

Advanced Technology to Capture CO2 from Exhaust for Injection or Transport to Commercial Markets

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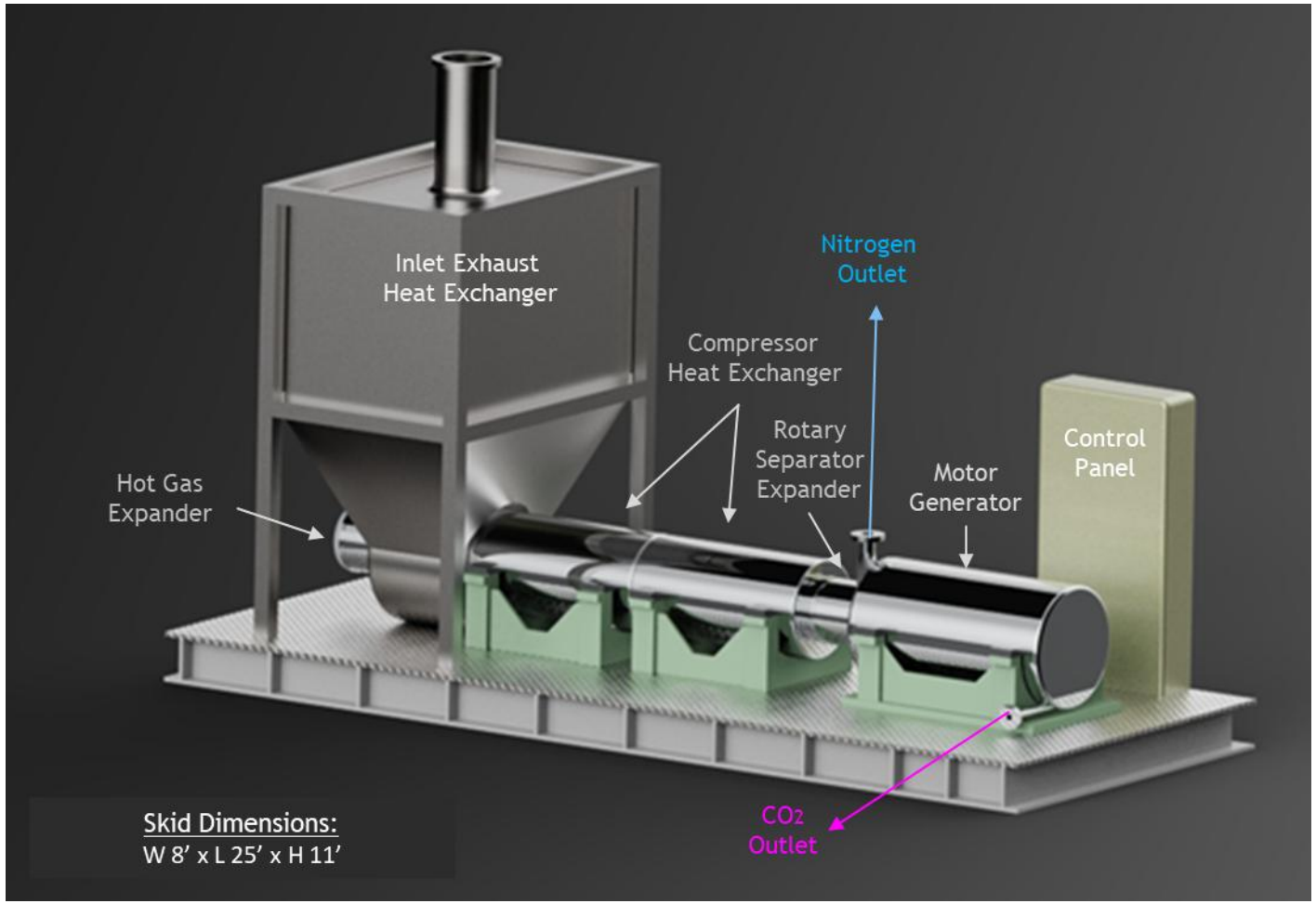
Axip’ s New Carbon Capture Technology

Exhaust Carbon Capture Skid

- Patented (U.S. Patent 11635255) April 25, 2023.
- Compact skid designed to be the size of a typical compressor package
- All rotating components are mounted on a common shaft
- CO2 capture efficiency > 99%
- The system utilizes waste heat to power the cycle
- Capable of treating large volumes of exhaust and generating power
- Pure supercritical CO_2 is delivered at high pressures requiring no additional compression
- Capture Methane out of the exhaust



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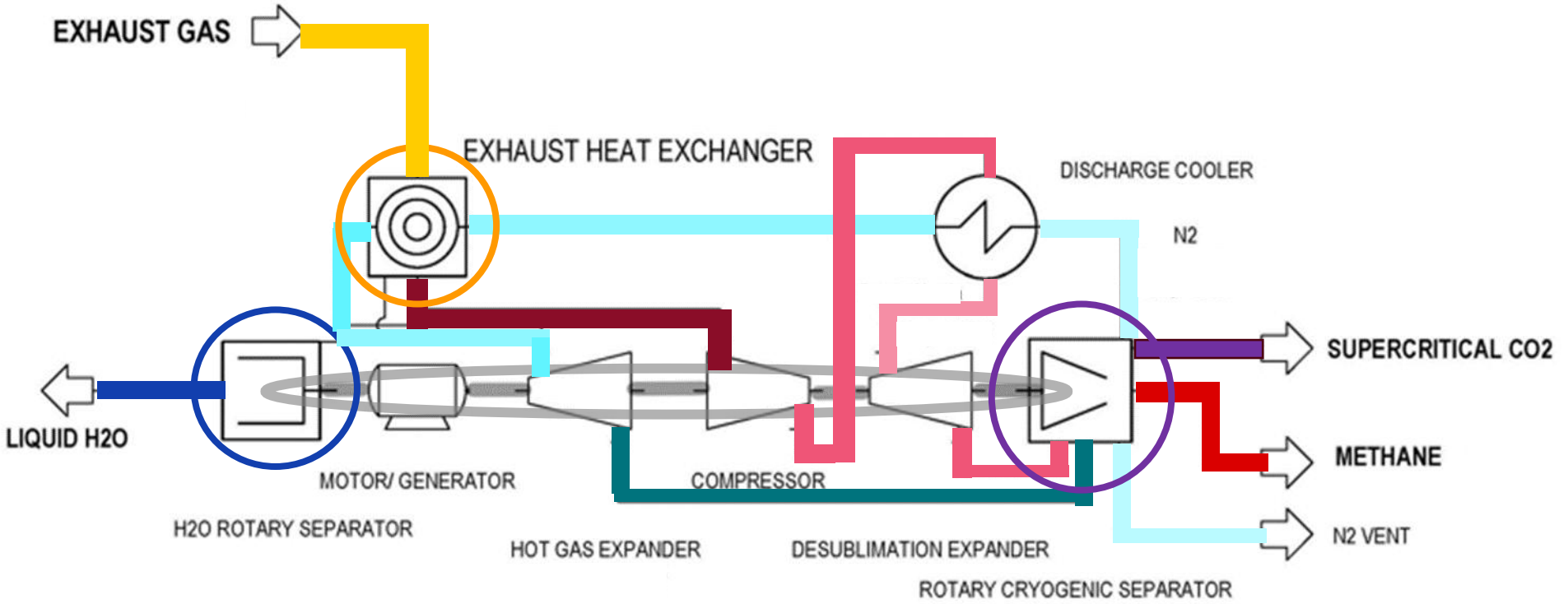
Exhaust Carbon Capture (ECC) PFD

Axip - Exhaust Carbon Capture System



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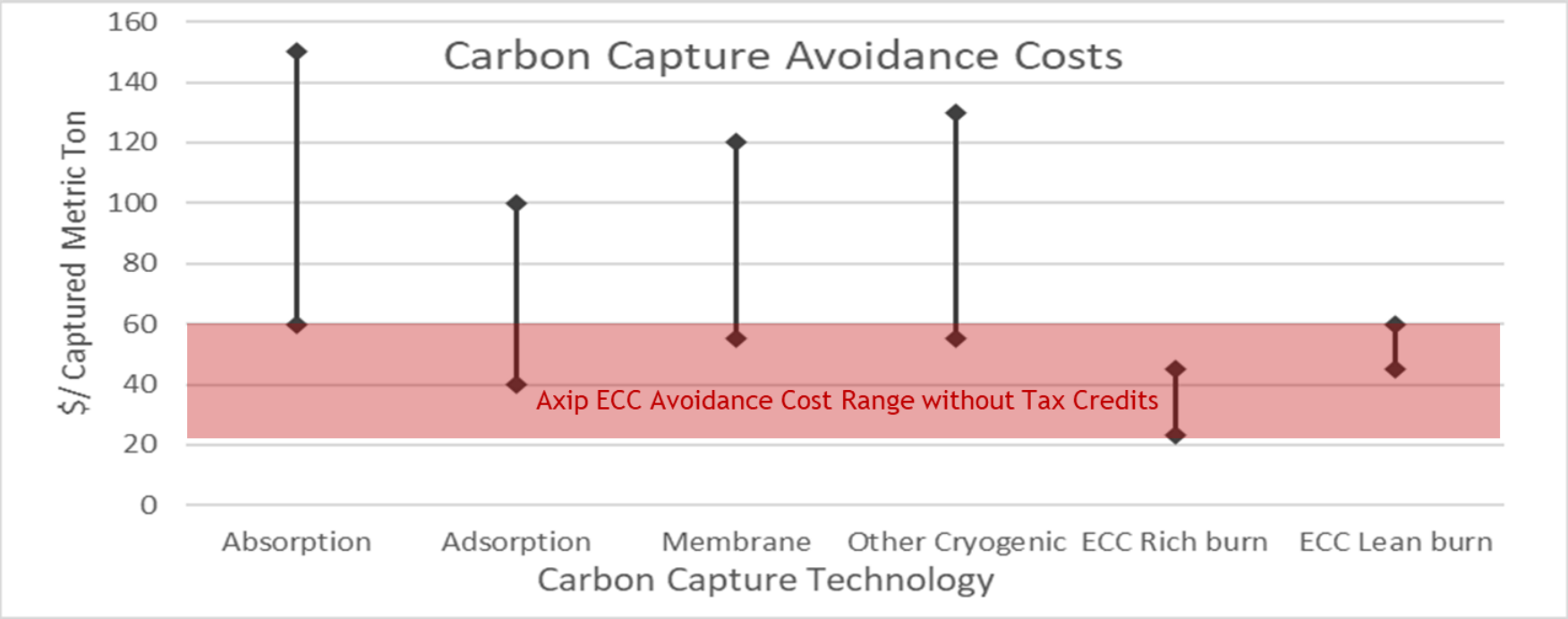
Axip Carbon Capture Comparison

- Originally enacted in 2008, Section 45Q of the US tax code provides a performance-based tax credit for carbon capture
- Changes to the contents of the regulation from Biden's IRA have increased the applicability and credits that qualify
  - Minimum has changed from 500,000 metric tons captured annually to **12,500 metric tons**
  - IRS 45Q tax credits are raised to **$60 per ton for EOR and $85 per ton for sequestration**



Axip Carbon Capture Comparison

Compressor Exhaust Comparison			
	Rich-burn Drive	Lean-burn Drive	Turbine
Number of Units	8	8	1
Horsepower	11,040	11,040	11,110
Exhaust Volume (Mcf/Day)	24,042	37,700	79,098
CO_2 in Exhaust (%)	10.12%	6.68%	3.08%
CO_2 (Tons/Year)	48,670	43,143	46,115
Power Usage (KWh)	3,475	6,014	10,733
Power Generated (KWh)	3,319	5,270	11,100
Cycle Net Power (KWh)	156	752	-372

- Rich burn compressors are the most efficient for Avoidance Cost
  - Lower exhaust volumes
  - Higher engine exhaust temperature

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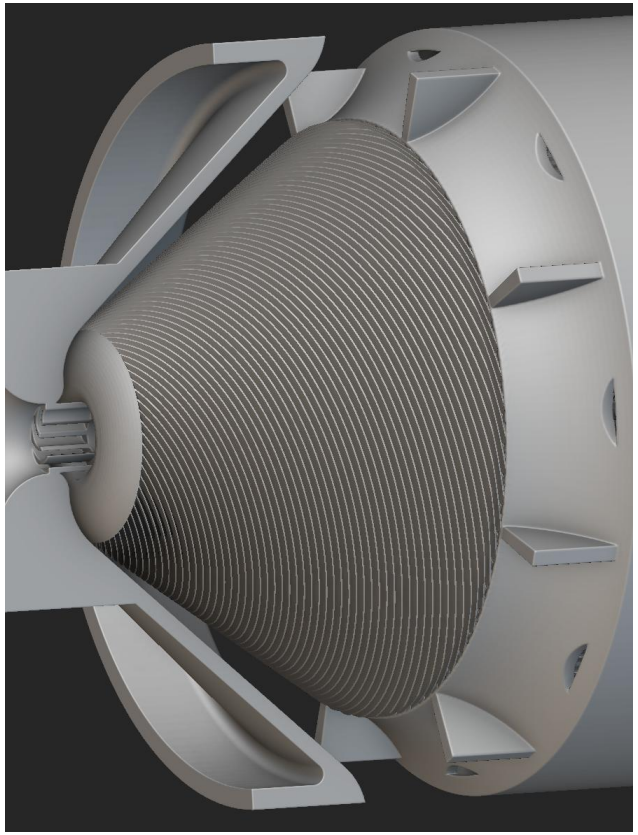
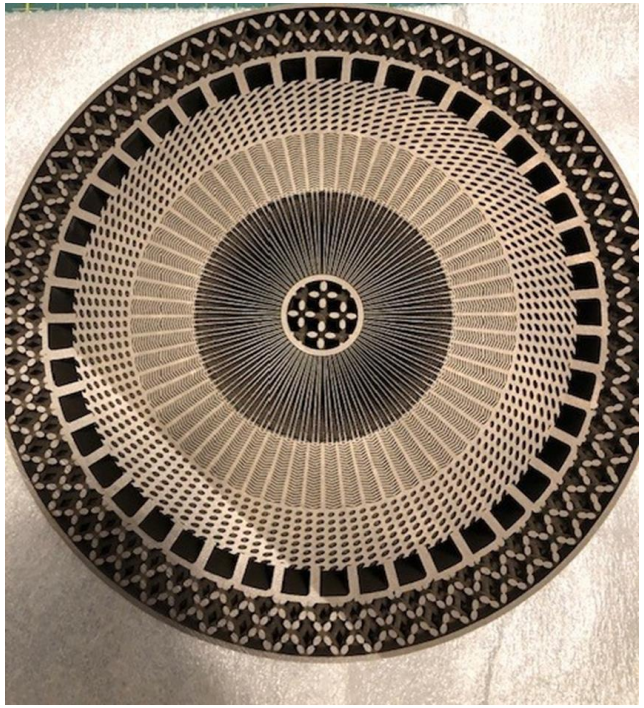
Rotary Separation Technology





- Rotary separator utilizes supersonic isentropic expansion to condense/de-sublimate different gas compositions.
- Condensed fluid is centrifuged to the outer walls while the non condensed gas components migrate to the center with reduced axial velocity.
- Condensed fluid recaptures the kinetic energy and is discharged at high pressure through a partial emission pump diffuser.
- Non condensed gas passes through a rotary structured packing that further separates any condensed particles to sub-micron levels.
- Separation technology is able to maintain thermodynamic conditions over large flow conditions due to variable throat technology.
- The separator runs at ultra high speeds with gas bearings and gas seal technology.
- The separator is very modular, and the flexible design utilizes the same hardware for many different process applications.
- The only process conditions that need to be adjusted between designs is inlet pressure, inlet temperature, and outlet pressure.

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ECC Summary and Overview

- Exhaust Carbon Capture can be an effective way to decarbonize compressors, reducing Scope 1 and Scope 2 emissions
- The ECC modular design can treat up to 70 Million scf/day of exhaust gas, remove up to 75,000 metric tons per year of CO2, and fit on a compact skid
- Added value is created by utilizing exhaust waste heat to power the cycle
- No chemicals or fluids
- With over 1,700 Midstream compressor stations in the US, exhaust capture can provide an economic CCUS impact to reach net-zero
- Axip's rotary separator is the principal component of the ECC system
- Construction and testing of the Rotary CO2 Separator is currently underway Q1 2025 with a cooperative agreement between Axip and Innio/Waukesha

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Axip Exhaust Carbon Capture Technology

- **Questions**