

How is solar energy used in Canada?

In Canada, the use of solar energy to generate electricity and heat is growing quickly and is helping reduce pollution related to energy production. Despite Canada's cold climate and high latitudes (which get less direct sunlight than mid-latitudes), solar power technologies are used in many places, from household rooftops to large power plants.

How much solar power does Canada have?

The past two decades have been marked by the significant growth of installed capacity for solar photovoltaic power, which in 2022 reached 6,452 megawatts. Canada generated around 4,323 gigawatt-hours of energy from solar power in 2022, which provided enough electricity to power over 470,000 typical Canadian homes.

How much solar energy does Canada have in 2023?

Canada now has an installed capacity of 21.9 GW of wind energy, solar energy and energy storage installed capacity. The industry added 2.3 GW of new installed capacity in 2023, including more than 1.7 GW of new utility-scale wind, nearly 360 MW of new utility-scale solar, 86 MW of new on-site\* solar, and 140 MW / 190 MWh of energy storage.

How many solar energy projects are there in Canada?

Canada has 206 major solar energy projects producing power across the country. Canada has 337 wind energy projects producing power across the country. Canada ranked 22nd in the world for installed solar energy capacity in 2020. Canada ranked 8th in the world for installed wind energy capacity by the end of 2022.

What is Canada's role in developing and deploying photovoltaic energy technologies?

Our primary mandate is to help develop and deploy photovoltaic energy technologies in Canada. To this end, two strategic approaches are being taken. The 1st is to accelerate the deployment of solar power in Canada, while the 2nd aims at exploiting solar energy's potential, both nationally and internationally.

What is the Canadian Solar PV market like?

The Canadian PV market has grown quickly and Canadian companies make solar modules, controls, specialized water pumps, high-efficiency refrigerators and solar lighting systems. Grid-connected solar PV systems have grown significantly in recent years and reached over 1.8 GW of cumulative installed capacity by the end of 2014.

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The solar resource data currently available for Canada has been summarized in the table below. Historical averages and other statistics are available, as well as time series data starting as early as 1953 and extending up to near real-time.

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In Canada, there are currently more than 43,000 solar (PV) energy installations on residential, commercial and industrial rooftops, providing power directly to those homes and businesses. There are many advantages when consumers generate their own solar energy on-site:

In Canada, Photovoltaic (PV) technology has become a favoured form of renewable energy technology due to a number of social and economic factors, including the need to reduce greenhouse gas (GHG) emissions, deregulation, and the restructuring of electric power generating companies.

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Between 2017 and 2023, capacity for renewables in Canada is projected to grow by 3 178 megawatts (MW) for wind, 2 392 MW for hydro, 1 784 MW for solar, and 52 MW for biomass and geothermal. This near-term outlook is from the CER's Evolving Energy Systems Scenario from Canada's Energy Future 2020.

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