Climate Change Business Journal®

Climate Change Industry Indicators

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Second Quarter 2021

Climate Change Indicators Point to a Promising and Challenging Future

The beginning of any new year brings delight to the statistician who likes to compare data on a conveniently recognizable calendar year format. The year 2020 will be a year with much data to look at, given the onset of the coronavirus and all of its implications socially and economically, but here at Climate Change Business Journal we concern ourselves with a more narrow range of indicators to assess the health and future prospects of the climate change industry.

Whereas the second quarter is too soon for CCBJ to reach a final conclusion on 2020 performance in absolute terms of billions of dollar in revenues of the U.S. and global climate change industry, a sector that CCBJ defines in nine segments and 58 quantifiable subsegments, in this review we look at a relatively short list of indicators in market drivers and key subsegments.

Assessing market drivers and policy influencers, a snapshot of the latest temperature, weather and emissions data indicates that nothing has really changed to curtail the perilous path of anthropogenic climate change. The year 2020, like 2009 before, will be a mere blip on the upwards curve of global greenhouse gas emissions that is set to continue to a still undetermined peak – that most analysts set in the 2030s, although some speculate could conceivably have been 2019 – but CCBJ's more optimistic scenario has at 2024. (See perspective on other 'peaks' on page 12.)

A continued increase of greenhouse gas emissions into the atmosphere means extending the still aspirational goal of a peak of the concentration of CO_2 in the atmosphere. Extending the increasing con-

Climate Change Industry Indicators: 2020 Data & Outlook

centration of atmospheric carbon inevitably leads to more prolonged increases in global air and ocean temperature, and the annual lists of economically disruptive weather events. So clearly the climate indicators are still heading in the wrong direction – or in the right direction if the objective is to mobilize more urgent policy response from the global community of nations.

Assessing some key subsegments of the climate change industry, it is welcome news that capacity additions, as well as total electricity generation, set annual records in 2020 by some margin in both solar and wind, and that energy storage had a breakthrough year in 2020. Global new capacity additions increased 62% in energy storage, 53% in wind and 22% in solar in 2020; USA capacity additions increased 187% in energy storage, 77% in wind and 39% in solar in 2020. (Conversely, global oil production decreased 6.4%, and global natural gas production dropped 3.6% in 2020.) Other segments saw global markets outpace the USA in 2020. The number of new electric vehicles sold globally in 2020 increased 39% in 2020 to 3.1 million units worldwide, while falling for the second consecutive year in the United States, in 2020 by 11% to just 292,000 EVs sold in the U.S., less than one-fourth of the sales in each of China and Europe.

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Climate Change Industry Indicators 2019-2020

Solar PV Capacity (MW)	**2019**	**2020**	**2020 Growth**
Global Capacity Additions	115,000	140,000	22%
USA Capacity Additions	13,500	18,800	39%
% USA	12%	13%	
Wind Power Capacity (MW)	**2019**	**2020**	**2020 Growth**
Global Capacity Additions	60,877	93,000	53%
USA Capacity Additions	9,143	16,205	77%
% USA	15%	17%	
CO2 Emissions (bil tons)	**2019**	**2020**	**2020 Growth**
Global CO2 Emissions	35.94	33.64	-6.4%
USA CO2 Emissions	5.25	4.57	-12.9%
% USA	15%	14%	
Energy storage (in GWh)	**2019**	**2020**	**2020 Growth**
Global Capacity Additions	5.6	9.0	62%
USA Capacity Additions	1.2	3.5	187%
% USA	22%	39%	
New Electric Vehicles Sold	**2019**	**2020**	**2020 Growth**
Global New EVs Sold	2,230	3,100	39%
USA New EVs Sold	331	296	-11%
% USA	15%	10%	
Carbon Market (in $bil)	**2019**	**2020**	**2020 Growth**
Global Carbon Market	227	272	20%
USA Carbon Market	24	28	16%
% USA/NA	11%	10%	

Source: CCBJ derived from IEA Photovoltaic Power Systems Programme; Global Wind Energy Council; International Energy Agency; Wood Mackenzie, Canalys; Platts Analytics, Refinitiv and others.

Guidehouse Adds 111th Financial Institution to Join its Partnership for Carbon Accounting Financials

HSBC the latest to sign on for the greenhouse gas accounting and reporting standard for the financial industry. PCAF commitments represent $28 trillion in assets.

Guidehouse is a leading global provider of consulting services to the public and commercial markets with broad capabilities in management, technology, and risk consulting. Guidehouse helps clients address their toughest challenges and navigate significant regulatory pressures with a focus on transformational change, business resiliency, and technology-driven innovation. Across a range of advisory, consulting, outsourcing, and digital services, Guidehouse creates scalable, innovative solutions that prepare our clients for future growth and success. Headquartered in McLean, VA., the company has more than 9,000 professionals in over 50 locations globally. Guidehouse is a **Veritas Capital** portfolio company, led by seasoned professionals with proven and diverse expertise in traditional and emerging technologies, markets, and agenda-setting issues driving national and global economies

Giel Linthorst is a director, leading all activities in the field of science-based targets and sustainable finance. He is a global recognized expert on translating climate science to corporate strategies and financial institutions. Giel was the leading expert who developed the new, ground-breaking methodology for the Science Based Targets initiative of CDP, UN Global Compact, WRI and WWF. This methodology was peer-reviewed and published in *Nature Climate Change* and referred to in other publications. Together with CDP, WRI, WWF and 2o investing initiative, Giel is developing a harmonized framework to set science-based targets for the financial sector and align a financial portfolio with the Paris Agreement. Giel has supported various financial institutions on carbon accounting of their loans and investments, developing climate strategy and performing scenario analysis and climate risk assessment. Giel is part of the Dutch High Level Expert Group on Sustainable Finance and was the leading expert on a project for the German government, as part of their G20 presidency to assess the carbon risks in the German economy, conduct a carbon stress test for German financial institutions and to develop regulatory instruments to mitigate carbon risks in financial markets in Germany and beyond.

CCBJ: Congratulations on adding HSBC as your 111th financial institution to Partnership for Carbon Accounting Financials (PCAF). Your original two objectives were to develop a global greenhouse gas accounting and reporting standard and making it common practice, and to attract more than 100 financial institutions to join the commitment. Have you been surprised how quickly the commitments have fallen in place?

Giel Linthorst: We're very pleased with the momentum PCAF has made in terms of commitments. PCAF was launched globally in September 2019 with about 50 financial institutions, many of which were smaller, value-based institutions. The initial goal of PCAF was to grow the network towards 100 financial institutions by 2022, but at the end of 2020 we already reached almost 100 financial institutions. We didn't expect the fast uptake of PCAF among larger financial institutions, but after the addition of **Morgan Stanley** to PCAF's Steering Committee and the commitments of **Citi** and **Bank of America,** our momentum accelerated rapidly.

CCBJ: Have you expanded the number target or broadened the scope of sectors in your community that will make the same or similar commitments in the future?

Linthorst: When we noticed that PCAF was growing faster than expected and we were reaching our initial goal of 100 financial institutions, the Steering Committee decided to aim for 250 financial institutions in from all global markets in 2022.

CCBJ: You started in the Netherlands and broadened out to Europe before adding North America and going global. Can you make any observations about cultural differences in financial institutions regionally, and how quickly or slowly their willingness to commit to the program has evolved or been embraced by leadership?

Linthorst: PCAF started in 2015 in the Netherlands under the leadership of **ASN Bank** and moved after that towards North America under the leadership of **Amalgamated Bank** in 2018. In September 2019 PCAF went global. We haven't seen large cultural differences when it comes to climate change and measuring financed emissions. However, we have experienced differences in the stakeholder environment, such as regulatory concerns, environmental needs or pressure from shareholders and NGOs. With a growing global momentum around mandatory climate-related disclosures by regulators and supervisors (linked to TCFD), we also experience more interest in PCAF.

CCBJ: Your frequent use of the term 'financed emissions' indicates that it's almost become a universally accepted terminology in the financial community. Can you take some credit for that, and has the methodology to produce this financed emissions figure been universally embraced by your global partners?

Linthorst: The term "financed emissions" existed already within the GHG Protocol language, but was not commonly used for a while. PCAF certainly deserves credit for making it a globally accepted term. "Financed emissions" or related terms like "Scope 3 Greenhouse Gas

(GHG)" emissions of financial institutions have been embraced by various global partners like the Net Zero Asset Owner Alliance, Net Zero Asset Managers initiative, Net Zero Banking Alliance, TCFD, regulators and financial authorities (like European Central Bank and European Banking Authority).

CCBJ: To what extent does the commitment and transparency process depend on the future of monitoring, data management and reporting technology to assure compliance and accuracy around meeting the commitments?

Linthorst: Measuring financed emissions is an annual accounting process connected to financial accounting and reporting. In this sense, financial institutions need to establish and implement a governance and control process to monitor, manage and improve emissions data.

CCBJ: And where have the innovations in this type of monitoring and information reporting technology come from most frequently?

Linthorst: Recent innovations lie is the data quality scoring in PCAF's Global GHG Accounting and Reporting Standard, that was also recently referenced in the NGFS progress report on bridging data gaps. This data quality scoring enables financial institutions to start measuring and reporting immediately, while improving data quality over time.

CCBJ: Tell us a little about Guidehouse as the instrumental entity supporting PCAF. Did the firm start out in climate or carbon accounting, and how many experts and staff members and where they placed around the world?

Linthorst: Guidehouse is a leading global provider of consulting services to the public and commercial markets with broad capabilities in management, technology, and risk consulting. We pride ourselves on being the go-to partner for leaders creating sustainable, resilient communities and infrastructure, serving as trusted advisors to the financial sector, as well as utilities and energy companies, large corporations, investors, NGOs, and the public sector. We help clients address their toughest challenges and navigate significant regulatory pressures with a focus on transformational change, business resiliency, and technology-driven innovation.

The company has more than 9,000 professionals in over 50 locations globally. This includes a team of highly experienced climate, finance, and energy experts that, for decades, have partnered with organizations across industries to create holistic approaches to sustainability, decarbonization, and ESG. We've worked with companies of all types and governments of all sizes on climate initiatives and sustainability journeys, and our deep expertise in a broad range of sectors enables us to provide strategies based on knowledge of industry, geography, and specific client needs.

Guidehouse was a pioneer in the sustainability, decarbonization, and ESG spaces, and is proud to have developed methodologies for leading sustainability protocols and standards for organizations such as the Science Based Targets initiative (SBTi) and the World Business Council for Sustainable Development (WBCSD), in addition to our work with PCAF.

CCBJ: On a personal level what do you believe are the most critical issues around climate change, and what direct evidence have you observed in your daily life of climate change in the last 20 years?

Linthorst: Over the past 20 years, I have seen the weather change with extreme heat, drought, and floods. I believe that these impacts are most devastating and scary as it affects a lot of lives across the globe. The loss of biodiversity (e.g. less birds and insects) is clearly visible as well, even in my small backyard. Changing the way we produce and consume goods and services is a key driver for me to contribute to preventing these impacts and creating a better world. Finance plays a crucial role in financing this transition. ☼

HSBC Joins Partnership for Carbon Accounting Financials (PCAF)

In March 2021, **HSBC** became the largest financial institution, as measured by assets (nearly $3 trillion) to join **Partnership for Carbon Accounting Financials** (PCAF). PCAF launched its global greenhouse gas accounting and reporting standard for the financial industry in November of 2020. No other standard or methodology has succeeded in aligning the greenhouse gas accounting rules of the financial industry to create the transparency and comparability across financial institutions that investors and stakeholders have long sought. So far, 111 financial institutions, including HSBC, with nearly $28 trillion in assets have committed to measuring and disclosing the greenhouse gas emissions associated with their portfolio of loans and investments. **HSBC Holdings plc** is a British multinational investment bank and financial services holding company., and second largest bank in Europe,.

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