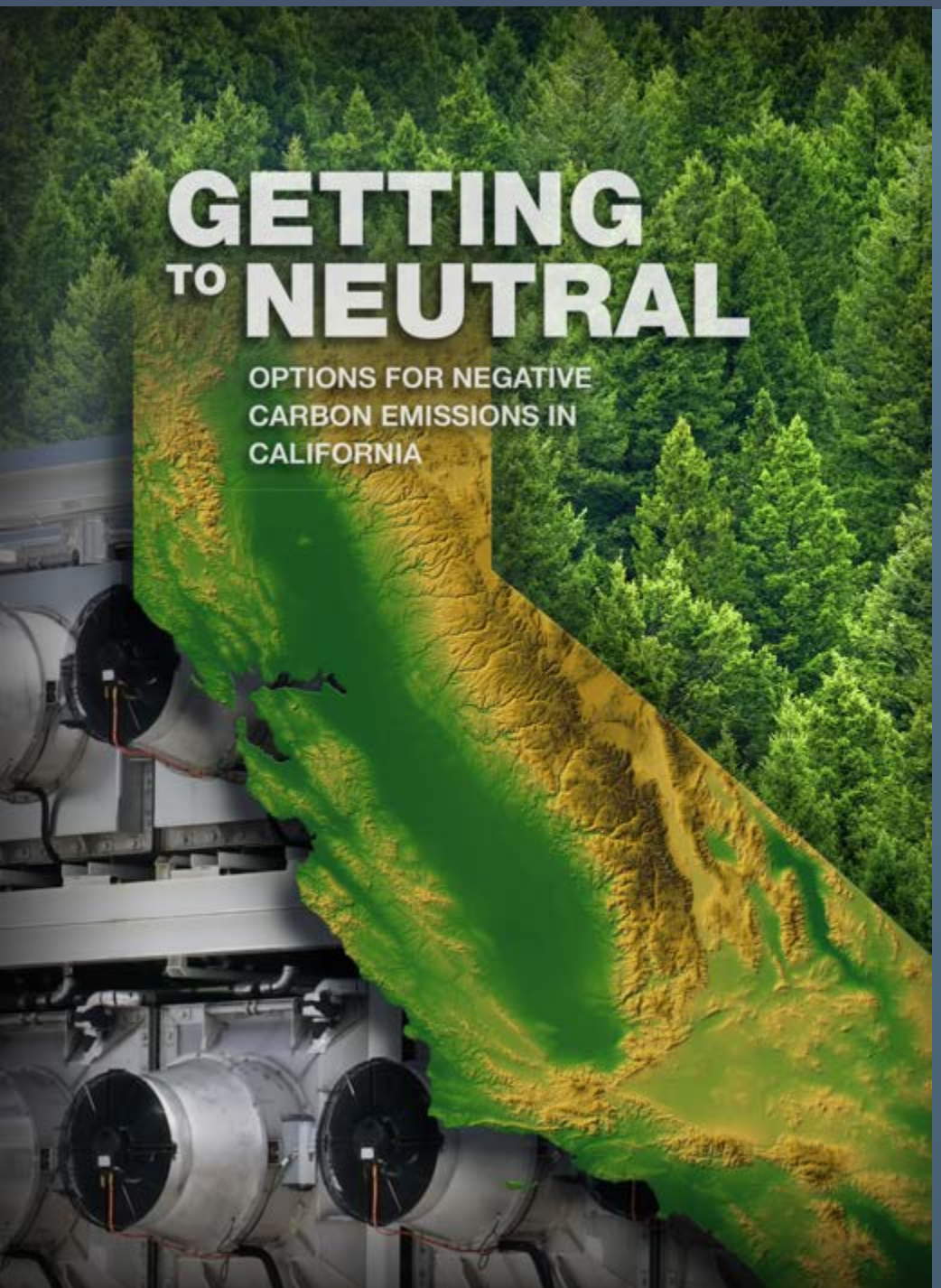


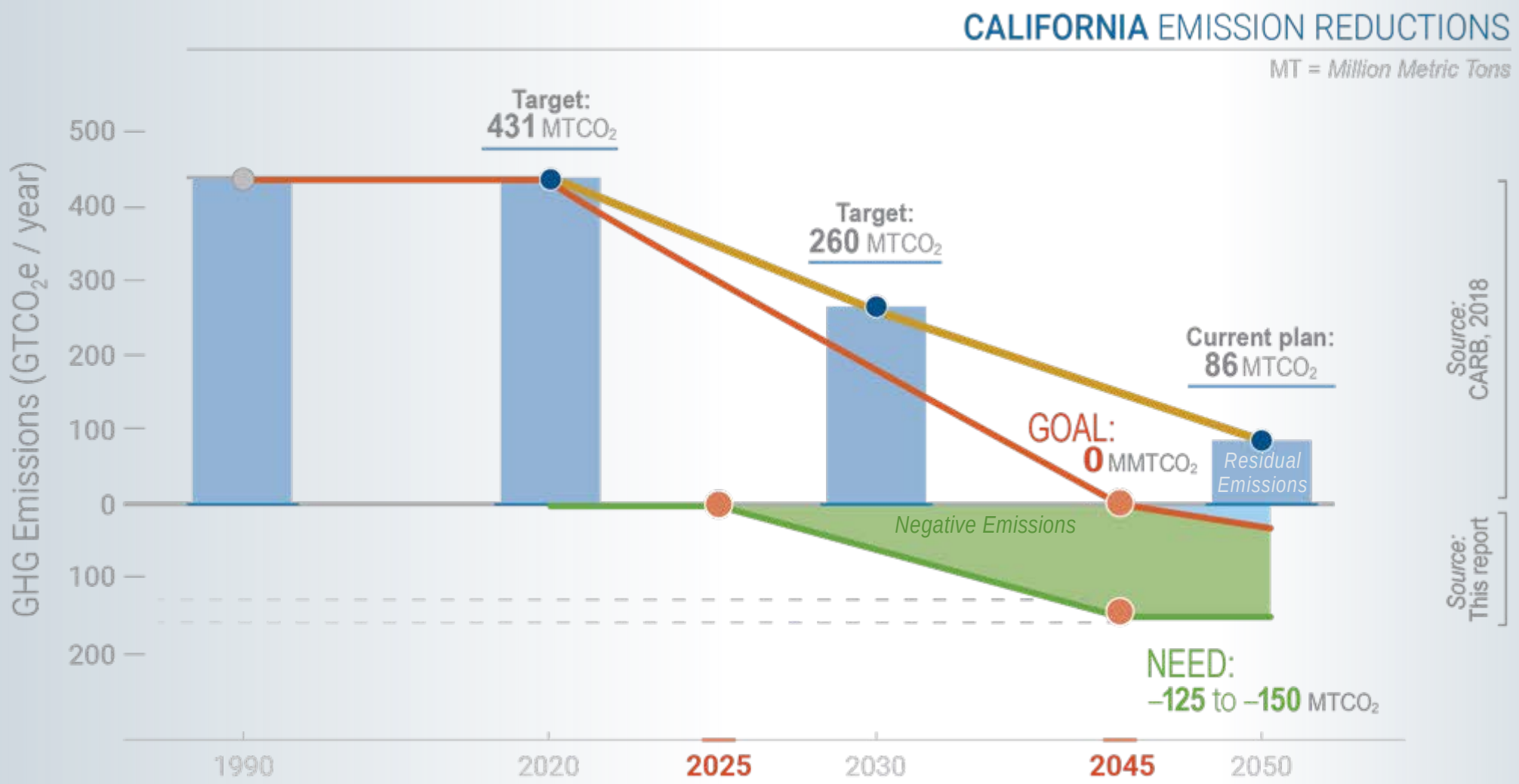
THE LLNL CARBON INITIATIVE

Status of the California Negative Emissions Report

George Peridas

LLNL-PRES-795982

125 MT/yr of negative emissions drastically help to meet the 2045 carbon neutrality goal



How can California achieve 125 MT/year of negative emissions by mid-century?

- Natural and Working Lands

25 MT/year

- Waste Biomass Conversion to Fuels with CO_2 Storage

Todd Nishikawa, Placer Cty Air Pollution Control District

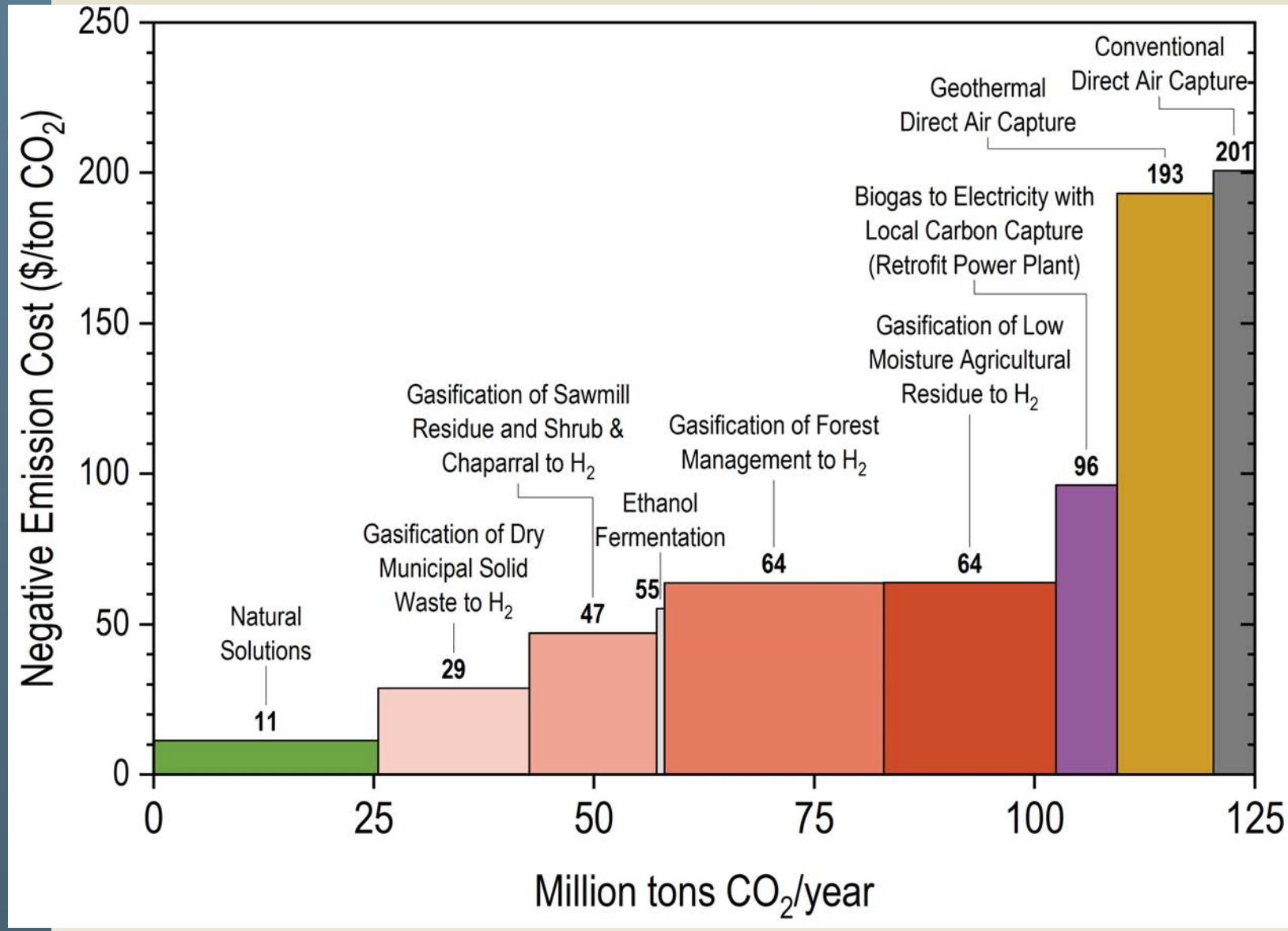
83 MT/year

- Direct Air Capture with CO_2 Storage

17 MT/year

Technological readiness: mid-to-high – no new breakthroughs required

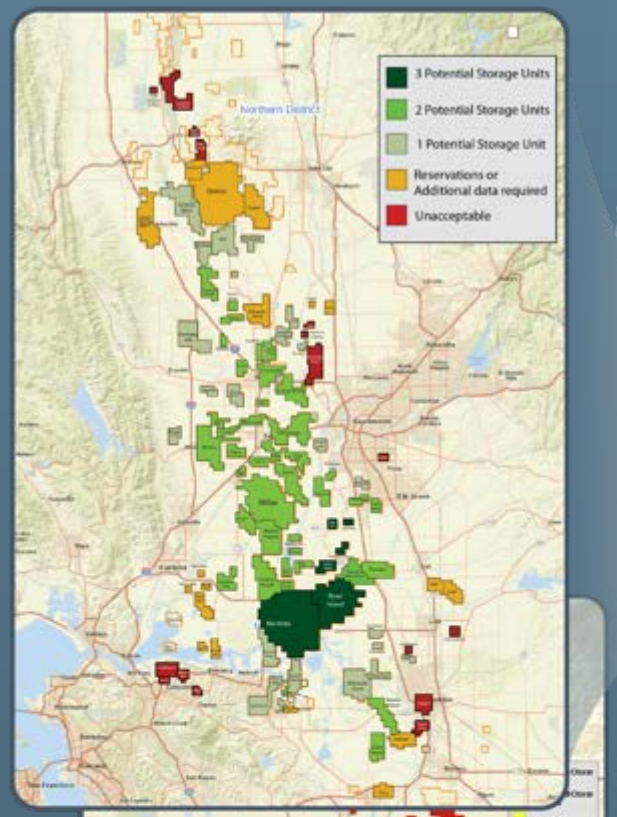
The least-cost path to 125 MT/year uses natural solutions, gasification of biomass to H_2, and some direct air capture.



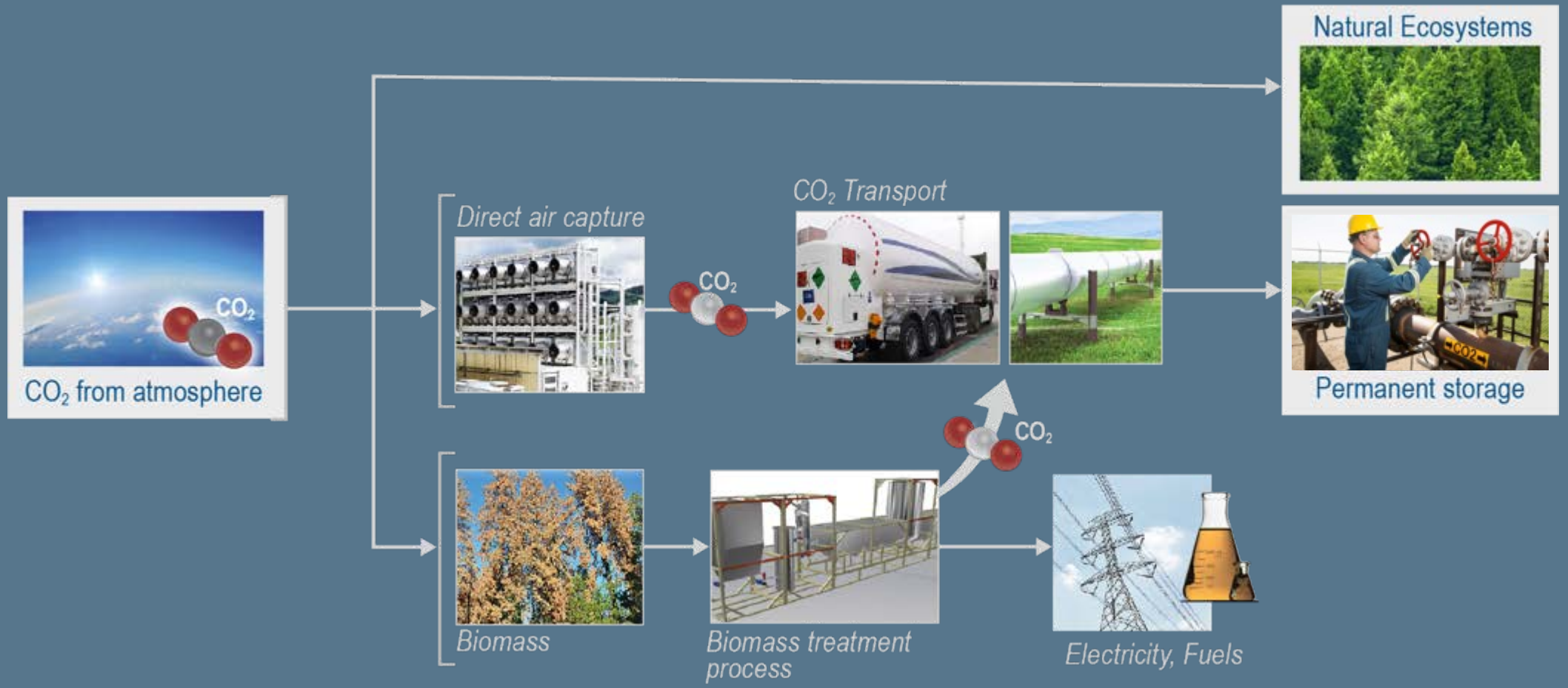
Permanent geologic storage is necessary

There is **plenty of safe space in California** to store CO_2 underground—in the same rocks that have held oil and gas for millions of years.

We have identified **17 billion tons** of safe storage in **just 2 areas** of the Central Valley. As much as **200 billion tons** may be available.



This is a robust set of solutions



Many groups of options in total cost range of $10-$15 Billion/year

Needs & Co-benefits

Support and build Infrastructure:

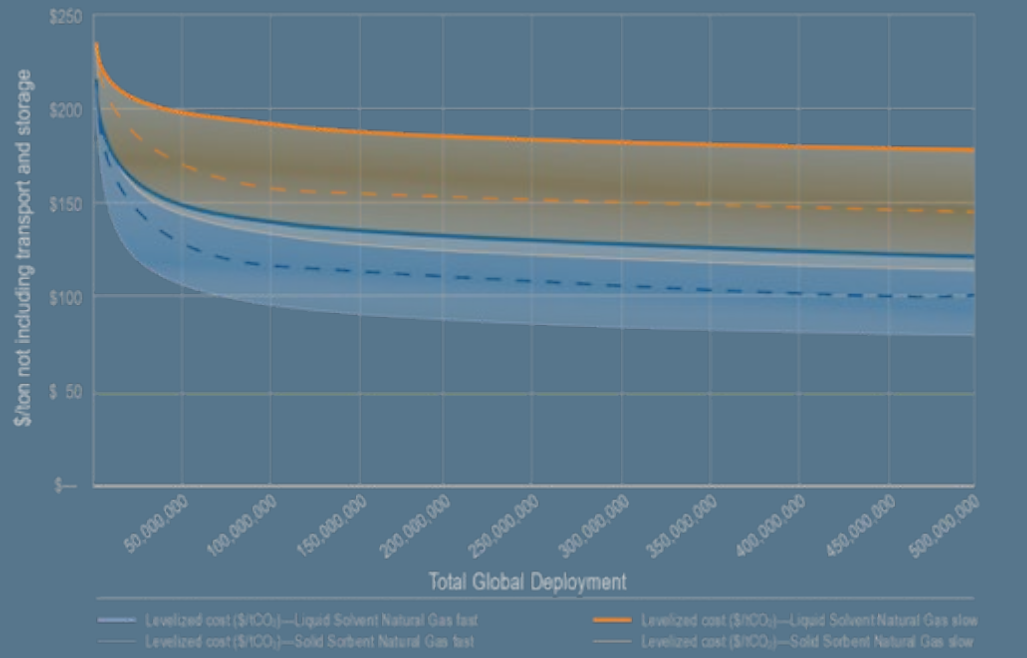
- 50-100 new-generation biomass plants
- CO_2 pipeline network
- CO_2 storage
- Buy down direct air capture costs early

Wildfire prevention and management

Central Valley jobs

Decarbonizing the state's oil industry

Air quality improvements



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