

INTRODUCTION

The *Energy Statistics Yearbook 2021* is a comprehensive collection of international energy statistics prepared by the United Nations Statistics Division. It is the sixty-fifth in a series of annual compilations which commenced under the title *World Energy Supplies in Selected Years, 1929-1950*.¹ It updates the statistical series shown in the previous issue.

The principal objective of the *Yearbook* is to provide a global framework of comparable data on long-term trends in the supply of both primary and secondary forms of energy. Data for each energy product and aggregated data for the total energy supply are shown for individual countries and territories, and are summarized into regional and world totals. The data are compiled primarily from the annual energy questionnaire distributed by the United Nations Statistics Division and supplemented by official national statistical publications, as well as publications from international and regional organizations. Where official data are not available or are inconsistent, estimates are made by the Statistics Division based on governmental, professional or commercial materials. Estimates include, but are not limited to, extrapolated data based on partial year information, use of annual trends, trade data based on partner country reports, breakdowns of aggregated data and analysis of current energy events.²

This issue of the *Yearbook* contains data in original and common energy units (tons of coal equivalent and joules) for the years 2018-2021.

This publication presents energy statistics consistent with the International Recommendations for Energy Statistics (IRES), which were endorsed by the United Nations Statistical Commission in 2011. IRES contains the Standard International Energy Product Classification (SIEC), the first definitive standard classification for energy products. It has been built on a set of internationally harmonized definitions of energy products developed by the Intersecretariat Working Group on Energy Statistics (InterEnerStat) as mandated by the United Nations Statistical Commission. The adoption of SIEC as an international standard classification for energy products represents a

significant step forward for energy statistics at the international level. SIEC not only provides a unified set of product definitions, but also uses a standard coding scheme, a common hierarchy of categories, and provides links to other internationally agreed product classifications, such as the Central Product Classification (CPC) and the Harmonized Commodity Description and Coding System (HS). SIEC is also harmonized with the Intergovernmental Panel on Climate Change (IPCC) methodology to compile inventories of greenhouse gas emissions.

Within this methodological framework:

- a) Table 1 shows a more historical perspective of total energy supply, with data for selected years going back to 1990.
- b) Table 2 provides more detail on the components of total energy supply, namely primary production (broken down by type), trade, international bunkers and stock changes. Total energy supply is also shown on a per capita basis.
- c) Table 3 provides more detail on total final consumption of energy products, broken down by consuming sector (including non-energy use), and also shows total final consumption per capita.
- d) Table 4, debuting in the 2021 edition of this *Yearbook*, displays calculations of CO₂ emissions from fossil fuel combustion according to the 2006 IPCC guidelines³ (reference approach, plus the category Industrial Processes and Product Use – IPPU).

By referring to previous volumes of the publication, time series can be established from 1950 to the present for the shown products. In addition to the basic tables showing production, trade, stock changes, international bunkers, supply and consumption, information is included on various other topics such as:

- (a) The principal importers and exporters of hard coal, crude oil and natural gas for the years 2020 and 2021;
- (b) The capacity of oil refineries and electricity generating plants by type;

¹Statistical Papers, Series J, No. 1 (United Nations publication, Sales No. 1952.XVII.3).

²For details, see unstats.un.org/unsd/energystats/pubs/yearbook/

³<https://www.ipcc-nggip.iges.or.jp/public/2006gl/>

(c) The ratio of crude oil and natural gas liquids reserves to crude oil and natural gas liquids production (R/P ratio);

(d) The electricity generated from different sources (including both electricity-only and combined heat and power (CHP) plants) such as from combustible fuels, nuclear, hydro, wind, and solar;

(e) The heat produced (from both heat-only and CHP plants) from combustible fuels, geothermal, solar thermal, nuclear, chemical heat, heat pumps and electric boilers, and direct use of solar thermal and geothermal.

The information contained in the *Yearbook* is also available in electronic format⁴. Requests for information should be directed to United Nations Publications at: order@un.org.

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International Atomic Energy Agency (IAEA), International Energy Agency of the Organisation for Economic Co-operation and Development (IEA/OECD), International Renewable Energy Agency (IRENA), Organization of Arab Petroleum Exporting Countries (OAPEC), Organization of the Petroleum Exporting Countries (OPEC), Organización Latinoamericana de Energía (OLADE), Statistical Office of the European Union (Eurostat), Union Economique et Monétaire Ouest Africaine (UEMOA), World Bank, and the World Energy Council (WEC). Acknowledgement is also made to governmental, energy and statistical authorities of the Member States which have been cooperative in providing data.

The annual energy data are being collected and processed by the Energy Statistics Section of UNSD, headed by Mr. Leonardo Souza. The processing of the energy data and preparation for publication was carried out by Ms. Agnieszka Koscielniak, Mr. Man Soni, Ms. Costanza Giovannelli, Ms. Peng Guo, and Mr. Graham Osborn.

Enquiries, comments and suggestions for improving this publication are welcome and should be addressed to: energy_stat@un.org.

⁴ For details, see unstats.un.org/unsd/energystats/pubs/yearbook/