KILPATRICK TOWNSEND

4 KEY TAKEAWAYS

Private Sector Investments in Climate Technologies:

ROI & the New 2018 US Tax Credit for Carbon Oxide Capturing Technologies

During the *2018 Global Climate Action Summit*, Kilpatrick Townsend hosted a panel session that focused on private sector investments in climate technologies. This session discussed criteria for investments in technology or in carbon capturing plants, and whether the new U.S. enhanced tax credit for carbon capture and sequestration technologies will help their return on investment. The panel included companies currently engaged in carbon capture today:

- **Carbon Engineering**, one of the few companies in the world that captures CO_2 directly from air and synthesizes it into transportation fuels, is funded by private investors, including Bill Gates.
- **Blue Planet** captures CO_2 from flue gas to make building materials, such as concrete.
- **Oil and Gas Climate Initiative (OGCI)**, a group of 10 major oil and gas companies (BP, Shell, Total SA, and others), formed Climate Investments LLP, a billion-dollar investment vehicle investing in technologies mitigating climate change.
- **NRG Cosia Carbon XPRIZE** is an investor currently looking for compelling technology and business solutions in the de-carbonization space and awards $20 million to the most promising concept.

Key takeaways from the presentation include:

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Different carbon capture technologies exist today. Some capture carbon direct from air, some at the source, for example from flue gas at a plant. Technologies and models can be categorized as carbon capture and utilization (CCU), carbon capture use and storage (CCUS), and carbon capture and sequestration (CCS), which is a subcategory of bio-energy with carbon capture and storage (BECCS) — photo-synthesis to absorb CO_2, burning the plant material to produce energy and storing the CO_2 emissions underground. However, the industry does not always use these terms consistently, which makes the market less transparent. The enhanced Section 45Q tax credit uses overlapping (but not identical) terminology, and careful analysis is necessary to confirm whether a plant or technology will qualify for the credit or not.

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The 2018 Bipartisan Budget Act includes an enhanced Section 45Q tax credit for carbon oxide capture. The tax credit per metric ton of CO captured and disposed in a secure geological storage starts at $22.66 and will increase to $50 by 2026. The credit per metric ton for commercial uses starts at $12.83 and will increase to $35 by 2026. Such commercial uses include (a) enhanced oil or natural gas recovery; (b) capture through photosynthesis or chemosynthesis; (c) chemical conversion to a material in which the CO_2 is securely stored; and (d) use for any other commercial market. The credit can be used either by the owner of the carbon capturing equipment or the entity that disposes of the qualified carbon oxide, utilizes it, or uses it as a tertiary injectant. Tax equity investors can use the credit if they are member of an LLC or partnership that is considered the owner of the equipment. Also, the minimum capacity of plants that qualify for the credit

the qualified carbon oxide, utilizes it, or uses it as a tertiary injectant. Tax equity investors can use the credit if they are member of an LLC or partnership that is considered the owner of the equipment. Also, the minimum capacity of plants that qualify for the credit has been lowered significantly, but varies depending on the type of plant or facility. Going forward, the IRS will be stricter when measuring the amount of CO_2 actually captured. It must be measured at the source of capture and verified at the point of disposal, injection, or utilization. In the past, the IRS relied on EPA reporting to measure benefits from sequestration; the new law directs the IRS to use the lifecycle analysis defined in the Clean Air Act.

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Carbon capture technologies are still in a very nascent stage. Investors are currently looking for compelling solutions in what could become at $7.5 trillion-plus market. A likely trend is away from large to many smaller plants, ideally geographically close to facilities where captured CO_2 can be used. This could be an oil field where the CO_2 can be used in enhanced oil recovery (EOR), or close to an geological underground storage facility. Some industry players see a huge potential in decarbonizing the gas value chain. 'Low hanging fruit' for profitable business models that also qualify for the tax credit seem to be EOR. The tax credits will bring the price for capturing CO_2 down to the level of the cost of using natural CO_2 deposits for EOR. Other areas where the math seems right are fuel production based on captured carbon and capturing CO_2 at biomass and bioethanol plants. It may be a lucrative venture capital investment to invest in technologies in this area now and profit from the development of the technologies and markets later. As tax credit dollar amounts per ton of captured CO_2 are increase each year until 2026, mid- to long-term investments seem to be most promising.

Where the tax credit alone is not sufficient to make the carbon business profitable, other policy or legislative measures would benefit the industry: Creating uniform technical standards would make the market more transparent and more efficient. It would make it easier for companies capturing carbon oxides to identify compatible technical solutions of other providers in the industry, such as off-takers that might store or utilize the captured carbon oxide. Another area would be technical standards for measuring the amounts of carbon captured, which could also set precedents as to whether and to which extent a certain method and solution qualifies for the tax credit. Finally, public entities could use their procurement power to require a certain percentage of goods sourced by public to be manufactured using carbon negative methods. The state of California has started a public discussion of this point.

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