Ember China Solar Export Data Methodology

Ember China solar export dataset provides the following information:

- Export amount in weight (kg)
- Export amount in US dollars (USD)
- Export amount in quantity (number of items)
- Average photovoltaic module price (USD)
- Calculated capacity (MW)

Solar Exports

The IEA has stated that China's solar photovoltaic exports account for 80% of the global market. While there is a wide variety of products that make up the solar supply chain, panels, cells and wafers make up the majority of exports by trade value, and can be expressed in GW terms. Ember tracks these products to give a clearer picture of the global solar supply chain.

Ember's China solar exports dataset is sourced from the General Administration of Customs of the People's Republic of China (GACC):

- Panel data is available from 2017:
    - Prior to 2022, assembled and non-assembled cells are not disaggregated into separate commodity codes in GACC reporting. The commodity code used is 85414020 (Solar cells). All exports in this category are assigned to panel exports.
    - From 2022 onwards, the commodity code used is 85414300 (Photovoltaic cells assembled in modules or made up into panels).
- Cell data is available from 2022: The commodity code used is 85414200 (Photovoltaic cells not assembled in modules or made up into panels).
- Wafer data is available from 2022: The commodity code used is 38180019 (Monocrystal silicon disk/wafer, d. >15.24cm, doped for electronics).

Commodity prices

Average monthly panel, cell and wafer prices are sourced from weekly InfoLink Consulting Group publications. Prices are reported in USD/W for panels and cells and USD/pc for wafers. The market shares of each type for panels, cells and wafers are based on annual shares reported by the IEA and InfoLink. These annual shares are scaled to estimated monthly market shares, used to weight the types and calculate an average monthly price.

Capacity calculations

The capacity (MW) of the solar export products in this dataset is not reported by GACC. Ember estimates it using the following methods:

For panels and cells, Ember calculates capacity from the export value in US dollars (from the raw GACC customs data) and the average monthly panel and cell prices described above. For wafers, the Ministry of Industry and Information Technology (MIIT) periodically reports the cumulative export capacities of panels, cells and wafers. Ember calculates the g/W (from available MIIT reporting), and derives the capacity of monthly exports in kg from GACC.
Release Schedule
GACC releases the monthly solar export data with a one month lag (except for January and February data, which is released together in March). The GACC release is usually available on the 20th of the month, and this dataset is updated shortly afterwards.

Caveats

GACC export data records the first country products are exported to, which may not be the final destination country. This is particularly evident for exports to The Netherlands, which is a major re-export hub for European countries.

The price to capacity conversion of panels and cells is based on the average prices of each product type reported for that month. This should be regarded as an indicative value useful for comparing broad trends. In reality, the exact amounts of each product type and price they were traded at are not available in the customs data, and may vary by country.