

# New Energy Virtual Roundtable

Industry experts weigh in on COVID's impact on the energy transition

Given Covid-19's profound impact on markets, we at Clareo reached out to our network of leaders on the front lines of the energy transition to get their perspectives on the pace of investment in energy projects and technology—and potential disruptions. We asked thought leaders across the energy sector four simple questions.

In the aftermath of the Covid pandemic and the resulting economic downturn:

- ▶ **What are the most exciting opportunities you see in the energy transition?**
- ▶ **Will consumers demand more from companies to reduce carbon emissions or will the energy transition be slowed? And why?**
- ▶ **What impact will cheap fossil fuels have on the pace of electrification of transportation and other non-power sectors (built environment, industry, and agriculture)?**
- ▶ **What is the outlook for pace of investment in the energy transition at your firm? Accelerating, decelerating, or about the same.**

We received candid responses from all across the energy sector. We heard from executives and innovation leaders from utilities, renewables developers, oil majors, grid and power supply vendors, venture capital, banking/M&A, consulting, non-profits, and academia.



Below we've summarized the varied—and, at times, opposing—perspectives from our network.



## ▶▶▶ Marching On

The energy transition is expected to march on, despite the deep disruptions Covid has created in the global economy. Prior to the pandemic, cost reductions had created compelling economic arguments for solar and wind; these arguments remain compelling and have buoyed the renewables sector even amid supply chain disruptions and turbulent markets. Promising developments in enabling technologies—in particular batteries and hydrogen—have the potential to speed up renewable-power adoption. Government energy and infrastructure policy, however, remains a critical uncertainty. On the one hand, low interest rates will persist, allowing project financing to supercharge renewables growth at scale. On the other, two big unknowns are forcing investors and project developers to make awkward bets: the fate of the White House in November and the question of

whether stimulus spending shaken loose by Covid ends up funding renewable energy.

## ◉ Accelerants of Change

Leaders across the sector are confident that consumers will play a role in pressuring companies and governments to do more—not less—in a post-Covid world to address climate change. Importantly, though, capital markets are seen as the most powerful lever for change in the near term. The emphasis on ESG will persist through the crisis, with awareness increasing among investors and banks.

## ⚡ An Uneven Pace

Despite widespread optimism that US and European capital markets will enable change, it is important to remember that the energy transition will not occur evenly across geographies or at a constant pace. For example, emerging markets,

which are often more sensitive to fossil fuel prices, are expected to see a deceleration in the pace of the energy transition given rock-bottom oil and natural gas prices.

### + Short-Term Impact on Transportation

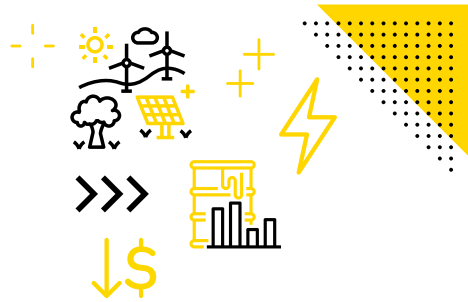
When it comes to the electrification of demand in the transportation sector, lower oil prices are expected to slow progress only in the short term, if at all. This strong EV outlook is due to battery cost reduction, pressure on corporations to reduce emissions through electrification of fleet vehicles, and maintenance and performance advantages in the consumer segment. Still, in emerging markets and non-transportation sectors, low oil and gas prices will likely slow the electrification of demand.

### ⚡ Interrelated Crises

As we contemplate the lasting effects of Covid on the energy sector and on global efforts to address climate change, it is important to remember that the crises currently rattling the globe can be interrelated. As Paul Seidler (Managing Director at Clean Energy Trust) noted, “the pandemic, racial inequality, climate change—each crisis is a health crisis AND an economic crisis AND a human rights crisis.” Their causes, impacts, and remedies can and should be considered in parallel with one another.

We are grateful to this community of energy thought leaders for continuing to advance these important conversations.

## Q1: What are the most exciting opportunities you see in the energy transition?



- Inevitability of energy transition due to cost reduction
- Moving beyond early adopters
- Battery storage cost reduction and expansion
- Hydrogen promise becoming more real
- Energy policy uncertainty and opportunity
- Economic and societal benefits are essential

### Wind and solar cost reductions have made renewables growth inevitable, with other positive knock-on effects: stable returns for investors, retiring fossil power plants, and ramped-up digital innovation efforts.

- ▶ Cost reductions and electrification of demand have made renewables competitive with natural gas as a source of new energy generation. This was true in most global markets before Covid, and that will continue through and beyond the pandemic. The renewables sector has shown remarkable resilience amid economic turbulence.
- ▶ Coal power plants will be retired faster and faster. This is due to reductions in electricity consumption and revenue paired with cheaper wholesale prices from natural gas and renewables.
- ▶ An increase in renewable energy adoption, and its affiliated complexity, also requires an increase in digital innovation. From visualization tools, to forecasting to AI, talented startups will be asked to find ways to manage complex data from power sources that are more intermittent and distributed.

“ Covid processing slowdowns (permitting, etc.) pushed a number of projects into 2021; but they were delayed, not cancelled.”

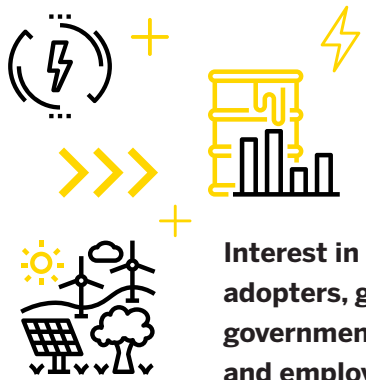
– STEVE KASE, INNOVATION EXECUTIVE AT GRID AND POWER SUPPLY COMPANY

“ In offshore wind, the average project is already large (>1GW) and likely to grow.

– GREG GORSKI, MANAGING DIRECTOR, CENTRALIZED GENERATION AT ENGIE

“ Since power plants are 30+ year assets, I do not think the COVID-19 pandemic has changed how utilities are viewing the energy transition... However... the resulting economic downturn could speed the acceleration of the retirement of uneconomic power plants.”

– STRATEGY EXECUTIVE AT A UTILITY SCALE RENEWABLE DEVELOPER



**Interest in renewable energy is expanding beyond early adopters, guided by non-cost factors, such as government- and customer-driven sustainability goals, and employee advocacy.**

- ▶ Corporate renewable purchasing is expanding beyond tech companies with energy-hungry data centers. Other industries are realizing that decarbonizing is essential for pleasing customers and employees who are increasingly passionate about climate.
- ▶ Persistence of fossil fuels will create additional opportunities for carbon offsetting.
- ▶ Utilities are increasingly being forced by governments to adopt more renewable energy.

“ In cases where utilities are not [voluntarily] procuring more renewable energy, they’re being asked for justification (e.g. Michigan). Virginia Clean Economy Act [is also] forcing utilities to procure more renewable energy to reduce emissions.

– STRATEGY EXECUTIVE AT A UTILITY SCALE RENEWABLE DEVELOPER

- ▶ A large amount of talent is looking to get into the energy transition.

“ Climate change and the intersection of environmental, social and economic justice is on everyone’s minds and it’s exciting that there are so many folks who want to improve the world we share.”

– STRATEGY DIRECTOR AT AN OIL MAJOR

**Battery storage innovation is proceeding rapidly, setting the stage for longer duration storage and deeper adoption.**

- ▶ Energy storage is continually growing and attracting interest from traditional and new offtakers. This will ultimately help address peak shaving and reduce the operational headaches of intermittent, non-dispatchable renewables.

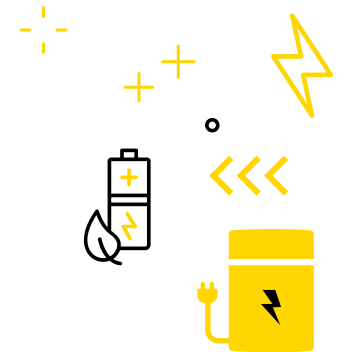
“ Battery storage is the next “shoe to drop” as costs continue to rapidly decline”

– EXECUTIVE AT RENEWABLES DEVELOPER

- ▶ The trend of lower cost and higher efficiency is bound to continue.

“ Renewables and batteries have reached enough scale where there is no going back. The advent of longer duration storage is bound to be the nail in the coffin for fossil fuels, as it will complement the intermittent generation of renewables.”

– ODED RHONE, POWER UTILITIES



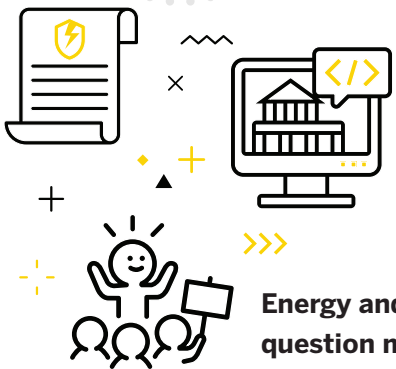
**The promise of hydrogen’s lower emissions and fundamental change to the energy system is becoming more real.**

- ▶ Exciting hydrogen technology innovations are creating investment interest. This includes large-scale private projects and government research and energy infrastructure planning.
- ▶ Hydrogen applications exist in both expanding intermittent renewable deployment and decarbonizing heavy industry.
- ▶ Hydrogen isn’t a space-age technology—its timeline is near-to-medium term.

“ Hydrogen is closer than people think. Particularly in Europe, powered by offshore wind. But also in the US in this decade.”

– EXECUTIVE AT RENEWABLES DEVELOPER





**Energy and infrastructure policy are the biggest question mark in the energy transition and, therefore, a big opportunity.**

- ▶ Covid-related government financial assistance has the potential to fuel renewables growth. The Fed has forecast vanishingly low interest rates until 2022, creating opportunities to finance clean energy at scale. Plus, if a part of the large government-funded Covid-related stimulus gets allocated to renewable energy, it could create a windfall for the industry. On the other hand, Covid may end up straining government finances, drying up funds that would have gone towards renewable energy.
- ▶ A democratic presidency can ignite policy changes to mitigate climate change, further fueling renewable energy growth: This could spark electrification of transport, industry and buildings, lead to biofuels in aviation, and deploying hydrogen as an enabler of renewable power and a tool to decarbonize heavy industry.

“ *General party sentiment has shifted left since Obama, coupled with Trump’s inactions towards climate change. If a Democrat wins the presidency, we could see huge [positive] policy changes for renewable energy.* ”

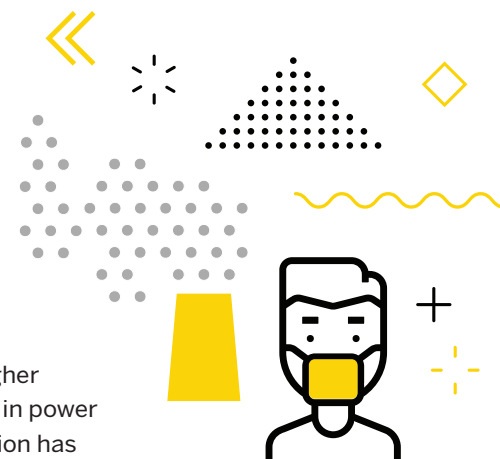
– FINANCE DIRECTOR AT A RENEWABLES DEVELOPER


**The economic and societal considerations that underpin the energy transition are just as essential as the pace and breadth of the transition itself.**

- ▶ Covid’s disproportionate effects on disadvantaged communities have added to existing environmental justice issues. These communities already suffer from higher levels of air pollution from fossil fuels used in power plants and ICE vehicles. The energy transition has the potential to improve health outcomes in these communities by replacing traditional fuels.

“ *For greatest societal impact, equity and justice need to be embedded in the foundation of this energy transition to cleaner and carbon free grid, transportation and industries. A reframing founded in equity and justice is necessary at this critical juncture in time.* ”

– ELIZABETH KOCS, ENERGY EXECUTIVE AT NREL; DIRECTOR OF PARTNERSHIPS AND STRATEGY AT UIC ENERGY INITIATIVE





## Q2: Will consumers demand more from companies to reduce carbon emission or will the energy transition be slowed? If so, why?

**In the near term, capital markets will take center stage, demanding companies reduce emissions.**

“Customers will increasingly demand more from companies to reduce carbon emissions. However, the capital markets will likely be a more powerful near-term force driving change. Lenders and investors are increasingly factoring in energy intensity, carbon emissions, and environmental impacts in financing decisions.”  
– ERIK BIRKERTS, CEO AT CLEAN ENERGY TRUST

- ▶ ESG funds have continued to outperform, so it appears the ESG-mindset will persist through the crisis. Sustainable investments are outperforming non-sustainable (fossil) ones and this will be underscored in 2020-2021.

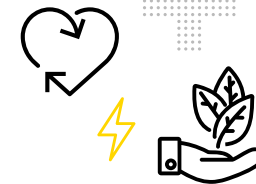
“It appears that through both market dynamics and mounting shareholder activism, fossil fuel companies recognize that a future sustained high oil price is unlikely and are adjusting their business models to adapt to a low-carbon world.”  
– ANDREW HINKLY, MANAGING PARTNER AT AP VENTURES

“More emphasis on ESG from investors, both casual and institutional, standardization of sustainability reporting, guidelines and mandates from regulators, and increased transparency will all increase the impact that customers will have.”  
– YANCEY MAY, UTILITY SCALE RENEWABLES DEVELOPER

- ▶ Consumers simply will not pay a premium. Consumers rarely pay a premium for sustainability. Decarbonization will come because it is profitable and inexpensive. Furthermore, because of the limited amount of visibility that the average consumer has into the supply chain and operations of most companies, they are unable to differentiate between true decarbonization and greenwashing.



- Economics and capital markets are primary drivers, then consumer
- Growing emphasis on ESG, will persist through crisis, awareness increasing
- Green recovery – investment for jobs and climate – will vary by region



**Still, citizens, consumers, and employees will exert increasing pressure on corporations and governments.**

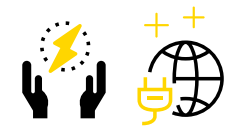
- ▶ Increased public awareness of carbon emissions will drive greater demand for decarbonization. This is due, in part, to digital connectedness transforming consumers into a more powerful and activated “voting bloc”. This will be particularly true for corporates viewed as lacking a clear decarbonization strategy that satisfies the Paris Agreement. Also for governments who will be expected to produce policy mandating standards for decarbonization.
- ▶ The pandemic made fears of disruption even more real, accelerating calls to action in the energy transition. The pandemic has been a shock for society, just as climate change will be. This rational/emotional response will highlight the threat of climate change disruptions and amplify government and corporate calls for action.
- ▶ Other corporations will follow in Amazon’s footsteps and commit to net-zero carbon.
- ▶ The challenge is for the industry to scale to meet demand. Consumers are already demanding net zero emissions commitments, and this will expand to more sectors beyond consumer-facing companies and rich tech companies.

“The systemic challenge of climate change has not diminished during COVID, and countries and businesses that have taken action are seeing positive reactions from citizens and customers.”  
– ENERGY VENTURE CAPITAL EXECUTIVE

“[Covid has engendered] a new respect for resilience. We’re all feeling the pain and adjusting to a new world. We are learning firsthand what it feels like to get hit hard when you least expect it. Every business in every industry will re-evaluate risk exposure, and foolish it would be to not consider climate risk as seriously as pandemic risk.”  
– PAUL SEIDLER, MANAGING DIRECTOR AT CLEAN ENERGY TRUST

“I see evidence of individuals thinking more critically about the importance of the decisions they make—where to spend their dollars, where to spend their time, which companies to support—and more importantly, believing that their decisions can really make an impact. More consumers are feeling empowered to demand change.”  
– OLIVIA KATZ, RENEWABLES & TMT AT EY-PARTHENON

“Amazon’s \$2 billion Climate Pledge Fund to invest in decarbonization technologies is tied to its commitment to be net-zero carbon by 2040. These are proactive, strategic moves to counteract increased criticism from the market and its employees. Amazon’s move will undoubtedly trigger other corporations to follow: Verizon, Reckitt Benckiser, and InfoSys have already signed on to Amazon’s pledge.”  
– ERIK BIRKERTS, CEO AT CLEAN ENERGY TRUST



**Despite reasonable enthusiasm for the energy transition, the transition will be regional, with different areas behaving differently based on government and financial factors.**

- ▶ Low price of fossil fuels in poorer regions will decelerate electrification in places like India, parts of Asia, etc. where the low price of fossil fuels (and up-front costs and lack of infrastructure for renewable power and EVs) will make a material difference for consumers and businesses. Where it takes place at all, electrification outside of the US and Europe will be more opportunistic, like in Chile where the solar resources make PV arrays profitable.
- ▶ For wealthier governments and businesses, economic recovery and financing renewable energy go hand in hand. This includes extra funding (subsidies, tax rebates, etc.) for renewables and energy infrastructure.

“ In Switzerland, a new—ultimately quite costly—CO2 law was just ratified, despite Covid and a deep recession in the country. One argument that was used is that the “green agenda” will bring jobs. The public at large is putting pressure on companies to decarbonize and adopt net zero CO2 emissions targets, [without which they face] potential reputation sufferings, protests, boycotts.

– MATTHIAS F BICHSEL, VICE CHAIRMAN AT SULZER; SENIOR INDEPENDENT DIRECTOR AT PETROFAC; NON-EXECUTIVE DIRECTOR AT CANADIAN UTILITIES AND SOUTH POLE GROUP

“ Before Covid-19 crisis there was a lot of discussion how to finance energy transition. Now the governments need to finance economic recovery. Doing it in a “green way,” they shoot two birds with one shot... This green economic stimulus is certain in Europe and hopefully Europe’s example will show others the way.

– GREG GORSKI, MANAGING DIRECTOR, CENTRALIZED GENERATION, ENGIE

- ▶ While the energy transition is real and ongoing, the pace of the transition rests on numerous variables that differ across geographies.

“ The world is at a crossroads, and there is only one way forward—accelerating the clean energy transition. The question of “at what pace” will be determined by a number of factors—local, state, regional legislation regulation and incentives; industry, company, and organizational goals; customer behavior and demands; electric utilities’ ability to leverage existing infrastructure while accelerating a cleaner pathway for the grid and transportation; and, most importantly, collaboration across all sectors and stakeholders.

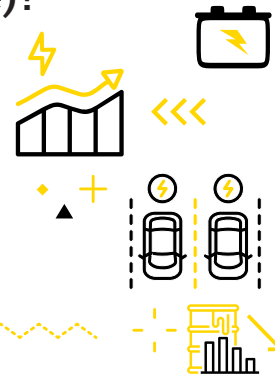
– ELIZABETH KOCS, ENERGY EXECUTIVE AT NREL; DIRECTOR OF PARTNERSHIPS AND STRATEGY AT UIC ENERGY INITIATIVE



### Q3: What impact will cheap fossil fuels have on the pace of electrification of transportation and other non-power sectors (built environment, industry, and agriculture)?



- Any slowing of EV growth will be short-term
- Battery price declines a driving force and counteract lower fossil fuel prices
- Impact on other markets more pronounced: agriculture, built environment



### EV adoption will be slowed only near term (~2 years), and the transition to green technology will continue.

- ▶ EV trucks and SUVs, plus demographics, will power long-run EV adoption.

“ People that have shunned owning a car to use public transit may feel compelled to reconsider, and that profile of customer (young, urban) lines up pretty nicely with EV demographics.”  
– ENERGY VENTURE CAPITAL EXECUTIVE

- ▶ Continued corporate pressure to green supply chains will win out long term.

“ Low cost fossil fuels will likely dampen consumer demand for EVs in the near term. But, corporations under pressure to reduce the carbon intensity of their operations will continue to pursue strategies for carbon reduction of their supply and logistics chains by electrification and other low-carbon fuel sources.”  
– ERIK BIRKERTS, CEO AT CLEAN ENERGY TRUST

- ▶ Long-run economics will fuel EV growth.

“ US is “awash” with oil and with very low-cost MWhs of renewable power. One is temporary, one is not.”  
– EXECUTIVE AT RENEWABLES DEVELOPER



## Heavy-duty EV adoption is currently limited by the availability of EVs.

- ▶ While consumer experience (EV charging networks, performance, etc.) dictates consumer adoption, battery innovation and cost reductions will accelerate heavy-duty, commercial EV adoption.
 

“ Within the next 24 months batteries in EVs will decline by another 50% and become materially cheaper than ICE vehicles. This will accelerate the adoption of long-range vehicles: city buses, long haul trucks, delivery trucks.”  
 – JOHN TOUGH, MANAGING PARTNER, ENERGIZE VENTURES
- ▶ EV adoption won't be affected by lower fuel prices, and heavy commercial EVs are more so a function of availability.
 

“ Utilities would likely have copious EV bucket trucks if they were widely available.”  
 – YANCEY MAY, UTILITY SCALE RENEWABLES DEVELOPER

## Certain market conditions will actually speed up the electrification of transportation.

- ▶ Even in consumer segments, battery prices are falling fast enough (due to increases in manufacturing scale) that the pace of transportation electrification has been uncoupled from fossil fuel prices.
 

“ [In addition to battery prices falling,] the maintenance and performance advantages of electric power are becoming a driving force [for EV adoption].”  
 – MARK PLATSHON, FOUNDER AND MANAGING DIRECTOR AT ICEBREAKER VENTURES; PARTNER AT BIRCHMERE VENTURES
- ▶ Where the political will exists, cheap fuel will not slow the pace of electrification/ decarbonization. Plus, governments can (and will) tax inexpensive fossil fuels without much resistance by the public.
 

“ Anecdotally, some well-regarded research analysts believe that renewable and storage growth may effectively eliminate the need for LNG in the next ~30 years.”  
 – M&A ADVISOR FOCUSED ON POWER AND UTILITIES
- ▶ LNG could be replaced by advancements in renewable and storage growth: The oversupply of natural gas has paused LNG projects, and the sector outlook is uncertain.

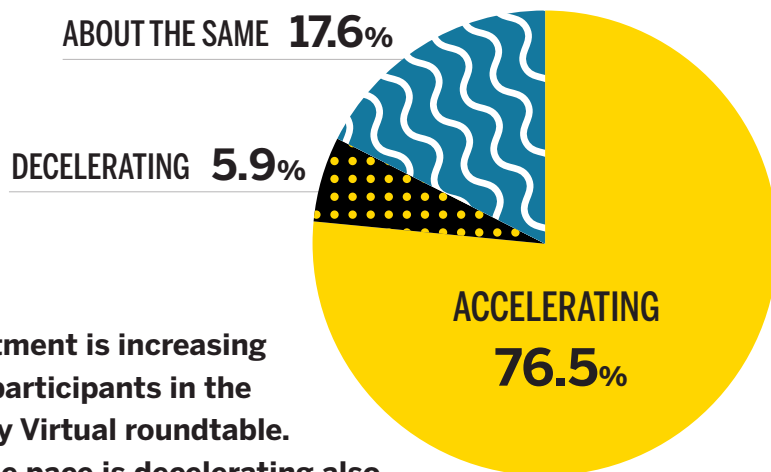
## Some believe that cheap fuel prices will adversely affect electrification in certain regions, industries, and initiatives.

- ▶ Cheap prices will cause the pace to slow down in regions unable or unwilling to address climate change, but opportunities remain. For instance, in some large emerging markets with ample renewable potential, such as India, distributed power can provide a jump forward to affordable energy.
- ▶ Energy efficiency in the built environment may be adversely affected if power prices stay low. Most efficiency projects are driven by ROI (typically short payback periods that may be difficult to achieve when natural gas used for heating is so inexpensive).
- ▶ On the other hand, air quality concerns related to Covid may motivate more HVAC-focused retrofits, providing an opportunity to incorporate energy efficiency into those projects.
 

“ Reinvention of the workplace with a focus on technology (both at home and in traditional offices) offers an opportunity to re-assess status quo and invest in clean, efficient technology and habits. Investment in state-of-the-art office building HVAC due to COVID is a huge opportunity from an efficiency perspective.”  
 – OLIVIA KATZ, RENEWABLES & TMT AT EY-PARTHENON
- ▶ Agriculture has a long way to go to lower their fossil footprint. Success would require greater transparency in the agricultural supply chain. Low natural gas prices (caused by the "fracking revolution") are also a major headwind, since they result in cheaper raw materials for fertilizers, pesticides, plastics, etc.
 

“ Until prices come out of the sub \$3/ mmbtu basement or there's a policy solution in place, there will be little to no financial incentive to reduce agro/ petrochemical use.”  
 – YANCEY MAY, UTILITY SCALE RENEWABLES DEVELOPER
- ▶ The behavior of the industrial sector is similar to that of the energy sector, with adoption of renewable energy and other cleantech only if it is profitable. Otherwise, margins are too thin to take an economic hit to adopt cleaner technology.

Q4: What is the outlook for pace of investment in the energy transition at your firm?



The pace of investment is increasing among nearly all participants in the Clareo New Energy Virtual roundtable. Those who said the pace is decelerating also indicated that it would pick up speed after 12 months.

“ About the same for large renewable energy projects, decelerating for smaller behind the meter projects at commercial and industrial sites (will likely pick back up in 2021). – STRATEGY EXECUTIVE, UTILITY SCALE RENEWABLE DEVELOPER

“ Venture [capital] is allocating more funding toward energy transition—more investments in electrification, batteries, fuel cells, advanced materials. Mobility companies like Lyft and Uber are committing to full electrification within the decade. – ENERGY VENTURE CAPITAL EXECUTIVE

“ In all the companies where I am on the board, we see acceleration. Either providing more products that concern energy transition (offshore wind, CSP, etc.) or moving towards a net-zero target requiring a solution furthering energy transition. – TRADITIONAL FUELS EXECUTIVE

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