www.bluebirdsolar.com

bluebird SOLAR
co-powering the future

RENEWING
POWER SOLUTIONS

ABOUT US

To be a significant contributor & the most admired brand in renewable energy sector.

Offering premium quality. Eco-friendly & sustainable power solution to delight our customer & empower our nation.

Contributing to India's green energy initiative by developing premium quality products as well as designing, building & operating efficient solar power projects.

Bluebird Solar is one of the finest players in solar energy sector. With a team of young and dynamic professionals we are actively engaged in manufacturing & Sales of premium quality solar PV modules and in providing turnkey solar EPC (Engineering, Procurement, Construction) solutions for commercial, industrial, residential purpose.

We continue to advance our value chain by providing highly reliable solar power solutions like Solar Combos, Hybrid Inverters, Solar Water Pumps and Solar Batteries which are distributed to our diversified domestic & international clients with the help of our established channel and exports network.

Use of top quality raw materials to manufacture Solar PV modules, Intensive R&D, and stringent QC confirms highest standards of product performance, and our association with tier-1 brands ensures top quality solar power plant installation.

As a Solar power enterprise we envision to become industry leaders in the renewable energy sector and carve a position for ourselves amongst the top 10 organizations in Solar Product manufacturing and Solar EPC service providers.

Our Key Offerings

OUR JOURNEY
TOWARDS EXCELLENCE

AUGUST 2014

The Beginning
Bluebird Solar initiated its journey as a trader of solar products like PV modules, lanterns, inverter & battery.

JULY 2016

Our First PV Module
Started manufacturing our own PV Modules in our fully automated state of the art manufacturing unit.

AUGUST 2016

Started Turnkey Solar EPC Services Business
Marked our entry into solar EPC services by installing our first solar rooftop system.

JULY 2017

Going Global
For the first time Bluebird Solar started exporting its Solar PV Module.

SEPTEMBER 2018

Growth Benchmark
3MW+ installations, 30MW+ PV module sales in domestic market and 2MW+ PV Module export in just two years.

MARCH 2019

New Technology Introduced
The next generation PV Modules based on more efficient PERC technology introduced in our product portfolio.

APRIL 2019

5BB PV Modules Introduced
We always prefer to go with the market trend and value the demands of our customer.

MAY 2019

Strengthening the Backbone of the Nation
Entered the solar water pump business to cater to agriculture industry & rural India.

JUNE 2019

Half Cut Cell Modules
Better Technology, Better power
Introducing the more advanced half cut cell PV modules.

FY 2019-20

Road Ahead
Line expansion to 150MW

INFRASTRUCTURE & MANUFACTURING













WHY BLUEBIRD SOLAR?

- Backed by a 40+ years old reputed brand name with remarkable history and experience
- Use of top quality Tier-1 raw materials for Solar PV Module.
- Intensive R&D, and stringent QC confirms highest standards of product performance.
- IEC CB, UL, CE, BIS(under process) certified PV Modules, complying with global standards.
- Robust supply chain & logistics for timely delivery of products.
- Assured product and plant support for next 25 years.
- Brand association with Tier-1 companies for products we use in solar projects.
- 25MW+ proposals and design consultancy delivered.
- Vast experience in handling statutory compliance & laisoning with Govt. Dept.
- Highly efficient, cost effective, up-to-date technology & safety with the help of our design expertise after understanding customer's need.
- Robust supply chain & logistics for timely delivery of products and execution of projects.

5MW+ Installations

30MW+ PV Module Sales

3MW+ Under Execution

25MW+ Proposal & Design Consultancy Delivered

2MW+ Exported

GOI Registrations

MAKE IN INDIA

Govt. of India MNRE APPROVED CHANNEL PARTNER

MSME

एन एस आई सी NSIC ISO 9001 : 2008

#startupindia

Company Empanelments

INDIAN OIL CORPORATION LIMITED
Empanelled for project installations
PAN India

HARYANA RENEWABLE ENERGY DEVELOPMENT AGENCY
Empanelled for project installations
Upto 500 KW

INDRAPRASTHA POWER GENERATION CO. LTD.
Empanelled for project installations
Upto 500 KW

J&K ENERGY DEVELOPMENT AGENCY
Empanelled for project installations
Upto 500 KW

INDIAN TELEPHONE INDUSTRIES LIMITED
Empanelled for project installations
Upto 500 KW PAN India

CHANDIGARH RENEWAL ENERGY SCIENCES & TECHNOLOGY PROMOTION SOCIETY

CERTIFICATIONS

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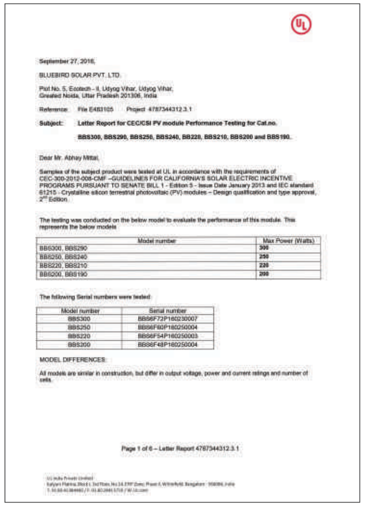
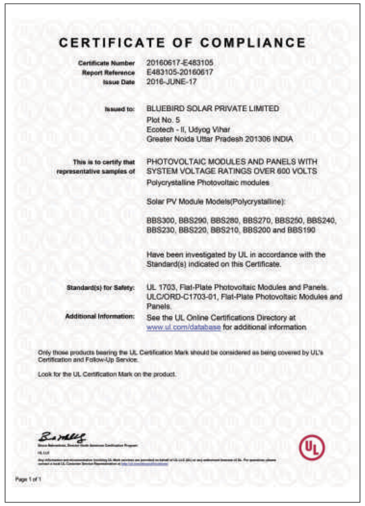




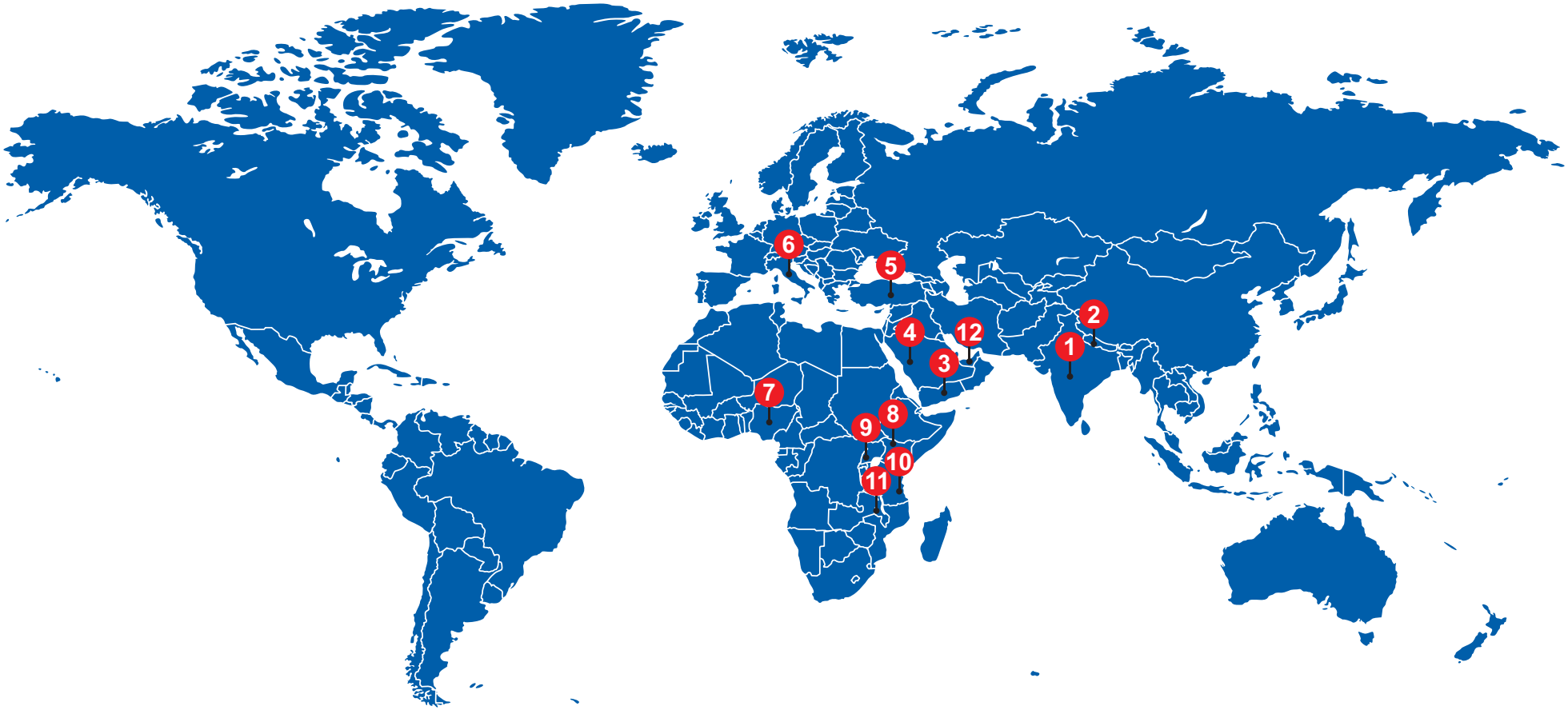
IEC | IECEE | c UL us LISTED | CE | RoHS

ISO 9001: 2015

ISO 14001: 2015

ISO 45001 : 2018

GLOBAL PRESENCE



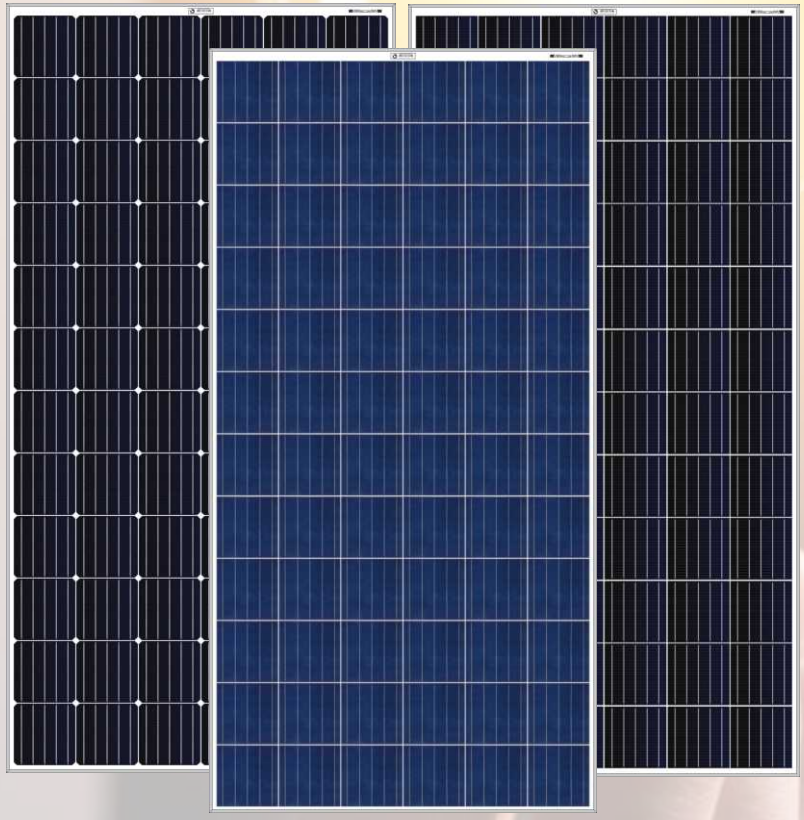
1.India 2.Nepal 3.Yemen 4.Saudi Arabia 5.Turkey 6.Italy 7.Nigeria

8.Kenya 9.Uganda 10.Tanzania 11.Malawi 12.Dubai(UAE)

Energising the nation with smart and sustainable

Solar Power Products and Solutions

Bluebird Solar constitutes a portfolio of highly reliable solar products and solutions to energize homes, offices, hospitals, schools, Petrol Pumps etc. Demonstrating innovative technology, know-how and versatility in application we are setting new paradigms in renewable power.



Solar PV Modules

POLYCRYSTALLINE SOLAR PV MODULES

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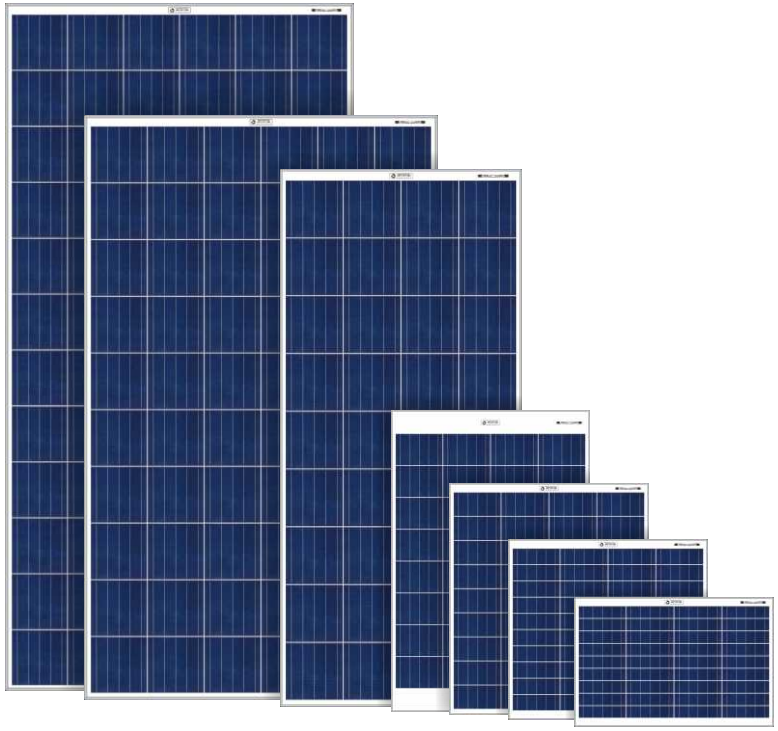
- High Efficiency
- PID Resistance
- Only positive power tolerance
- Excellent low light performance

5 BB CELLS

25 YEARS PERFORMANCE WARRANTY

10 YEARS PRODUCT WARRANTY



- 100% EL Inspected to ensure micro crack free modules.
- Certified to withstand harsh environmental conditions.
- Resistant to ammonia corrosion.
- Certified for 1500 V system voltage.

Module Series	POLYCRYSTALLINE										
	BBS12C40	BBS12C50	BBS12C60	BBS12C75	BBS12C80	BBS12C100	BBS12F150	BBS12F170	BBS24F250	BBS24F300	BBS24F340
Electrical Characteristics at STC:											
Maximum Power Pmax (Wp)	40.00	50.00	60.00	75.00	80.00	100.00	150.00	170.00	250.00	300.00	340.00
Maximum Voltage Vmpp (V)	18.50	18.50	18.50	18.50	18.50	18.50	17.98	18.24	27.22	33.90	38.58
Maximum Current Impp (A)	2.16	2.70	3.24	4.05	4.32	5.41	8.32	9.32	9.19	8.85	8.82
Open Circuit Voltage Voc (V)	22.00	22.00	22.00	22.00	22.00	22.00	21.18	21.47	32.02	39.90	46.15
Short Circuit Current Isc (A)	2.31	2.85	3.39	4.20	4.47	5.56	8.84	9.87	9.74	9.38	9.70
Module Efficiency (%)	14.00	14.10	14.25	14.40	14.50	15.25	15.00	15.40	16.30	16.70	17.40
Mechanical Data											
No. of Cell	36 Cells	36 Cells	36 Cells	36 Cells	36 Cells	36 Cells	36 Cells	36 Cells	60 Cells	72 Cells	72 Cells
Dimension(LxWxH)(in mm)	430x665x30	505x665x30	605x665x30	775x665x30	775x665x30	1010x665x30	1480x665x30	1480x665x30	1640x990x35/40	1955x990x35/40	1955x990x35/40

STC:1000W/m2 irradiance, 25°C cell temperature, AM1.5G spectrum according to EN 60904-3
Average relative efficiency reduction of<5% for every 200W/m² reduction in Irradiance, according to EN 60904-1

MONORYSTALLINE-PERC SOLAR PV MODULES

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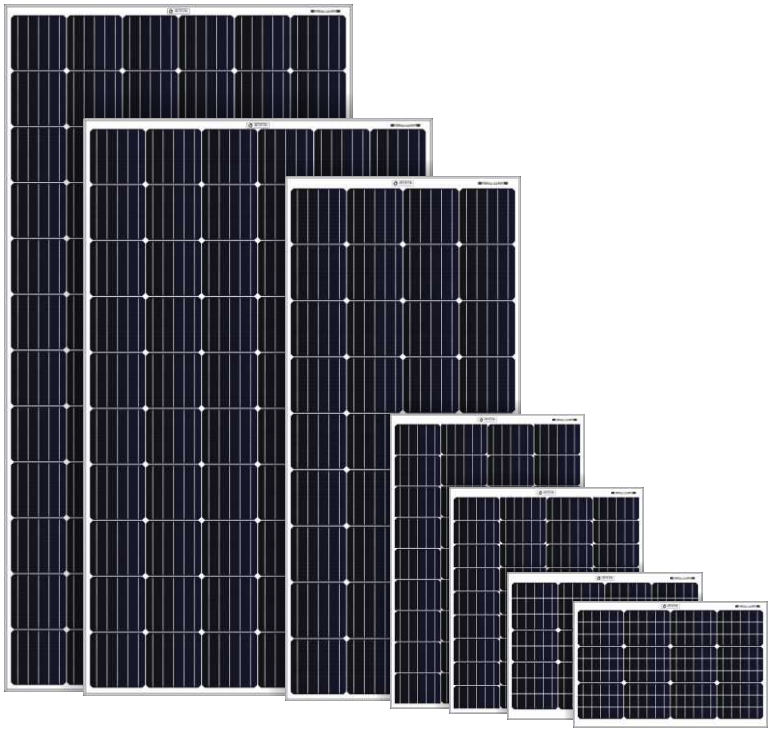
- High Efficiency
- PID Resistance
- Only positive power tolerance
- Excellent low light performance

5 BB CELLS

25 YEARS PERFORMANCE WARRANTY

PRODUCT WARRANTY 10 YEARS PRODUCT WARRANTY



- Increased module power output.
- Certified for 1500 V system voltage.
- Better light conversion efficiency.
- Low resistive power losses.
- Lower temperature co-efficient.

Module Series	MONORYSTALLINE-PERC									
	BBS12MC50	BBS12MC60	BBS12MC100	BBS12MC125	BBS12MF180	BBS12MF 200	BBS24MF310	BBS24MF330	BBS24MF375	BBS24MF400
Electrical Characteristics at STC:										
Maximum Power Pmax (Wp)	50.00	60.00	100.00	125.00	180.00	200.00	310.00	330.00	375.00	400.00
Maximum Voltage Vmpp (V)	20.00	20.00	20.00	20.00	20.30	23.56	32.60	38.45	39.27	40.15
Maximum Current Impp (A)	2.50	3.00	5.00	6.25	8.87	8.49	9.51	8.58	9.55	9.96
Open Circuit Voltage Voc (V)	22.50	22.50	22.50	22.50	23.83	27.76	40.30	46.01	48.47	49.30
Short Circuit Current Isc (A)	2.65	3.18	5.30	6.63	9.17	9.00	10.04	9.44	10.06	10.22
Module Efficiency (%)	17.50	17.80	18.40	18.60	18.30	18.70	18.80	20.50	19.00	20.50
Mechanical Data										
No. of Cell	36 Cells	36 Cells	36 Cells	36 Cells	36 Cells	36 Cells	60 Cells	60 Cells	72 Cells	72 Cells
Dimension(LxWxH)(in mm)	430x665x30	505x665x30	775x665x30	1010x665x30	1480x665x30	1480x665x30	1640x990x35/40	1640x990x35/40	1955x990x35/40	1955x990x35/40

STC:1000W/m2 irradiance, 25°C cell temperature, AM1.5G spectrum according to EN 60904-3
Average relative efficiency reduction of<5% for every 200W/m² reduction in Irradiance, according to EN 60904-1

TURNKEY EPC SERVICES

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Providing robust & optimized Solar power systems that assure investment returns.

Bluebird solar designs, builds and commissions off-grid and grid-tied solar power plants for a diverse profile of customers ranging from Institutional, commercial and residential clients.

1 ON-SITE SURVEY

- ✓ Availability of required space.
- ✓ Identifying technical risks and opportunities.
- ✓ Shade and obstruction issues analysis.
- ✓ Economic and sustainability analysis of the project.
- ✓ Estimating annual energy generation and return.

2 FINANCIAL MODELLING

- ✓ Analyzing the financials risks, & returns over the life of the project,
- ✓ Comparing & selecting suitable system configuration.
- ✓ Preparing financial models depicting the returns over the life of the project, ROI, IRR etc.

3 SYSTEM DESIGN & ENGINEERING

- ✓ System designing & engineering after detailed evaluation of the proposal.
- ✓ Ensuring maximum electricity yield and reduced LCOE.
- ✓ Ensuring maximized system safety, reliability, and economy of investment.

4 PROJECT INSTALLATION & COMMISSIONING

- ✓ Fulfilling system designs and construction requirements by integrating planning, logistics and timely supply of components.
- ✓ Pre-implementation walk through and risk assessment analysis.
- ✓ Complete Installation and commissioning of the system.

5 OPERATION & MAINTENANCE

- ✓ Developing site-specific monitoring, maintenance and reporting procedures.
- ✓ Uploading remote monitoring tools on customer's personal device.
- ✓ Regular auditing of existing systems from electrical, physical, and financial perspective.
- ✓ Performance optimization, repair, modification and replacement.

FEATURED PROJECTS

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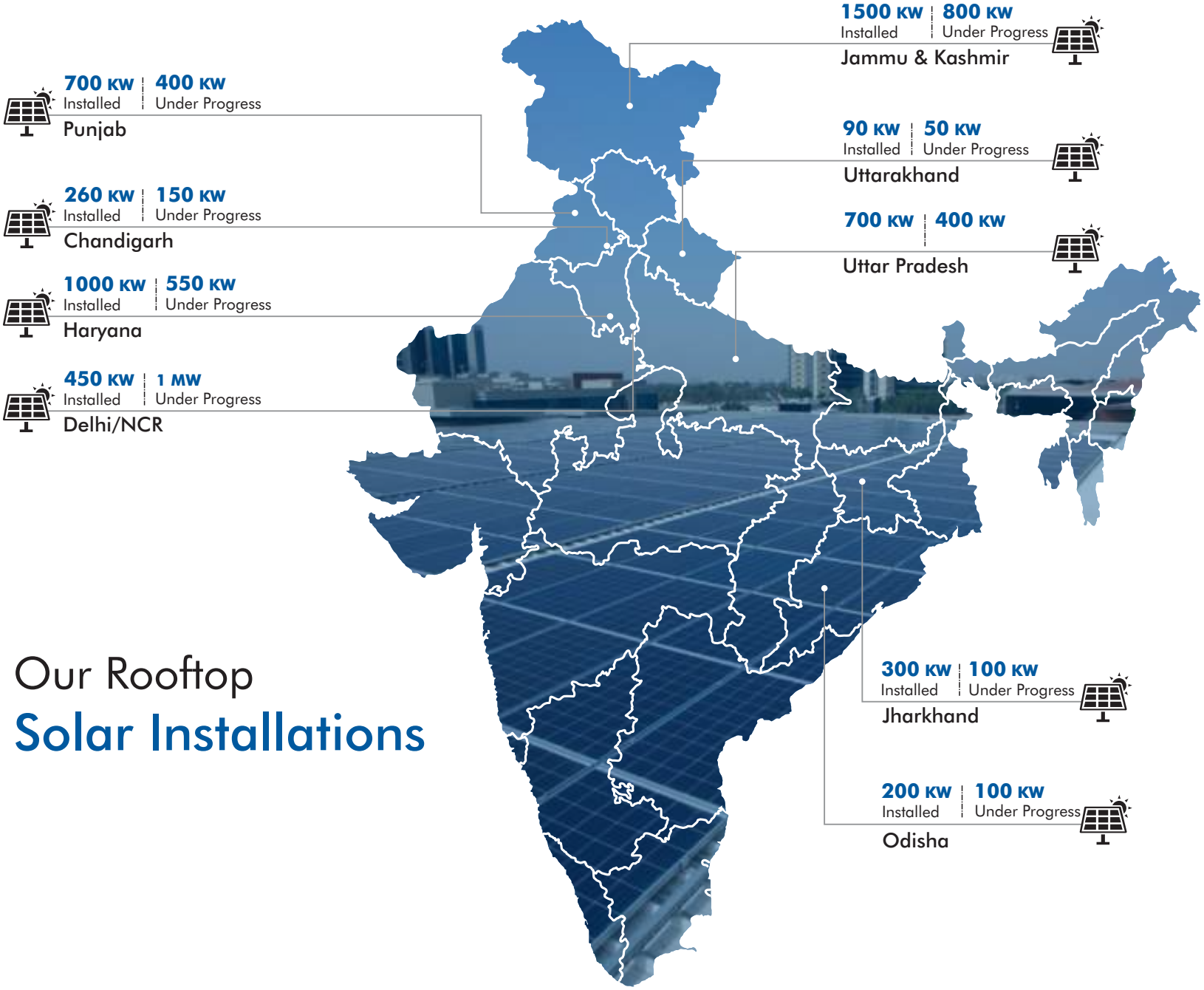
INSTALLED PROJECTS



Our Rooftop
Solar Installations

OUR CLIENTELE

885 KW
MCD Schools
5KWx177

395 KW

115KW
General Post Office
Ambala, Bhuvneshwar

100KW
Department ofAdministration
of Post Delhi

130KW
Head Post Office
Ludhiana, Patiala

50KW
Circle office Ambala

50 KW
Sub District Hospital &
Primary Health Centre J&K

308 KW
36 IOCL Petrol Pumps
10KW x 23, 7.5KW x 5
5KW x 8

150 KW
Sirca Paints

150 KW
State Board of
School Education,
Bemina, Srinagar

50 KW
Sujata
(Mittal Electronics)
Bahalgarh

240 KW
Residential Installations
(JAKEDA)

200 KW
J&K Police Headquarter

1.1 MW
IPGCL
(Govt. Buildings)

45 KW
Shri Ram Shiksha
Mandir, Jindpur

200 KW
Atoz Industries
Moradabad

100 KW
Global Engineers Ltd.
Bhiwadi

50 KW
SG Engineers
Udyog Nagar
Delhi

70 KW
Pushpanjali Farms
Delhi (IPGCL)

170 KW
National Institute
of Criminology
and Forensic
Science

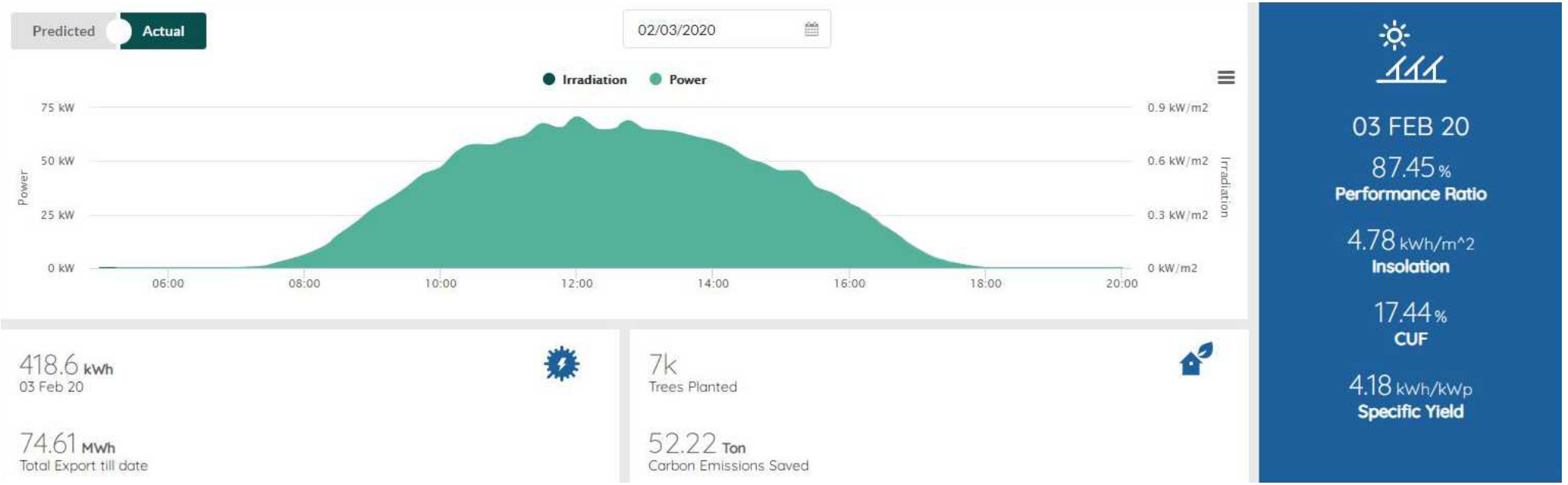
371 KW

86KW
(50+20+10+6)
Rooftop

185KW
(60+25+40+60)
Govt. Model
High School

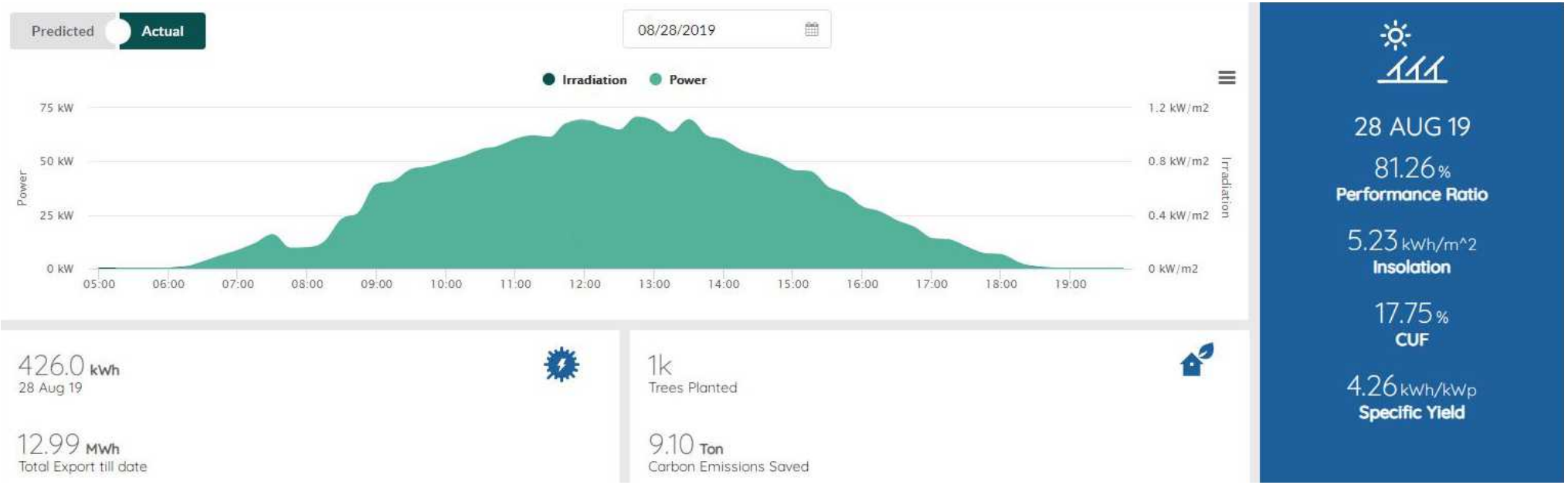
100KW
(50+50)
Carport

SYSTEM PERFORMANCE GRAPH



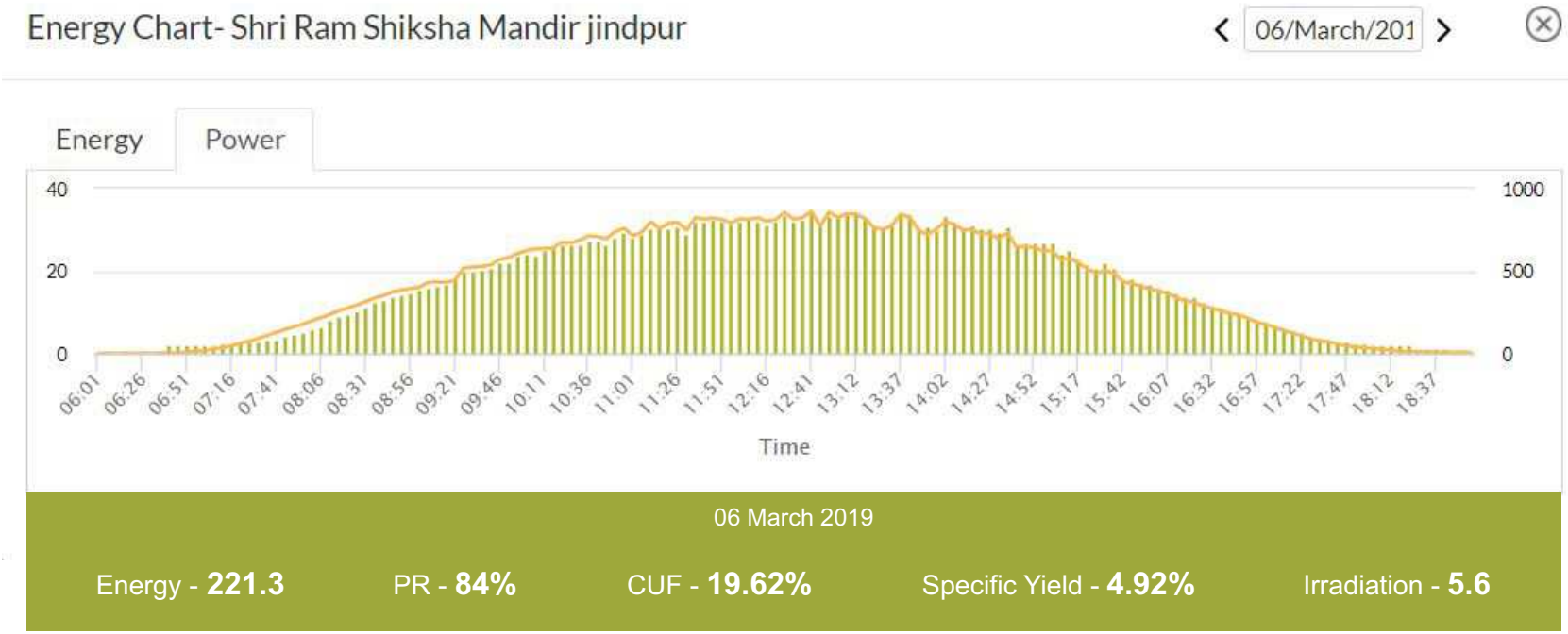
Plant capacity : 100 KW | **Department of Post, New Delhi** | **RCC Roof, South Orientation**

SYSTEM PERFORMANCE GRAPH



Plant capacity : 100 KW | **Global Engineering, Bhiwadi** | **Tinshed Roof, E/W Orientation**

SYSTEM PERFORMANCE GRAPH



Plant capacity : 45 KW | **Shri Ram Siksha Mandir, Jindpur** | **RCC Roof, South Orientation**

Solar Power Benefits

Home Owners

- Reduced electricity bill.
- Hedge against increasing electricity and diesel tariffs.
- Reduces the dependency on grid power.
- Long term reliable power source.
- Option for revenue generation through Net Metering
- Framework security through localized generation

Commercial & Industrial Users

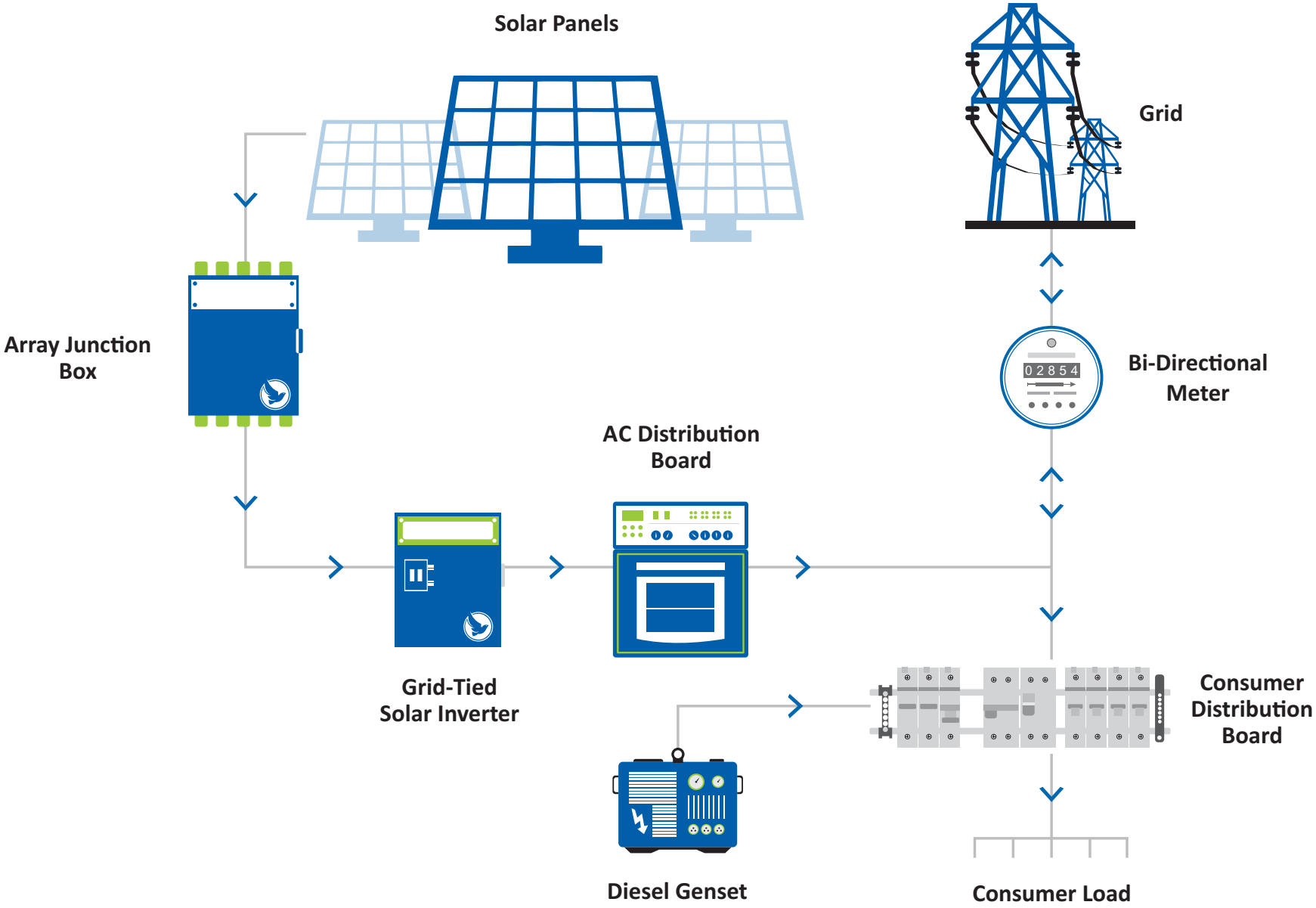
- Contribution to CSR (Corporate Social Responsibility)
- Fulfillment of solar purchase obligation.
- Reduced utility electricity bill.
- Higher benefits in TOD regime
- Hedge against increasing electricity and diesel tariffs.
- Reduced dependency on grid power
- Option for revenue generation through Net Metering

What is your capacity requirement ?

- 1KW Grid Tied Solar Power system require 10-13 sq.mt. area.
- 1kW Grid Tied system can generate – 4-5 KWh/Day.
- 1KW Hybrid system can generate – 3-3.5 KWh/Day.
- South facing installations are preferred. In tilted roofs south facing installations gives maximum power generation.
- Recommended tilt angles of modules – optimized based on latitude and space availability.
- A typical 100KWp power plant will require 1200-1300 sq.mt. area.

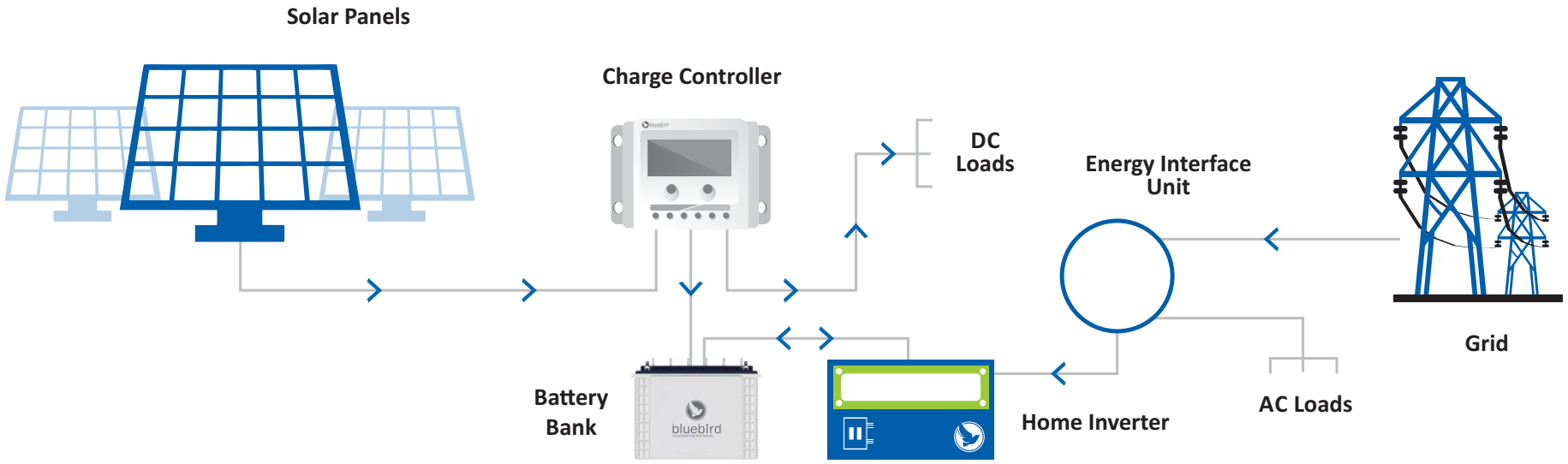
TYPES OF SOLAR SYSTEM

On-grid or Grid Connected System

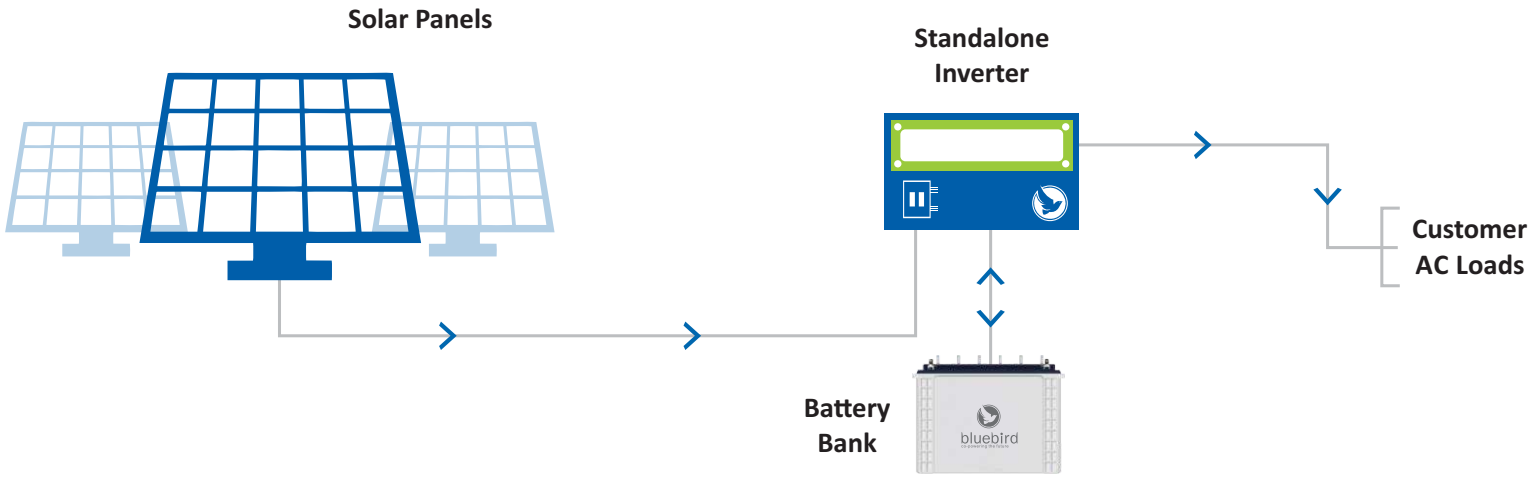


Off-grid Or Standalone System

For user with existing home inverters and batteries



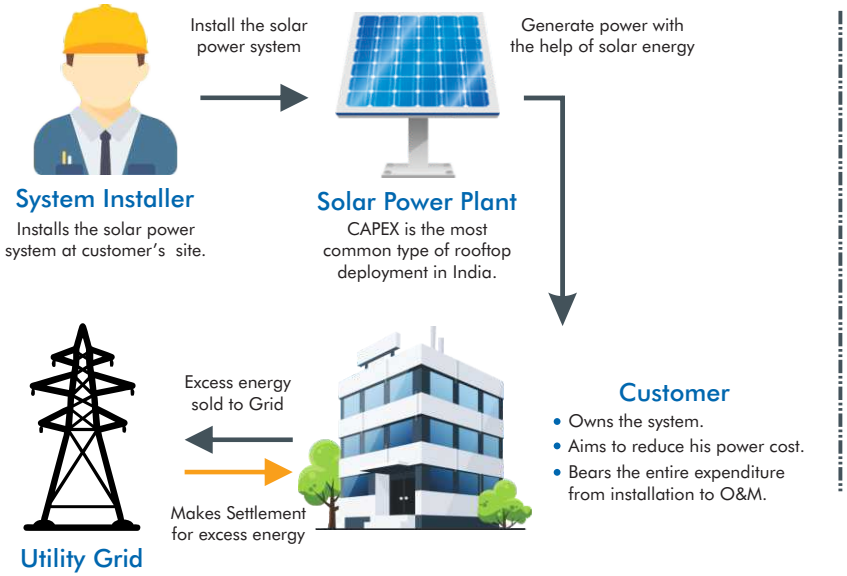
Standalone System



SOLAR BUSINESS MODELS

A business model in case of solar power plant is the method by which the consumer or the investor generate the revenue by selling the generated electricity or saves his money by consuming the generated electricity. Therefore, it is very important for the consumer and the investors that they choose the right business model to minimize the risks and maximize the ROI.

CAPEX (Capital Expenditure Model)



RESCO (Renewable Energy Service Company)

BOOT (Build, Own, Operate & Transfer)

- The RESCO constructs, owns, operates and transfers the ownership of the rooftop solar project to the customer (Rooftop Owner) after expiry of contract period or as per agreed terms.
- After the transfer of ownership, the customer is responsible for O&M.
- Customer may choose to retain the services of the original RESCO or he may make his own arrangements for O&M requirements.

BRAND ASSOCIATIONS

PV Module

bluebird SOLAR
co-powering the future

Inverter

DELTA
Smarter. Greener. Together.

KSTAR

SUNGROW
Green and Effective

POLYCAB

Wires

HAVELLS

POLYCAB

Net Meter

HPL

SECURE
energy together

Remote Monitor

WEBDYN

Switchgear

ABB

Schneider Electric

SIEMENS

PROJECT INSTALLATION PROCESS

1. Pre- installation site survey and marking on roof
2. Structure installation with foundation
3. Module mounting on structure
4. DC cabling
5. DCDB–Inverter–ACDB installation
6. Connecting DC cable to DCDB & Inverter
7. Installation of lightening arrester
8. Earthing
9. Attaching AC cable from Inverter to ACDB
10. Termination to client LT panel
11. Net metering
12. Project testing & commissioning

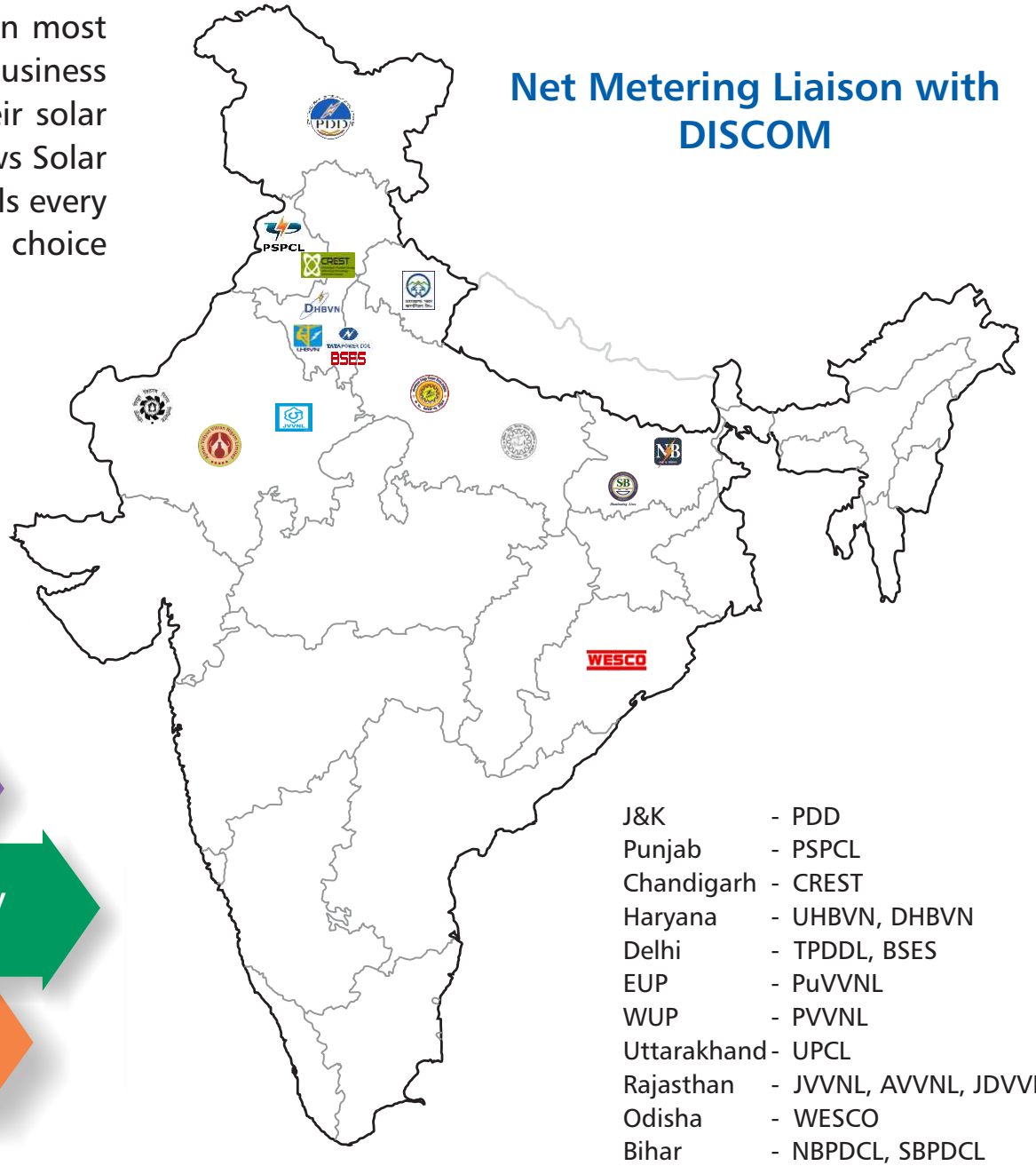
NET METERING

Net metering is a utility billing mechanism available in most of the states that offers a credit to residential and business customers who are making excess electricity with their solar panel systems and sending it back to the grid. It allows Solar Power Plant owners' valuable money on their utility bills every year, so it's a good reason to make the money-saving choice and go solar sooner rather than later.

Net Metering Mechanism

1. Filling & submitting Net-Metering application form to DISCOM
2. Verification of technical feasibility of connecting your solar PV system to their distribution network.
3. Solar PV system installation and readiness intimation to DISCOM.
4. Inspection of Solar PV system & Issuance of Safety clearance certificate.
5. Testing and Commissioning of Net Meter & CT/PT

Net Metering Liaison with DISCOM



J&K	-	PDD
Punjab	-	PSPCL
Chandigarh	-	CREST
Haryana	-	UHBVN, DHBVN
Delhi	-	TPDDL, BSES
EUP	-	PuVVNL
WUP	-	PVVNL
Uttarakhand	-	UPCL
Rajasthan	-	JVVNL, AVVNL, JDVVNL
Odisha	-	WESCO
Bihar	-	NBPDCL, SBPDCL

bluebird®

the reliable voltage stabilizer

- Automatic Voltage Stabilizer
- Servo Voltage Stabilizer
- Constant Voltage Transformer
- Step Down Transformer

bluebirdstabilizer@gmail.com

www.bluebirdstabilizer.com

bluebird LIGHTS

lights up life

- Bulbs & Tube Lights
- Ceiling Lights
- Flood Lights
- Spot Light

customercare@bluebirdlights.com

www.bluebirdlights.com

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