



POWERING HOMES, EMPOWERING FUTURES

MARKET RESEARCH: RESIDENTIAL SOLAR ROOFTOP IN INDIA

—→ **P R E S E N T A T I O N**

~ KANISHQ SAHU



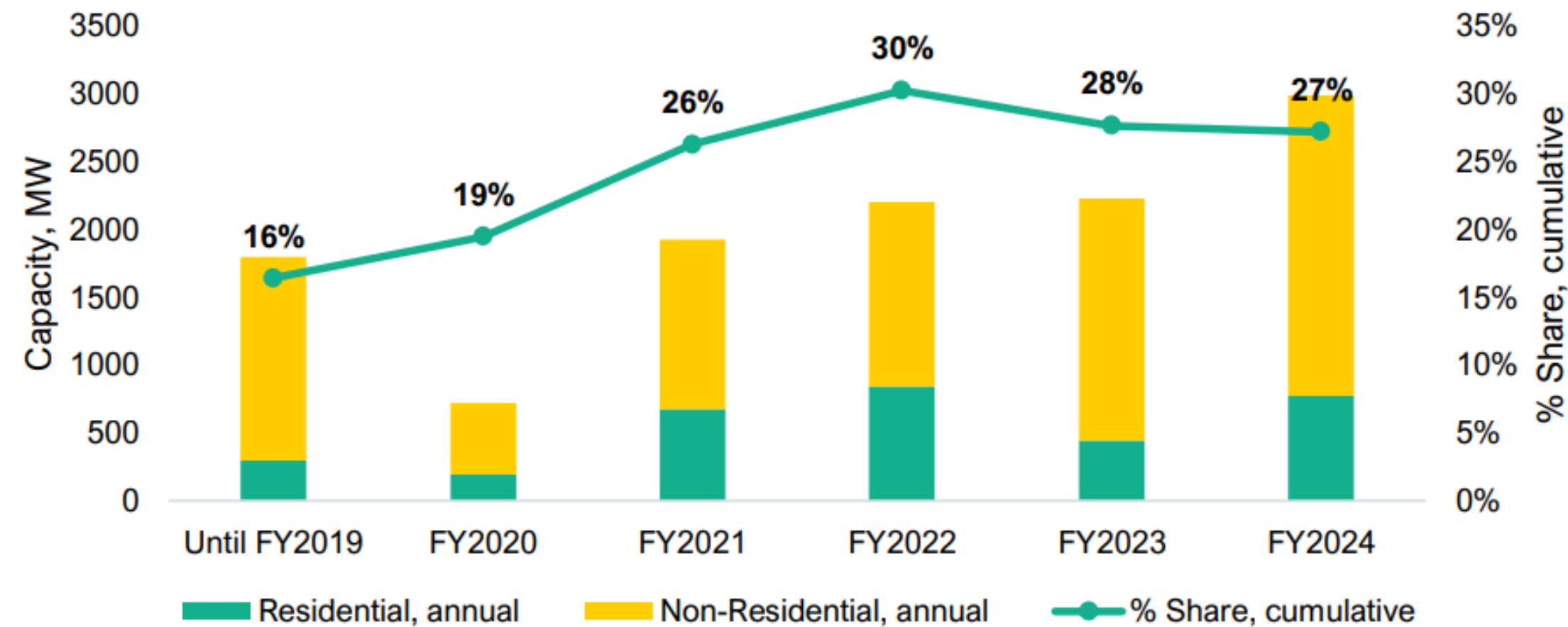
WHY RESIDENTIAL SOLAR ROOFTOP?

Why is the Indian residential rooftop solar market a billion-dollar opportunity?

- **Key Insights:**

- **₹75,021 Cr** allocated under PM Surya Ghar Yojana
- Target: **10 million** households, **30GW** by 2027
- Rooftop solar reduces household electricity bills by 60–70% annually
- **CAGR: 31.7%** growth from FY2020 to FY2024

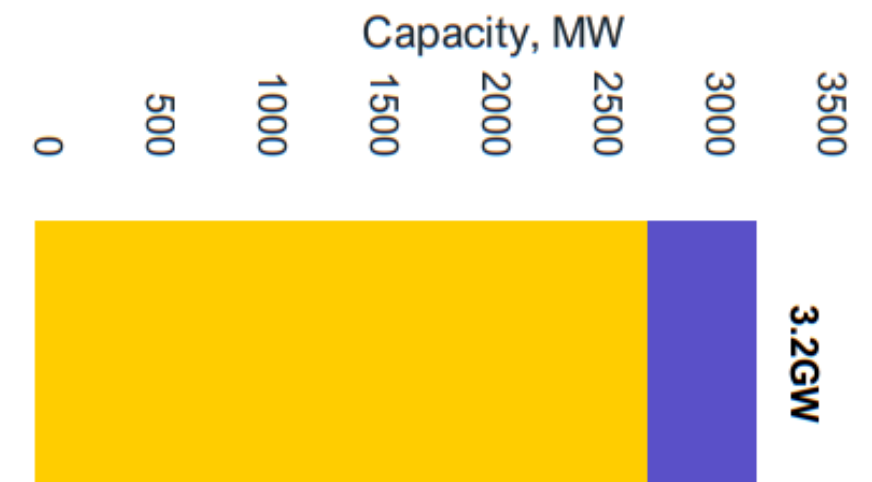
Share of residential in rooftop solar, annual trend



Sources: MNRE, JMK Research

Cumulative installed capacity (March 2024)

■ Subsidised ■ Unsubsidised



MARKET SIZE ESTIMATION

- The **technical potential (637 GW)** for rooftop solar systems drops to one-fifth due to lower electricity consumption per sq. ft
- Residential consumers, mostly in the 0–100 and 100–300 kWh/month slabs, benefit from subsidized electricity rates, reducing the economic feasibility of rooftop systems.
- **Economic potential (102 GW)** decreases by 16 GW due to low residential tariffs.
- When restricting the payback period to five years, potential further **reduces to 11 GW**, driven by high system costs, low tariffs, and limited consumer awareness of rooftop solar benefits.

Technical potential



637 GW

Economic potential



118 GW

~102 GW

Market potential



~11 GW

Current Installed Capacity : 3.2 GW

MARKET INTELLIGENCE

COMPETITION OVERVIEW



WAAREE ENERGIES (20% MARKET SHARE)

Strengths

Strong presence in the commercial and industrial segments, robust distribution network.

Gaps:

- Limited penetration in the residential rooftop segment.
- Products primarily optimized for large-scale applications, not small rooftops.
- Limited focus on consumer awareness & post-sales service.

Insight

Residential adoption remains an afterthought in their business model, leaving room for specialized players like Ecozen.



TATA POWER SOLAR (15% MARKET SHARE)

Strengths:

Established brand trust, premium product quality, extensive financial partnerships.

Gaps

- Premium pricing alienates middle-income consumers.
- Installation process perceived as bureaucratic and time-consuming.
- Limited focus on product innovation for smaller rooftops.

Insight

A “one-size-fits-all” approach limits their reach to mass-market residential customers.



LOCAL PLAYERS (45% COMBINED MARKET SHARE)

Strengths

Lower upfront costs, regional familiarity.

Gaps

- Inconsistent product quality across vendors.
- Poor after-sales service and maintenance infrastructure.
- Limited focus on product differentiation and technology integration.

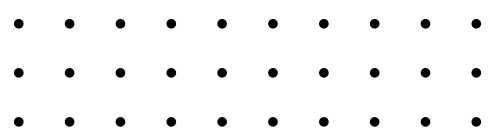
Insight:

Local players often compromise quality for affordability, creating a trust deficit in the market.



ECOZEN

- **Smart Hybrid Inverter:**
 - Ultra-quiet, and auto-protection for better performance and fewer issues.
- **Flexible Panel Design:**
 - Adapts to any roof, 15% better space utilization, and weatherproof for long life.
- **IoT-Enabled Energy Management:**
 - Real-time monitoring, AI alerts for maintenance, and remote troubleshooting to reduce downtime.
- **Customer-Centric Financing:**
 - Zero upfront cost, EMI options, and buyback assurance.



SWOT ANALYSIS

Strengths	Weaknesses	Opportunities	Threats
Expertise in IoT and smart energy management systems	New entrant in residential solar market	Rising electricity costs (8-10% annual increase)	Established players with strong brand value
Established supply chain relationships	Limited brand recognition in B2C segment	Government's 40GW rooftop solar target by 2026	Price competition from unorganized sector
Proven track record in agricultural cooling solutions	Need to build installation partner network	Growing environmental awareness	Potential solar panel import restrictions
Strong R&D capabilities and existing patents	Learning curve in residential customer service	Untapped Tier 2/3 city markets	Long sales cycles in residential segment



MARKET SEGMENTATION



Location

- ✓ **Urban (Tier-1):**
Dominates the market with 3–5 kWp, grid-connected systems, mostly subsidized.
- ✓ **Rural (Tier-2/3):**
Growing demand due to PMSGY, larger rooftop space, and financing access; off-grid systems paired with BESS common due to lower grid reliability.

Project Size

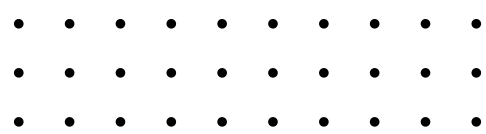
- ✓ **Urban areas:**
Typically 3–5 kWp.
- ✓ **Rural areas:**
Smaller systems (<3 kWp) due to lower power needs.

Grid Connectivity

- ✓ **On-grid:**
Predominant in urban areas, leveraging state/central subsidies.
- ✓ **Off-grid:**
More prevalent in rural regions, often paired with lead-acid BESS (20–25% of capacity).

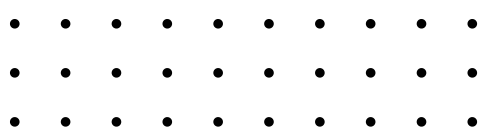
Financial Support

- ✓ **Subsidized:**
Majority of systems, driven by state and central financial assistance.
- ✓ **Unsubsidized:**
15–20% of the market; preferred for larger systems (>10 kWp) and high-end products (bifacial, n-type, TOPCon modules)



PRODUCT-MARKET FIT

	Pain Points	Ecozen Solution	Why Ecozen?	Case Insight
Urban Professional Homes:	High electricity bills, dependence on unreliable grid power.	Energy-efficient systems to reduce monthly power costs by up to 70% Real-time monitoring to optimize power usage.	Easy financing, smart IoT-based controls, & zero noise operation.	60% urban professionals list high electricity bills as a top concern.
Semi-Urban & Tier-2 Homes:	Frequent power cuts, inconsistent grid reliability, & lack of financing options.	Hybrid systems with battery backups for uninterrupted power supply. Flexible panels suitable for varied roof types.	Affordable, durable, and easy-to-install systems designed for resilience.	Off-grid solar adoption in semi-urban homes is expected to grow by 25% annually.
Gated Communities:	High common area electricity costs, dependency on diesel generators on outages.	Shared solar solutions tailored for common rooftops. Integrated power backup for elevators, lights, and essential facilities.	Scalable systems with centralized monitoring and control.	Communities adopting solar collectively save up to 50% on power costs annually.
Rural Early Adopters:	High upfront costs, lack of product awareness, absence of reliable local vendors.	Subsidy integration under PM Surya Ghar Yojana. Awareness campaigns to educate on ROI benefits.	Govt-backed affordability, tailored solutions for all rural needs.	40% of rural households remain underserved despite available subsidies



PRICING & FINANCIAL STRATEGY

Model	Key Features	Pricing	ROI/Benefits
Solar-as-a-Service	<ul style="list-style-type: none">- Zero upfront cost- Monthly subscription- Performance-based pricing	Starts at ₹2,999/month	Hassle-free ownership, pay-as-you-save model
Traditional Purchase	<ul style="list-style-type: none">- Direct ownership- Eligible for subsidies- Long-term savings	₹1,35,000 (3kW) ₹2,25,000 (5kW)	ROI in 3-4 years Up to 40% subsidy

Financial Projections

Metric	Year 1	Year 3
Target Installations	2,000	10,000
Revenue	₹30 Cr	₹150 Cr
Market Share	2%	8%

Target Customer Profile:

Independent house owners

Monthly income > ₹80,000

Average electricity bill > ₹5,000

Roof space > 300 sq ft

GO-TO-MARKET STRATEGY

01.

Awareness & Engagement

- **Digital Campaigns:** Targeted ads on social media & search engines.
- **Community Workshops:** Awareness drives & early adopter incentives.
- **Strategic Partnerships:** Collaborate with housing societies and real estate developers.
- **Content Marketing:** Blogs, ROI calculators, customer success stories.

Drive visibility, educate customers, and build trust.

02.

Multi-Channel Sales – Ensure Accessibility

- **Direct-to-Consumer (D2C):** Online platform with virtual consultations.
- **Channel Partners:** Local solar installers and EPC contractors.
- **Franchise Model:** Regional hubs for Tier-2 city expansion.
- **Retail Experience Zones:** Interactive kiosks in malls and housing expos.

Make Ecozen solutions easily accessible across all customer touchpoints

03.

Smart Financing – Break Financial Barriers

- **Solar-as-a-Service:** Zero upfront cost, subscription model starting at ₹2,999/month.
- **Traditional Purchase:** ₹1,35,000 (3kW), ROI within 3-4 years.
- **Financing Partnerships:** Tie-ups with NBFCs and fintech platforms.
- **Government Subsidies:** Seamless integration with PM Surya Ghar Yojana.

Remove cost as an adoption barrier with flexible financing solutions.

04.

Seamless Installation – Deliver Excellence

- **Certified Installers:** Skilled professionals ensuring quality setups.
- **IoT Integration:** Real-time monitoring & predictive maintenance.
- **Dedicated Support:** 24/7 assistance for post-installation needs.
- **Quality Assurance:** 25-year performance warranty.

Ensure hassle-free installation and long-term customer satisfaction.

05.

Loyalty & Advocacy – Scale Organically

- **Referral Programs:** Incentivize customer referrals.
- **Community Partnerships:** Engage with gated societies and housing clusters.
- **User Stories:** Showcase real-world success stories.
- **Upgrade Options:** Flexible models for future scaling.

Turn satisfied customers into long-term brand advocates.



VISION & IMPACT

- **Vision: 100,000 Solar Homes by 2028**
- **Environmental Impact: 500,000 Tons CO₂ Reduction**

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 - Indian Residential Rooftop Solar Trends





THANK YOU

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