

## **Legislative Hearing on “Clearing the Air: Legislation to Promote Carbon Capture, Utilization, and Storage”**

Subcommittee on Environment and Climate Change

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Addressing the climate crisis and growing the fossil fuel industry are mutually exclusive.<sup>12</sup> We cannot escape the fact that absolute demand for and production of fossil fuels must decline rapidly if we are to have a chance at meeting the Paris Climate targets. This necessary decline in oil production calls into question the wisdom of incentivizing Enhanced Oil Recovery (EOR). As written, the USE IT Act does not provide any guardrails to ensure it will not lead to decades of increased oil production. If it is an onramp to a broader decarbonization agenda, where is the requisite off ramp for fossil fuels? The current regulatory framework, tax incentives, and oil and gas growth paradigm this legislation is born into ensures the industry will pocket these subsidies, continue on its current course of full throttle expansion, and fight any policies to reduce our dependence on oil. It's a bad deal.

The oil extraction that could be supported as a result of streamlined CO<sub>2</sub> pipeline permitting will be delivered under the industry's new climate action PR campaign. The American Petroleum Institute, which all the major EOR players are dues paying members, has already signaled its support for this legislation.<sup>3</sup> At the same time API recently spent 7 figures on a PR campaign to convince the public they are one of the biggest players fighting climate change. E&E News was quick to point out: “Despite the new campaign, API isn't changing any of its policies or opposition to regulation or legislation on climate.”<sup>4</sup>

### Oil Industry's Growth Strategy

Oil and gas production in the U.S. is booming, placing our climate goals at risk, and the industry clearly aims to keep the expansion going. The primary market for CO<sub>2</sub> is enhanced oil recovery, meaning the infrastructure built under the USE It Act provisions would likely be used to connect CO<sub>2</sub> sources to oil fields.

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<sup>1</sup> Andrew Grant. *Carbon Tracker*. September 21, 2019. ([link](#))

<sup>2</sup> We view the overshoot scenario in P4 as an unacceptable risk. To avoid this scenario, we must reduce oil consumption in the near term. IPCC. Characteristics of four illustrative model pathways. ([link](#))

<sup>3</sup> American Petroleum Institute. *API: New NPC Research Underscores Opportunities to Sustain U.S. Energy Leadership and Environmental Progress*. December 12, 2019. ([link](#))

<sup>4</sup> Timothy Cama. *Oil and Gas Industry Launches Climate Campaign*. E&E News. January 7, 2019. ([link](#))

Indeed the oil industry is ready to capitalize. The State CO<sub>2</sub>-EOR Deployment Working Group<sup>5</sup> reported the EOR industry could triple in size by 2030 with 375 million barrels in additional annual production.<sup>6</sup> This would likely only occur under scenarios where U.S. production continues to expand in the coming decade, rather than declining at a pace consistent with 1.5C.<sup>7</sup>

The State CO<sub>2</sub>-EOR Deployment Working Group goes on to propose a pipeline buildout, which the USE It Act would help jump start, that includes five pipeline corridors to EOR regions. CO<sub>2</sub>-EOR proponents are clear that long term growth for the industry is constrained by lack of access to consistent sources of CO<sub>2</sub> and that the pipelines are needed to expand.<sup>8</sup> Companies see the future that a subsidized EOR industry could unlock.

The resource estimates are breathtaking in the context of the unfolding climate crisis:

- Advanced Resources International says 284 billion additional barrels of oil are “technically favorable” with CO<sub>2</sub> injection, calling it the “CO<sub>2</sub>-EOR Prize”.<sup>9</sup>
- Denbury Resources told investors there are 10.3 – 23.4 billion barrels of recoverable oil in Texas alone.<sup>10</sup>

USE It Act stakeholders point out that this is oil that would otherwise likely remain in the ground. According to the Working Group, “natural geologic supplies of CO<sub>2</sub> are constrained, so the potential to grow the EOR industry hinges on increasing the supply of anthropogenic CO<sub>2</sub>...”<sup>11</sup> DOE listed a CO<sub>2</sub>-EOR project on its website and highlighted that it was designed to add “another 25 years and as much as 130 million barrels of oil that might otherwise have been abandoned.”<sup>12</sup>

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<sup>5</sup> A project staffed by the Great Plains Institute, a convening member of the Carbon Capture Coalition, whose policy recommendations are largely reflected in the USE IT and FUTURE Act. The Working Group includes participants from fourteen states with current EOR development or potential.

<sup>6</sup> State CO<sub>2</sub>-EOR Deployment Working Group. *21st Century Energy Infrastructure: Policy Recommendations for Development of American CO<sub>2</sub> Pipeline Networks*. February 2017. ([link](#))

<sup>7</sup> Production Gap Report. Stockholm Environment Institute, UN Environment Programme. December 2019. ([link](#))

<sup>8</sup> State CO<sub>2</sub>-EOR Deployment Working Group. *21st Century Energy Infrastructure: Policy Recommendations for Development of American CO<sub>2</sub> Pipeline Networks*. February 2017. ([link](#)) .

<sup>9</sup> Michael Godec. *Importance of 45Q and Large Scale CO<sub>2</sub>-EOR and Storage*. Advanced Resources International. CO<sub>2</sub>-EOR Carbon Management Conference. December 3, 2018.

<sup>10</sup> DNR- The Business of CO<sub>2</sub>-EOR and Impediments to CCUS. Carbon/CO<sub>2</sub>-EOR Conference Midland, Texas. December 2016. ([link](#))

<sup>11</sup> State CO<sub>2</sub>-EOR Deployment Working Group. *21st Century Energy Infrastructure: Policy Recommendations for Development of American CO<sub>2</sub> Pipeline Networks*. February 2017. ([link](#))

<sup>12</sup> U.S. Department of Energy. *Enhanced Oil Recovery*. ([link](#))

We note that CO<sub>2</sub>-EOR operations are in addition to the rest of the industry's growing production pie. Nowhere in the discussion is there a commitment to a managed phaseout of production in line with climate science. **It is net expansion.**

Also rarely discussed in mainstream CO<sub>2</sub>-EOR conversations is the new push to apply the technology beyond aging conventional fields to unconventional resources.<sup>13</sup> If the industry can perfect CO<sub>2</sub> injection into shale formations and tight oil, and it seems likely with continued federal and state support, it could unlock billions of barrels of oil under the right conditions. Pilot projects underway in the Bakken and the Eagle Ford Shale look so promising analysts are calling it the "next frontier."<sup>14</sup> The National Petroleum Council recently looked at unconventional reserves for CO<sub>2</sub> injection and reported 110 billions of barrels of "EOR production potential" in oil shale reservoirs.<sup>15</sup> The Department of Energy just announced a \$40 million research agenda into EOR, including one unconventional resource project.<sup>16</sup>

The expansion into unconventional resources complicates the oil industry's carbon storage narrative. Storage potential in shale is not well understood or necessary given the vast saline storage capacity often cited by permanent geologic sequestration proponents.

## No End Game

Part of the justification used for CO<sub>2</sub>-EOR (as it relates to CCS industry viability) and incentives created by the USE IT Act is that the same productive oil formations could someday be converted to long-term storage. However, not every EOR field is suitable for permanent mass storage of CO<sub>2</sub>. The capacity for continuous high pressure CO<sub>2</sub> injection for storage over many decades is not uniform across EOR operations.

A 2010 DOE paper determined it does not make sense as a climate mitigation tool to construct CO<sub>2</sub> pipelines to oil fields looking to expand CO<sub>2</sub>-EOR operations "without establishing that large additional suitable storage capacity exists in the area that can handle storage demand over the long term."<sup>17</sup> Furthermore, there are a number of geologic and well integrity issues that can compromise a field's existing storage capacity that must be evaluated.<sup>18</sup>

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<sup>13</sup> State CO<sub>2</sub>-EOR Working Group "Putting the Puzzle Together: State and Federal Policy Drivers for Growing America's Carbon Capture and CO<sub>2</sub>-EOR Industry" p 23. ([link](#))

<sup>14</sup> Brian Wazlel. *The Next Frontier: EOR In Unconventional Resources*. Hart Energy, August 8, 2017. ([link](#))

<sup>15</sup> National Petroleum Council. *Meeting the Dual Challenge*. Chapter Eight. December 12, 2019. ([link](#))

<sup>16</sup> U.S. Department of Energy. *Energy Department Invests \$40 Million in Enhanced Oil Recovery*. July 18, 2019. ([link](#))

<sup>17</sup> Dooley, et al. "CO<sub>2</sub>-driven Enhanced Oil Recovery as a Stepping Stone to What?" prepared for the US Department of Energy. July 2010. ([link](#))

<sup>18</sup> Scott Anderson, Environmental Defense Fund, Carbon Sequestration in Oil and Gas Fields (in Conjunction with EOR and Otherwise): Policy and Regulation Issues, (Panel 3: Policy and Regulation) MIT. 2010. ([link](#))

Right now there is no widespread effort on the part of CO<sub>2</sub> pipeline companies or their partner EOR operators to evaluate eventual conversion of an EOR field to long term permanent storage. This evaluation would have to be done on a field by field basis determined by individual field's geology. Injection into unconventional resources complicates this rational even further.

The State CO<sub>2</sub>-EOR Deployment Working Group even indicated the proposed pipeline network could divert CO<sub>2</sub> away from one of the only existing permanent geologic sequestration wells in the country and instead use it as an input for more oil production.<sup>19</sup>

## Regulatory Capture

Sequestration and injection for oil production are two different enterprises. An IEA report from 2015 hinges the potential benefits of CO<sub>2</sub>-EOR as a carbon storage mechanism on the understanding that more stringent regulations are necessary. IEA warns that a "paradigm shift" is necessary to see any potential carbon storage benefits. .

"While both the economic and CO<sub>2</sub> storage potential seem significant, adding these CO<sub>2</sub> storage practices to EOR (the "+" in EOR+) **requires a clear paradigm shift from current practices.** At present, no CO<sub>2</sub>-EOR site is pursuing this dual objective: today EOR operations are carried out with the aim of maximising oil output with the minimum CO<sub>2</sub> input. Extending CO<sub>2</sub>-EOR projects to include CO<sub>2</sub> storage as an end goal requires taking on activities associated with monitoring and verification of stored CO<sub>2</sub>."<sup>20</sup>

We do not see the oil industry welcoming a paradigm shift in regulation. At this very moment oil interests are working to undermine the existing secure geologic storage regulations under the Section 45Q tax credit.<sup>21</sup> The only thing captured is our regulatory agencies.

This tax credit is part of the system of incentives designed to drive new carbon capture investment. Senator Menendez recently sent a letter to an IRS Inspector General calling for an investigation into the Section 45Q tax credits for enhanced oil recovery.<sup>22</sup> The letter states:

"Publicly available data suggests that the vast majority of 45Q tax credits claimed have come absent the required monitoring, reporting, and verification systems that ensure the safe disposal of captured carbon, in clear contravention of current law and guidance."

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<sup>19</sup> State CO<sub>2</sub>-EOR Deployment Working Group. *21st Century Energy Infrastructure: Policy Recommendations for Development of American CO<sub>2</sub> Pipeline Networks*. February 2017. P 18. ([link](#))

<sup>20</sup> International Energy Agency. *Storing CO<sub>2</sub> Through Enhanced Oil Recovery*. 2015. ([link](#))

<sup>21</sup> See Energy Advance Center's submission to the IRS public comment docket for the Section 45Q guidance process. ([link](#))

<sup>22</sup> Senator Menedez. Letter to Treasury Inspector General for Tax Administration. November, 19, 2019. ([link](#))

This brings into question how much CO2 has actually been safely stored underground versus how much was claimed for tax credit.<sup>23</sup> The USE It Act will build on this compromised tax incentive and help streamline infrastructure to EOR fields.

## Looking Forward

There could be another way to ensure climate benefits of a potential permanent storage and eventual drawdown program. We are not opposed to the proposals to support carbon utilization research in the bill and agree that an alternate vision for carbon removal decoupled from the oil industry is necessary. Yet the existing paradigm is primarily designed to streamline the permitting of enhanced oil production infrastructure and support the ongoing industry crusade against oversight and accountability, and therefore will not and should not inspire public confidence.

We can't meaningfully address the climate crisis if we continue to legitimize the oil industry in climate policy circles. This legitimacy is unearned and the economic incentives inherent to its current business model run counter to the requirements for climate sanity. The industry's campaign to undermine true climate solutions in order to maintain demand is real and well documented. CO2-EOR cannot be siloed off from the rest of a company's portfolio or business strategy. Any policy that subsidizes increased oil production, which improves the borrowing position of the oil company, not only bolsters its ability to plow revenues back into expansion efforts, but also strengthens its social license and ability to run political interference against real climate action. Climate science and carbon math are not complete without an honest analysis of political power.

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<sup>23</sup> Clean Water Action. *Carbon Capture and Release: Oversight Failures in the Section 45Q Tax Credit for Enhanced Oil Recovery*. September 2018. ([link](#))