

BRIEFING NOTEGlobal Clean Energy Trends

THE CLEAN ENERGY TRANSITION TAKES HOLD

Clean Energy Canada published its annual assessment of the global clean energy market on March 30. Here are some of the key findings:

Global trends:

- The world installed 150 GW of new clean power in 2016, just shy of 2015's all-time record (152 GW). For context, 150 GW is more power capacity than we have from all sources in Canada today.
- More new power has come from renewable sources—like wind, water, and sun—than from fossil fuels every year since 2012.
- The global clean energy workforce is growing, with solar photovoltaics (PV) leading the way. In 2015, clean energy accounted for 6.7 million direct and indirect jobs around the world.
- Over the past five years, more than C\$2 trillion has been invested in clean energy globally.
- The costs of clean energy technology technologies have plunged in recent years. As a result, governments are seeing record-low prices for solar and wind at power auctions. And that trend is expected to continue: for example, onshore wind costs are projected to fall by 26% from 2015 to 2025, while utility-scale solar PV costs are projected to drop by 57%.
- Total clean energy investment in 2016 was C\$348 billion, a drop of 26% from 2015's all-time record investment. The slowdown is mainly due to China and Japan easing up on new investment as they “digest” the clean power they've brought online to date—but also reflects the lower costs of installing these technologies, as evidenced by new capacity that was just shy of 2015 levels.
- Despite that slowdown, China was easily the world's top investor in clean energy, a total of C\$103 billion in 2016. Renewables accounted for 52% of the new power China brought online last year. China broke its own world record for total solar capacity installed in a year, adding 30 GW of new capacity—or roughly enough solar panels to cover three soccer fields every hour.
- China is also home to five of the world's six top solar panel manufacturers and five of the top 10 wind turbine manufacturers. In 2016, China was involved in four of the five biggest clean power deals in the world.
- India built the world's largest solar project last year, a C\$900 million facility 10 kilometers square. In 2016, 44% of India's new power came from clean energy.

North America:

- The United States was the world's second-biggest investor in clean energy in 2016, with a total C\$60 billion. That's its second-best total ever, and means that 61% of new power added to the U.S. grid in 2016 was renewable.
- In 2016, the solar industry created 1 of every 50 new jobs in the U.S.; over 260,000 Americans worked in the solar industry last year.

- The fastest-growing job category in the U.S. today is “wind turbine technician.” Wind power employed over 100,000 Americans last year.
- The top 10 wind-power-producing Congressional districts are all represented by Republicans, and the top 5 wind-power-producing states are also “red” (Republican) states. Thirty-nine U.S. states currently mandate that a portion of their electricity must come from renewable sources.
- Canada’s clean energy investment fell by 53% last year, from just over \$4 billion in 2015 to just over \$2 billion in 2016, moving Canada from 9th to 11th place among global clean energy investors. The lower investment total reflects limited current opportunities for new electricity demand—partly a function of the comparatively high fraction of Canadian power (two-thirds) that comes from renewable sources today.
 - However, government decisions to phase out coal power by 2030 are expected to generate new opportunities in the years ahead, particularly in Alberta and Saskatchewan.
- In 2015, Canada’s solar and wind industries employed over 18,000 workers.