

## Renewables Global Status Report (GSR) Collection for 2023 Industry Module Factsheet

### What are the main takeaways of this report?

- Multiple crises – including the climate emergency and the energy crisis, along with associated inflation and higher energy prices – have played a **key role in increasing demand for renewable energy** in four sectors: buildings, industry, transport and agriculture.
  - Interest in **energy efficiency and renewables** increased across these sectors as a way to cut costs and enhance energy supply.
- The crises pushed countries to enact **key policy frameworks for renewable energy**.
  - If adequately backed by policy frameworks and political will, renewables have the potential to respond to crises by providing the **most reliable and cheapest energy option** to supply buildings, industries, transport and agriculture.
- The main barrier to renewable energy uptake in these demand sectors is the **ongoing support for fossil fuels from governments and multilateral development banks**.
  - These institutions provide subsidies and continued investment for new fossil fuel projects despite clear signals from the scientific community that this is incompatible with a pathway to keep global temperature rise within 1.5 degrees Celsius, as pledged in the Paris Agreement.
- In 2022, the United States announced the **Inflation Reduction Act (IRA)**, allocating USD 433 billion in new spending and tax credits, of which USD 370 billion is dedicated to energy security and climate change for the next 10 years.
- The European Commission advanced its **REPowerEU** plan to curtail the effects of the disruption of the energy markets caused by the Russian Federation’s invasion of Ukraine.
  - To reduce the European Union’s reliance on Russian gas, REPowerEU sets policies and objectives for energy efficiency, as well as specific renewable targets and initiatives such as a solar rooftop initiative requiring the installation of renewables in new buildings.
  - REPowerEU also establishes an EU solar strategy to double solar photovoltaic (PV) capacity by 2025 and install 600 gigawatts of solar by 2030. In addition, it calls for a doubling of heat pump deployment and the integration of solar thermal and geothermal in district heating.
  - A key REPowerEU objective is to reduce fossil fuel use in industry and transport.
- Momentum towards **net zero greenhouse gas emissions** is driving policies.
  - As of 2022, a total of 140 countries, representing 90% of global emissions, had committed to a net zero pathway, up from 130 countries representing 70% of emissions in 2021
- Because sectors have responded differently to crises, renewables **uptake across sectors varies widely**.
  - Policies must bring together the different sectors to avoid a siloed transition to renewables and to improve co-ordination among sectoral and energy policies.

### Why is this report focused on demand – that is, the energy-consuming sectors?

- Understanding trends on the demand side is critical because it helps **identify energy needs** across sectors and **advance progress** in the uptake of renewables – thereby speeding the energy transition.

- The energy transition involves different building blocks, **not only energy supply**, which typically dominates the narrative.
- This report provides evidence of the key role that energy-consuming sectors play in advancing the **structural transformations needed** for a full transition to renewables.
- REN21 decided to structure the GSR 2023 collection to bridge both angles – supply and demand – and will soon release a module on energy supply.

### How did the sector respond?

- The industrial sector accounted for 9.4 gigatonnes of **CO<sub>2</sub> emissions** in 2021, roughly a quarter of global emissions. Around 70% of the emissions came from three sub-sectors: cement and concrete, iron and steel, and chemicals and petrochemicals.
- Industrial activities generate **a quarter of the world's gross domestic product** and employment.
- Industry is one of the **largest energy-consuming sectors**, accounting for 33% of global total final energy consumption in 2021.
- The industry sector is increasingly **investing in renewables**, driven by growing interest in energy efficiency as well as the need to decarbonise activities and reduce energy costs.
- Of the four demand sectors, industry has the **highest share of renewables** in total energy consumption.
- In the **pulp and paper industry**, renewables accounted for 43% of total final energy consumption in 2021, due to the high use of bioenergy generated from the industry's own waste.
- The share of **fossil fuel use** in the industry sector fell from 87% in 2010 to 83% in 2020, due mainly to the ongoing electrification of industrial heat coupled with renewable electricity use in the sector, which grew 80% during the decade.
- High energy prices in Germany and elsewhere have driven industries to **cut production and/or to relocate** to reduce costs and access renewables.
  - Volkswagen and Pandora announced expansions in the United States, where renewables are more accessible for industrial production. The German auto industry in general has considered similar shifts because Germany is no longer competitive due to high energy prices and low security of supply.
  - Luxembourg's steelmakers, which usually operate in German plants, have shifted their production to the US state of Texas to achieve better performance.
  - Tesla paused its battery cell manufacturing in Germany to take advantage of IRA tax credits in the United States.
- In 2022, no new **regulatory frameworks** were introduced to compel the industrial sector to use renewables, except for REpower EU, which set a target for 10 million tonnes of domestic renewable hydrogen production by 2030. Only Poland announced plans for a new renewable energy mandate for industry, for the mining sector.
- **Financial incentives** remain the most common policy support for promoting the use of renewable heat in industry.

- Some countries have established **hydrogen roadmaps** for their industrial sectors, including Australia, Brazil, South Africa, Spain and Sweden.
  - Globally, however, most industry leaders continue to consider both fossil-based and renewable hydrogen in the push towards net zero emissions.
- The industry sector has experienced **increased electrification and the growing use of power purchase agreements (PPAs)** to reduce energy costs
  - In 2022, the steel manufacturer ArcelorMittal invested in wind and solar plants in Argentina and India, and German steelmakers such as the GMH Group and Salzgitter signed PPAs with renewable providers to power their electric arc furnaces.
  - Cement manufacturers that signed renewable PPAs during the year included Cemex in Spain, Suez Cement in Egypt, Opterra in Germany and Lafarge in Hungary.