

► What is the goal for Cleco's Project Diamond Vault?

Project Diamond Vault will retrofit Cleco's existing Madison 3 plant to reduce up to 95% of its carbon dioxide emissions through carbon capture and sequestration (CCS) technology.

► How will the CCS Technology work?

The facility will (i) use a chemical process to remove up to 95% of the CO₂ produced by the combustion of fuel in Cleco's Madison 3 electric generation unit, (ii) compress the CO₂ and (iii) store it permanently in deep geological formations located directly beneath Cleco's Brame Energy Center site.

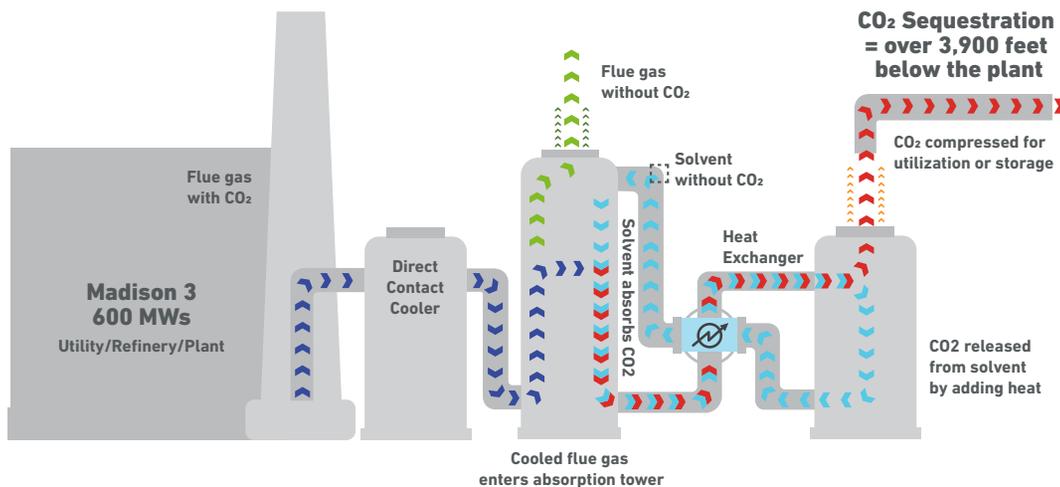
► Why Carbon Capture?

Even the most ambitious emission-reduction scenarios maintain a share of fossil fuel usage, suggesting carbon capture solutions are needed to achieve full decarbonization.

Findings from Princeton University's Net-Zero America* study conclude that significant carbon capture will be required for achieving net zero emissions of greenhouse gasses by 2050 and require geological carbon sequestration.

► Process

1. We are taking the flue gas from the existing Madison 3 Unit and retrofitting the unit so that the flue gas runs through a carbon capture system.
2. Once the flue gas leaves Madison 3, it is cooled before it enters an absorber tower. In the absorber, the flue gas will contact an amine-based solvent whereby through a chemical process, the amine will capture and remove the CO₂ from flue gas.
3. The flue gas will be released via the absorber stack minus the CO₂.
4. After the CO₂ amine solvent leaves the absorber, it will be heated to allow the CO₂ to separate from the amine solution where it will then be compressed, dehydrated and injected below ground.



KEY

BLUE arrows represent the flue gas with CO₂.

RED represents the CO₂ being taken from the flue gas.

LIGHT BLUE represents the amine solvent that's absorbing the CO₂.

NEXT, the **LIGHT BLUE** and **RED** together (amine that has captured the CO₂), represents the CO₂ and amine solvent together going through a heat exchanger. The amine solvent is reused and returned to the absorber while the CO₂ is compressed, dehydrated and injected into the ground (sequestration).

GREEN represents the flue gas going out of the stack minus the CO₂.

*Princeton Net-Zero America netzeroamerica.princeton.edu