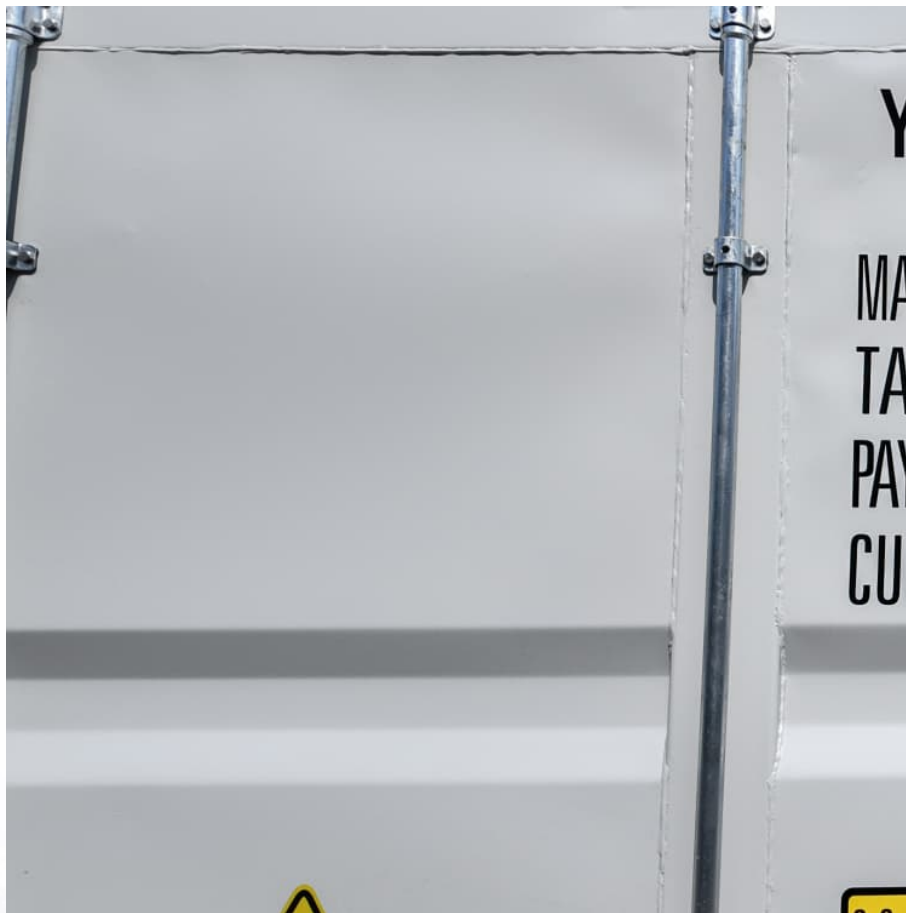


# Rooftop solar battery cost breakdown in Iran 2030





## Overview

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Upper limits are calculated based on land use limitations and the density of capacity. Table 9 shows the upper limits specified for the different technologies in this study.

An hourly resolved model has been designed and developed on the basis of linear optimization of energy system components. This model is based on several.

The main technologies used in the energy system optimization are as follows: 1. technologies for conversion of RE resources into electricity; 2. energy.

The financial assumptions for capital expenditures (capex), operating and maintenance expenditures (opex) and lifetimes of all components are provided in Table 3.

In this study, two scenarios with different energy systems are considered: (1) a country-wide scenario energy system in which RE generation and energy storage.

However, the integrated scenario shows a much more competitive cost for 100% RE energy systems for Iran in the year 2030. An 11% decrease in total LCOE can be observed in the integrated scenario due to a reduction of all estimated levelized costs (Fig. 5).

However, the integrated scenario shows a much more competitive cost for 100% RE energy systems for Iran in the year 2030. An 11% decrease in total LCOE can be observed in the integrated scenario due to a reduction of all estimated levelized costs (Fig. 5).

The focus of the study is to define a cost optimal 100% renewable energy system in Iran by 2030 using an hourly resolution model. The optimal sets of renewable energy technologies, least-cost energy supply, mix of capacities and operation modes were calculated and the role of storage technologies.

In September 2022, according to the Iranian energy ministry, solar rooftop electricity increased by 20 MW. And the total rooftop solar capacity of Iran's household sector reached 90 MW. In January 2022, to reach the long-term



goal of a cumulative renewable capacity of 30 GW, the Iranian Energy.

by the year 2030. is based on the weighted average value of the saved fuel, a maximum of 9.5 cents. of the Energy Exchange. production certificate (REC) in the green board of the Energy Exchange. Turboexpander, Rooftop solar power plants.) .

Emphasis on Deployment (Rooftop, and Ground Mounted); Capacity (Rooftop Capacity (Below 10 kWp, 10-20 kWp, 20-30 kWp, 30-100 kWp, 100-500 kWp and Above 500 kWp) and Ground Mounted Capacity (Below 750 kWp and Above 750 kWp)); Technology (Thin Film, Multi-Crystalline Silicon, and Mono-Crystalline. Is solar energy a viable option in Iran?

The potential for PV is extremely high in Iran, mainly due to having about 300 clear sky sunny days per year on two-thirds of its land area and an average 2200 kWh solar radiation per square meter (Najafi et al. 2015).

How many MW of solar power does Iran have?

However, 27 MW of installed wind power capacity was added to the system in 2014 (Farfan and Breyer 2017). Solar power generation has seen high growth in recent years, mainly through photovoltaics (PV) and followed by concentrating solar thermal power (CSP) plants in Iran.

Why does Iran have a low storage capacity?

In terms of storage, the low installed capacities can be explained by the fact that Iran has a high availability of RE sources, particularly wind energy, solar PV and hydropower, which can produce electricity all-year-round (Fig. 6). The total storage capacities soar from 9.7 TWh in the country-wide scenario to 110.9 TWh in the integrated scenario.

Are wind turbines profitable in Iran?

Besides, the installation of wind turbines in windy regions of the country, constructing wind farms, and distributed small-scale and centralized PV plants are already profitable in numerous regions in Iran (Ghobadian et al. 2009; Alamdari et al. 2012; Aguilar et al. 2015).

Will solar PV self-consumption prosumers increase electricity demand by 2030?

The electricity demand projection growth by the year 2030 is estimated based



on the IEA (2015) assumptions. Solar PV self-consumption prosumers have a modest impact on the residual load demand in the energy system as illustrated in Fig. 4 (right).

Why does Iran have a low  $l_{cow}$ ?

This reduces the LCOW by increasing the FLH. In terms of storage, the low installed capacities can be explained by the fact that Iran has a high availability of RE sources, particularly wind energy, solar PV and hydropower, which can produce electricity all-year-round (Fig. 6).



## Rooftop solar battery cost breakdown in Iran 2030

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## Commercial PV , Electricity , 2024 , ATB , NREL

Units using capacity above represent kWDC. 2024 ATB data for commercial solar photovoltaics (PV) are shown above, with a base year of 2022. The base year estimates rely on modeled ...



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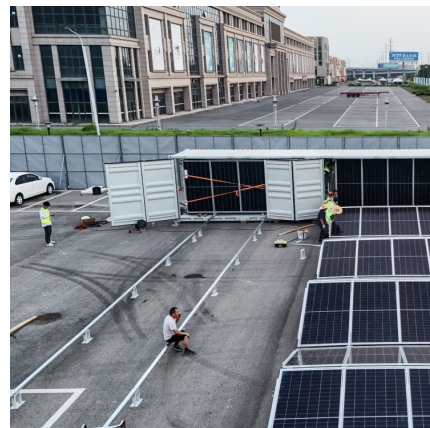


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