

September 7, 2021

CCS Federal Policy

Considerations for retrofitting the
Cosumnes power plant

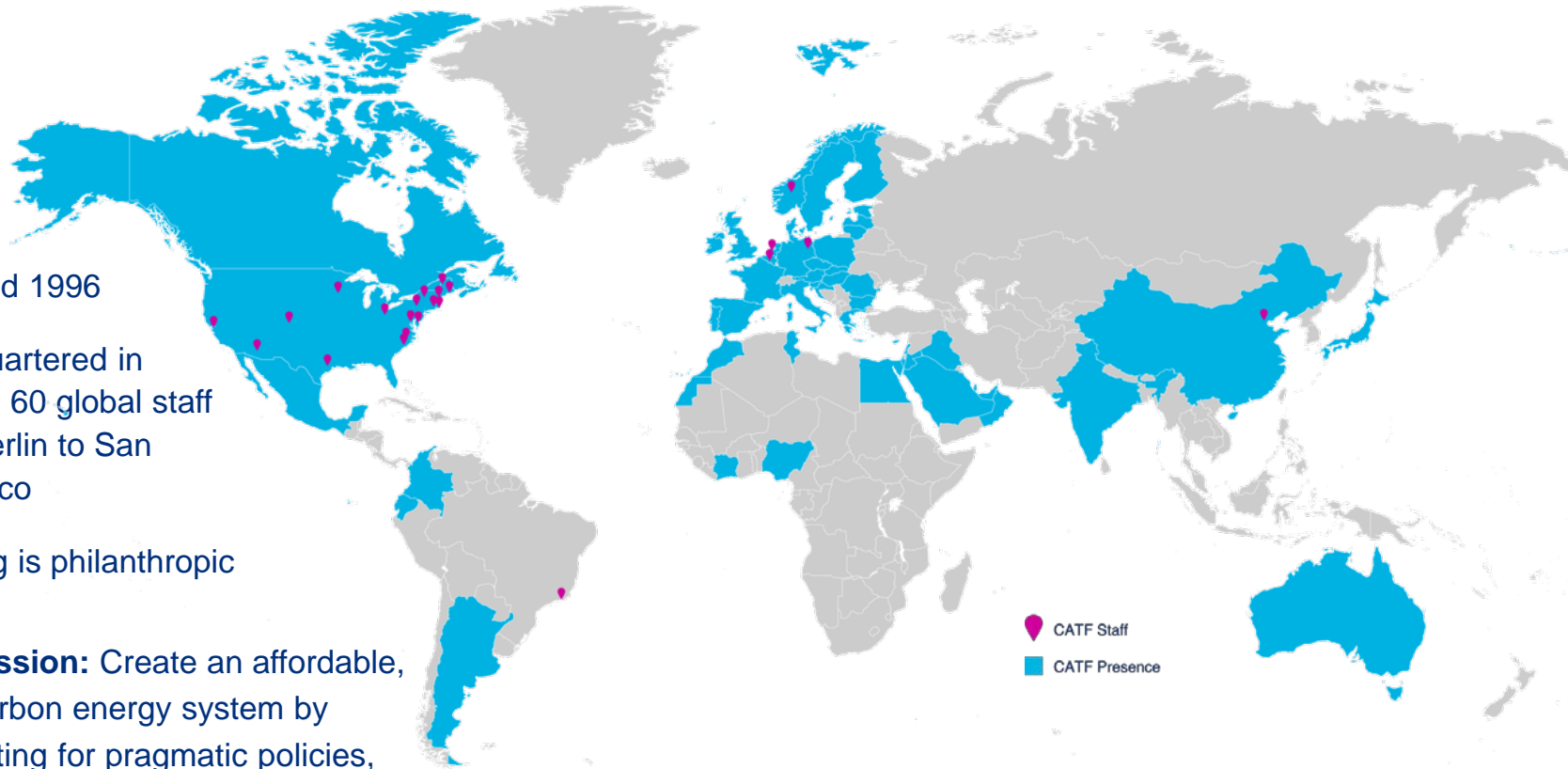


CLEAN AIR
TASK FORCE

John Thompson, Director of Markets and Technology

About the Clean Air Task Force

- Founded 1996
- Headquartered in Boston, 60 global staff from Berlin to San Francisco
- Funding is philanthropic
- **Our Mission:** Create an affordable, zero carbon energy system by advocating for pragmatic policies, new business strategies, and advanced technologies.
- **Our Vision:** Meet the world's rising energy demand in a way that is financially, socially, and environmentally sustainable.



Cosumnes CCS option

Must overcome cost and CO₂ storage barriers to be viable

Cost

- Capture equipment is capital intensive and adds operating costs.
- Black and Veatch estimates \$800 million capture investment needed for Cosumnes.

Storage

- Possible geologic storage nearby (16 miles), but many actions required to establish viability.



The CCS benefit: Very low stack emissions (even net-zero) on a 24/7 basis. Requires relatively limited additional land.

Current federal policies don't fully address cost and storage barriers

45Q tax incentives award \$50/metric ton for saline storage

- Value is too low for most CCS applications
- If project lacks tax liability, credits hard to monetize
- CO₂ capture thresholds too high for some projects to be meet
- Commence construction window (2026) too short

Few Front-End Engineering Design (FEED) study grants

Support for transport and storage centered on small number of CarbonSafe projects

Industry	Capture (\$/tonne) ¹	Transport & Storage (\$/tonne) ²	Total CCS (\$/tonne)
Ethanol	12-30	25	37-55
Ammonia	15-21	25	40-46
Gas Processing	11-16	25	36-41
Cement	40-75	25	65-100
Refineries	43-68	25	68-93
Steel	55-64	25	80-89
Petrochemicals	57-60	25	82-85
Hydrogen	36-57	25	61-82
Gas Plant	54-63	25	79-88
Coal Plant	46-60	25	71-85

Notes:

1. [Transport Infrastructure for Carbon Capture and Storage](#), Great Plains Institute and Wyoming University, 2020.

2. CATF national estimate used in this analysis. Low could be \$3/tonne to \$40/tonne.

Congress is considering solutions that could make CCS viable option at Cosumnes

45Q Enhancements

Various bills would:

- Increase credit value to \$85/tonne for saline and \$60/tonne for geologic storage through EOR and other utilization.
- Direct pay (especially important for municipal utility districts)
- Extend construction window
- Eliminate minimum eligibility thresholds that are based on size

SCALE Act

Create regional CO2 pipelines and storage sites:

- Total of \$4.9 billion including \$2.5 billion in grants to support storage and \$2.1 billion in loans and grants for transport.
- Access to low-interest financing for infrastructure
- Funding for EPA Class VI permitting of storage sites

Status of Legislation

- SCALE Act is incorporated into Bipartisan Infrastructure bill that passed Senate and awaiting action in the House.
- Bipartisan support for 45Q enhancement legislation (See list in appendix). 45Q enhancements could be included in Budget Reconciliation measure that House and Senate may pass on party line vote.
- Timetable? Both infrastructure bill and budget reconciliation likely to be acted on between September and December 2021

Appendix

Broad Bipartisan Support for 45Q Enhancements

	Bill	Direct Pay	Increased Industrial/Power Credit Value	Increased DAC Credit Value	Commence Construction Window Extension	Eliminate Eligibility Thresholds
Senate						
Bipartisan	Carbon Capture, Utilization, and Storage Tax Credit Amendments Act of 2021 (S. 986)	✓		✓	✓	
	Save America's Clean Energy Jobs Act (S. 985)	✓				
	Clean Energy For America Act (S. 1298)	✓		✓	✓	
House						
Bipartisan	ACCESS 45Q Act (H.R. 1062)	✓			✓	
Bipartisan	CATCH Act		✓			✓
	GREEN Act of 2021 (H.R. 848)	✓			✓	
	H.R. 2633		✓		✓	

Advocating for a 65% cut in methane emissions

Given the urgency of the climate crisis, the U.S. Environmental Protection Agency should very rapidly put in place methane emissions standards at new and existing oil and natural gas sites, nationwide.

