

// FOLLOWING is the sample output generated on streamlit during Testing of the project

## Rooftop Solar Potential Analyzer

Upload a Satellite Image of Rooftop

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- sampleImage.jpeg

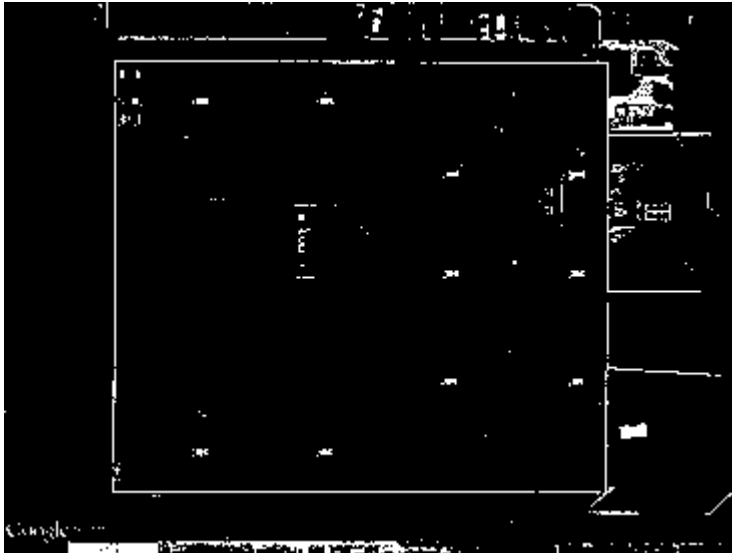
27.3KB

The use\_column\_width parameter has been deprecated and will be removed in a future release. Please utilize the use\_container\_width parameter instead.



Uploaded Rooftop

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Segmented Rooftop Area (3.35%)

Estimated Rooftop Area (in m<sup>2</sup>)

### Output Summary

 Estimated Power Output: 0.34 kW

 Number of Panels: 1

 Installation Cost: \$300

 Annual Savings: \$120

 Payback Period: 2.5 years

Ask AI for Recommendations

### AI Recommendation

Nice to assist you with solar energy!

Considering the rooftop has 1.68 m<sup>2</sup> usable space, we'll aim to maximize the power output while ensuring the setup is optimal for the given space. Here's a suggested panel setup:

#### Panel Configuration:

- Number of panels:\*\* 4
- Panel size: 420 mm x 670 mm (approximately 0.28 m<sup>2</sup> each)
- Monocrystalline panels with 21% efficiency
- Total panel area: 4 panels x 0.28 m<sup>2</sup> x 4 = 1.12 m<sup>2</sup> (leaving about 0.56 m<sup>2</sup> for mounting and maintenance clearance)

#### Power Output:

- Peak power output per panel: 375 Wp (based on 21%)
- Total peak power output: 4 panels x 375 Wp = **1500 Wp**

### ROI Estimation (India Location):

- Assuming an installation cost of ₹ 70,000 to ₹ 80,000 (approximately ₹ 45 to ₹ 50 per Wp)
- Average daily irradiance in India: 5.5 kWh/m<sup>2</sup>/day (source: NASA)
- Estimated annual energy output: 1500 Wp x 5.5 kWh/m<sup>2</sup>/day x 365 days = **2991 kWh/yr**
- Assuming a feed-in tariff (FIT) of ₹ 4.5 to ₹ 5.5 per unit (kWh) in India, the annual revenue would be: ₹ 13,425 to ₹ 16,395
- ROI estimation: 7.5% to 10.2% per annum (based on the installation cost and annual revenue)

Keep in mind that these estimates are approximate and may vary depending on factors like:

- Actual installation costs
- Efficiency of the inverter and other system components
- Shading, dust, and temperature effects on panel performance
- Local electricity rates and FIT schemes

It's essential to consult with a local solar installation expert to get a more accurate assessment of the project's feasibility, including installation costs, permits, and maintenance requirements.

I hope this helps!