

# Canada • Renewable energy • Hydrogen, Wind, Solar and Tidal

## Gross electricity generation from renewable sources by 2021, TWh (%)



**Total: 433.68 (100)**

Source: Renewable Energy Statistics 2023 © IRENA

## Wind power plants over 150 MW, MW:

- 1 Riviere-du-Moulin, 350.0
- 2 Blackspring Ridge, 300.0
- 3 Lac Alfred, 300.0
- 4 Seigneurie de Beupre 2-3-4, 340.0
- 5 South Kent (Chatham Wind), 270.0
- 6 Gros-Morne St.-Madeleine 1-2, 211.0
- 7 Melancthon (Amaranth), 200.0
- 8 Wolfe Island, 198.0
- 9 Prince 1-2, 189.0
- 10 Enbridge Ontario (Underwood), 181.5
- 11 Comber, 166.0
- 12 Kent Hills 1-2, 150.0
- 13 Massif du Sud, 150.0
- 14 Centennial, 150.0

## Key solar PV power plants over 20 MWe, MWe:

- 1 Grand Renewable Solar Project, 100.0
- 2 Kingston, 100.0
- 3 Sarnia, Enbridge, 80.0
- 4 Sault Ste. Marie, 68.0
- 5 Southgate, 50.0
- 6 Windsor, 50.0
- 7 Rainy River, 25.0
- 8 Elmsley, 24.0
- 9 St. Isidore, 24.0
- 10 Arnprior, 23.4

## Key Cryogenic Liquid Hydrogen Plants:

- 1 Sarnia, Ontario, Air Products
- 2 Magog, Quebec, Linde
- 3 Becancour, Quebec, HydrogenAL

## Major hydrogen fueling stations:

- 1 Vancouver, Shell / HTEC
- 2 Burnaby, Victoria
- 3 Surrey, Powertech Labs
- 4 Mississauga, Hydrogenics
- 5 Trois Rivières, Quebec
- 6 Montreal, Quebec

0.0 kWh/m<sup>2</sup>/d Global Horizontal Irradiation (GHI)

0.0 m/s Wind speed

## Tidal power plants over 1 MW, MW:

- 1 Annapolis, 20

## High activity areas:

The most common solar GHI intensity is 3.8 - 4.1 kWh/m<sup>2</sup> per day, distributed in southern part of the provinces of Ontario, Saskatchewan and Alberta, near the borderline with the United States.

The most common wind speed is over 8.0 m/s per year at 50 m are distributed along the country's eastern and western coastlines, and in some Canadian islands in northeastern part.

Avg wave power potential is 30 - 60 kW/m per year.

Source: Energydata.info; Wikipedia

## Key Compressed Hydrogen Plants:

- 1 Edmonton, Alberta, Air Products
- 2 Fort Saskatchewan, Alberta, Air Products
- 3 Scotford, Alberta, Air Products
- 4 Sarnia, Ontario, Air Products
- 5 Asbestos, Quebec, Linde
- 6 Becancour, Quebec, HydrogenAL
- 7 Hamilton, Ontario, Air Liquide

## Hydrogen pipelines, km:

- 1 Edmonton, Alberta, Praxair, 60
- 2 Edmonton, Alberta, Air Products, 48
- 3 Sarnia, Ontario, Air Products, 31
- 4 Scotford, Alberta, Shell Canada, 9

## CSP Parabolic type plants over 1 MW, MW:

- 1 Medicine Hat ISCC, AB, 1.1



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