

CAPITAL DYNAMICS CEI ANNUAL LETTER

# GLOBAL TRENDS IN RENEWABLE ENERGY INVESTMENTS

MARCH 2020





As we move into a new decade, the power industry is going through a period of unprecedented change, which we believe will likely continue, if not accelerate further. With climate change and pure economics driving the appetite for renewable energy, we expect the opportunities to make attractive investments into the sector will only increase, both in North America and Europe. In this letter we share our perspective and insights on some of the major trends we experienced across our clean energy markets and projects in 2019, and what we expect for 2020 and beyond.

## North America

2019 marked another year where, despite inconsistent government policies, the power industry in the U.S. continued to make strong advancements in the supply of energy generation. This evolution started in the early 2000s with lower cost wind turbines, and accelerated in the following decade with the precipitous drop in solar prices. The deployment of large-scale storage technologies will only further accelerate the pace of change.

Just five years ago, there were very few large, utility-scale solar plants in the U.S. At the time, it would have been almost inconceivable to imagine that solar and storage would compete against new gas generation to provide something close to base load. Today, in many markets, this has become a reality, and with it the opportunity for another huge surge in renewable deployment and the continued transition from traditional power generation. Declining government subsidies, tariffs on solar products, and attempts to support coal have failed to slow down this transition, so far. We believe that nothing else is likely to impede the pace of progress towards renewable energy in the future.

Last year's trends were set against the backdrop of ongoing global climate change, which is helping further accelerate developments in the power industry. Investors are seeing both the opportunity to

invest profitably in support of Climate Change mitigation, as well as possessing the moral impetus to do so.

The first trend we witnessed was investors committing capital towards the first large-scale battery storage systems, primarily in California. After years of talk, and the installation of smaller scale systems, a number of projects between 100 and 300MW and up to 900 MWH have finally been ordered and will start being installed this year. This is the result of a number of convergent trends. The cost of batteries in California has dropped to the point where a battery system can operate profitably without an investment tax credit. In other words, without any meaningful state or Federal incentives.

The increasing penetration of solar power, particularly in California, has created a need to store energy from midday and to deliver it later in the day. Large-scale batteries have become a practical solution to manage this need. As these systems come into operation they will enable further solar penetration. This virtuous cycle (from the standpoint of renewables) means that traditional, thermal power plants will come under even more pressure. The Clean Energy Infrastructure (CEI) team now has over 2,600 MWH of battery storage in its construction plan over the next 24 months. As the industry learns how to optimize the value of these plants, we remain a committed leader in storage. This exponential growth in battery scale and output also

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means lower costs for systems and improved integration capability.

Another noteworthy trend is the move by many municipal utilities, co-ops and large industrial loads to shift from traditional power utilities towards renewable generated electricity. New regulation, the high costs that utilities often charge these entities, and the desire for higher renewable content have contributed to this move. There are more than 1,600 municipal utilities and co-ops in the U.S. supplying more than 45 million customers, so this certainly presents a significant long-term opportunity.

In addition, new kinds of co-ops, such as the Community Choice Aggregators (CCAs) in California have further contributed to this alternative for utilities. However, replacing utility-supplied power is complex and requires expertise in solar and wind generation, storage, transmission and trading power. The CEI team is well placed to take advantage of this shift, and has put together a comprehensive, difficult-to-replicate, solution that provides both cost savings for these customers, and above-market and contracted returns for our investors. Our in-house team will continue to invest profitably in this opportunity.

The third trend is the significant number of investors entering this sector. Many diversified infrastructure funds are turning to U.S. renewables. In addition, some large, established managers and new managers are putting teams together to raise money in the sector, driven by new investor interest and fewer attractive opportunities in other parts of the U.S. infrastructure market, especially power. These new entrants are joining the market via the most easily-accessible points: auctions, high-merchant risk projects or by purchasing development platforms. We believe that none of these more competitive areas provide an attractive risk/return profile for investors. Our scale and asset management capabilities provide us with a significant advantage that less specialized and experienced new entrants cannot easily replicate. While we welcome this new capital to help the sector grow, we believe investors should be cautious when evaluating these newcomers.

Looking ahead, we remain bullish on the industry and our position within it. However, to avoid chasing all the

new money going into low return/high risk areas, it will be increasingly important to develop innovative solutions for customers.

Some of the areas that we remain cautious about include wind, in general, ERCOT (interconnected electrical system serving Texas), short-term power purchase agreements (PPAs) in much of the southeast of the U.S., the purchase of operating projects, and investing in development platforms. These are all relatively straightforward places to deploy capital but they can expose investors to high risk.

For the CEI team, 2020 will be a year of expanding upon some of last year's initiatives, such as Distributed Generation (DG). DG is growing rapidly, offering higher returns and lower exposure to wholesale merchant power. The challenge is that the transaction costs of each small project can be higher than the profit. With our decade-long experience in DG, we are in a strong position to take advantage of the market's attractive growth prospects.

Storage will continue to make rapid advancements in 2020. Our large-scale construction activities begun earlier in the year, with utility-scale solar operations commencing at the start of 2021. We believe that being an early operator provides us with a first-mover advantage. The economics of storage will be best for the earliest projects, and as more storage comes online in later years, extensive operational experience will be a critical differentiator, particularly in California, where storage offers a major source of revenue.

The U.S. election in November is widely seen as the most important event for the country's power market. After the surprise outcome of the last election, making any sort of predictions of the victor does not appear to make sense.

If Trump is re-elected, we expect continuation of the current policies, i.e. no new Federal incentives, phasing out of investment tax credit (ITC) and production tax credit (PTC), and a strong push, both in Democratic states and some Republican states, for climate change initiatives. However, if we do get a Democratic administration, we expect that some form of additional support for renewables from the Federal government will emerge. In addition, we expect further support for

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the electrification of the transportation fleet and, with that, increased demand for electricity. This scenario is the upside to our entire base planning in what is sure to be a thrilling political year.

## The U.K. and Europe

The past decade has placed a bigger spotlight on infrastructure investment, with 2019 being a strong year for infrastructure fundraising globally. This includes the U.K. and Europe, where we have seen an increasing interest in renewables.

Historically, the European market has statistically had the highest penetration rate of renewables in the world, driven by decades of subsidies. Over the last decade, the costs of solar panels and wind turbines decreased dramatically, whilst their respective efficiencies improved. This resulted in the subsidies, previously available for onshore wind and solar, largely removed for new generation capacity. Consequently, these two forms of energy are now generally considered to have the lowest cost of electricity generation versus alternatives.

As the market transitions from a subsidized to a non-subsidized world, and as large amounts of capital continue to chase renewable assets, our differentiation remains a significant advantage.

The removal of subsidies has created two distinct markets. First, the market for de-risked operating assets is extremely competitive with investors seeking a long-term yield that has been compressed significantly over the last year or so as more entrants compete for the same assets, generally acquired through an auction process. While value can be generated through these auctions, we aim to avoid being a price taker of higher valuations via auctions, and would only consider these processes on an opportunistic basis.

We see strong value in the acquisition and construction of new onshore wind and solar projects through a focused origination strategy, working extensively with our network of developers across the different technologies and geographies in Europe. Utilities dominate the larger deals, but we continue to see some interesting medium-sized deals where the lack of subsidies raises the barrier to entry.

In an unsubsidized world, the key for us is to de-risk the cash flows as much as possible by finding alternative buyers for our generation. One secular movement we are seeing, that is getting increasing attention in the U.K. and continental Europe, is the growing interest in corporates looking to source more of their power needs from renewables. Lower costs and the steady increase in demand from investment grade corporates, such as RE100 companies and other corporate power buyers, are providing the opportunity for a dedicated renewable investor such as Capital Dynamics to sell the power we generate from our renewable generation sites to these corporate entities on a long-term basis.

Real value can be created by matching the assets we acquire and construct, with suitable long-term offtake agreements – this will be key to our business in 2020 and beyond.

Without the benefit of subsidies, sourcing new assets is a lot harder unless you are a specialist and have the relationships, in-house expertise and asset management capabilities to extract as much value as possible in a competitive environment. Since the formation of our business at the beginning of the last decade, we have built up our own in-house asset management team that is focused purely on Capital Dynamics' CEI assets. When you acquire a renewable asset, the asset does not come with employees. The members of our asset management team are essentially the employees of the business, looking at and monitoring the operational performance of our assets every minute of the day, both during the construction and throughout the operational phase. Having this depth of resource undoubtedly helps us extract additional value from the assets. In an increasingly competitive market, this remains a key component of our business going forward.

A topic of contention since 2016 has been the United Kingdom's departure from the European Union. Any direct impact on the assets themselves has so far been muted and we do not foresee any significant impact to our current strategies as a result of Brexit. Our investment strategies have been designed to provide accommodating environments for our investors. We will continue to monitor the impacts of Brexit throughout 2020.

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As we continue to lead the way in a clean energy market that is becoming larger and more competitive, our business remains underpinned by key factors that add value for our investors:

- A focused acquisition strategy where we target the mid-market, keeping us below the radar of the utilities and giving us access to deals sourced directly from our developer relationships;
- De-risking the cash flows we generate from the assets by contracting with large, credit worthy off-takers who purchase the electricity we generate on a long-term basis; and
- Utilizing our in-house asset management team to extract additional value for the performance of our assets throughout the life-cycle of our investments.

### ESG focus

It is clear that there has been a tidal shift in public opinion regarding climate change. We believe the overall support for climate change initiatives has reached a tipping point. Ten years ago, ESG was an issue that some investors were reluctant to talk about out, fearing it might mean lower returns.

Today, ESG is a critical part of how most large investors evaluate managers and investments, and an area that we take extremely seriously. Our approach involves not only lowering greenhouse gas emissions via new projects brought on to the grid, but also evaluating our entire supply chain from the labor practices of our suppliers and offtakers to the mining practices and policies of our equipment providers. The shift in the global power mix is moving rapidly, where a sustainable approach and perspective on the entire supply chain are critical.

As the leading independent asset manager investing in renewables globally, we are well-positioned to deliver our investors both superior risk-adjusted returns that have a low correlation to other assets and inflation, while strongly contributing to the advancement toward a cleaner environment.



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