

# 22<sup>nd</sup> Edition World Energy Markets Observatory: North America

In pursuit of a "better normal"

Region: **US**  
 Population: **328,239,523** (Jul 2019)  
 GDP: **USD \$21,427,700**

Region: **Canada**  
 Population: **37,971,020** (April 2020)  
 GDP: **USD \$1,736,430**

## At a Glance: Renewables & Environment

**U.S.: Share of renewables** (in the global energy consumption): **6.2%**  
**Total CO<sup>2</sup> emissions:** **5117.77 Mt**

**Canada: Share of renewables** (in the global energy consumption): **4%**  
**Total CO<sup>2</sup> emissions:** **588 Mt**

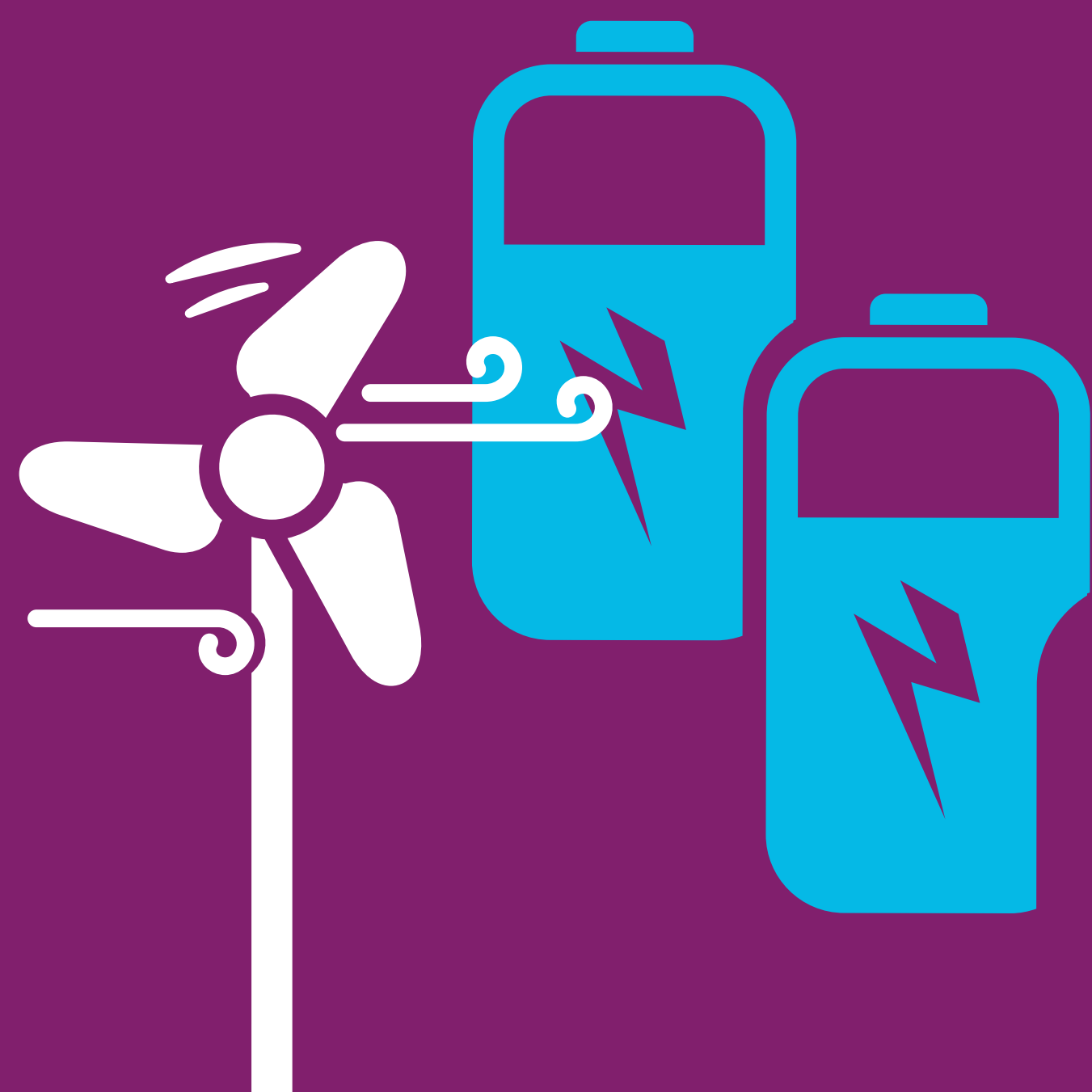


**-11%**

projected decline of U.S. CO<sup>2</sup> emissions in 2020 — the largest decline since 1949 — due to the effects of decreasing economic growth resulting from COVID-19. However, the decrease is unsustainable. Emissions will likely rise as the world recovers from the pandemic and daily life resumes.

## U.S. Levelized Cost of Energy

The cost of renewables is falling but at a slower rate.



**\$323-394:**  
 2009 unsubsidized utility-scale solar LCOEs

VS

**\$36-44:**   
 2019 unsubsidized utility-scale solar LCOEs

**\$26-41 and \$27-31:**  
 Marginal cost of existing coal and nuclear plants

VS

**\$32-42 and \$28-54:**  
 Unsubsidized thin-film utility-scale PV and onshore wind LCOEs

**~20.2 GW**  
 renewable capacity added in the U.S. in 2019

**+2.3 GW from 2018**

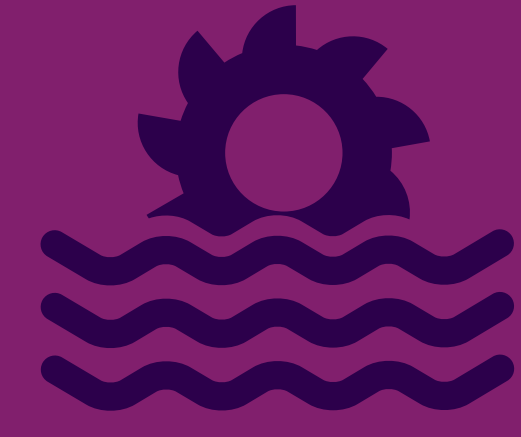
The surge in clean energy investment in 2019 — the second highest year on record in the U.S. — was prompted by a rush to qualify for federal tax credits set to be scaled-back in 2020.



**U.S. became a net natural gas exporter, averaging 5.2 Bcf/d**

Spectacular LNG exports growth was enabled by 5 liquefaction terminals.

**Total U.S. electric power sector generation:**  
**-1.25% in 2019**

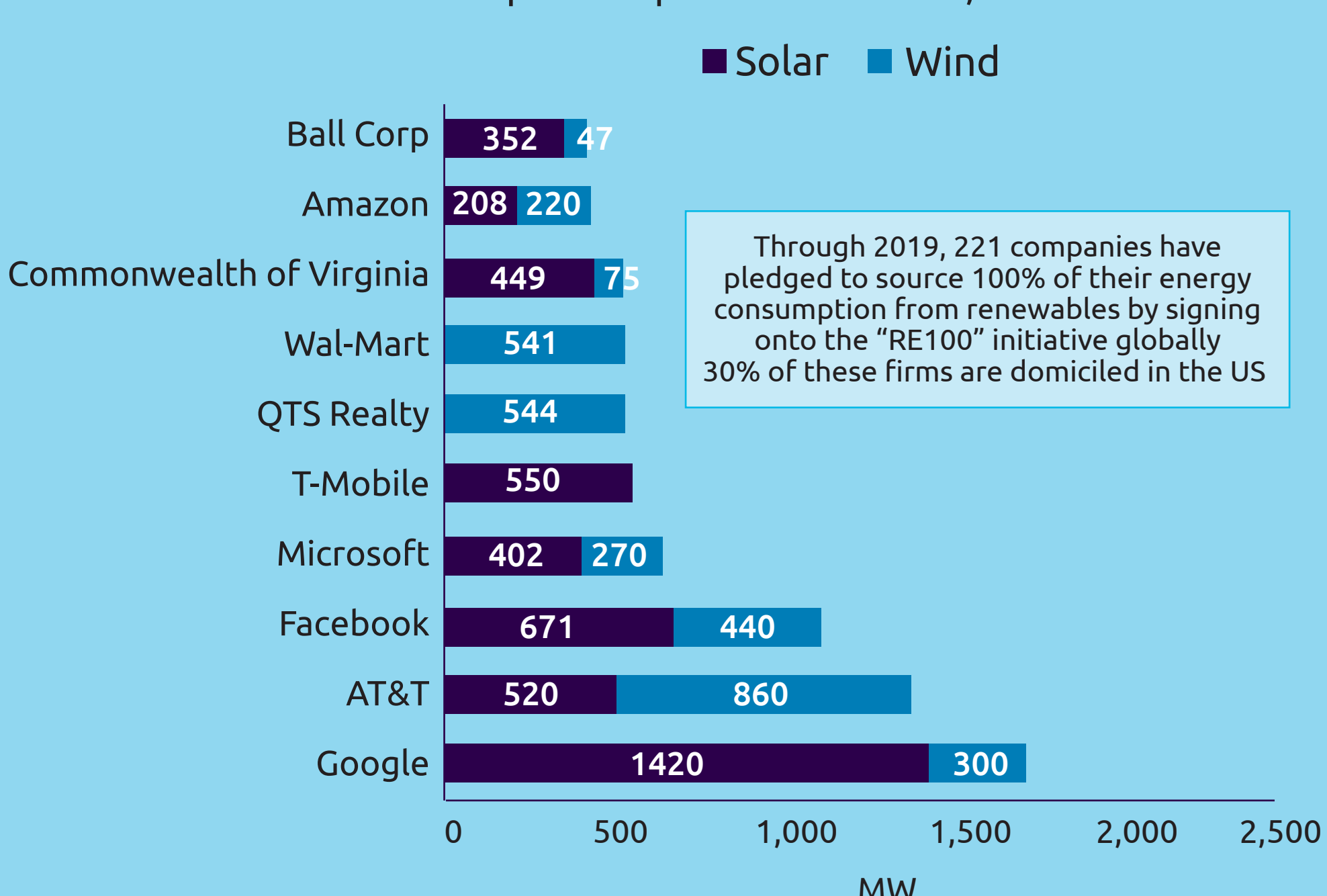


**Annual electric output: -1.7% in 2019**

## Power Purchase Agreements (PPAs)

In 2019, corporates procured a record-breaking 13.6 GW of clean energy capacity, as led by Google, AT&T and Walmart.

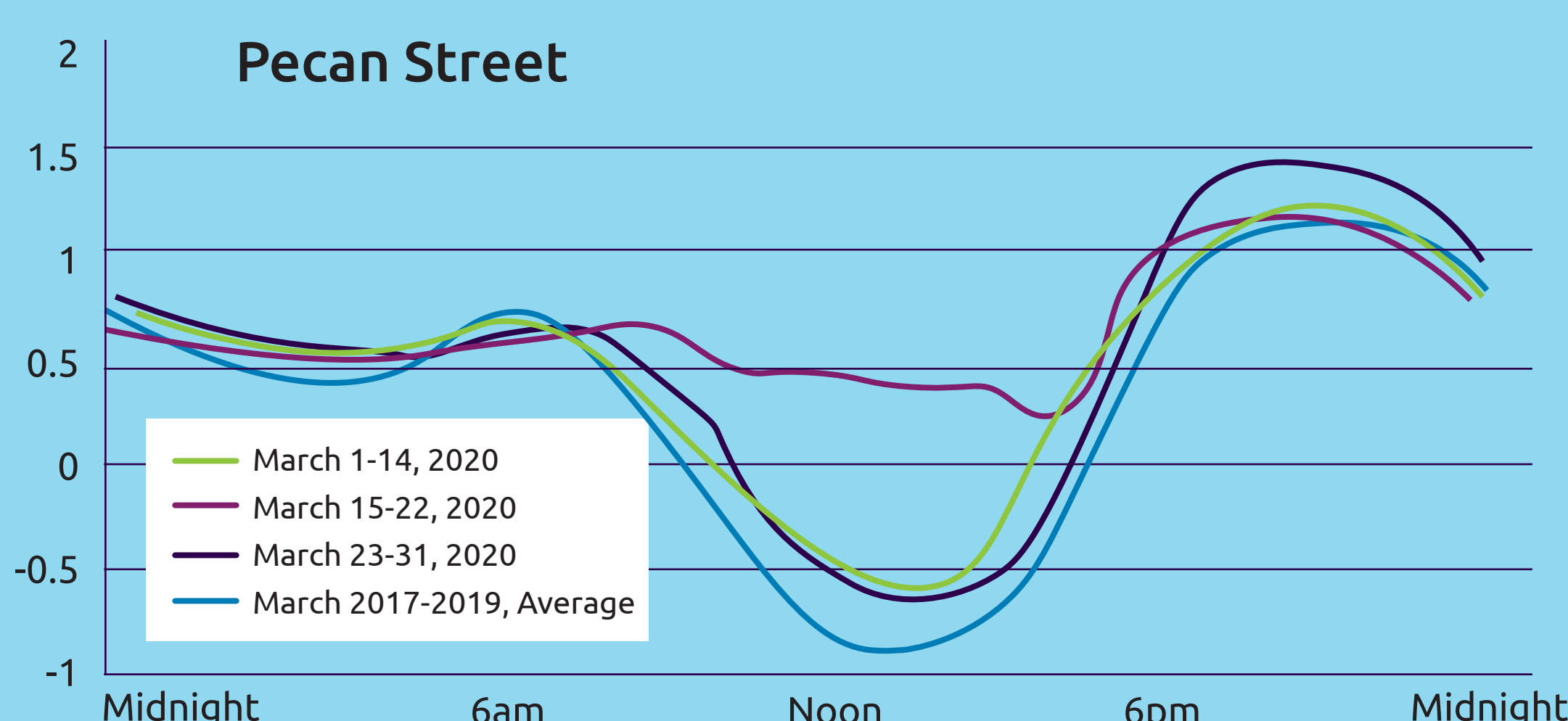
Top 10 Corporate Off-takers, 2019



Through 2019, 221 companies have pledged to source 100% of their energy consumption from renewables by signing onto the "RE100" initiative globally. 30% of these firms are domiciled in the US

## The Duck Curve: Impact of COVID-19

Changes in energy-use patterns due to the pandemic will affect grid operations, power purchasing practices and long-term plans.



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"We conclude this year's WEMO with a now-familiar call for radical change to address climate change. While virtually every organization understands what's at stake, companies' transformation plans tend to be far more conservative, as the business grapples with costs, risk and returns. In publishing our WEMO report, we aim to help organizations understand some of the latest digital and sector technologies, business models and data and analytics that could help shape a high-value transformation agenda."

**Randy Cozzens**  
 Executive Vice President and North America Sector Head of Energy, Utilities and Chemicals

## About WEMO

The World Energy Markets Observatory (WEMO) is Capgemini's annual thought leadership and research report that tracks the development and transformation of electricity and gas markets in Europe, North America, Australia, Southeast Asia, India and China. Now in its 22nd edition, WEMO examines the following topics: climate change & regulatory policies; energy transition; infrastructure & adequacy of supply; supply & final customer; transformation; financials; and, for the first time, the oil & gas industry. This edition also includes data and analysis for the first half of 2020 due to the extraordinary events related to COVID-19.

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