

The Renewables Revolution

How Private Equity
is Expanding Our
Clean Energy
Footprint

APRIL 2021



Introduction

The shift toward renewable energy is underway, and private capital is accelerating it. Private equity (PE) is well-suited for the task— PE investment in renewable energy hit a record \$23.7 billion last year, and more capital is on the way. Patience is required, and PE firms pencil in long holding periods for their investments. For renewable energy, the catalyst has always been workability, and dramatic improvements in technology have brought costs down to put solar-powered electricity costs on par with fossil fuels. According to the International Energy Agency's [2020 World Energy Outlook](#), "solar projects now offer some of the lowest cost electricity ever seen." Onshore and offshore wind projects are also producing cheaper electricity than they have in the past.

According to the [US Energy Information Administration](#), about 11% of current energy consumption is produced by renewable energy, and the Biden administration has pledged to put America on a path to 100% carbon neutrality by 2035. Solar panels and wind turbines have made significant strides in recent years, and the underlying technology is now proven instead of theorized. President Biden pledged upwards of \$2 trillion in clean energy spending, which will help bolster private capital fundraising, as well. Another driver has been limited partners—the public pension funds, college endowments, and insurance companies that invest in PE—directing more of their capital toward environmental, social, and governance (ESG) considerations. A new UN-convened group, The Net-Zero Asset Owner Alliance, recently pledged to have carbon-neutral portfolios by 2050. Limited partners such as CalPERS (California's public employee pension plan) and the David Rockefeller Fund are influential players in the PE industry, and investors will follow their lead in the decades to come.

The financial markets are baking in aggressive energy transition scenarios that will influence the trajectory of private investment. Last June, [Goldman Sachs predicted](#) that "renewable power will become the largest area of spending in the energy industry in 2020...surpassing upstream oil & gas for the first time in history," adding that they see a "total investment opportunity of up to \$16 trillion by 2030." The government's role is to provide pilot programs and set adoption goals, but government programs have limitations. Private capital's role is essential, especially in early-stage technology development, where risks are often greater. PE can thrive in that stage, and as the underlying technologies continue to mature, the conversation will gradually shift to broad adoption and volume, where other pockets of the American capital markets can take over.

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PE joining the revolution

A record year

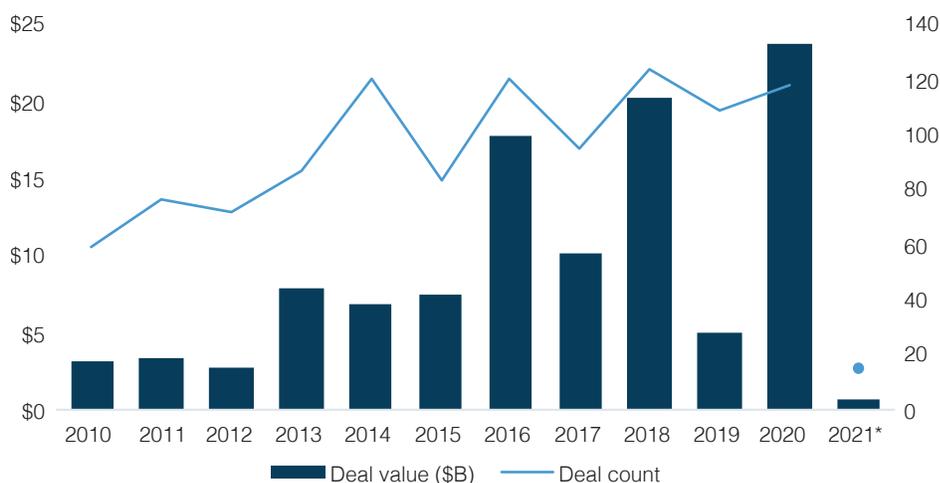
Renewable energy and cleantech saw major PE investment in 2020. Renewable energy investments reached \$23.7 billion last year, despite the COVID-19 pandemic, economic uncertainty, and unpredictable energy markets. PE is familiar with renewable energy—the industry has funneled over \$100 billion into the sector since 2010.

Why now?

The underlying technology behind renewable energy has been borne out, and results are coming into focus. The cost (per megawatt) of building solar plants is now less than the fossil fuel equivalent for the first time, [according to the World Energy Outlook 2020](#). Equipment prices are cheaper than they've ever been, and construction risks—safely and effectively building the facilities themselves—have significantly decreased, as well.

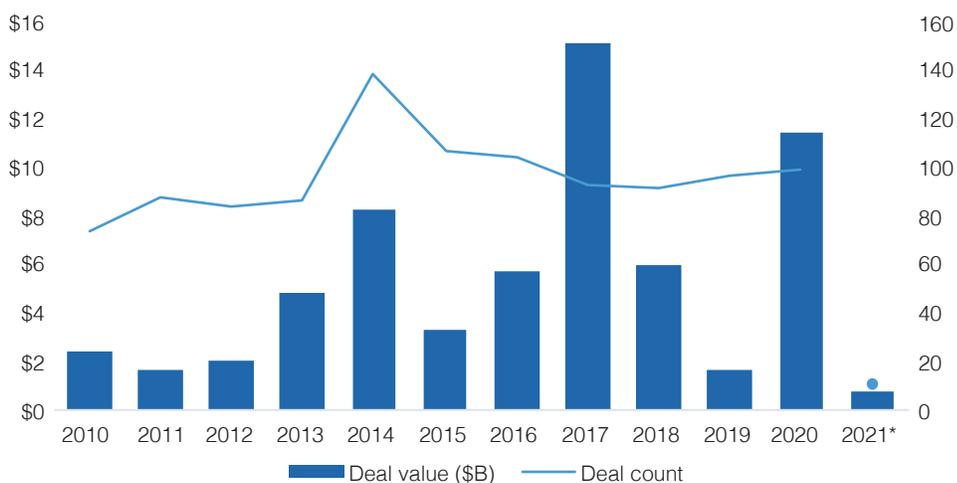
PE invests in renewable energy in two major ways: buying and expanding established power generators and increasing their production over the long term, and financing development costs for new renewable power companies. The latter is risky but important, and initial development costs often become issues for promising projects. PE plays a valuable role in shouldering that early risk.

Renewable energy PE deal activity



Source: PitchBook | Geography: US
* As of March 15, 2021

Cleantech PE deal activity

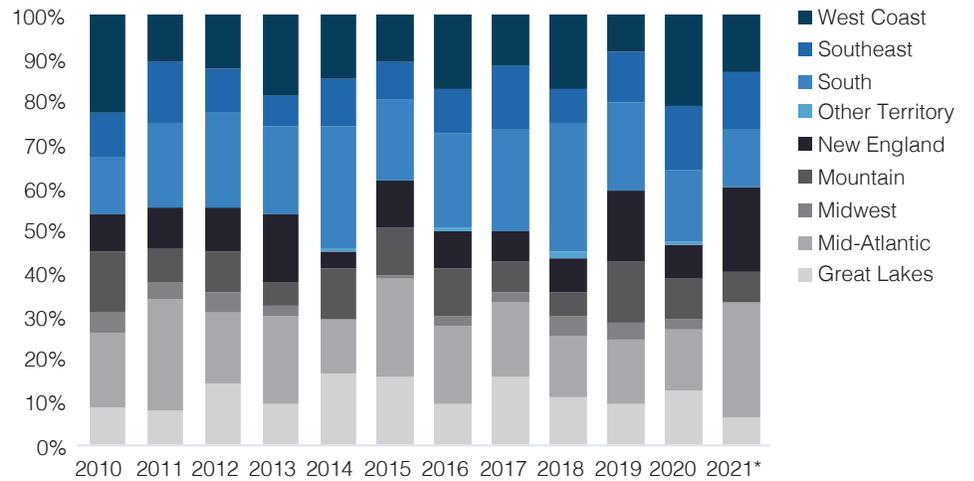


Source: PitchBook | Geography: US
* As of March 15, 2021



The cleantech sector is another important market where PE is having an impact. Outside of energy generation, cleantech applications include energy conservation, water purification, waste management, and recycling and retrofitting buildings with clean energy technology. More than \$11 billion in PE was invested in 2020, despite the pandemic, and almost \$40 billion has been invested over the last five years. Importantly, the investments are being made across the US, and cleantech companies in every region of the country are now supported by PE.

Cleantech PE deals (#) by US region

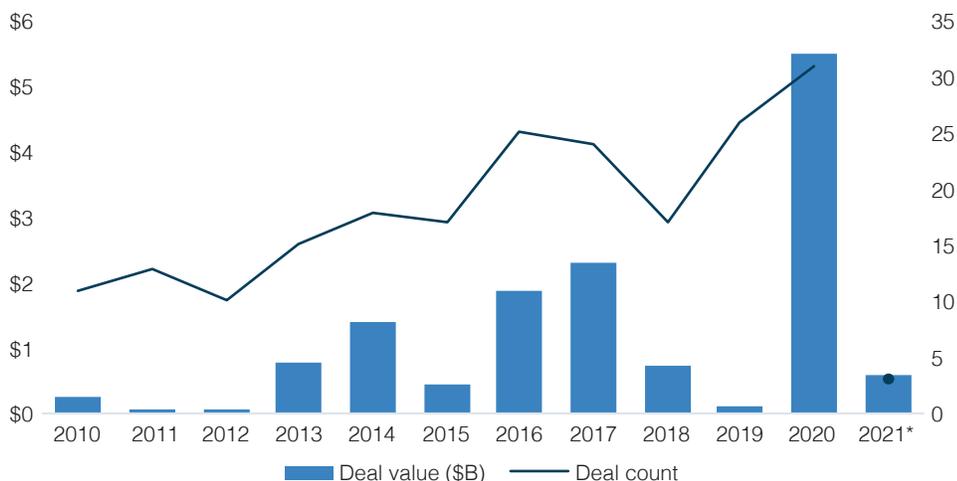


Source: PitchBook | Geography: US
* As of March 15, 2021

Solar

Despite the impacts of the pandemic, PE investments in solar energy reached record highs in 2020. \$5.5 billion of PE funneled into the sector in the year, and almost \$13.5 billion has been invested since 2010. Today's solar-powered energy companies are producing tangible results, and new projects are expected to generate significant levels of electricity in the years ahead. Massive PE-backed projects in the Northeast will provide power to tens of thousands of homeowners in Maine and New York state. The International Energy Agency projects more progress over the next handful of years. In a series of simulations, [the IEA found that](#) "renewables meet 80% of the growth in global electricity demand to 2030" and that "solar is the main driver of growth as it sets new records for deployment after 2022, followed closely by onshore and offshore wind."

Solar PE deal activity



Source: PitchBook | Geography: US
* As of March 15, 2021

Private equity at work



In August 2020, The Carlyle Group invested more than \$130 million in Arcadia, which is comprised of eight solar projects across Southern Maine. Arcadia is contracted to sell power—estimated to be north of 100 megawatts—to regional power companies for 20 years once construction is complete. That would be enough to supply power to about 19,000 Maine homes.



Blackstone, which owns a sprawling complex in Stuyvesant, has installed more than 9,000 solar panels across 56 apartment rooftops. Combined energy production (3.9 megawatts) is enough to power about 1,100 apartments. It's the largest rooftop solar array in the United States and tripled the solar capacity for Blackstone properties in New York City.



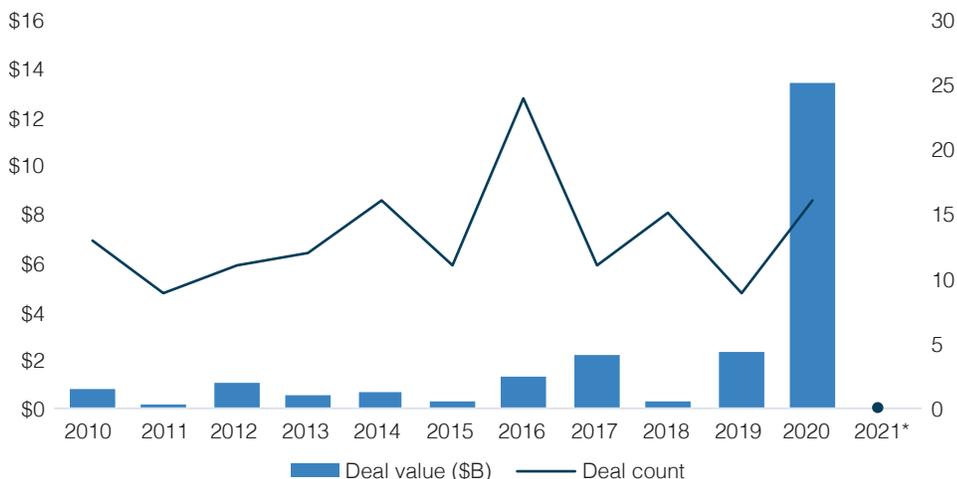
A portfolio company of Monarch Private Capital

In January 2020, The Carlyle Group made a \$100 million commitment to Alchemy Renewable Energy. The money is being used to develop, acquire, finance, and operate solar power generation projects throughout the United States. Founded in 2016, Alchemy has built 38 renewable energy projects across eight states, generating a combined 850 megawatts of power.

Wind

In addition to last year's record in solar investment, PE also hit a new peak in wind energy. \$13.4 billion was invested in wind, which is more than the previous 10 years combined. According to the Office of Energy Efficiency and Renewable Energy, "wind energy costs have been reduced from over 55 cents per kilowatt-hour in 1980 to an average of 3 cents per kWh in the United States today." Wind energy comes with relatively little carbon emissions, is easy to tap, and is already being successfully used across Europe. PE is beginning to invest in wind at scale, with more capital on the way in the years ahead. The International Energy Agency believes that offshore wind power could become a \$1 trillion market over the next 20 years, and long-horizon PE funds will provide crucial, and patient, capital to new wind farms as the market continues to mature.

Wind PE deal activity



Source: PitchBook | Geography: US
* As of March 15, 2021

Private equity at work



Last August, Apollo Global Management invested \$265 million in US Wind. The capital will finance an offshore wind farm about 17 miles off the coast of Maryland. The first phase is expected to generate about 270 megawatts of power, enough to power 75,000 homes in Maryland, once it comes online in 2024.



The Carlyle Group backed Valcour Wind Energy in December 2018. Valcour operates six wind farms in Northern and Western New York and generates about 612 megawatts, which made up about 29% of New York's wind power at the time of the partnership.

Industry initiatives

 **Blackstone**

Blackstone cuts emissions by 15%

Blackstone pledged to reduce carbon emissions by 15% within the first three years of buying new portfolio companies. To help stick to that pledge, Blackstone's progress is being tracked by French energy and digital automation company Schneider Electric SE. Blackstone has had success in the past, reducing carbon emissions at Hilton Hotels by 30% and energy consumption at the Cosmopolitan Hotel by 18%, according to the [Wall Street Journal](#).



The Rise Fund

Founded in 2016 by PE firm TPG, in partnership with Bono and Jeff Skoll, The Rise Fund works with growth-stage, high potential, mission-driven companies to help achieve the United Nation's Sustainable Development Goals. Now on its second fund, Rise Fund II is targeting \$2.5 billion to be deployed across the United States and globally.



KKR Global Impact Fund

Last February, KKR raised \$1.3 billion for its inaugural Global Impact Fund, which is designed to support middle-market companies focused on ESG challenges. The fund is meant to help contribute to the United Nation's Sustainable Development Goals.



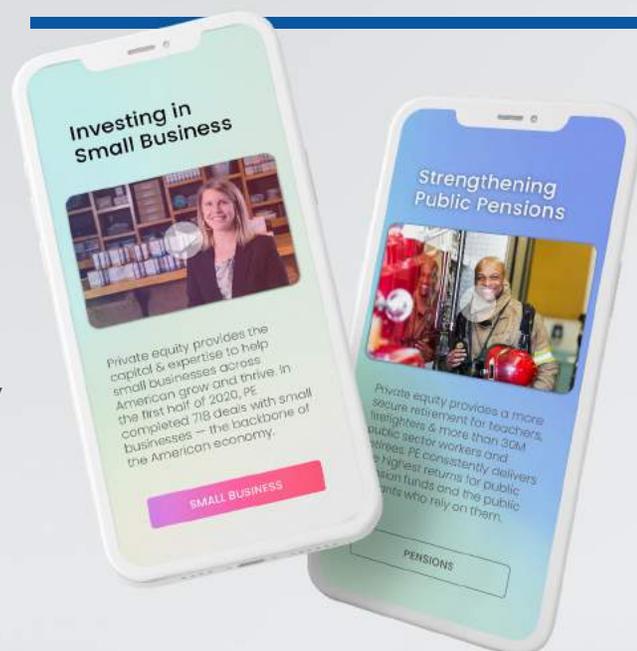
Bain Capital Double Impact Fund

Bain's Double Impact funds aim to solve critical social problems and do so with sustainable business models while doing measurable social and environmental good. Its second fund, Double Impact Fund II, raised \$800 million in late 2020.

PRIVATE EQUITY INVESTING IN AMERICA

From urban to rural and everywhere in between, private equity is making a positive impact across America and investing in every community to:

- Back small businesses
- Support good-paying jobs
- Boost the American economy
- Strengthen public pensions



The American Investment Council (AIC) is an advocacy and resource organization established to develop and provide information about the private investment industry and its contributions to the long-term growth of the U.S. economy and retirement security of American workers. Member firms of the AIC consist of the country's leading private equity and growth capital firms united by their successful partnerships with limited partners and American businesses.

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