IRENA Renewable Energy Statistics

Adrian Whiteman, IRENA Statistics

Joint Wood Energy Enquiry 2021 Training Webinars
Module 1: 17 April 2023

Overview

- Introduction to IRENA
- Importance of renewable and wood energy data
- IRENA data collection
- Publication cycle (and unpublished data)
- How to streamline data between forestry and energy statistics?

International Renewable Energy Agency (IRENA)

Established: 4 April 2011
Headquarters: Abu Dhabi
Member states: 184 (168+16)

Mission: Supporting countries in their transition to greater use of renewable energy

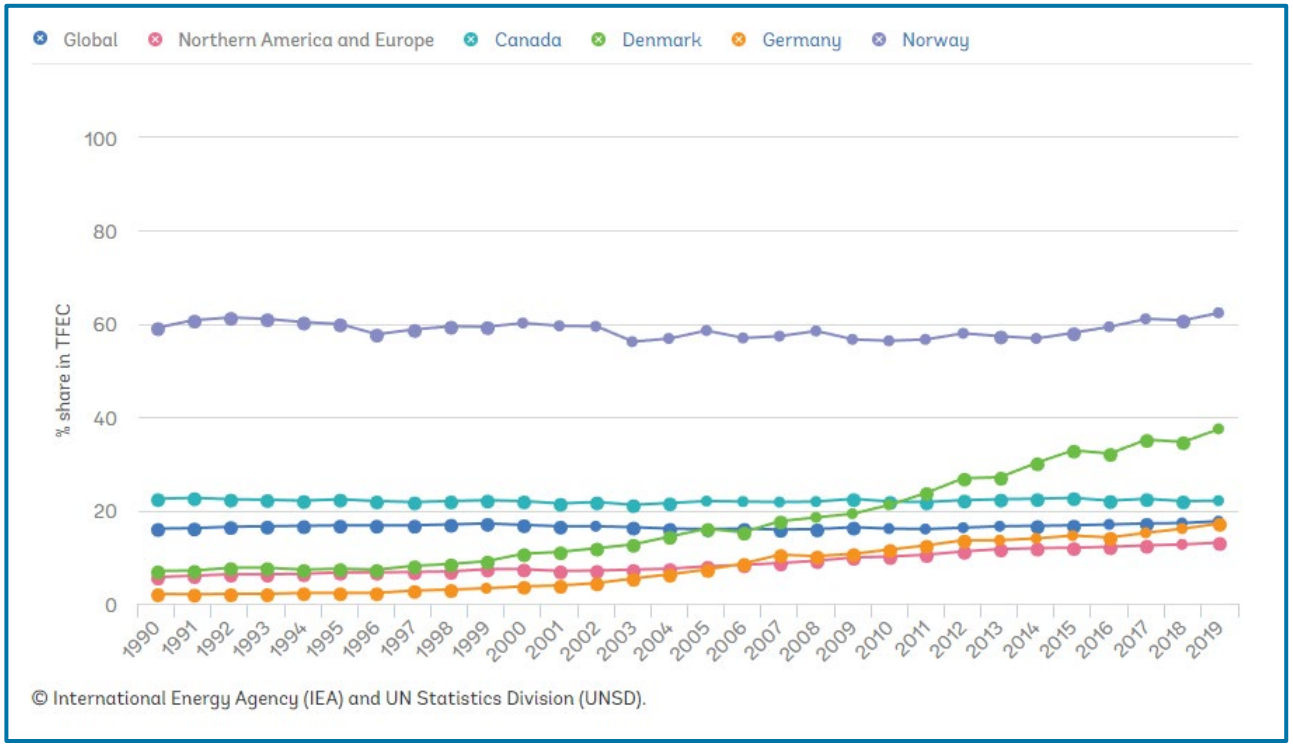
Activities:

- Promote and support international co-operation
- Provide technology advice (office in Bonn, Germany)
- Produce studies on policy, finance, knowledge, statistics

Importance of RE data

Monitor the energy transition and climate commitments

- SDG7 Target 7.2: Increase RE share of consumption
- Most countries have renewable energy targets
- Renewable energy targets in climate change NDCs

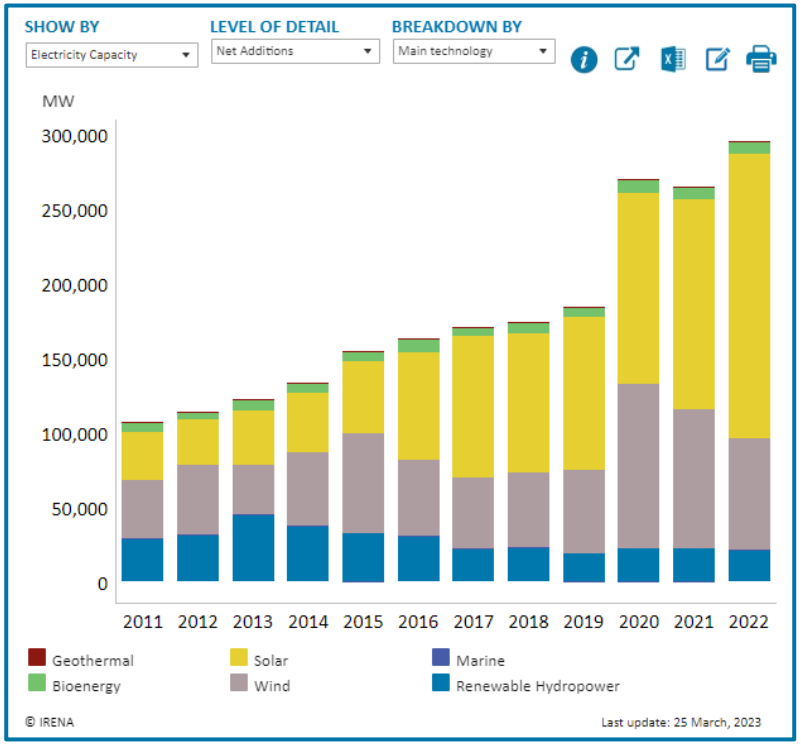


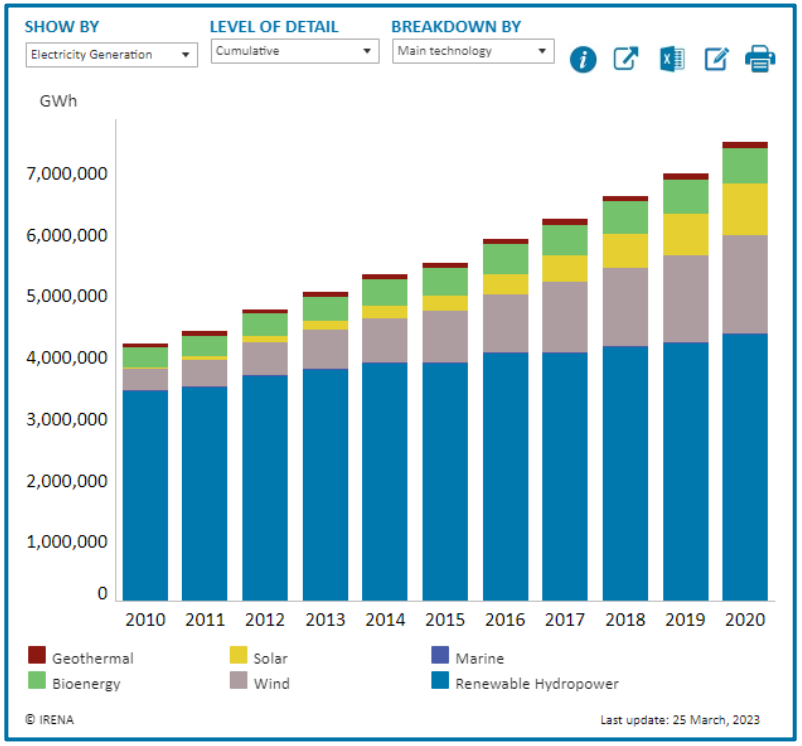
Source: SDG 7 Tracking Report https://trackingsdg7.esmap.org/

Importance of RE data

Monitor trends for investment and planning purposes

- To understand what works (resources, risks, policies, costs)
- Examine differences across technologies and sectors
- Anticipate and plan for systemic changes





Source: IRENA Statistics https://www.irena.org/Data

Importance of wood energy data

Energy transition, climate change, investment, planning

- Same as above, but wood energy also has some interesting characteristics!

  - *Can be traded internationally*
  - *Can be stored and used as/when required*
  - *Doesn't have to be turned into electricity*

  - *Very variable product (e.g. energy content)*
  - *Sustainability of production is a concern*
  - *Carbon neutrality is questioned*
  - *End-use technologies are important (e.g. cook stoves)*

Wood fuel is a more flexible type of renewable energy, but it's not so obvious that "more wood energy = good"

IRENA data collection

Annual data collection cycle, using a questionnaire

- Questionnaires sent Jan-May (to national statistics offices or energy authorities, where we have correspondents)
- Many are pre-filled with existing available data (e.g. from Eurostat), asking for confirmation and additional detail.
- Most of the detail requested is about bioenergy. Will also accept national data (in detail) to derive estimates.
- Response rate is quite low: about 15-20 UNECE countries have provided more detailed renewable energy data.
- Regional training workshops provide checks/confirmation and increase interest (for a while).

Data collected from correspondents is supplemented with official statistics and/or estimates. Electricity data is mostly official data, but a lot of other data is estimated.

IRENA data collection

IRENA solid biomass product classification:

- Wood fuel
- Energy crops (excluding wood and bamboo)
- Bagasse
- Black liquor
- Other vegetal and agricultural waste
- Rice husks
- Straw
- Wood waste (from all sources)
- Animal waste
- Primary solid biofuels n.e.s.
- Biomass pellets and briquettes
- Charcoal

Publication cycle (and other data)

IRENA
International Renewable Energy Agency

Four data products per year

End-Mar Renewable Capacity Statistics:
- RE capacity for all countries 2000 to Y-1

End-Jun Renewable Energy Statistics (Yearbook):
- RE capacity for all countries, 2000 to Y-1
- RE generation for all countries, 2000 to Y-2
- RE energy balances for 160 countries, Y-2 and Y-3
- Development aid for RE, 2000 to Y-2

End-Sep Country profiles:
- 4-page summary of recent energy data

End-Dec Off-grid Renewable Energy Statistics
- Off-grid RE capacity for developing countries, 2000 to Y-1
- Biogas production in developing countries, 2000 to Y-1
- Energy access data (numbers of people using the above)

Detailed bioenergy data is collected but is incomplete and not published. Biomass pellet data is probably the most complete.

Streamlining forestry/energy data

Trade data:

Biomass energy trade not well understood in some countries, leading to inconsistency. Foresters may be ahead on this one.

Units and conversions:

Foresters tend to work in cubic metres. Energy data is mostly collected in tonnes and converted to joules. There could be scope for cross-checking these calculations. Foresters may have more detailed knowledge about the product.

Data sources:

Bioenergy data may be largely based on consumption surveys, while forestry data is often about production. Checking consistency could be very useful as both parties may have better data in some areas.

Thank you

awhiteman@irena.org

Renewable energy statistics available at:
https://www.irena.org/Data