COVID-19 Provides Warning about the Transition from Fossil Fuels

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- The oversupply of crude oil (35 % demand loss) and natural gas is unprecedented; Crude oil, natural gas and LNG are trading at historically low levels
- Likewise, the oversupply of refined products, chemicals and plastics is quite unprecedented
- Scenario 1: COVID-19 recovery starts globally by June 2020:
  - Post COVID-19 – that is an extra month's supply has to be dissipated
  - Depressed Crude Oil prices until June 2021 (in spite of OPEC+ cuts)
- Scenario 2: COVID-19 recovery starts globally after Q3 or Q4 of 2020
  - Oil surplus will keep depressed prices through 2021
  - All marginal producers consolidated or eliminated
- In both scenarios: Significant short-term brake on the advancement of decarbonization strategies including the penetration of renewable energy generation and on the demand side for electric vehicles and the systematic decarbonization of industrial energy use

- Prior to COVID-19: renewable energy penetration in the US (2020) slowed
  - Sun-setting of the wind energy PTC & Tariffs on solar panels
- Since COVID-19, the supply chain for wind and solar panels have been significantly disrupted – much of the turbine blades and panels are made in Asia – significantly impacted with delivery in the US
- The stimulus monies in US and fiscal support for the fossil energy and the downstream petrochemical industries, add further stress to the renewable energy and increase the disparity in a competitive market
- Decarbonization, banning / minimizing venting & flaring of natural gas – were pressures imposed on the fossil energy companies by an active investor group in reaction to public sentiment;
  - Those ESG priorities have shifted to employee safety, community health and ultimately shareholder returns
  - While no active loss of climate priorities, it is no longer first priority

- Cleaning up of air thanks to the absence of transportation & low industrial productivity:

  40% cleaner in NYC; Houston with 15 - 25% decrease in NO_x, CO_2 and smog (y/y March)
  - This has given the public a taste for what they could have without fossil fuels
  - Stimulus and ability to upend the entire economy to shift direction in response to a virus has suggested to the public that if we accept that climate change is a threat akin to COVID-19 – the fiscal resources are present
- Under Scenario 2:
- It is possible that the US & Western Europe substantially shift directions & move towards an embracing of a decarbonized world in a period as short as 5 to 7 years from now
  - Drivers: Infrastructure resources needing replacement
  - Energy Security & Technology Disruption
- The big unknown is **energy storage** – especially with its reliance on critical minerals from places like China