

A Story of American Ingenuity and Progress

Charm Industrial Could Add 200,000 Jobs and \$20B to US Economy by 2040

Charm Industrial's atmospheric carbon dioxide removal process is uniquely American: liquefy excess corn stover and forestry residues into a carbon-rich bio-oil and then inject it deep down into end-of-life oil and gas wells. Experts from a leading economic consultancy found that Charm's planned activities could create 20,000 direct and indirect jobs and \$2B in GDP by 2030, with the potential to increase both by 10x, to over \$20B in GDP and over 200,000 jobs by 2040. The direct jobs created by Charm span its value chain and touch sectors including agriculture, manufacturing, transportation, and oil and gas, among others.

Investing in Rural Communities - from Farms to Factories



Charm collects agricultural and forestry residues that would otherwise release ${\rm CO_2}$ into the atmosphere by rotting or burning.

This will create **35,531** direct agriculture jobs by 2040.



Charm's carbon-rich bio-oil is transported to an injection well site.



These activities are anticipated to create **25,337** direct transportation jobs by 2040.



Charm builds pyrolyzers to convert biomass into bio-oil in a self-sustaining reaction.

The growth of this fleet is anticipated to lead to **38,029** direct operations, manufacturing, and maintenance jobs by 2040.



4 Inject

Charm pumps the bio-oil underground where it sinks and solidifies in place.

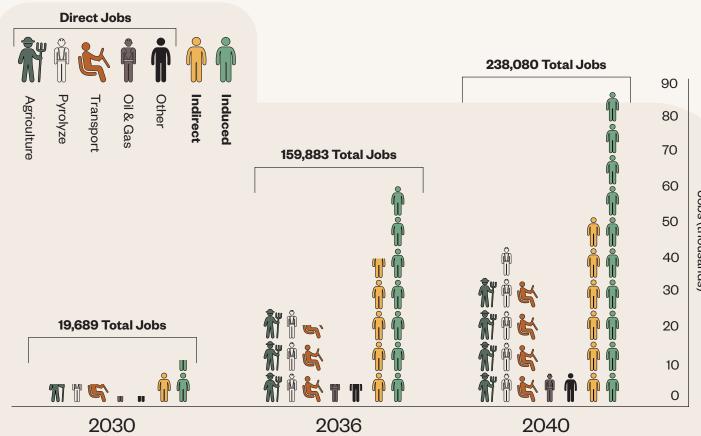


Charm could create **4,628** direct oil and gas services jobs by 2040.



Catalyzing Long Term Growth Across the Economy

As Charm rapidly grows to process millions of tons of corn stover and forestry residues into bio-oil for underground storage, it will bring new income to farmers and create a new industry that provides opportunities for agricultural workers and oil and gas field workers to put their existing skills to use. In addition to its agriculture and geologic injection services, Charm's approach to carbon dioxide removal (CDR) will also create new jobs and economic opportunity in sectors ranging from transportation to manufacturing.



In its work to return the atmosphere to pre-Industrial Revolution CO2 levels of 280 parts per million (ppm), **Charm has removed roughly 80% of all global permanent carbon removal deliveries to date.**



CHARM

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Jobs (thousands)