Climate Infrastructure and the Oil Crisis

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With oil prices at unprecedented lows caused by the dual black swan events of the oil war and COVID-19, we are left asking: "Will oil declining to sub-zero dollars per barrel[1] and widespread economic volatility undermine the energy transition and climate infrastructure growth?"

In our Climate Infrastructure Green Paper [INSERT LINK], we outlined what we believe are the fundamental drivers supporting the energy transition and the long-term growth of infrastructure investments that reduce greenhouse gas emissions, promote efficient use of natural resources, and strengthen climate change resiliency, called climate infrastructure. Examples of climate infrastructure include renewable energy, energy storage, electric transmission, vehicle electrification, energy efficiency, and smart grids. These are the assets and technologies that are driving the energy transition and a broader decarbonization and electrification of the energy sector and the economy.

Climate infrastructure assets typically benefit from multi-year contracted cashflows with creditworthy counterparties, allowing them to generate highly predictable cash yield with historically limited correlation to public markets and potential immunity from commodity price volatility. Climate infrastructure often serves as a hedge to commodity volatility and provides diversification during times of market dislocation like the present. ***Based on these features, we believe that climate infrastructure is well-positioned to continue its historic growth, remains durable if not enhanced by the recent market dislocation, and is part of a broad portfolio asset allocation that provides potential diversification benefits.***

Will low oil prices impact the energy transition? The most common misconception is that low oil prices will reduce the growth of renewables. In fairness, in the nascent days of renewables 40+ years ago this was probably true, with oil comprising nearly 20% of U.S. electricity generation in the late 1970s. The energy crisis of that era prompted experiments to develop alternative energy sources, with President Carter's 1979 solar panel installation on the roof of the White House one of the more symbolic moves. However, as renewables have achieved true cost competitiveness, their growth trajectory has become more self-sustaining and the more recent historical trend shows that they are largely insulated from commodity price volatility. Oil quite simply is not used for U.S. power generation today, providing only 0.5% of power.

Exhibit 1: 2019 U.S. Power Generation

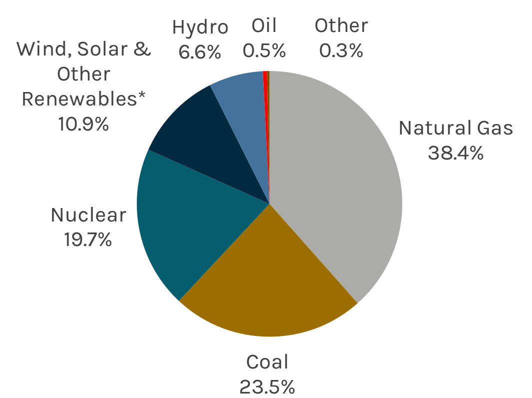
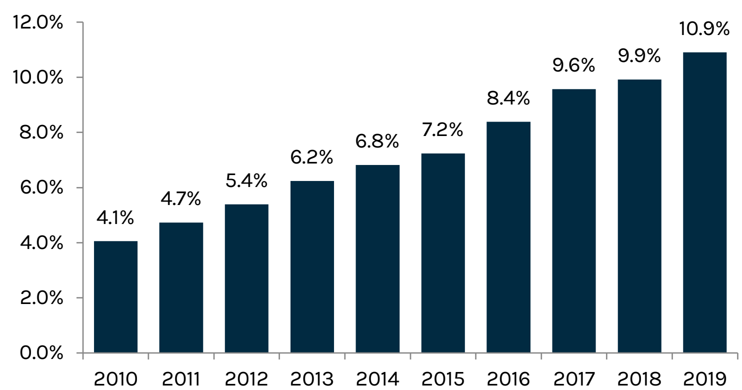


Exhibit 2: Growth in U.S. Wind, Solar & Other Renewables* Generation (2010-2019)



* Other Renewables include wood, landfill gas, municipal solid waste, other biomass waste, and geothermal.

[1] Reference is made to the WTI May futures contract price in USD.

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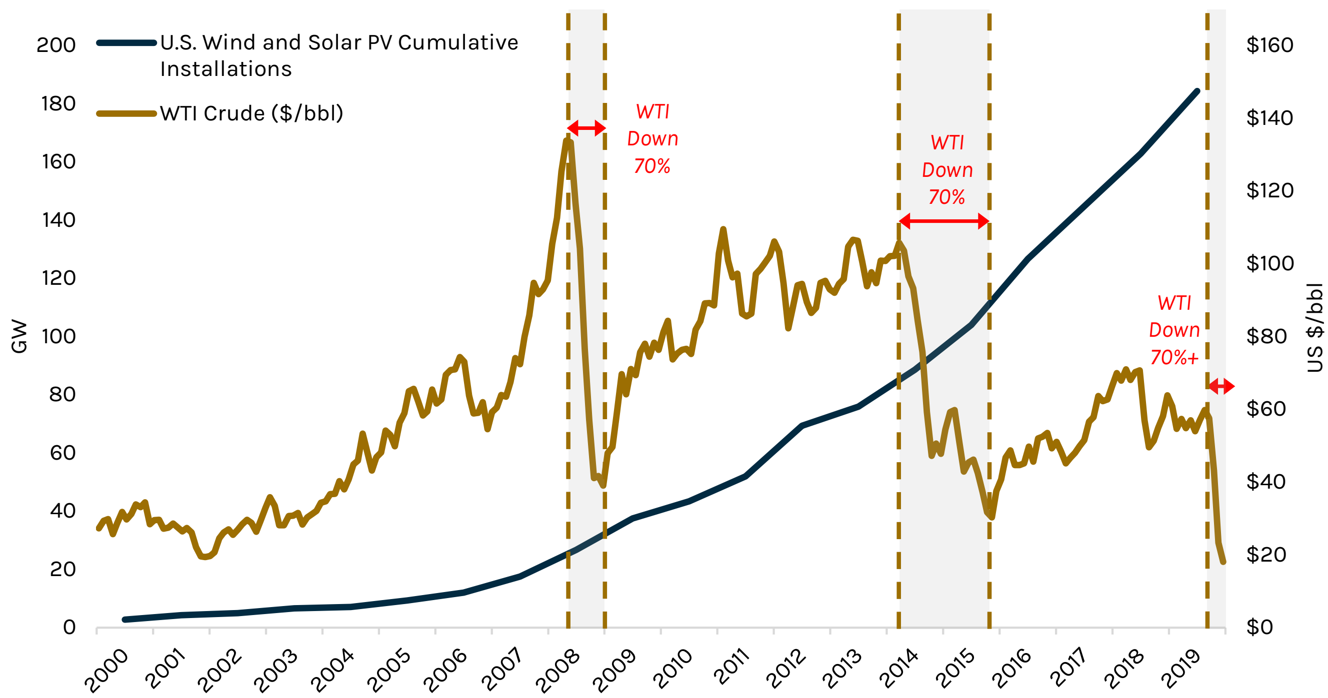
The last 20 years have been marked by three oil price crashes of approximately 70%, and renewables deployment in the U.S. and globally has continued to grow consistently and exponentially. In fact, from 2008 to 2009, when oil prices crashed over 70% and the economy was mired in a severe recession, renewables capacity still grew by 40% in the U.S. And in 2019 when oil prices averaged $50/barrel, low by historical standards, renewables accounted for 63% of total capacity additions.[2] Now more than ever, the unpredictability of commodity prices and potential lower returns for hydrocarbon investments may enhance the attractiveness of low-cost (free fuel), stable power generated by wind and solar projects. As a prime example, in April oil majors Shell and Total, who might otherwise be retrenching given market conditions, announced plans to eliminate all net operating emissions and add 22 GW of renewable capacity over the next 5 years, respectively. Quite simply, climate infrastructure makes good business sense for these companies relative to their core hydrocarbon enterprise that has historically been subject to significant volatility and may see downward pressure on future returns.

Exhibit 3: U.S. Renewables Growth vs. Oil Price 2000–2020[3]



The primary driver of renewables deployment remains the fact that they are the lowest cost form of generation, driven by cost declines of more than 70% since 2008 for utility-scale wind and solar power due to technology improvements, federal/state policies, and manufacturing economies of scale. In 2012, renewable energy surpassed fossil fuel new capacity additions for the first time, and over the last 5 years has averaged approximately 55% of all new capacity additions. In 2020, with the backdrop of oil market volatility and COVID-19, renewable energy's share of new capacity additions is expected to be nearly 80%.[4]

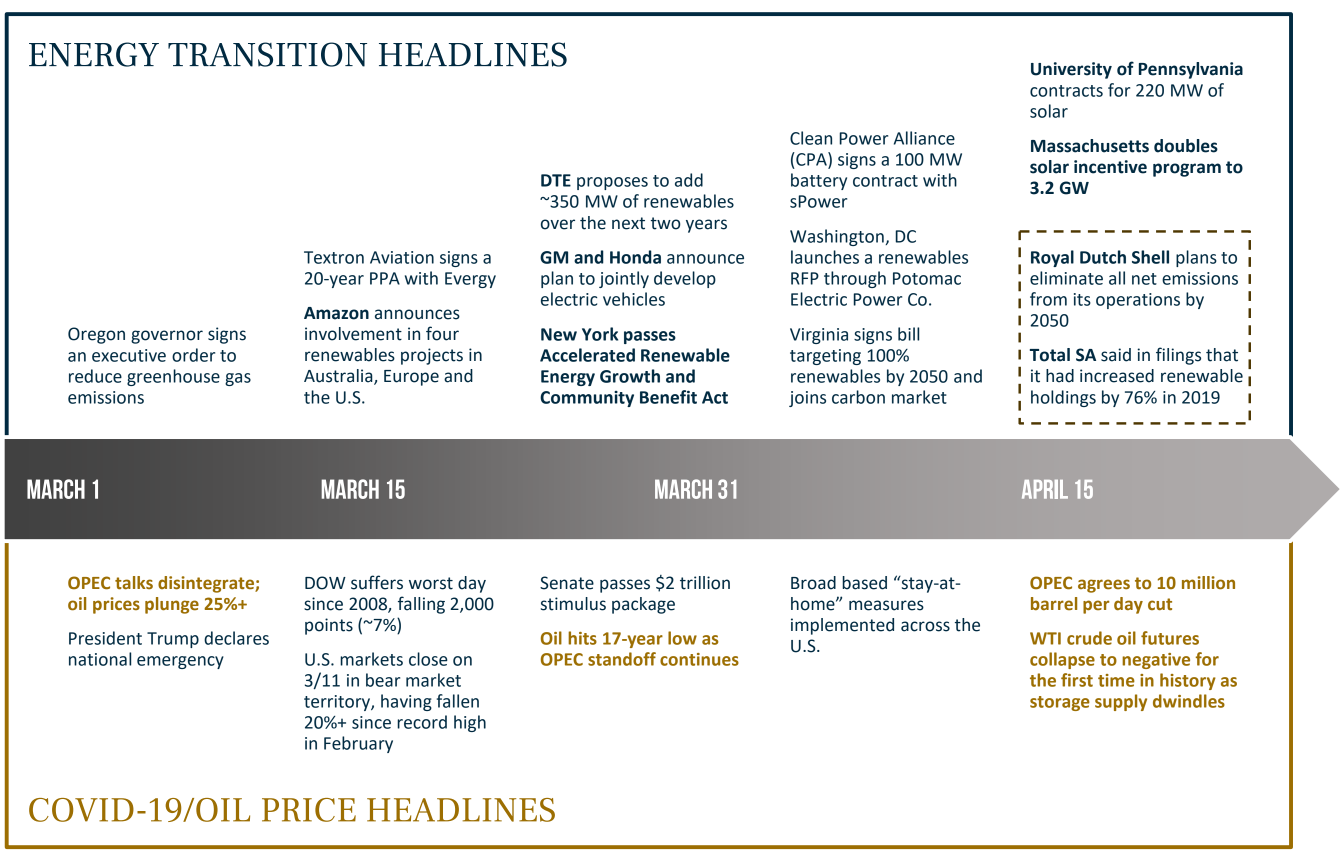
The most defensive in an already defensive asset class. While other infrastructure asset classes such as toll roads, airports, and ports are experiencing significant declines in utilization, climate infrastructure continues to operate consistent with return expectations. In addition, construction of new climate infrastructure assets continues to proceed given their highly essential nature. Climate infrastructure's

[2] Source: EIA.
[3] As of April 20, 2020.
[4] Source: EIA.

lower correlation to overall economic activity is evident with no reductions to project output, in contrast to many sectors of the economy that are completely shut down. It is reassuring to remember that the wind continues to blow, and the sun remains shining regardless of performance in the stock market or growth in GDP. The long-term power purchase agreements that underpin nearly all new build wind and solar projects provide 10, 15, and sometimes 20 years of expected stable cash flow streams backed by high quality counterparties like utilities and corporations. These long-term power purchase agreements ("PPA") are designed to help protect revenues from a slow-down in economic activity or a movement in commodity prices. We continue to believe that demand for these assets could increase further during a flight to quality moment owing to their stable cash profiles and downside protections.[5]

A path to recovery. Amidst a public health crisis and historic stock market and oil volatility, the energy transition continues to progress. Over the last six weeks, numerous renewables PPA and RFP announcements have taken place, automaker electric vehicle partnerships have been formed, and several states have taken steps to increase their renewable procurement goals and lower their overall emissions profile. New York passed legislation on April 3 to accelerate renewable energy permitting and on April 15 Massachusetts doubled its solar incentive program in an emergency revision. The energy transition and climate infrastructure in particular provide an important economic driver to restart the economy and can provide energy savings to consumers during a recession when efficiency is paramount and every dollar counts.

Exhibit 4: Recent Energy Transition and COVID-19/Oil Price Headlines



[5] References to "downside protection" or similar language are not guarantees against loss of investment capital or value.

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Now more than ever, we believe that climate infrastructure represents a compelling asset class as part of overall portfolio construction considerations given its defensive qualities, stable cash yield, and uncorrelated returns to broad capital markets. The energy transition is a secular trend driven by low cost renewable power, long-term policy objectives to meet clean energy targets, and technological evolution that is changing how we produce, deliver, and consume energy.

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