

# **Solar with battery cost vs benefit calculation in Indonesia**





## Overview

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The government aims to minimize GHG emissions in the power generation sector, one of which is the phase-out of coal power plants and replacing them with integrated photovoltaic (PV) power plants with battery energy storage systems (BESS). A cost-benefit analysis compared two development scenarios.

This study aims to understand what is the cost of generating electricity from renewables and fossil in Indonesia using an LCOE tool developed by IESR based on Agora Energiewende model. Through better understanding of the LCOE, we hope to develop a constructive fact-based dialogue that can help.

“Indonesia Can Cost-effectively Supplant Captive Coal-fired Power Plants with Solar Energy”, Working Paper, Center for Environmental Public Policy (CEPP), Goldman School of Public Policy, University of California, Berkeley.

\*Corresponding author: nabhyankar@berkeley.edu Working papers are.

Dengan menganalisis faktor-faktor seperti biaya investasi awal, rugi-rugi, dan harga jual listrik, penelitian ini bertujuan untuk menentukan kelayakan ekonomi dari BESS dan dampak potensial pada kinerja keseluruhan sistem PV on-grid. Melalui analisis komprehensif dari data dan literatur yang.

Indonesia could fundamentally transform how it produces, delivers and consumes energy. But only if policymakers take swift, concrete actions to transition away from coal toward lower-carbon energy sources. Over the last few months, there have been public pledges to undertake change. Such



verbal. Does Indonesia have a solar energy policy?

At least one solar energy policy has been enacted in these countries. Specifically, Indonesia has implemented Feed-In Tariff (FiT) regulations for utility-scale projects, net-metering mechanisms for rooftop PV, and solar tariffs determined by benchmarking against applicable electricity cost generation.

How much money does it cost to install solar panels in Indonesia?

Installing 18GW of PV would require \$14.4 billion of investments: This amounts to more than 50 times the \$287 million invested in Indonesian PV deployments over 2005-20. The “pipeline” of PV projects in Indonesia under development today currently totals 2.7GWac. This translates to an estimated \$3 billion investment if all projects are developed.

How much does solar power cost in Surabaya?

Tarigan examined the IRR and payback period of 1 kWp solar power system in Surabaya using RETScreen software. Jasuan et al. conducted a comparative analysis between off- and on-grid PV in Indonesia and found that the electricity generation costs for off- and on-grid PV were 4644 IDR/kWh and 1244 IDR/kWh, respectively.

How can solar energy be used in Indonesia?

electricity using the PV system on roofs. The energy produced can be exported or fed into a utility grid. MEMR Regulation No. 49 is the most current Indonesian solar energy policy. It customers of PLN. This includes residential, commercial, and produce excess power. The regulation requires prior approval installed.

What is the average LCOE of solar power in Indonesia?

For example, according to NREL studies, the average LCOE of solar in Indonesia is the highest among ASEAN member state, reaching 165 USD/MWh and far below Burma with an average of 79 USD/MWh (Lee, et al., 2019). A similar problem can also be expected from wind power.

What is the capacity factor of solar energy in Indonesia?

Capacity factor of renewables is generally tied with resources availability. Being located on the equator line, Indonesia has a relatively constant but



average solar irradiation, which leads to above average solar capacity factor (between 12-19%).



## Solar with battery cost vs benefit calculation in Indonesia

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### [Solar Panel & Battery Storage Calculator](#)

The calculator helps evaluate the financial benefit of an investment in solar panels and/or battery storage. The calculator takes your annual electricity use (kWh) and the annual output of your solar system and ...

### Solar Battery & Storage Battery Systems Indonesia

Solar battery and storage lithium battery systems with competitive prices for any location in Indonesia. Features 6,000 cycles and a 10-year product warranty.

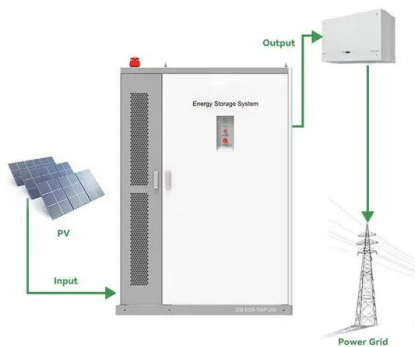


### How Much for Solar Panels and Battery: A Complete Guide to Costs ...

Discover how much solar panels and battery systems cost and the long-term benefits of this sustainable energy solution. This comprehensive article covers essential factors ...

### 2025 Solar Panel Costs: Ultimate Guide to Pricing and ...

The average solar panel cost has declined dramatically over the last decade, and solar systems now offer more value to homeowners than they ever have before



### Indonesian Solar Panels: Development, Benefits and Installation Costs

Even though the potential and benefits of solar panel technology are enormous, its implementation in Indonesia faces many challenges, including inadequate infrastructure, low ...

### LEVELIZED COST OF ELECTRICITY IN INDONESIA

This study aims to understand what is the cost of generating electricity from renewables and fossil in Indonesia using an LCOE tool developed by IESR based on Agora Energiewende model.



### Integration of Solar Power Plants and Battery Energy Storage ...

A quick calculation method was developed to assess the feasibility of this hybrid system, with manual calculations verifying initial estimates. These calculations were further validated ...



## Solar Battery Payback, ROI & Savings in Australia ...

How to Size Solar Panels and Batteries for Your Energy Usage To get the greatest utility from your solar battery you need to ensure that it will still be able to fully charge from your Solar Panels most days through winter when ...



### [Community Solar & Storage Benefit Calculator](#)

This calculator helps housing developers, community groups, and individuals estimate the financial and environmental benefits of installing a community-scale solar PV system combined with battery storage. It projects savings, revenue, ...

## 100 kW Solar Panel System Price in India in 2025 , Explore ROI ...

The 100 kW solar panel system price in India depends on several factors, including your DISCOM charges, panel type, inverter type, mounting structure height, type of ...



### **Battery Calculator: See Your Savings And Payback**

Calculate your savings with our Battery Calculator for existing solar panel systems. Discover the payback period of adding a solar battery in Australia. Easy to use.



### Solar Battery Costs - Are They Worth It?

The obvious one is the financial benefit of reducing the amount of power that you need to buy off the grid. A typical residential solar system without a battery will cover about 30%-50% of household power consumption. ...



### **Presentation: Indonesia Can Cost-effectively Supplant ...**

We find that approx. 50% of daily solar generation must be stored in batteries to achieve a 65% capacity factor, while approx. 55% of solar is stored to achieve a near-100% capacity factor

### **Solar Battery Price vs. Savings: Is It Worth the Cost?**

Finally, using incompatible inverters or poor-quality battery management systems can result in inconsistent charging patterns, further reducing the battery's longevity. How much is a new solar battery? The price of a new solar battery in ...



### **Solar Calculator , Solar Savings , Payback Calculator**

The solar calculator will help you determine your potential saving based on your current energy conditions. Solargain will ensure your investment is the perfect balance between cost, savings ...



## Solar Levelized Cost of Energy Projection in Indonesia

Utility-scale solar PV is projected to play a pivotal role in achieving Indonesia's 2050 net-zero energy target. However, current uptake is limited. This study seeks to identify a cost-effective



## Solar Calculator , Panel and battery cost, savings, payback and ROI

Is solar a good investment? Use our Solar Calculator to get instant solar savings and payback estimates. Whether solar makes financial sense largely depends on where you live. Your ...

## Calculation of battery bank capacity in solar systems

This comprehensive guide details formula derivations, real-world examples, and step-by-step procedures to accurately determine solar battery capacities and requirements ...



## Solar and Battery Payback Calculator (with real data!)

For each year, I've broken down the calculation steps so as you can see how much it reckons you'll have paid for your energy without solar, how much you would pay for it with solar and a battery, and therefore the ...



### Solar & Battery Calculator for Fast Size & Price ...

Discover the Solar and Battery Calculator, a tool designed to assist you in determining the ideal size for your solar system along with battery storage for your home. Utilise our pricing calculator to estimate the cost of your system ...



### Federal Government Solar Battery Rebate calculator

Federal Battery Rebate Calculator The federal government's Cheaper Home Batteries Program lowers the cost of adding a home battery to either a new or existing solar system by a ...

### Cost vs. Benefit: Analyzing the ROI of an Off-Grid Solar System

The Financial Equation of Off-Grid Solar The primary financial benefit of an off-grid solar system is the elimination of recurring electricity bills. By generating your own power, ...



### Transitioning from coal to solar: A cost-benefit ...

A cost-benefit analysis compared two development scenarios for 2023-2060. The base scenario continues developing coal power plants, and the phase-out scenario replaces coal power plants with integrated PV power ...



### **New Home Battery Calculator: See How Much You'll ...**

A home battery calculator is an online tool that estimates the financial benefits of installing a home battery system. By inputting specific data about your energy usage, solar panel system, and local electricity rates, the ...



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