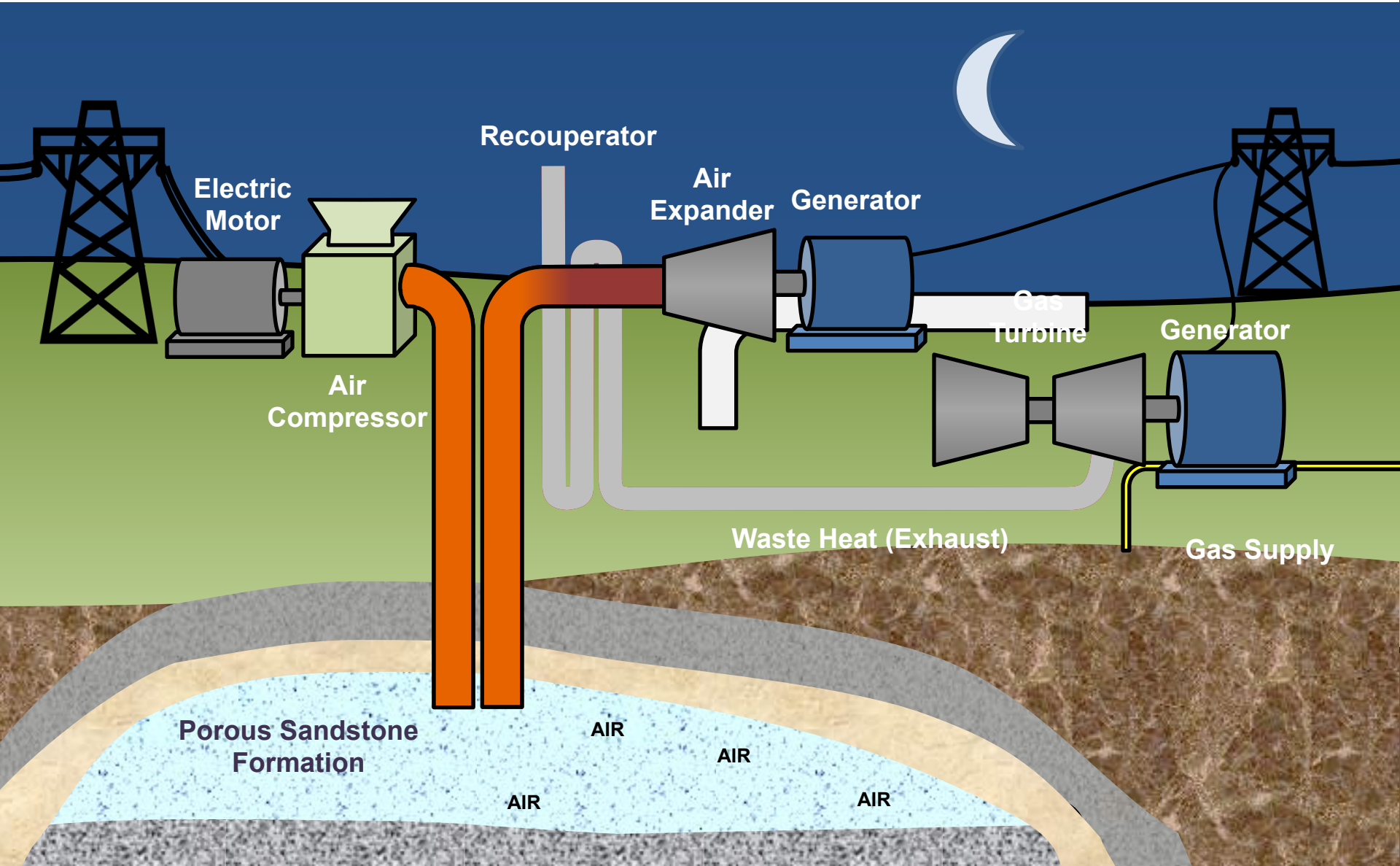
Big Springs Geology



Compressed Air Energy Storage



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Current Status

- NPPD has secured the storage rights in the D-sand formation of the Big Springs Gas Storage Unit
- Developing Air Injection Test Plan for air bubble development
 - Air injection test is not currently scheduled
- Compressed air energy storage is only a contingency option at this time based on current and future needs

Questions?