

# JOBS AND ECONOMIC IMPACT OF CARBON CAPTURE DEPLOYMENT Minnesota

## TOTAL JOBS POTENTIAL

Project Jobs	Operations Jobs	Infrastructure Jobs
<b>800</b>	<b>680</b>	<b>230</b>

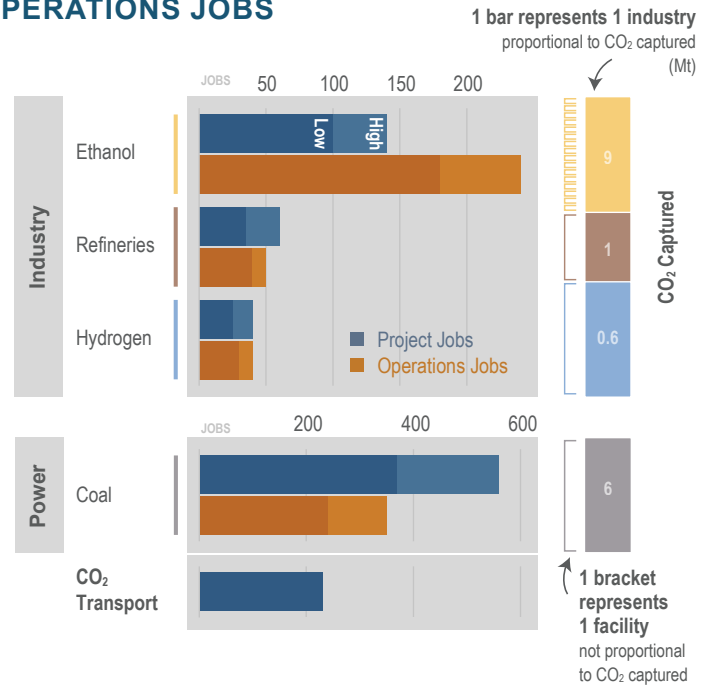
Minnesota has the opportunity to create an annual average of up to **1,030 project jobs** over a 15-year period and **680 ongoing operations jobs** through the deployment of carbon capture at 19 industrial and power facilities. The retrofit of equipment at these facilities has the potential to capture **16.6 million metric tons** of carbon dioxide (CO<sub>2</sub>) per year. Along with the development of CO<sub>2</sub> transport infrastructure, this would generate up to **\$3.1 billion** in private investment.

## CREATING JOBS & CAPTURING CARBON

Carbon capture is essential to meeting mid-century emissions reduction goals while retaining and growing a domestic base of high-wage energy, industrial, and manufacturing jobs. Carbon capture retrofits require facilities to be outfitted with capture technologies such as amine scrubbers to remove CO<sub>2</sub> from exhaust gas and compressors to make the CO<sub>2</sub> transport-ready, that are dependent upon the type of industrial plant and vary across industries and facilities. There are jobs associated with the equipment, materials (e.g., cement and steel), engineering, and labor required to install the capture technology, as well as ongoing jobs to operate and maintain the retrofits. These are referred to as **project jobs** and **operations jobs**.

Rhodium Group performed an economic analysis based on the Regional Carbon Capture Deployment Initiative's near- and medium-term capture potential scenario.<sup>1</sup> The Rhodium analysis quantifies the economic impact and employment opportunities of carbon capture retrofit projects by deploying state-specific data in the IMPLAN economic model. The analytical results measure the impact of project investment and operation costs through expected annual jobs. Average annual project jobs were calculated assuming deployment of all projects within the 15-year period from 2021-2035. The jobs reported are in-state jobs, directly associated with carbon capture retrofits. They do not include other jobs at the facilities, nor indirect and induced jobs.

## ANNUAL PROJECT AND OPERATIONS JOBS



Mt = million metric tons.

This figure depicts the low and high range of estimated annual average project jobs, transport infrastructure jobs, and ongoing operations jobs that could be created through carbon capture retrofits at industrial and power facilities in Minnesota. The potential amount of CO<sub>2</sub> captured and the number of potential near- or medium-term capture facilities in each industry are shown on the right.

## RESULTS

With the deployment of carbon capture technologies, Minnesota could create jobs and reduce emissions across various sectors. Sixteen of the the state's ethanol facilities, one hydrogen plant, and one refinery have the combined ability to create an annual average of up to 240 project jobs and 330 ongoing operations jobs while capturing 10.6 million metric tons of CO<sub>2</sub> emissions per year. In the coal sector, carbon capture has potential to create an annual average of up to 560 project jobs and 350 operations jobs while capturing six million metric tons of CO<sub>2</sub> per year. Additionally, the development of transportation infrastructure would create an annual average of up to 230 project jobs.

## CARBON CAPTURE JOBS AND ECONOMIC IMPACT SUMMARY

Industry	Number of Facilities	Total Capture Target Metric Tons	Private Investment Million Dollars	Annual Average Project Jobs 2021-2035	Annual Operations Jobs
Coal Power	1	6,000,000	\$1,300 - \$1,900	370 - 560	240 - 350
Ethanol	16	9,000,000	\$340 - \$520	100 - 140	180 - 240
Hydrogen	1	1,000,000	\$90 - \$130	25 - 40	30 - 40
Refineries	1	600,000	\$120 - \$180	35 - 60	40 - 50
CO <sub>2</sub> Transport Infrastructure	-	-	\$410	230	-

<sup>1</sup> Rhodium Group analytical results: [rhg.com/research/](http://rhg.com/research/)

For more information, visit [carboncaptureready.org](http://carboncaptureready.org)