



BRIEF

Social factors could be final barrier to deep US decarbonization, National Academies report finds

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Dive Brief:

- With the cost of clean energy technologies plummeting, social factors may prove to be final barriers to a deep decarbonization of the U.S. economy, according to a new report by the National Academies of Sciences, Engineering and Medicine.
- Thanks to a decade of rapidly declining costs, decarbonization is not only technically and financially feasible — it's actually the most economical path forward, according to the NASEM report. The report also projects that decarbonization could add 1-2 million jobs to the U.S. economy.
- However, without policies to ensure an equitable transition that does not leave economically and racially diverse communities behind, the U.S. risks "yellow vest" social uprisings that could derail decarbonization, according to Stephen Pacala, a professor focused on climate change and systems ecology at Princeton University.

Dive Insight:

The vast majority of the technology needed to realize a full decarbonization of the U.S. economy exists, and most of the technology is more cost effective than fossil fueled alternatives,

according to the National Academies of Sciences, Engineering and Medicine. But a committee assembled by the NASEM to study decarbonization says all levels of government must do more to ensure the coming economic transition is just and fair to all.

The report, the first of two decarbonization studies planned by the NASEM, ultimately focused on the social factors that will determine the success of the U.S.'s energy transition, according to Pacala, who headed the 17-person committee behind the report.

The committee identified five technology goals to maintain the course to net-zero carbon emissions by 2050, outlined in the report. Ideally, the U.S will source three-fourths of its energy from carbon-free sources by 2030, with zero-emission cars accounting for 50% of vehicle sales by the same date. The report also calls for the electrification of heating in 20% of buildings and for a 50% reduction in building energy use by 2030, for an expansion of the nation's transmission infrastructure, and for a tripling of federal investment in research, development and demonstration of emerging technologies such as advanced nuclear reactors, carbon capture and sequestration, and hydrogen fuels.

"The National Academies' new report ... issues a clarion call for more clean energy innovation," Colin Cunliff, senior policy analyst for the Information Technology and Innovation Foundation and a member of the NASEM decarbonization committee, wrote in a blog post after the report's official release. The report "recognizes that innovation won't happen without an assertive federal policy that involves much more than just basic funding."

But the report also proposes policy action necessary to meet critical socioeconomic goals, such as ensuring jobs created by the economic transition are distributed in such a way that benefits diverse communities historically left behind in the U.S., while also making assistance available to communities that stand to suffer

major job and tax revenue losses as fossil fuel production winds down.

Support could be provided through the creation of a new government agency proposed in the NASEM report, an independent national transition corporation, that would provide workers and communities with support in the event of job losses. A federal green bank, recommended by the report, could also provide funding for economic redevelopment in affected communities, Pacala said.

"Now that the transition is so much more affordable," he said, "the primary concern is the impact on communities that depend on fossil fuels. We recognize that past transitions have been rocky, and that policy approaches that focus only on worker retraining have been inadequate."

The committee highlighted the need to make resources available at all levels of government — including state and municipal governments, to avoid the failures of a one-size-fits all approach. They also emphasized a need to make resources and funding available in communities with access to fewer economic resources, and the need for greater engagement with the public during the transition.

The report also recommends the adoption of a carbon tax, but at \$40 per ton or less to avoid inequities in communities that cannot afford an increase in the price of carbon. The committee also spoke of a need to replace long-lived fossil fuel assets like power plants at the end of their working life, rather than retiring them early, to keep costs manageable.

"What we need to do with the timing of these stock turnovers," said Jesse Jenkins, who leads the Zero Carbon Energy Systems Research and Optimization Laboratory at Princeton University, "is

we have to make sure that when someone makes that decision, the no-brainer is to invest in transition technology."