

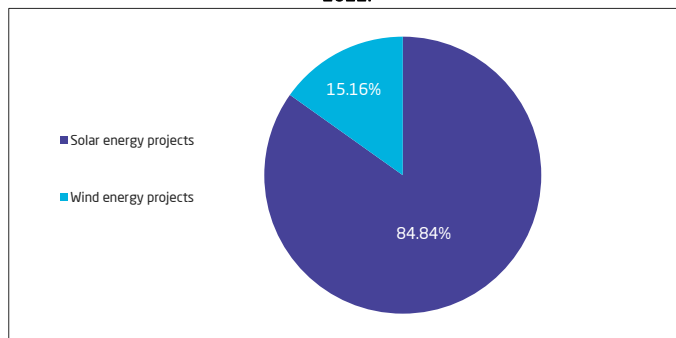
## Total electricity production from renewable energy program projects reaches 2,520 GWh during 2022

The amount of electricity generated from renewable energy projects connected to the grid reached 2,520 GWh /year in 2022. The annual production quantity of Dumat Al-Jandal wind energy project reached 1,588 GWh /year, while the annual production quantity in Sakaka photovoltaic solar project reached 932 GWh /year. Dumat Al-Jandal wind energy project and Sakaka photovoltaic solar project are part of the renewable energy program that contributes to achieving one of the goals of Saudi Arabia's Vision 2030 by increasing the contribution of renewable energy sources to approximately 50% of the electricity production energy mix.

### Solar energy projects account for largest share of renewable energy projects at 84.84%

By the end of 2022, a total of 19 projects were launched, including 2 projects that were operationalized and 17 projects that were introduced at various stages of development. The total capacity of these projects reached 14,513 MW. Solar energy projects accounted for 84.84% with a total capacity of 12,313 MW. On the other hand, wind energy projects accounted for 15.16% with a total capacity of 2,200 MW (Figure 1).

Figure 1. Total capacity of renewable energy projects launched until the end of 2022.



### Renewable energy projects until the end of 2022

When connected to the grid, renewable energy projects aim to generate an electricity quantity of 43,698 GWh /year (Figure 2). It is expected that these projects will contribute to supplying approximately 2.6 million housing units with electricity annually. Additionally, they will contribute to reducing carbon dioxide emissions by approximately 24.8 million tons annually (Figure 3).

Figure 2. Electricity targeted to be generated from renewable energy projects annually.

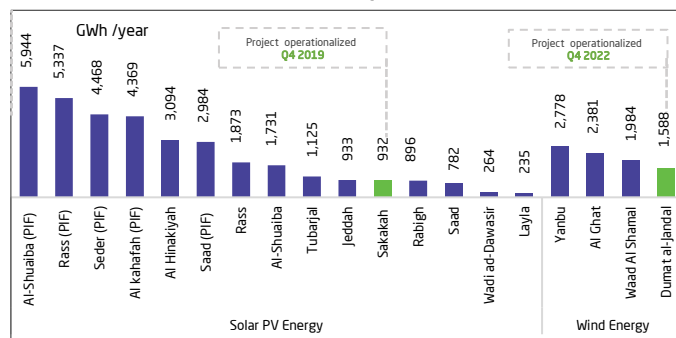
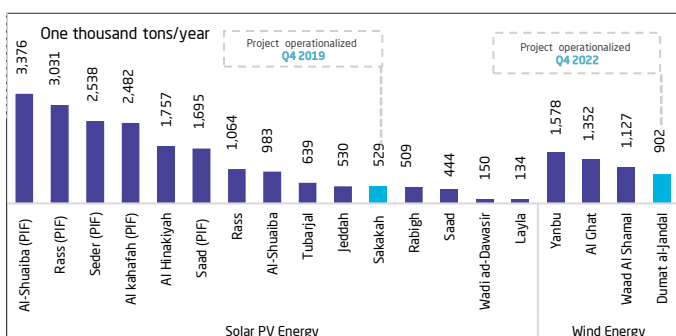


Figure 3. Expected environmental impact of projects on reducing carbon dioxide emissions.



\*The CO2 emission reduction calculation is a rough estimate, issued based on (GEF-Grid Emission Factor 2021) by CDMDNA and will be updated as needed.

### Average daily radiation from monitoring stations in Saudi Arabia

The average daily global horizontal irradiance (GHI) reached 5,651 Wh/m<sup>2</sup>/day in 2022. The average daily direct normal irradiance (DNI) reached 5,375 Wh/m<sup>2</sup>/day in 2022. Additionally, the average daily diffuse horizontal irradiance (DHI) reached 2,181 Wh/m<sup>2</sup>/day in 2022 (Figure 4).

Figure 4. Average daily radiation from monitoring stations in the Kingdom

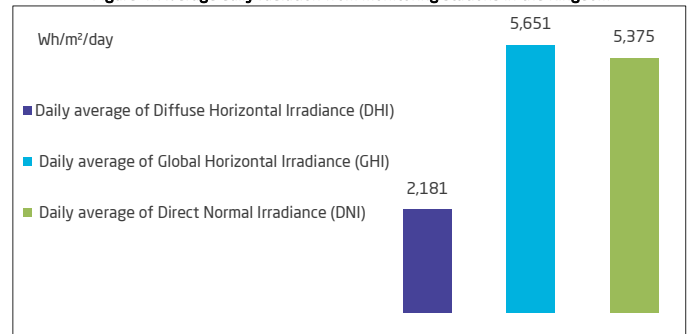


Table 1. Renewable energy statistics indicators 2022

Renewable energy projects that were operationalized until the end of 2022		Unit
Number of projects	2	Project
Total projects capacity	700	MW
Number of housing units estimated to be supplied with electricity	149	One thousand housing units annually
Electricity generated	2,520	GWh /year
Contributing to reducing carbon dioxide emissions	1.4	Million tons/year
Renewable energy projects that were launched until the end of 2022		Unit
Number of projects	17	Project
Number of housing units targeted to be supplied with electricity	2.4	One million housing units annually
Electricity targeted to be generated	41,177	GWh /year
Contributing to reducing carbon dioxide emissions	23.4	Million tons/year
Average daily radiation from monitoring stations in the Kingdom		Unit
Daily average of Global Horizontal Irradiance (GHI)	5,651	Wh/m <sup>2</sup> /day
Daily average of Direct Normal Irradiance (DNI)	5,375	
Daily average of Diffuse Horizontal Irradiance (DHI)	2,181	

Source :Table.

### Reference metadata

The renewable energy statistics publication provides data on renewable energy in Saudi Arabia. The Ministry of Energy and King Abdullah City for Atomic and Renewable Energy are the main sources of data. The data is available in a time series for the period (2013-2022) and is published annually. [For more details, please refer to the available reference metadata.](#)