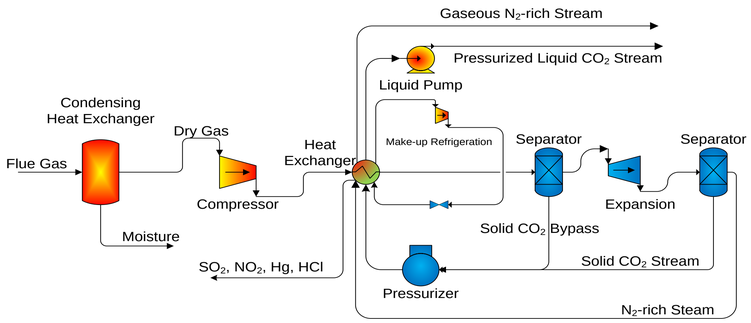
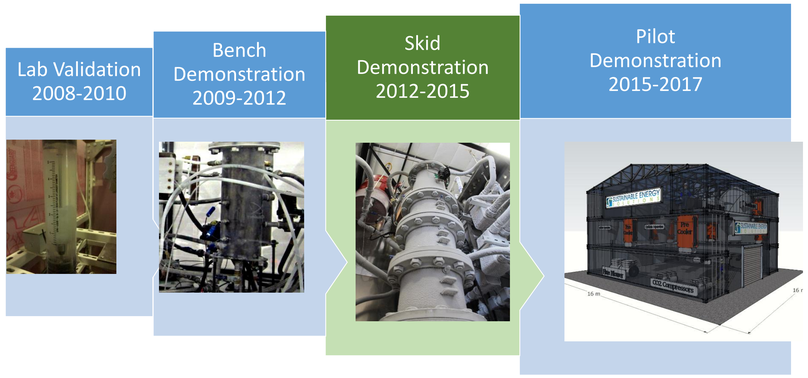
CRYOGENIC CARBON CAPTURE

Sustainable Energy Solutions, ARPA-E, Wyoming, CCEMC

Compressed Flue Gas (CFG) VERSION



DEVELOPMENT STATUS

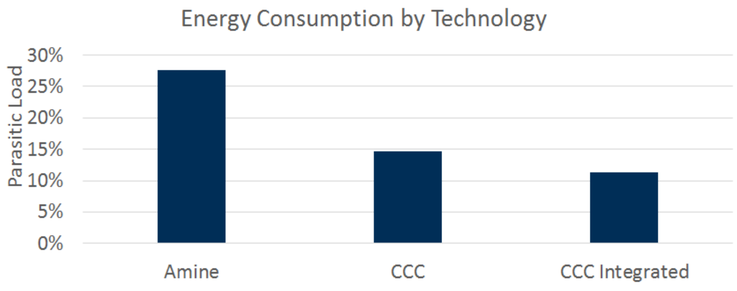


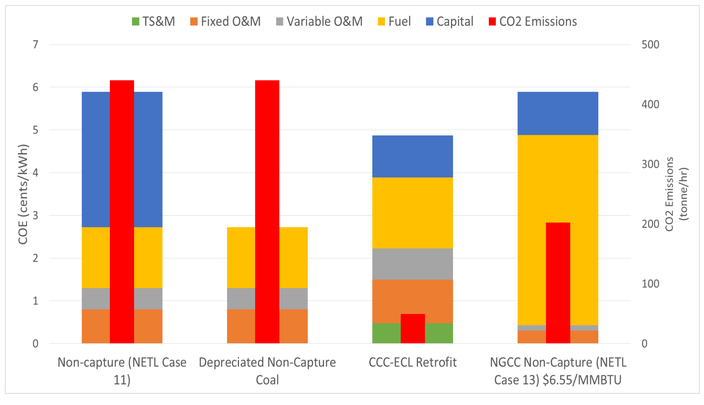
Demonstrations

Top: Testing at Power Plant

Bottom: Testing at Cement Plant

COST AND ENERGY EFFICIENCY

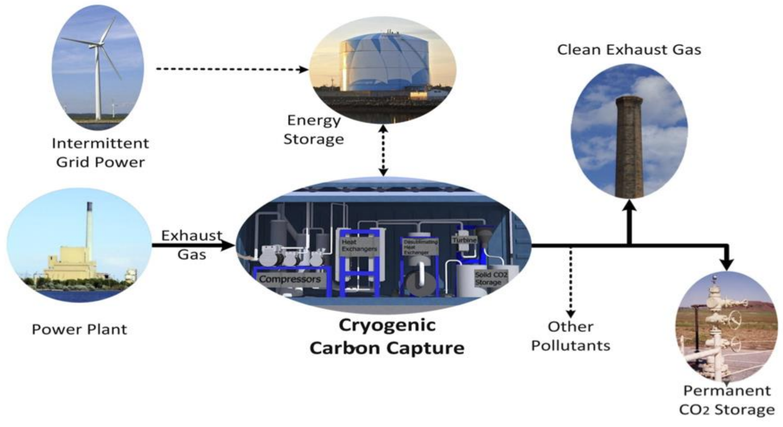




CCC Value Proposition

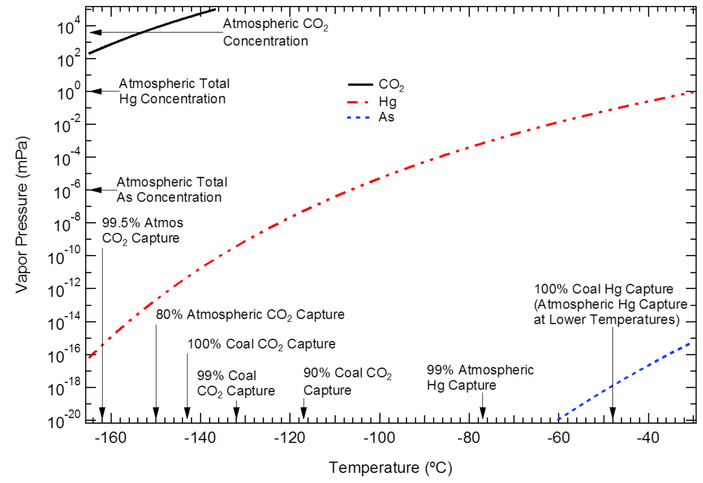
- Energy efficient & cost effective CO_2 capture (greater than 90%)
- Bolt-on technology ideal for retrofitting
- Widely deployable across various industries (Natural Gas, refineries, coal, cement plants etc.)
- Captures multiple pollutants
- Enables adoption of renewables through rapidly responding, large-scale energy storage

ENERGY STORAGE



SUSTAINABLE ENERGY SOLUTIONS

POLLUTION REMOVAL



Temp (°C)	Capture
-48	100% Mercury from Coal
-77	99% Mercury from Atmosphere
-116	SO2 EPA standard met
-117	90% Coal CO_2 Captured (Base)
-132	99% Coal CO_2 Captured
-143	100% Coal CO_2 Capture
-150	80% Atmospheric CO_2 Captured
-162	99.5% Atmospheric CO_2 Captured

1. Removes all the mercury from the coal as well as >99% of the mercury in the incoming air
2. Captures >95% CO_2 at marginal cost
3. Captures SO_2/SO_3/NO_2 and PM_{xx}
4. Far exceeds new EPA standards for mercury and air toxics