









OPERATING PROCEDURE FOR IMPLEMENTATION OF DISTRIBUTED SOLAR PHOTOVOLTAIC (DSPV) PLANTS IN KARNATAKA

COMMON STANDARD OPERTATING PROCEDURE FOR IMPLEMENTATION OF DISTRIBUTED SOLAR PV (DSPV) PROJECTS

(SRTPV shall hereafter be referred to as DSPV)

Index

SI. No.	Particulars	Page No.
I	Preamble & Orders Reference	2-3
II	The Gist Of Frequently Referred Terminologies	4-12
III	Procedure for Installation of Solar Rooftop Plants	13-24
IV	Accounting & Billing	25
V	Timelines	26-27
VI	Schematic Diagrams	28-29
VII	Illustration of Procedure	30-79

I. PREAMBLE:

The Energy Department, Government of Karnataka, through Government Order No. ENERGY 346 VSC 2023, Bengaluru, dated 24.05.2024, issued directives for the implementation of Solar Rooftop Projects in the State.

In pursuance of these directives, it was mandated that BESCOM to develop the procedure and Standard Operating Procedure (SOP) for SRTPV implementation and circulate to all other ESCOMs, who in turn should follow without any deviation.

Accordingly, BESCOM prepared the Common SOP, which was issued vide Circular No. BESCOM/BC-51/2024-25/CYS-23, dated 04.07.2025, and subsequently adopted by all ESCOMs.

With the issuance of the KERC Generic Tariff Order dated 09.07.2025, the existing Common SOP now requires modification and updation.

The revised procedure and SOP detailed below shall be read with the following Regulations and Orders and its modifications issued thereof:

Table No.1

SI. No	Issued By	Date	Description
1	KERC	19.09.2016.	Modifications to the order dated 2 nd May 2016 in respect of Determination of tariff and other norms for Solar Rooftop and small Photovoltaic power plants
2	KERC	15.12.2016	The KERC (Implementation of Solar Rooftop Photovoltaic Power Plants), Regulations 2016
3	KERC	15.09.2017	Tariff and other Operational Procedures applicable for Multiple/Combined SRTPV in single premise
4	Energy Department	19.07.2018	Notification No: EN 106 EBS 2018, Bengaluru dated 19.07.2018 regarding tax on self-consumption.
5	Energy Department	27.08.2018	Inspection by Electrical Inspector for the Generating Units including Solar Rooftop Units

SI. No	Issued By	Date	Description
6	KERC	09.12.2019	Decision on Various Models and Guidelines for SRTPV allowed to be installed on consumer's rooftop
7	Ministry of New & Renewable Energy, Gol.	10.06.2022	Guidelines for simplified procedure
8	KERC	18.07.2022	Net metering arrangement for eligible consumers of Solar Rooftop Photovoltaic (SRTPV) plant.
9	KERC	02.03.2023	Evacuation / Utilization of Solar Energy Generation at LT/HT Voltage and connect to their LT/HT system
10	Ministry of New & Renewable Energy, Gol.	17.05.2023	OM for empanelment of Vendors
11	KERC	01.06.2023	Determination of tariff for SRTPV plants for FY-2023-24
12	Energy Department	11.01.2024	GO No: ENERGY/ 346/VSC/2023 Bengaluru Formation of Expert Committee.
13	KERC	06.03.2024.	KERC (Pre-paid Smart Metering) Regulations, 2024
14	Energy Department	04.05.2024	Report of the Expert Committee
15	Ministry of New & Renewable Energy, Gol	07.06.2024	Operational Guidelines for Implementation of PM Surya Ghar: Muft Bijli Yojana for the component "CFA to the Residential Consumers"
16	KERC	11.06.2024	Determination of tariff for SRTPV plants for FY-2025
17	KERC	26.11.2024	KERC (Fee) Regulation 2024
18	KERC	05.12.2024	Enhancement of sanctioned load up to and inclusive of 10 kW for SRTPV Consumers and other related matters
19	Ministry of New & Renewable Energy, Gol	07.06.2025	Amendment in Guidelines for Implementation of PM Surya Ghar: Muft Bijli Yojane
20	KERC	09.07.2025	Determination of tariff for SRTPV plants for FY-2025

Summary of Commonly Used Terminologies in the Implementation of DSPV Projects

1. Installation of Distributed Solar PV (DSPV) Systems

a) Permissible Locations

Installation of Solar PV panels shall be permitted on the following areas, subject to compliance with applicable building bye-laws and adherence to all relevant safety regulations/standards:

- On the walls of buildings as façade-integrated solar installations.
- o On the rooftop of buildings.
- On elevated structures within the premises, constructed from the ground level, provided that such structures maintain a minimum ground clearance of 8 (eight) feet at the lowest point.

b) Plant Capacity Determination

For the purpose of capacity determination, the **DC capacity** of a DSPV plant shall be reckoned as the arithmetic sum (total wattage) of the Maximum Power Rating of all installed solar modules/panels.

c) Minimum and Maximum Capacity

The minimum permissible capacity of a DSPV plant shall be 1 kW (DC). The maximum capacity shall be limited upto the sanctioned load of the consumer's installation.

d) Tolerance in DC Capacity of PV Panels

For installation of SRTPV system up to and inclusive of 10 kW sanctioned load, a capacity tolerance of up to 10% shall be allowed for the applied system capacity (DC), subject to condition that the AC capacity of the inverter shall not exceed the sanctioned load.

e) Conversion of Sanctioned Load

- Where the sanctioned load is expressed in KVA, it shall be converted to kW by applying a multiplication factor of 0.85 for LT installations & 0.90 for HT installations.
- Where the sanctioned load is expressed in HP, it shall be converted to
 kW by applying a multiplication factor of 0.746.

f) Provision for Installation of DSPV Plants with Generators and Hybrid Inverters:

The consumers are allowed to install the Distributed Solar PV grid tied plants with Generators especially during periods of low sunlight or grid outages. Even the consumers are allowed to use the hybrid grid tied inverter with the battery to the Distributed Solar PV plant.

g) SOP on Sanctioned Load and Installation of DSPV Plants: Table No.2

Provision	Responsibility of			
FIOVISION	Distribution Licensee	Consumer		
Installation beyond sanctioned load (up to 10 kW DSPV)	Allow consumer to install SRTPV plant of capacity upto and inclusive of 10kW even if the sanctioned load is less than the solar proposed capacity and the sanctioned load of the consumer shall be enhanced automatically to match the required capacity of SRTPV plant	Shall Apply for the DSPV installation as per the prescribed format.		
Augmentation of Network	Where required, augment distribution lines / transformers of the Distribution Licensee to accommodate the enhanced load.	Allow access to premises for augmentation works.		
Increased Sanctioned Load	Record enhanced sanctioned load in consumer account. Issue revised demand note for applicable charges and security deposit.	 Pay applicable charges Deposit additional security Execute Power Supply Agreement(PSA) for additional load. 		
Compliance Before Commissioning	Verify that consumer obligations have been met before granting commissioning approval for DSPV plant.	Ensure all payments and agreements are completed prior to commissioning.		

2. Application & Facilitation Fees:

The applications are broadly considered into following 02 categories;

- I. Without Subsidy (Non-Subsidy)
- **II.** With Subsidy (PM Surya Ghar Yojana)
 - The registration and the facilitation fee **have been waived off** for the consumers applying under subsidy scheme of DSPV under PM Surya Ghar Yojane.
 - The application and facilitation to be paid by Consumer for applying under non-subsidy DSPV scheme is as tabulated below;

Table No 3

SI. No	Capacity of the proposed DSPV system	Registration Fee	Facilitation Fee	Total Amount
1	From 1kWp Upto and inclusive of 5kWp	Rs.500/-	Rs.1000/-	Rs.1,500/- plus applicable GST
2	Above 5kWp Upto and inclusive of 50kWp	Rs.1000/-	Rs.2000/-	Rs.3,000/- plus applicable GST
3	Above 50kWp and Upto 1000kWp	Rs.2000/-	Rs.5000/-	Rs.7,000/- plus applicable GST
4	Above 1000kWp and Upto sanctioned load	Rs.5000/-	Rs.10000/-	Rs.15,000/- plus applicable GST

3. Metering arrangement:

Table No.4

SI.	Type of	Eligible	Remarks
No	Metering	Consumers	
1	Gross Metering / Net Metering	All category of consumers.	As per Commission's Order dated 19.09.2016, consumers are allowed a one-time irrevocable option of either Gross or Net Metering at the time of signing of PPA/ at the time of providing consent, as the case may be. Consumers under Net Metering opting to procure power through Open Access shall be permitted, subject to the condition that ESCOMs shall not pay for net exported energy. In such cases, a Supplementary PPA (SPPA)shall be executed/consent shall be provided as the case may be.

2	Virtual Net Metering (VNM) & Group Net Metering(GNM)	Separate SoP will be issued
---	---	-----------------------------

4. Feasibility for LT installations:

Every DSPV plant of less than 150 kW capacity shall be connected only to the existing distribution transformer through which the eligible consumers are being supplied electricity. In such cases, the total capacity of the existing and proposed DSPV plants on that distribution transformer shall not exceed 80% of the rated capacity.

Note:

- i. This is applicable only for LT installations.
- ii. The installations with solar proposed capacity upto 150kW are considered to be deemed feasible. There is no requirement of issuing feasibility reports for such DSPV plants.

5. Feasibility for HT installations:

Every DSPV plant of more than 150 kW capacity shall be connected only to the existing 11 kV distribution system. In such cases, the total capacity of the existing and proposed DSPV plants shall be limited so that line current does not exceed 80 % of the rated current capacity of the line

Note: This is applicable only for HT installations.

6. Installation of More than 150kW plant capacity for LT Consumer:

If a LT consumer requests for installation of DSPV plant of capacity more than 150 kW, the consumer shall convert to HT system i.e., the billing meter shall be HT meter with metering cubicle and solar generation meter shall be 3 phase LT CT Operated meter (For net meter arrangement only).

7. Installation of More than 150kW plant capacity for HT Consumer:

If a HT consumer requests for installation of DSPV plant of capacity more than 150 kW, the billing meter shall be bi-directional HT meter and solar generation meter will be 3 phase LT CT Operated meter (For net meter arrangement only).

8. Power Purchase Agreement:

No requirement of PPA to be executed between the Consumer and the ESCOMs for the Distributed Solar PV Plant capacity with net/gross metering arrangement for LT Domestic Consumers upto 150 kW. The online application format covers all the terms and conditions for implementation of Distributed Solar PV Plants with net /gross metering.

Other than the above, the term of Power Purchase Agreement is for a period of 25 years and the Power Purchase Agreement (PPA) Execution Authority on behalf of ESCOMs are as tabulated below;

Table No.5

SI. No.	DSPV plant Capacity	PPA Execution Authority			
1	From 1kWp to 500kWp	Assistant Executive Engineer(Ele), O & M Sub-Division			
2	Above 500kWp	Executive Engineer(Ele) O & M Division			

In case of lease agreement, the PPA shall be executed for the duration of lease period or maximum for 25 years, whichever is earlier.

9. Synchronization Authority:

The DSPV plant Commissioning & Synchronizing Authority:

Table No.6

SI. No.	DSPV Plant Capacities	ESCOM Officers authorized for synchronization
1	1kW upto 35kW with smart meter	Assistant Executive Engineer(Ele), O & M Sub-Division and MT staff not required.
2	Above 35kW upto 50kWp with smart meter	Assistant Executive Engineer(Ele), O & M Sub-Division in co-ordination with Meter Testing (MT) staff.
3	Above 50kW upto 500kWp static meter	Assistant Executive Engineer(Ele) O & M Sub-Division in Co-ordination with Meter Testing (MT) staff
4	Above 500kWp static meter	Executive Engineer(Ele) O & M Division in Co-ordination with Meter Testing (MT) staff

^{*}For all clarifications with regards to the meter, the circulars/orders issued by GM(M&C) from time to time, shall be followed.

10. Installation of Multiple DSPV Plants:

As per KERC order dated:15.09.2017 and tariff order dated:01.06.2023 for FY-2023-24, the following metering arrangements are allowed;

Table No.7

Clause No. as per the Order dated:15.09. 2017	Registered Consumer	Details of the S	Metering Arrangement (Net/Gross)	
i	Single or multiple Registered Consumer	No Existing SRTPV Unit	Wants to install multiple SRTPV Units	Net
ii	Registered consumer with multiple installations	No Existing SRTPV Unit	Wants to install Single SRTPV Unit	Gross
iii	Multiple Registered Consumer with multiple installations	No Existing SRTPV Unit	Wants to install Single SRTPV Unit	Gross
iv	Multiple Registered Consumer with multiple installations	Unit of a	Wants to install multiple SRTPV Units	Net
V	Multiple Registered Consumer with multiple installations	Unit of a	Wants to install additional SRTPV unit	Gross

The Commission has allowed the single or multiple registered Consumers to opt for installing DSPV plant /plants with respect to each RR No. separately, under net metering or gross metering as per Commission's order dated 19.09.2016.

11. Option for installation of multiple generation Meters for HT Consumers:

The KERC vide order dated 02.03.2023 has issued order for Evacuation / Utilization of Solar Energy Generation at LT/HT Voltage and connect to their LT/HT system.

The DSPV plant under net-metering arrangement can be installed on the rooftops of the several buildings with different capacities within the same premises, having HT connection with ESCOMs and to evacuate the solar generated energy connecting to the LT voltage bus of each building.

12. Third Party Investment Models:

The Commission has allowed consumers to opt for either net metering or gross metering arrangements, irrespective of the nature of investment in the Distributed Solar PV project.

13. PPAs for additional capacity installation:

In the event a consumer seeks to install additional solar capacity beyond the capacity already commissioned under the existing PPA, the existing PPA shall stand terminated. A fresh PPA shall thereafter be executed for a period of twenty-five (25) years, at a tariff determined as **ninety percent (90%) of the PPA tariff** or the **prevailing generic tariff determined by the Commission at the time of execution**, whichever is lower.

In the event that a consumer seeks enhancement of the sanctioned load, such enhancement shall be permitted, provided that the enhanced sanctioned load does not exceed the solar capacity already commissioned under the existing PPA. In such cases, there shall be no change in the applicable tariff, subject to the following conditions:

- a) The annual energy generation from the plant shall not exceed a Capacity Utilization Factor (CUF) of 19%.
- b) In the event of generation in excess of the 19% CUF, such excess energy shall be injected into the grid free of cost, without any liability on the ESCOM to make payment for the same.
- c) If consumer opts the above, a Supplementary Power Purchase Agreement (SPPA) shall be executed to record and give effect to the above provisions and SPPA shall be approved by the Hon'ble KERC.

Note: In case where the DSPV plant installed is equal to or less than the sanctioned load/contract demand, the tariff rate applicable for change in sanctioned load/tariff category will be **ninety percent (90%) of the PPA tariff** or the **prevailing generic tariff determined by the Commission at the time of execution**, whichever is lower

14. Continuation of PPA for change in location of Distributed Solar PV Plants with net-metering/gross metering as per PPA

If the Consumer who has invested in Solar PV Plants with net-metering/gross metering in a place, decides to shift his Solar PV Installation to a new location, such consumer are allowed to shift the solar PV installation to a new place in the jurisdiction of the same ESCOM and continue the same PPA for remaining PPA term, subject to limiting the solar plant capacity to the original sanctioned load, at new location.

Note: In case of change of sub-division, the SRTPV file alongwith billing & payment details shall be transferred to the concerned subdivision where the DSPV plant is intended to shift and SPPA shall be executed between consumers & concerned ESCOM officer.

15. Transfer of DSPV installation:

For transfer of DSPV installation in cases where the property is transferred due to sale/gift deed/legal heir due to death of the registered consumer, the same shall be allowed by duly executing SPPA with the new registered consumer at the existing PPA tariff rate for the remaining term.

16. Energy Accounting during faulty Meter/ meters not recording:

The ESCOMs shall calculate the energy generated on the basis of DSPV installed capacity for extending the solar energy generation benefits by considering 19% CUF or if available, analyse historical energy generation/consumption data/excess energy exported to the grid, trends and patterns in energy generation to estimate current energy generation levels.

Provided such meter shall be replaced within the prescribed time period as mandated under Conditions of Supply of Electricity of ESCOMs (CoS) as amended from time to time.

17. Procurement of Smart Meters:

Provision has been made for supply of smart meters in BESCOM outlets. The Consumer has to purchase smart meters from any of the outlets. For installations more than 50KW, the procurement of static meters shall be followed the circulars issued by GM(M&C) from time to time.

18. Provision of Check Meter:

The check meter shall be provided for DSPV systems as per the provisions of the Conditions of Supply(CoS)& circulars/orders issued by GM(M&C) from time to time.

19. Procurement of CTs, PTs & Metering Cubicle:

CT's, PT's and Metering Cubicle shall be procured from ESCOM approved Vendors only.

20. Applicable Tariff:

The PPAs shall be executed as per the Generic Tariff Orders issued by KERC from time to time for every FY / Control Period.

21. Gist of other Orders:

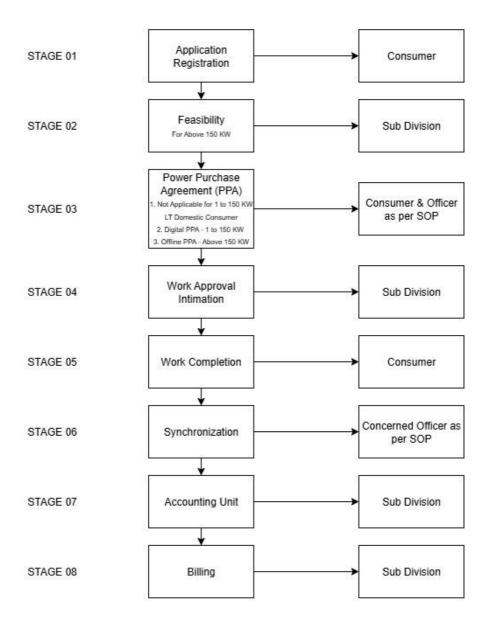
- i. To install Distributed Solar PV projects with capacity equivalent to 100% of the sanctioned load of the respective consumer's installation for the purpose of gross or net-metering with their own investments/third party investment.
- ii. To allow installation of Distributed Solar PV projects on Government buildings, as per the Commission's Order dated 11.11.2016, with the tariff for any surplus energy injected as determined by the Commission.
- iii. To allow installation of Distributed Solar PV systems up to and inclusive of 10 kW sanctioned load, a capacity tolerance of up to 10% for the applied system capacity (DC), subject to condition that the AC capacity of the inverter shall not exceed the sanctioned load.
- iv. The consumers are allowed to install Solar panels and other equipment conforming to standards specified by IEEE / BIS, without insisting on procurement from the ESCOMs' empanelled vendors.
- v. Connectivity of Distributed Solar PV installations above 5KW and up to 150 KW at LT level, 3 phase, 400 volts and above 150 KW and up to 2000 KW at 11KV HT. For above 2000kW capacity, the Distributed Solar PV installations shall be connected to the system as specified in the KERC Regulations/ Conditions of Supply of Electricity of Distribution Licensees (COS).
- vi. The PPAs/SPPAs of Distributed Solar PV plants, with an installed capacity up to and inclusive of 1000 kW, executed as per the approved standard PPA/SPPA format, shall be considered as deemed to have been approved by the Commission and the ESCOMs are not required to obtain a separate approval thereon.
- vii. The Commission allows to connect the Distributed Solar PV grid tied plants with Generators especially during periods of low sunlight or grid outages. The Commission allows the consumer to use the hybrid grid tied inverter with the battery to the Distributed Solar PV plant.
- viii. The Commission has detailed the procedure for energy accounting when the meter is faulty or meters are not recording.
- ix. The Commission has removed the capacity restriction of 2000 kW for installing Distributed Solar PV projects and allowed to install the plants up to their sanctioned load/Contract demand.

II. PROCEDURE FOR INSTALLATION OF SOLAR ROOFTOP PLANTS

The general work flow to be followed for DSPV application consists of following stages:

- 1. Application Registration
- 2. Providing Feasibility (If applicable)
- 3. Execution of Power Purchase Agreement (if applicable)
- 4. Work Approval Intimation
- 5. Work Completion Intimation
- 6. Synchronization
- 7. Accounting & Billing

The flow chart for the work flow for processing of DSPV applications and detailed procedure to be followed at each step is as below;



Dated:

STAGE -01: APPLICATION REGISTRATION

Non-Subsidy Application

Responsibility: Consumer

Documents Required: Nil

a. The consumer shall click the link of the online portal of the ESCOM as tabulated below;

ESCOM Portal link	
BESCOM https://SRTPV.bescom.org/SRTPV/	
GESCOM https://gescomSRTPV.in/SRTPV/	
HESCOM	https://SRTPV.hescom.co.in/SRTPV/
CESC	https://SRTPV.cescmysore.org/
MESCOM	https://SRTPV.mesco.in/SRTPV/

- **b.** Enter the account id which is printed in the electricity bill. The billing data will be fetched automatically and enter the remaining fields such as proposed solar capacity, type of metering Net or Gross etc.
- **c.** The Consumer will be verified through OTP sent to registered mobile number.
- **d.** For LT domestic consumer, wherein the PPA has been waived off, the **Consent Form** will pop up with the applicable terms & conditions and by agreeing to it the consumer can proceed to the next step.
- **e.** Pay the application fees online using any one of the payment methods displayed on the screen-applicable for only non-subsidy application
- **f.** Application is considered as registered after payment of application fees.
- **g.** The consumer must mandatorily enter the bank details and upload the photo of cancelled cheque.
 - h. Smart Meter Consent Form: The consumer can also avail the facility of Smart Meter procurement through the DSPV portal under the Application Info Tab.

- The consumer should click on "Proceed to Meter Request", select the type of existing meter, choose the phase type, and upload the duly signed copy of the Meter Consent Form.
- Upon clicking the "Agree & Submit" button, a "Meter Procurement Letter" for the DSPV plant will be automatically generated.
- This letter will specify whether the consumer is required to procure one number of smart meter configured bidirectionally to record import/export units (in case of new installations serviced with smart meter) or two numbers: one number of smart meter -unidirectional to record solar generation & one number of bidirectionally configured smart meter (in case of installations serviced with electrostatic meters), along with the applicable terms and conditions.
- The consumer shall present the "Meter Procurement Letter" at the BESCOM-authorized smart meter retail outlet to purchase a tested smart meter. The list of authorized retail outlets is available on the DSPV portal.

Subsidy application(PM Surya Ghar Yajana):

- a. At present subsidy is available only for domestic category Consumers who are willing to install solar rooftop plants under PM Surya Ghar Scheme.
- b. For installation of solar rooftop plants under PM Surya Ghar Scheme, the Consumers are required to register their application and apply through National Portal using the link: https://www.pmsuryaghar.gov.in/
- c. Also the consumer can directly click on the link of PM Surya Ghar portal available on ESCOM portal.
- d. Once the application registration process is complete in PM Surya Ghar portal, the Consumers should note down the Registration Reference number generated by the portal for continuing application process in ESCOMs portal.
- e. For continuing the application process in ESCOMs portal, the Consumers are required to click the link displayed at ESCOMs website and enter the Registration Reference number generated by the PM Surya Ghar portal.
 - f.Once, the Registration Reference number is entered in ESCOMs portal, the data from PM Surya Ghar portal will be fetched automatically and Consumers will be verified by ESCOMs portal through OTP sent to registered mobile number.

STAGE -02: FEASIBILITY

Responsibility: Sub division

The Category of Consumers for feasibility approval is as below;

• Category –I: Deemed Feasible Applications

• Category – II: Non-Deemed Applications

Category-I:

All DSPV applications with proposed capacity upto 150kW are considered deemed feasible and it is not required to provide feasibility for these applications.

Category-II:

- a) Feasibility shall be provided by sub divisions for all DSPV applications of capacity more than 150 kW.
- b) For providing the feasibility, the designated officer shall visit the proposed DSPV installation premises and verify technical details and shall issue feasibility report.
- c) The procedure for providing feasibility is as below;
 - I. The Sub Division office has to login to the online portal using their login credentials.
 - II. The list of applications for which feasibility is to be provided will be displayed.
 - III. Select one application at a time, open the feasibility tab and enter the required details.
 - IV. After entry of required data in the portal, Feasibility report will be generated automatically.
 - V. Download the feasibility report, sign it and upload it.
- d) The technical feasibility shall be provided in accordance with the following;
 - i. Every DSPV plant of less than 150 kW capacity shall be connected only to the existing distribution transformer through which the eligible

consumers are being supplied electricity. In such cases, the total capacity of the existing and proposed DSPV plants on that distribution transformer shall not exceed 80% of the rated capacity. This applicable only for LT installations.

Note: If a LT consumer requests for installation of solar rooftop plant of capacity more than 150 kW, the consumer shall convert to HT system i.e., the billing meter shall be HT meter with metering cubicle and solar generation meter will be 3 phase LT CT Operated meter (For net meter arrangement only).

ii. Every DSPV plant of more than 150 kW shall be connected only to the existing 11 kV distribution system. In such cases, the total capacity of the existing and proposed DSPV plants shall be limited so that line current does not exceed 80 % of the rated current capacity of the line. This applicable only for HT installations

Note: If a HT consumer requests for installation of solar rooftop plant of capacity more than 150 kW, the billing meter shall be bi-directional HT meter and solar generation meter will be 3 phase LT CT Operated meter (For net meter arrangement only).

- **iii.** If the application is not technically feasible, the SDO shall cancel the Application and intimate the same to the Applicant.
- e) For HT installations, if the existing metering system is 3 phase 3 wire, it shall be converted to 3 phase 4 wire.
- f) Metering cubicle replacement and meter replacement to be indicated in feasibility report. It shall form a part of feasibility report. The existing meter shall be checked and suitable meter change shall be recorded in feasibility report in accordance with following table;

Table No.8

SI. No	Sanctioned Load	Smart meter (Billing Meter)	Solar Rooftd Plant Capac	· _	Inverter Type
1	1kW to 34kW	1 Phase or 3 phase	1kWp 34kWp	o 1 Phase or 3 phase	1 Phase or 3 phase
2	More than 34 kW up to 50 Kwp	3 phase CT PT Operat ed meter	More that	n 3 phase LT CT Operated meter	3 phase

For More than 50kWp:

Table No.9

SI. No	Sanctioned Load	Bi-directional Meter (Billing Meter)	Solar Rooftop Plant Capacity	Uni-directional Meter (Solar Generation Meter)	Inverter Type
1	More than 50 kW & upto 150 kW	3 phase LT CT Operated meter	More than 50 kWp & upto 150 kWp	3 phase LT CT Operated meter	3 phase
2	More than 150kW	3 phase CT PT Operated HT meter	More than 150 kWp	3 phase LT CT Operated meter	3 phase

<u>STAGE -03 – EXECUTION OF POWER PURCHASE AGREEMENT (PPA)</u>

Responsibility: Consumer & & O&M AEE /EE

The execution of PPA is not applicable for LT Domestic Consumers upto 150kW and the PPA step has been waived off in the online portal.

The Power Purchase Agreement has to be executed in either of the following ways;

- a) Online PPA:1kW to 150kW SRTPV capacities
- b) Offline PPA:>150kW SRTPV Capacities

a) Online PPA:

The online PPA shall be executed by the Consumer for all the DSPV applications which are considered as deemed feasible i.e. for all applications upto 150kW capacity.

The online PPA shall be executed in online mode by the Consumer. The PPA execution is completed only after both the parties i.e. the consumer & concerned ESCOM official have esigned the PPA through online mode.

Note: In case of online PPAs if the consumer has generated the esign link but has not executed within 07 days, the link will be expired and has to approach the ESCOM for re-enabling the link.

The concerned ESCOM officer has to esign the PPA strictly following the timelines

Verification of esign on behalf of consumer:

- a) Once the PPAs are esigned by the consumers, the BESCOM officer can double click on the signature box of the consumer which is displayed on the left side at the last page of the PPA.
- b) After double clicking a dialog box is opened which contains the name of the person who has actually signed the PPA.
- c) If the name displayed matches with the name of the RR No. holder or authorized signatory in case of Company or Organization, such PPAs can be esigned by the concerned AEE of C,O&M sub-division BESCOM and the DSPV application can be processed.
- d) If the name displayed does not matches with the name of the RR No. holder, such PPAs are liable to be rejected by the concerned AEE of C,O&M sub-division BESCOM.

e) In case of joint RR No. holder, if any one RR No. holder esigns the PPA, such PPAs can be accepted and an undertaking/NOC can be obtained from the other RR No. holders of the joint account or the other RR No. holder signature can be obtained manually.

b) Offline PPA:

- The offline PPAs shall be executed for DSPV applications of more than 150kW capacity. The PPAs are to be executed on Rs. 500 value non-judicial stamp paper in Commission approved format.
- The Consumer shall co-ordinate with designated ESCOM officer for PPA execution.
- The PPAs shall be uploaded in the online DSPV portal by designated officers for auto generation of work approval letter.

The Power Purchase Agreement (PPA) Execution Authorities on behalf of ESCOMs for DSPV installations are as tabulated below;

SI. No.	DSPV plant Capacity	PPA Execution Authority		
1	From 1kWp to 500kWp	Assistant Executive Engineer(Ele) , O & M Sub-Division		
2	Above 500kWp	Executive Engineer(Ele), O & M		

Table No.10

PPA Approval Authority:

- I. For capacities upto 500kWp, Assistant Executive Engineer(Ele) of O & M Sub-Division is the PPA approval authority.
- II. For capacities above 500kWp and upto & inclusive of 1000kWp, PPAs shall be approved by Corporate Office of the respective ESCOMs.
- III. The approval of the KERC shall be obtained for all PPAs of DSPV applications with capacities of above 1000kW.
- **IV.** In case of any deviation from the standard format of PPA, the approval for the same shall be obtained from KFRC.
- **V.** The documents to be submitted alongwith draft PPA for Corporate Office or KERC approval are as follows:
 - Copy of Online DSPV Application & Technical Feasibility Report
 - Latest Electricity Bill

- DPR clearly specifying the nos. of the panels and capacity of each panel to be installed by the consumer
- Solar Installation plan
- Landownership Document: Sale Deed/Lease Deed whichever is applicable
- In case of KERC approval, Demand Draft drawn in favor of The Secretary KERC for an amount of Rs.7500 per MW or part thereof contracted capacity. For eg if the proposed solar capacity is 1500kW, the DD of amount Rs.15000/- shall be submitted.
- Certification by the ESCOM whether the consumer is under open access or not.

PPAs for additional capacity installation

If a Consumer requests for installation of additional solar capacity, the present PPA shall be canceled and new PPA shall be executed for 25 years with PPA rate being 90% of PPA tariff or present tariff, whichever is lower,

Note:

- i. In case of additional DSPV capacity, for deciding the PPA authority, the total of already commissioned and proposed plant capacity shall be considered.
- ii. If the tariff rate of the DSPV plant has been reduced due to one or the other reasons such as delay in commissioning, change in sanctioned load or additional solar capacity, there shall be no subsequent reduction in the tariff rate.

Intimation for change of HT Metering Cubicle:

In case, if the change of HT Metering Cubicle is required, the sub division officers shall prepare estimate and intimate to the Consumer the supervision charges to be paid, within 07 days of PPA execution.

STAGE -04 – WORK APPROVAL INTIMATION

Responsibility: Sub division

- a. Work approval intimation shall be auto generated and emailed to registered email after online execution of PPA/Uploading of PPA document in case of off-line PPA.
- b. The work approval intimation shall also include intimation for change of meter and if required change of HT metering cubicle.

Note: For LT Domestic Consumers upto 150kW, the work approval will be autogenerated after the registration of the application.

STAGE -05 – WORK COMPLETION INTIMATION

Responsibility: Consumer

- a) The Consumer shall upload the Work Completion details in online DSPV portal for enabling the sub division offices to process the application for synchronization.
- b) The capacity tolerance allowed in the PV panel capacity is as below:

Table No.11

DSPV capacity & Sanctioned Load	DC Capacity Tolerance		
lincluding 10 kW	Up to 10% tolerance for DC capacity is allowed. No SPPA required.	For more than 10% variation, the sanctioned load has to increased before commissioning.	
Non-Domestic above 10 kW	Any variation between solar proposed and actual capacity, the SPPA for capacity variation to be executed		

- c) The concerned ESCOM authority will be intimated through the SMS to the official mobile number for synchronization of the said DSPV plant.
- d) In case of any observation found by ESCOM official while inspection, the remark shall be entered and work completion report to be returned back to the consumer through the portal.

Note:

In case of subsidy applications, the vendor has to upload the work completion details in MNRE portal and the same details will be autofetched to the BESCOM portal. The same details should be verified by the consumer and submit for synchronization.

STAGE -06 - MT INSPECTION REPORT(>17.5kW)

Responsibility: MT AEE (>34kW & <500kW)

MT EE (>500kW).

<u>Note:</u> The synchronization page for solar proposed capacity above 17.5kW shall be enabled only after the MT inspection report has been updated by the concerned MT officer.

STAGE -07 - SYNCHRONIZATION/Spot SYNCHRONIZATION:

Responsibility: Consumer & ESCOM O&M AEE/EE and MT staff.

• The DSPV plant Commissioning & Synchronizing Authority:

Table No.12

SI. No.	DSPV Plant Capacities	ESCOM Officers authorized for synchronization
1	1kW upto 35kW with smart meter	Assistant Executive Engineer(Ele), O & M Sub-Division and MT staff not required.
2	Above 35kW upto 50kWp with smart meter	Assistant Executive Engineer(Ele), O & M Sub-Division in co-ordination with Meter Testing (MT) staff.
3	Above 50kW upto 500kWp static meter	Assistant Executive Engineer(Ele) O & M Sub-Division in Co-ordination with Meter Testing (MT) staff
4	Above 500kWp static meter	Executive Engineer(Ele) O & M Division in Co-ordination with Meter Testing (MT) staff

The synchronization certificate shall be generated by Division/Sub Division Officers in the online portal as per DSM Section, BESCOM circular dated:05.06.2025

Note:

- i. For subsidy applications, after synchronization in ESCOM portal, the AEE of C,O&M sub-division should mandatorily complete Inspection Approval in the MNRE portal as per the MNRE guidelines.
- ii. The application can either be submitted for subsidy release, retuned for correction or reject the application.

24

III. ACCOUNTING & BILLING

Responsibility: AEE, AE (Technical) & AAO of the sub division

- a. Login credentials have been created for the AOs & AAOs wherein the concerned officer can login and obtain the required documents such as PPA, synchronization certificate etc required for billing.
- b. The AAO of the sub division shall ensure that all the DSPV installations synchronized in a calendar month are read and billed in the next calendar month without fail by verifying the details in online portal.
- c. **No hard copies of the documents,** except for PPA in case of offline PPA, shall be collected from Consumer / Installer. If required, documents shall be downloaded by AE(T)/AAO using their login credentials.

Dated:

IV. TIMELINES:

For 1KW to 150KW:

Activity	Responsibility	Timeline
Submission of Application which includes PPA(PPA not applicable for LT Domestic consumers up to 150kw). No separate PPA is required to be executed. The submission of application is deemed to be the approval to commence the work.		Zero Date
Online uploading of work Completion Report by the consumer.	Consumer	150(one hundred and fifty) days from the date of uploading/submission of application.
Inspection by ESCOM officials for commission the project, after receipt of work completion report from the consumer.	Distribution Licensee	Within 5(five) working days from the receipt of work completion report, after ensuring satisfactory completion of work. If the plant is not commissioned within 5days from the date of work completion report, the concerned officer shall be liable to pay penalty of Rs.1000 per day, till the date of commissioning, to the applicant. After five days of work completion, in case the plant is not commissioned, the consumer are entitled to deemed generation benefit.
Commissioning of Distributed Solar PV System in case work completion is delayed by the consumer	Consumer/Dist ribution Licensee	In Case of delay of more than six months, the tariff payable will be as per the terms of PPA/application.
Billing process	Distribution Licensee	30 Days from the date of commissioning of the solar plant.
Activity	Responsibility	Timeline

For above 150KW up to Sanctioned load:

Submission of Application Online.	Consumer	Zero Date.
Acknowledgement of Application by distribution licensee ESCOM.	ESCOM	Within 3(three) working days from zero date.
Site verification/ technical Feasibility &Issuance of Letter of Approval/Rejection of application	ESCOM	Within 10(ten) working days from the date of acknowledging the application.
Execution of PPA (including countersignature by the controlling officer up to and inclusive of 1000kw DSPV projects).	ESCOM & CONSUMER	Within 5(five) working days from the date of issuance of Letter of Approval.
Submission for Approval of the PPA to the ESCOM, less than 1000KW And to Commission ,for more than 1000Kw.	ESCOM	Within 07(seven) working days from the date of execution of PPA.
Submission of Works Completion Report by the Consumer.	Consumer	150(one hundred and fifty) days from the date of execution of PPA
Inspection by ESCOM official for commissioning the project, after receipt of work completion report from the consumer	ESCOM	Within 5(Five) working days from the receipt of work completion report after ensuring satisfactory completion of work If the plant is not commissioned within 5 days from the date of work completion report, the concerned officer shall be liable to pay penalty of Rs.1000 per day, till the date of commissioning, to the applicant. After five days of work completion, in case the plant is not commissioned the consumer are entitled to deemed generation benefit.
Commissioning of Distributed solar PV system in case of delay in submission of work completion report by the consumer.	Consumer/ES COM	In case of delay of more than 6 months, the tariff payable will be as per the terms of PPA.
Billing Process	ESCOM	30 days from the date of commissioning of the solar plant.

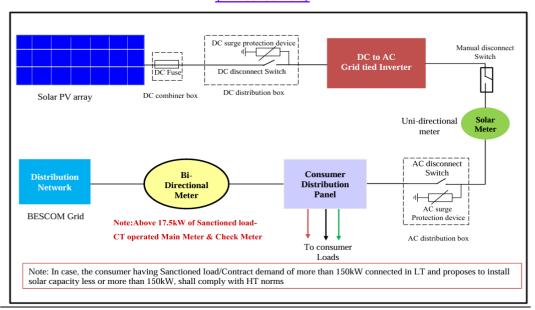
Dated:

Schematic Diagrams:

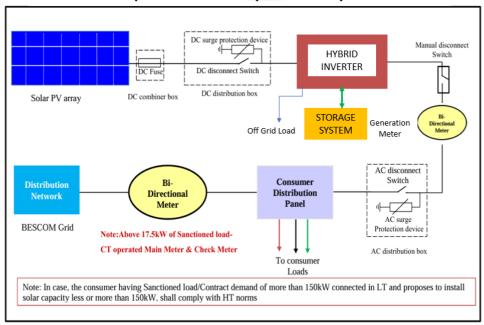
The Schematic Diagram for Net & Gross Metering arrangement is as below and same arrangement shall be ensured at the time of synchronization.

A. Net Metering Diagrams:

<u>Single Line Diagram of Rooftop Facility for Net Metering Interconnection</u>
(LT consumers)



Single Line Diagram of DSPV for HYBRID System (LT Consumers upto 150 kW)

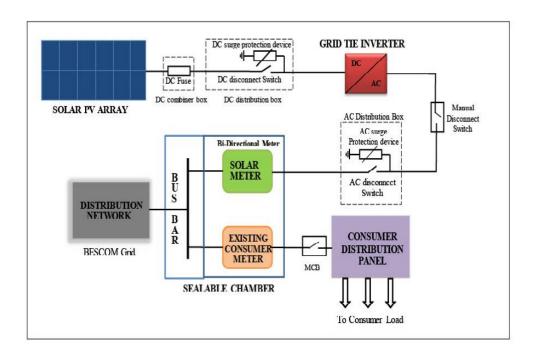


DC surge protection device Manual disconnect DC to AC Switch Grid tied Inverter DC disconnect Switch DC Fuse DC distribution box DC combiner box Solar PV array Uni-directional meter AC disconnect Consumer Switch Distribution HT Metering cubicle Distribution Panel Distribution Transformer BESCOM Grid Main Meter & Check Meter Protection device AC distribution box To consumer Loads Note: In case, the consumer having Sanctioned load/Contract demand of more than 150kW connected in LT and proposes to install solar capacity less or more than 150kW, shall comply with HT norms.

<u>Single Line Diagram of Rooftop Facility for Net Metering Interconnection</u>
(HT consumers)

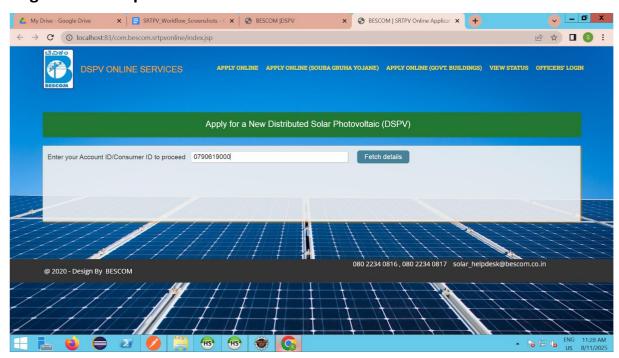
B. Gross Metering Arrangement:

Schematic Diagram of Rooftop Facility for Gross Metering Interconnection

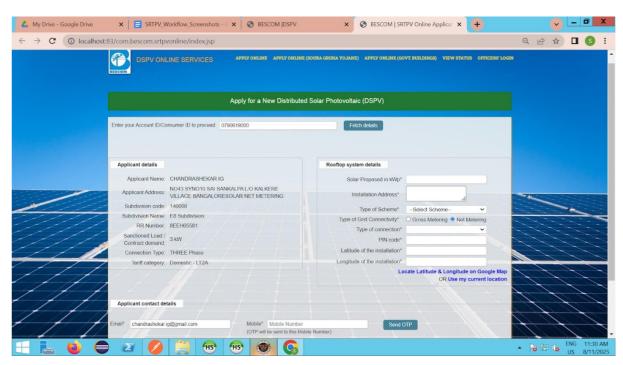


Domestic Consumer Simplified Workflow (Feasibility and PPA Waived Off)

Registration Step

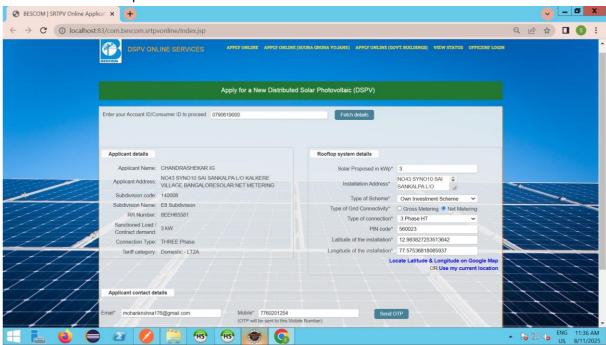


Details of the Consumer fetched from billing software:

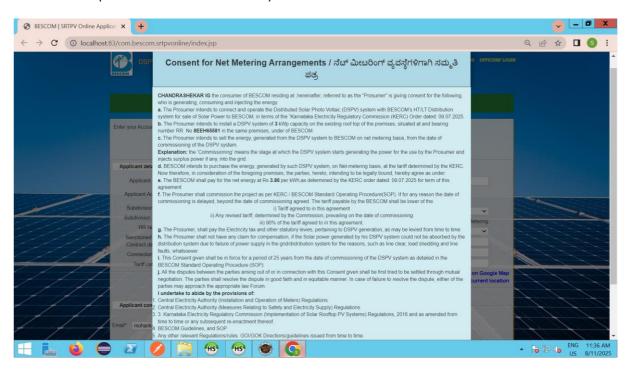


Dated:

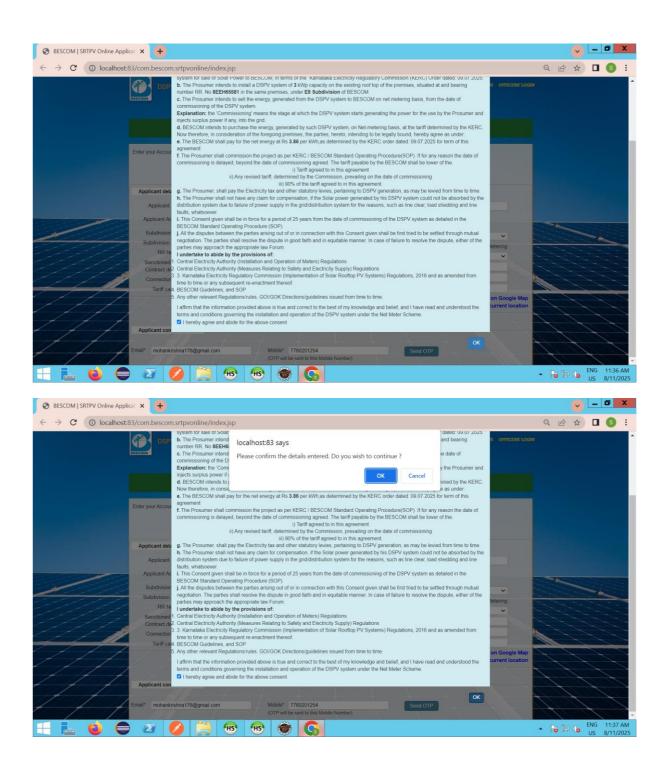
Enter the solar rooftop details:



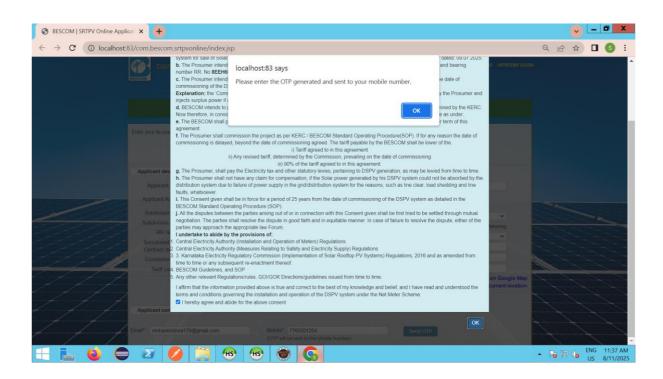
Consent Form(For LT Domestic Consumers):



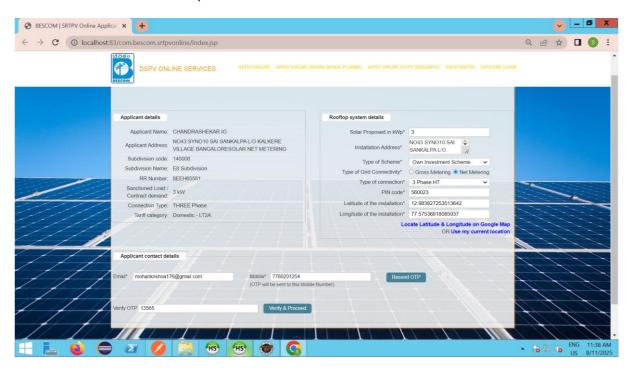
Dated:



Dated:

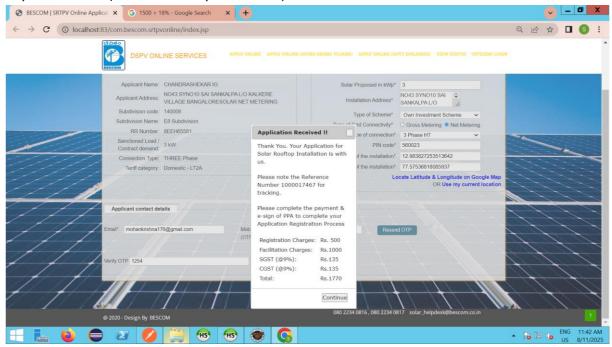


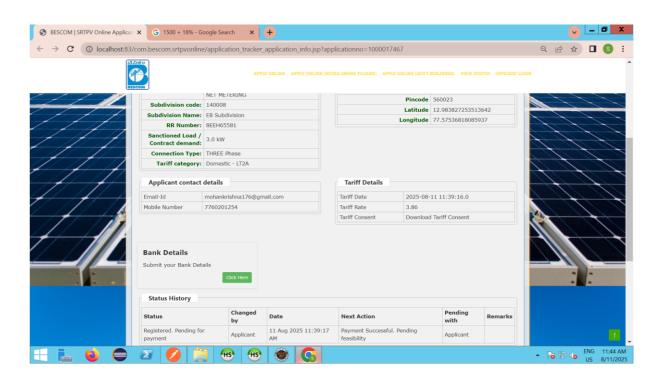
Verification of the consumer by OTP:



Dated:

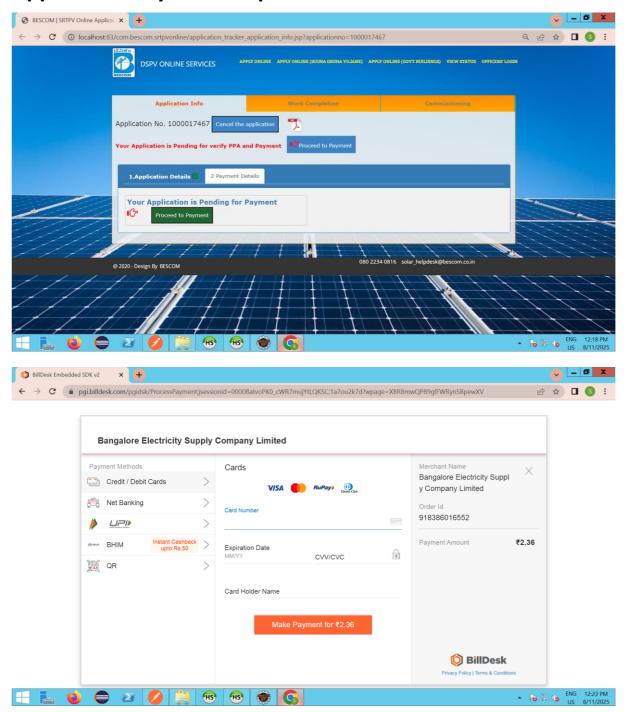
Payment of Fees (For Non-Subsidy Consumers)

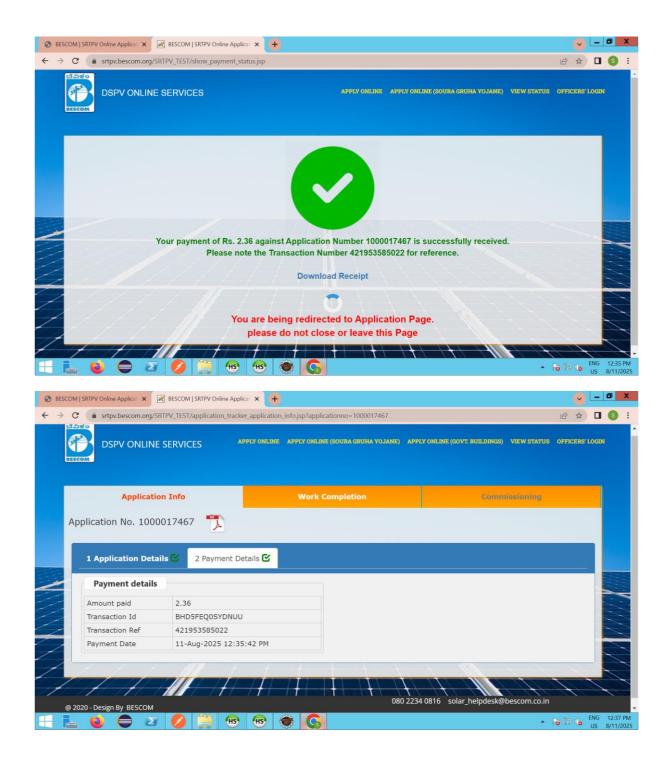


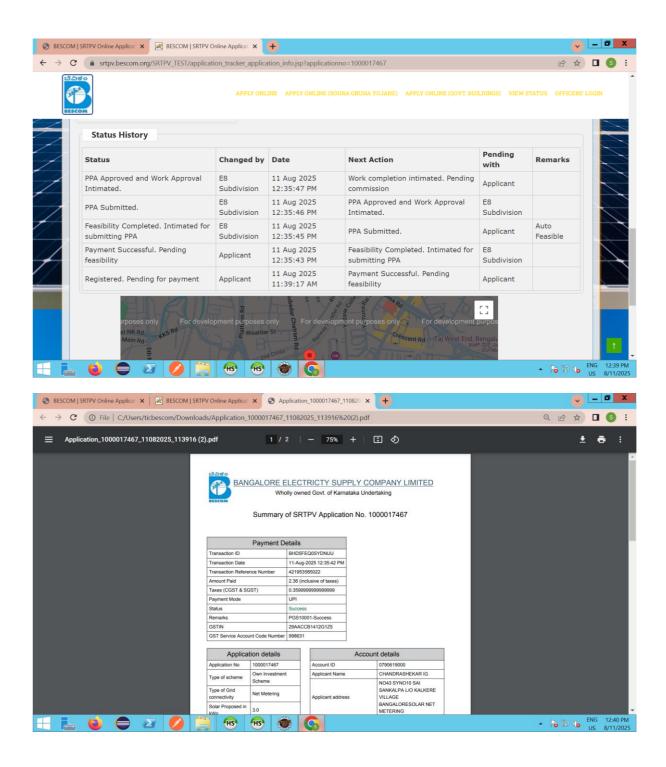


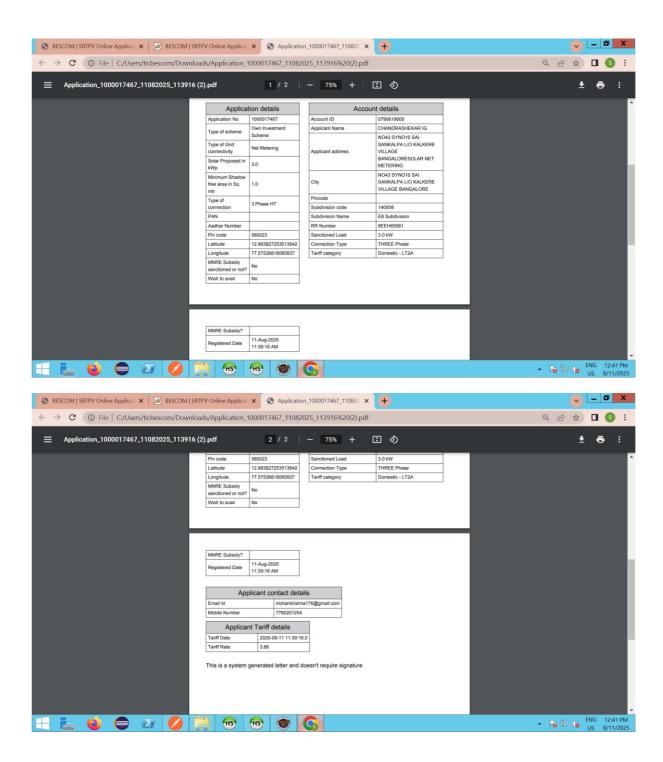
Dated:

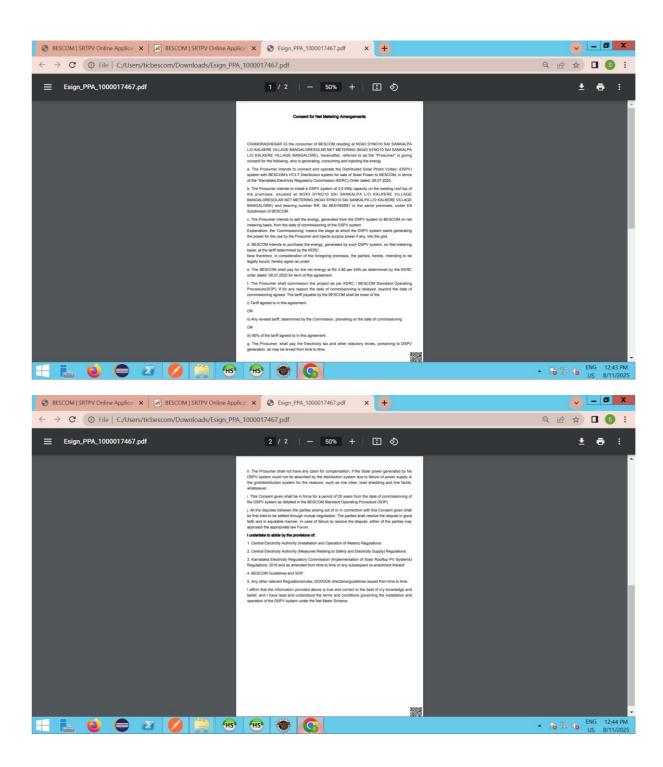
Application Payment Step



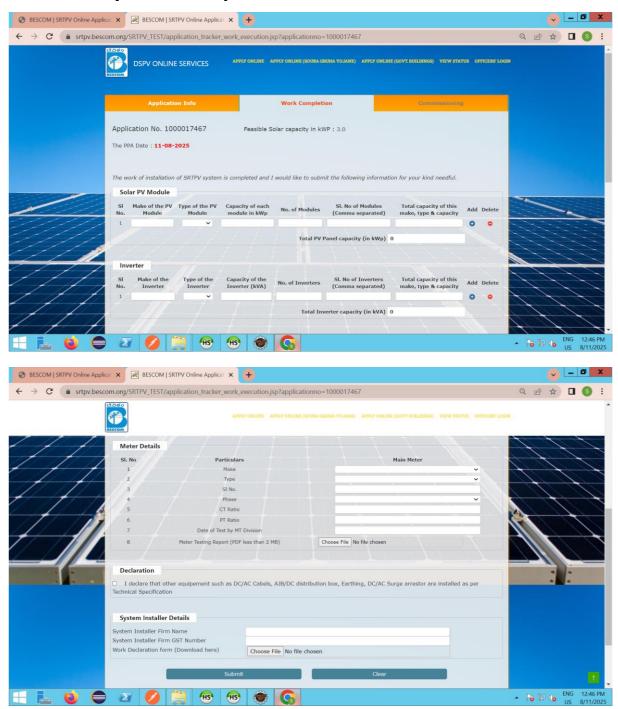


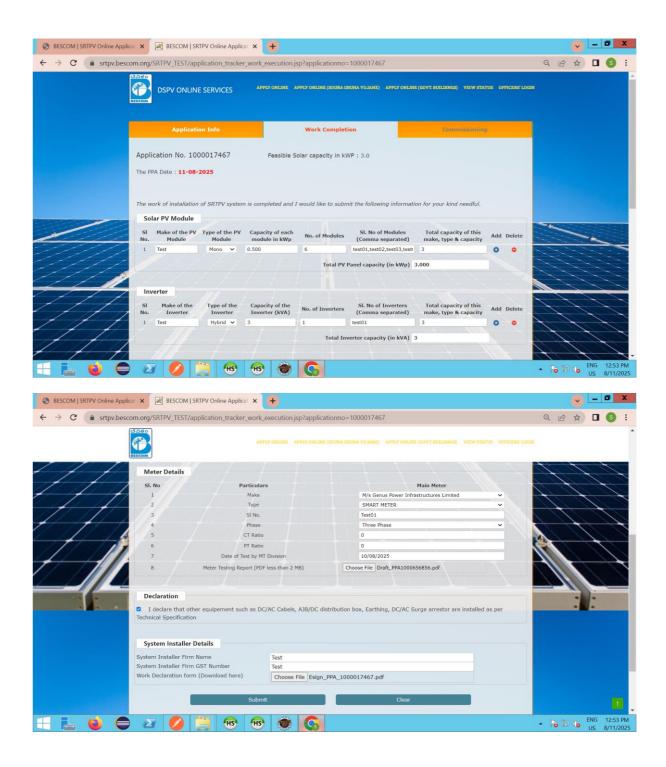


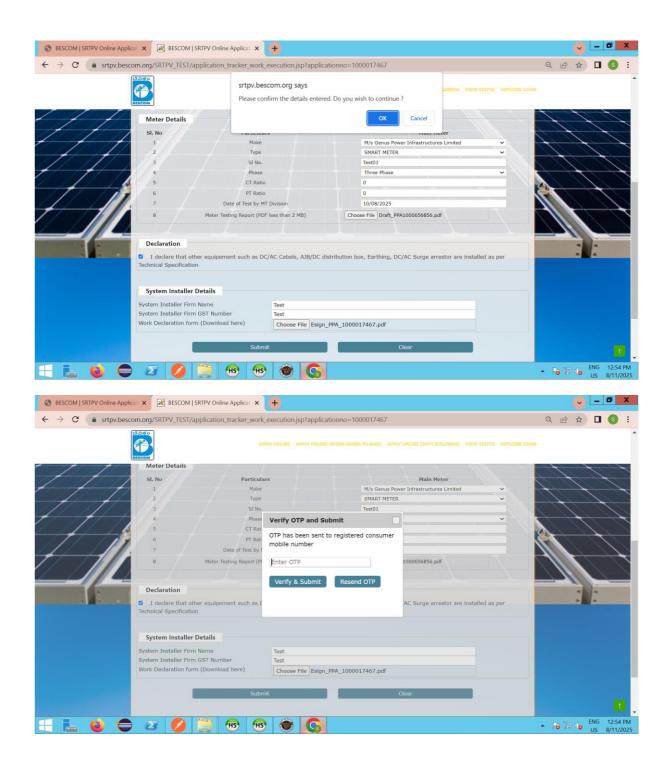


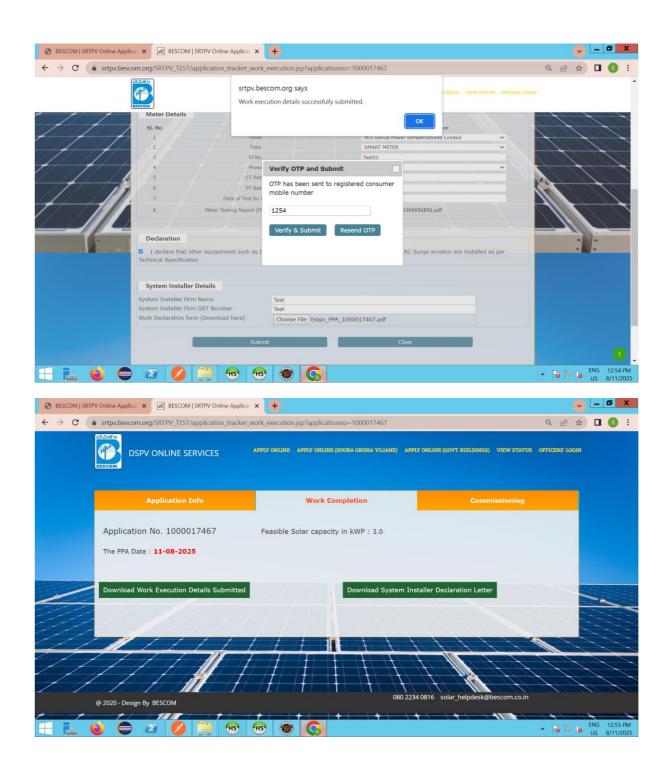


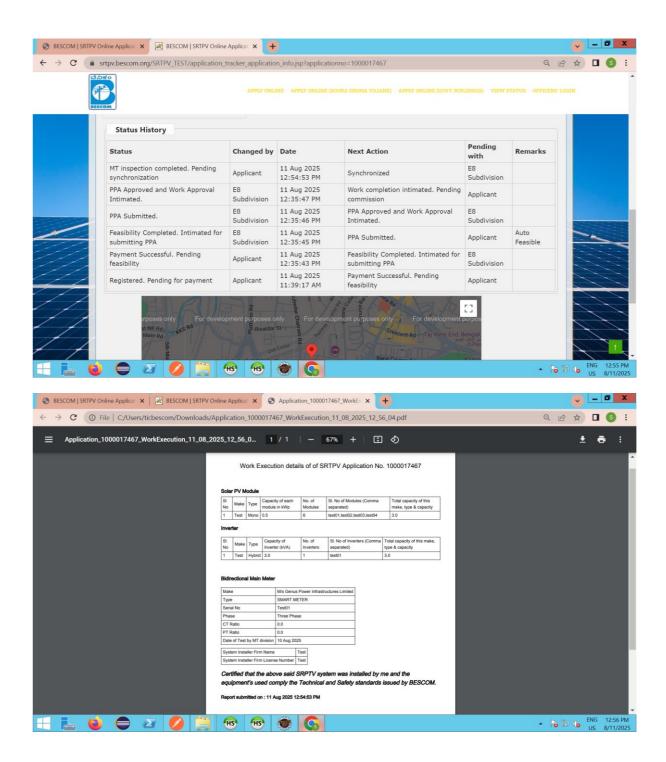
Work Completion Step



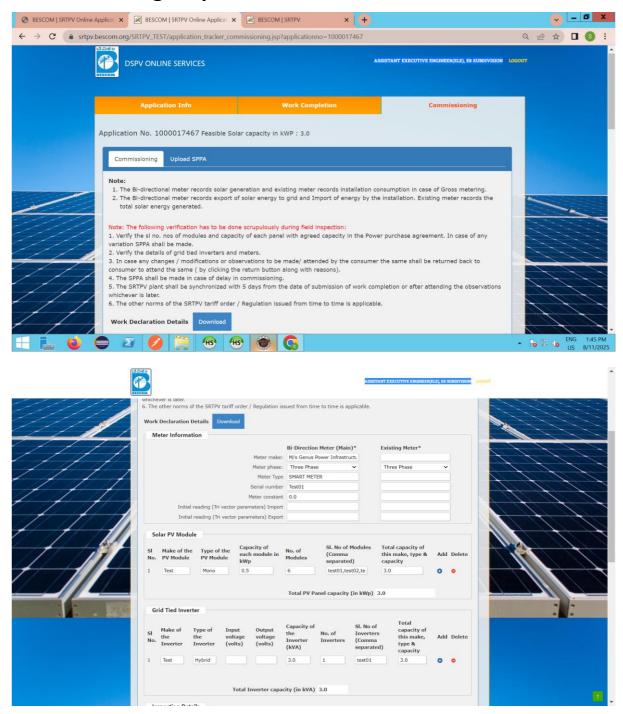


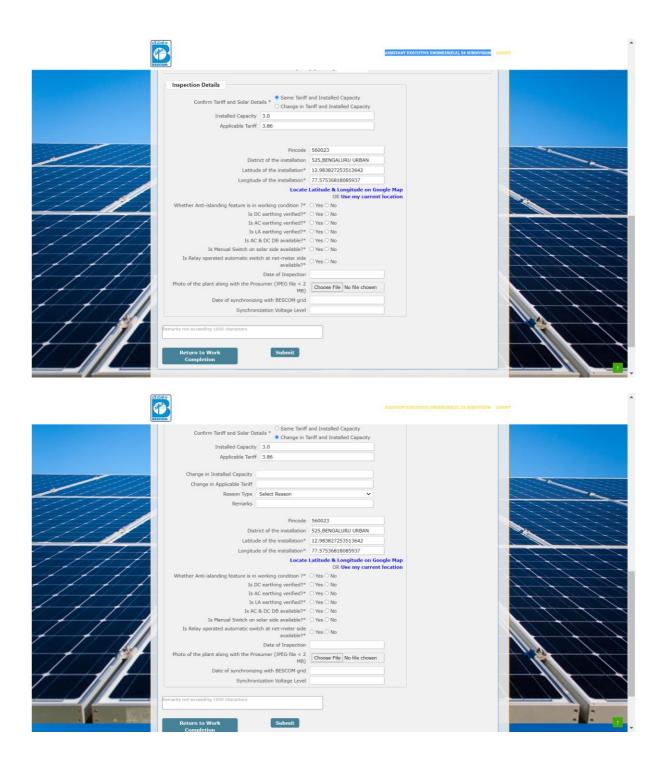


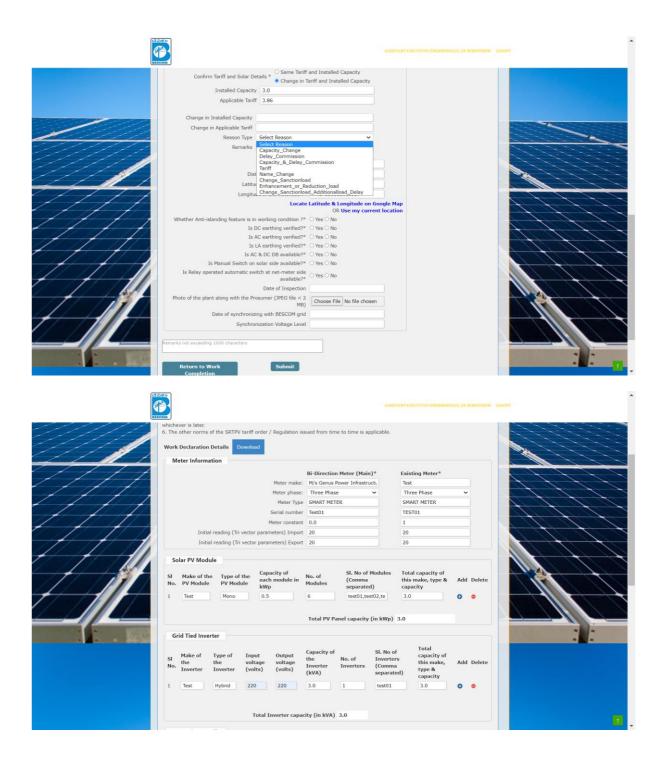


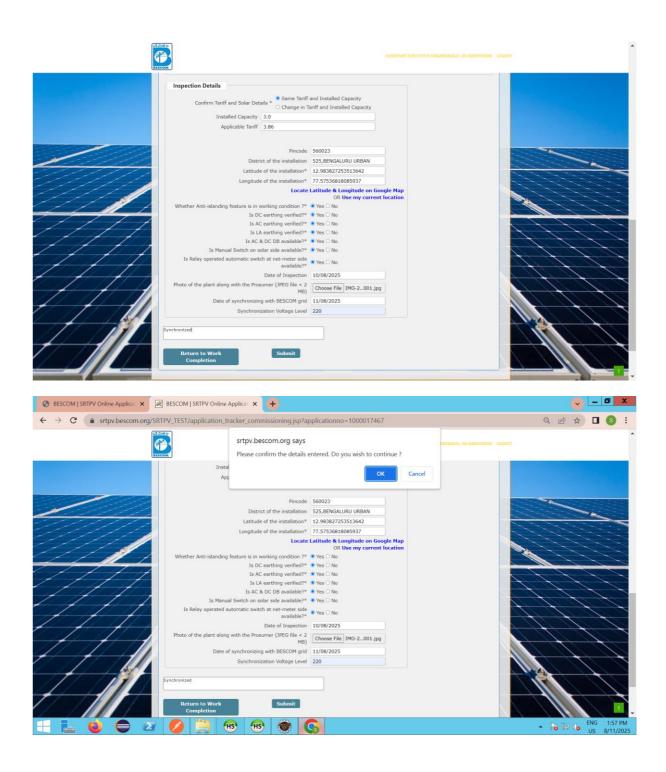


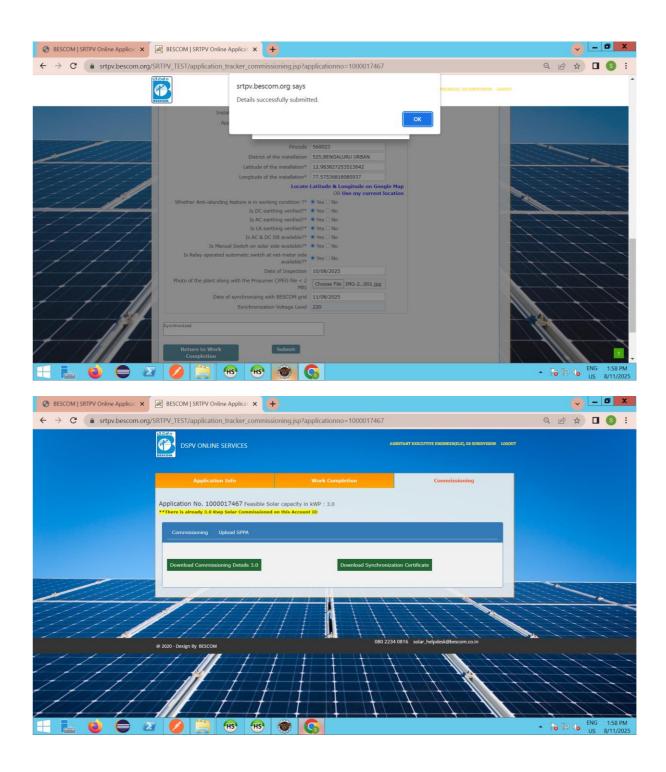
Commissioning Step

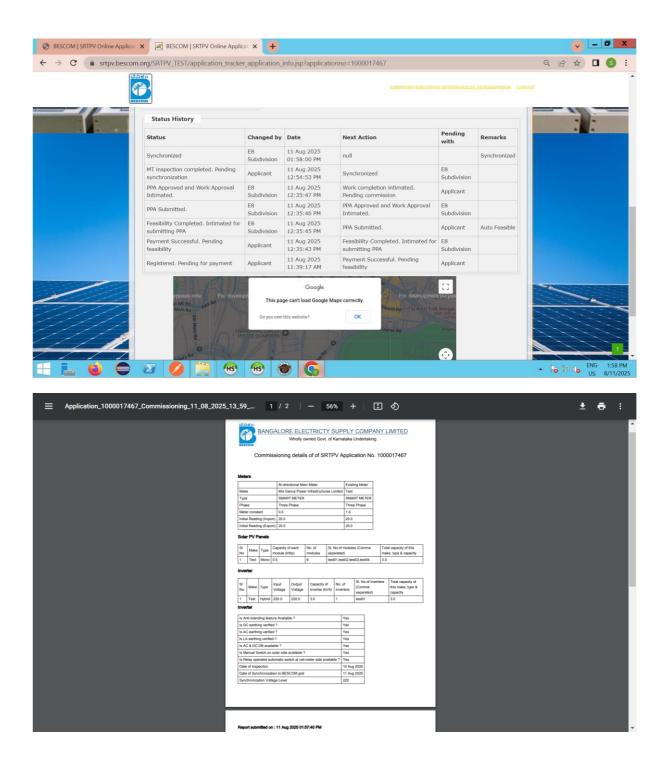


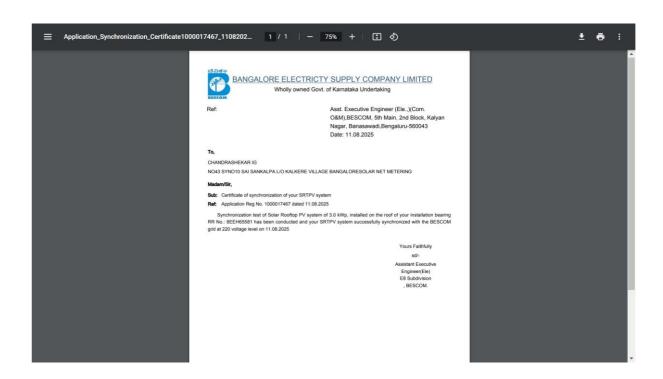






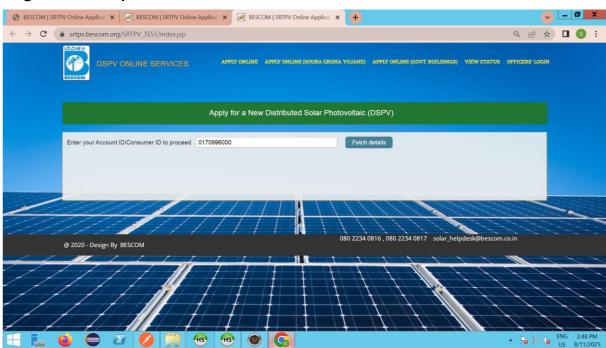


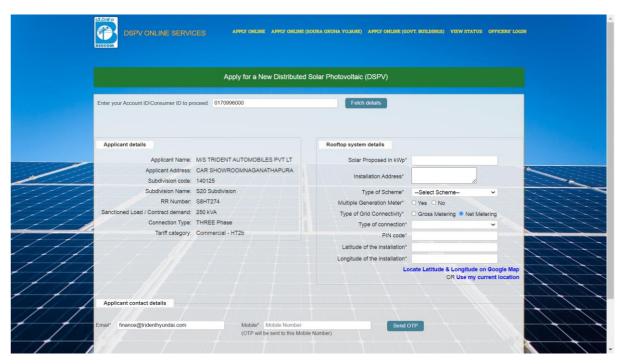


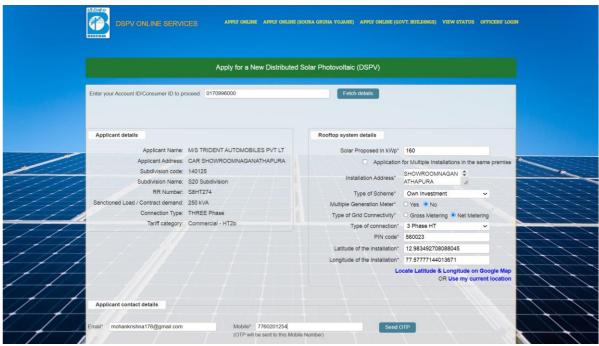


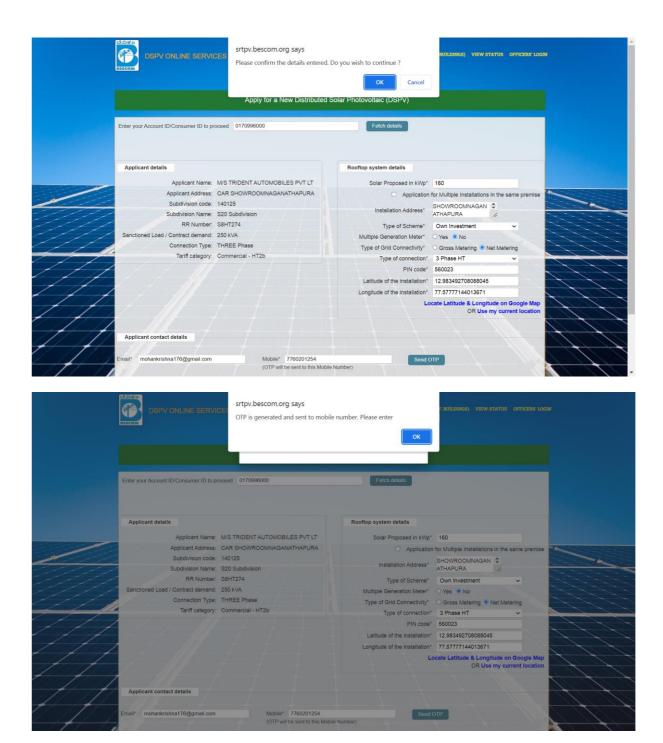
Above 150Kw Workflow

Registration Step

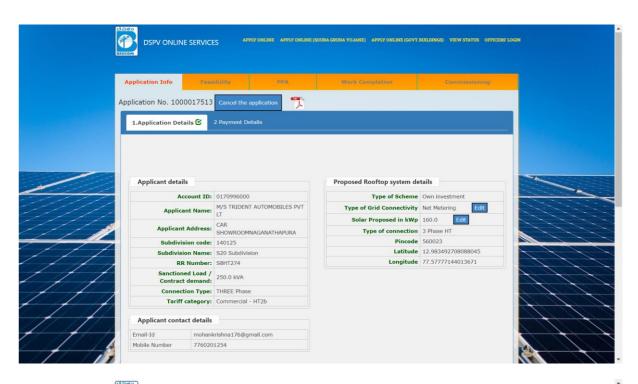


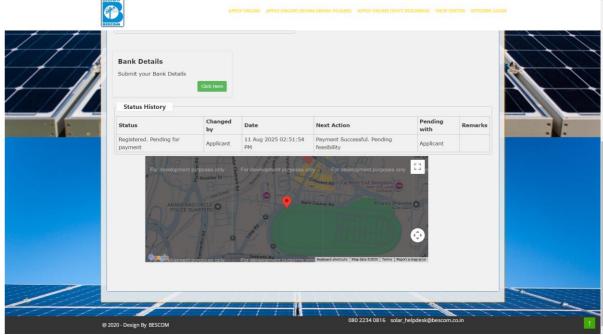




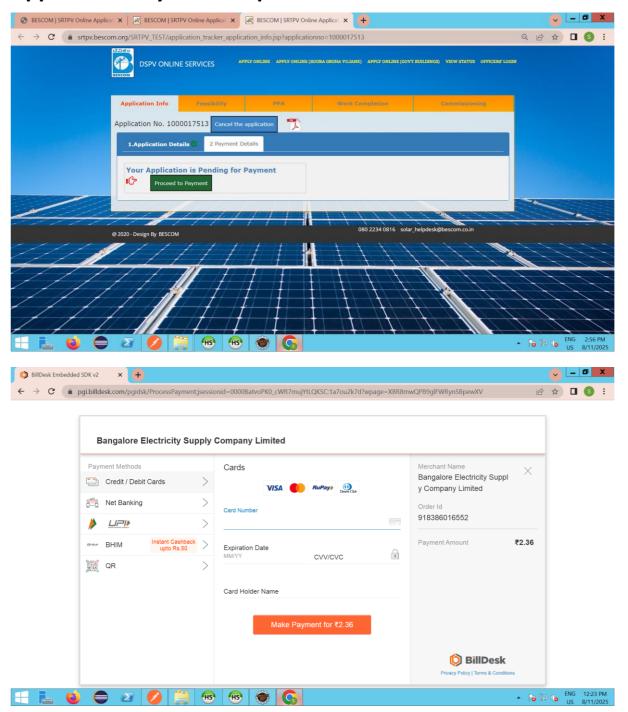


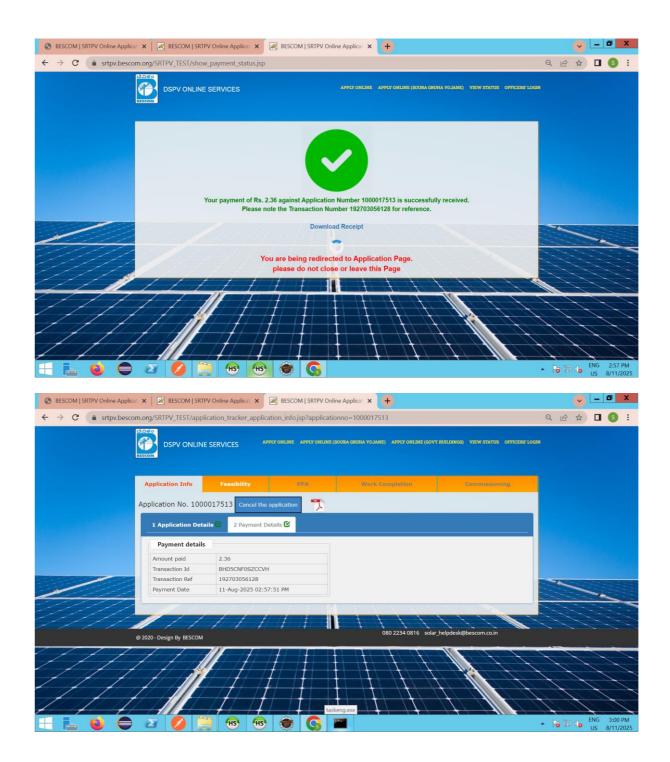


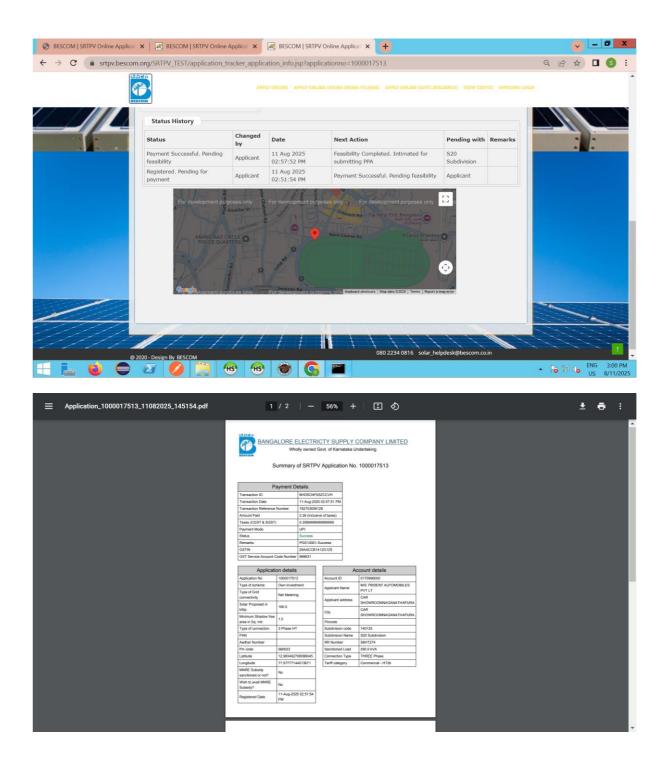


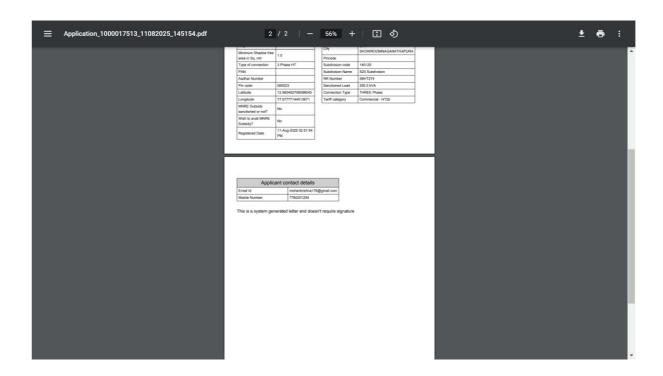


Application Payment Step

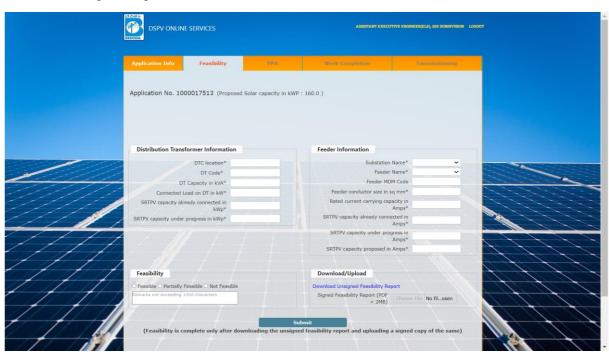


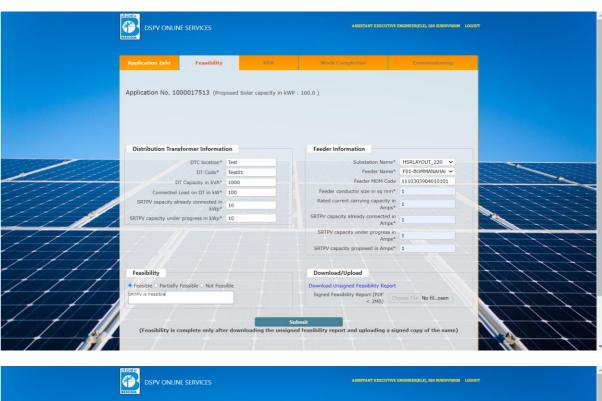


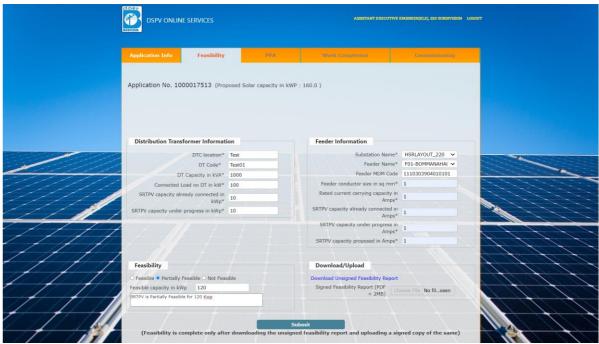


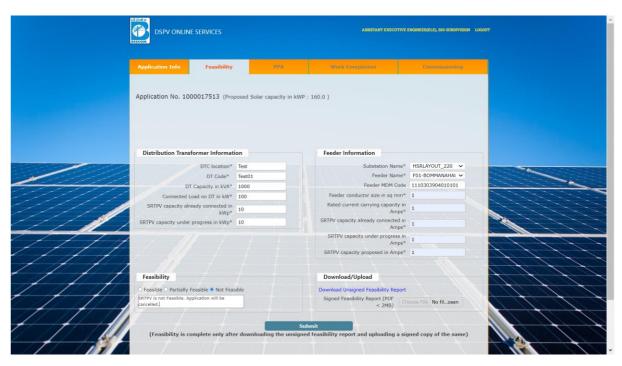


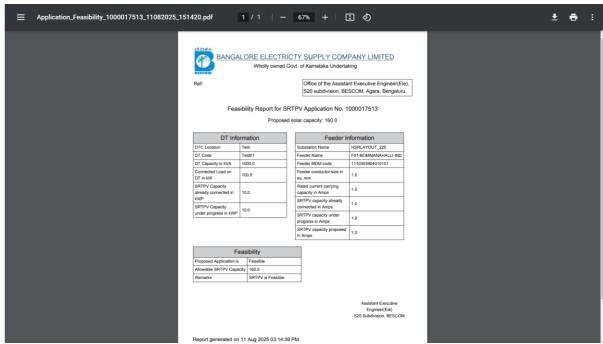
Feasibility Step

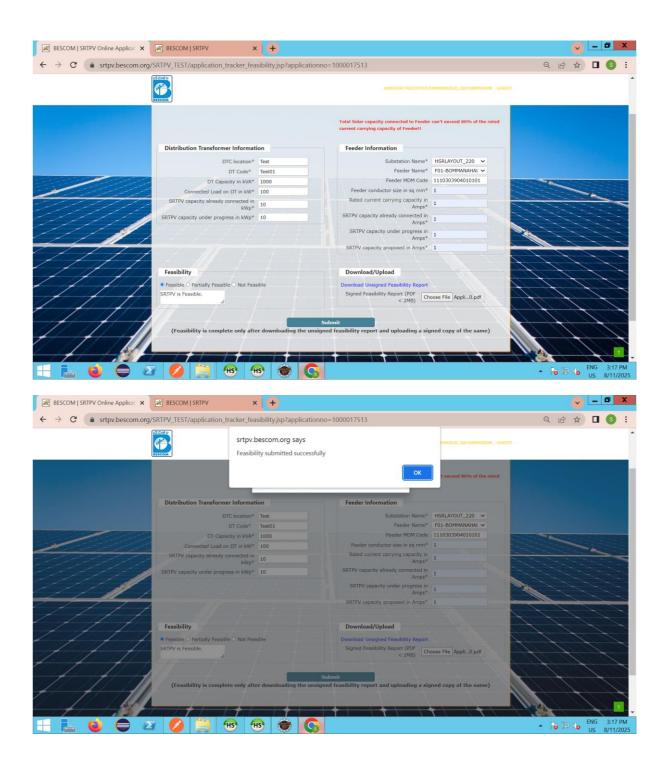


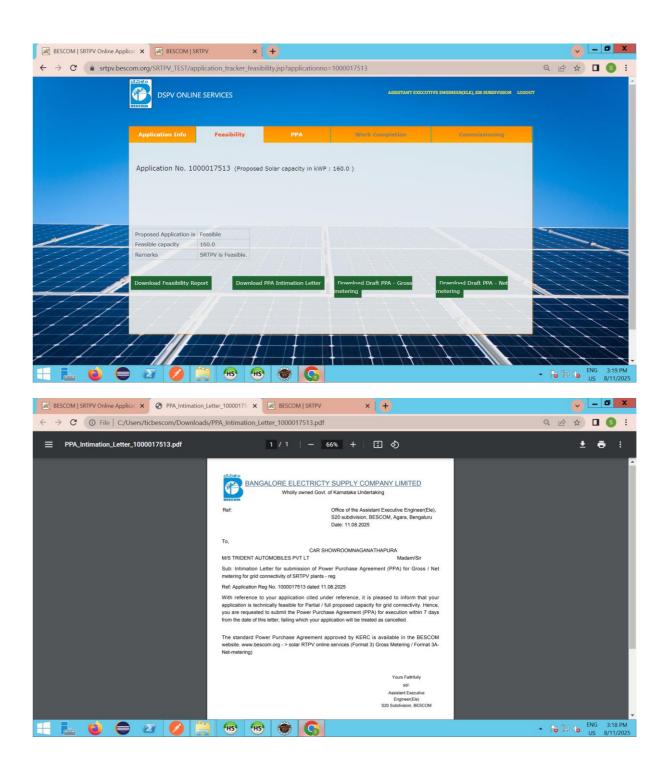


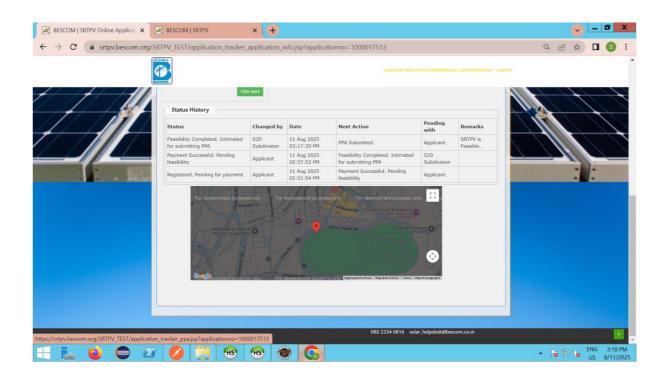




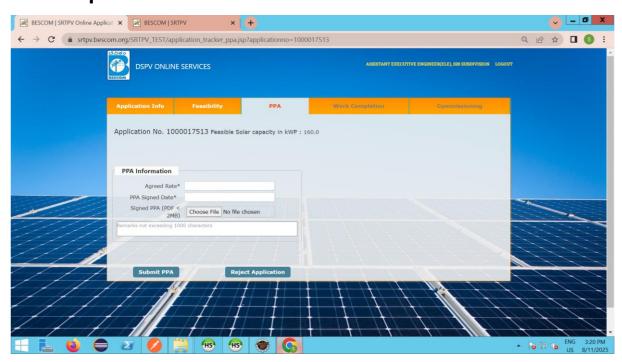


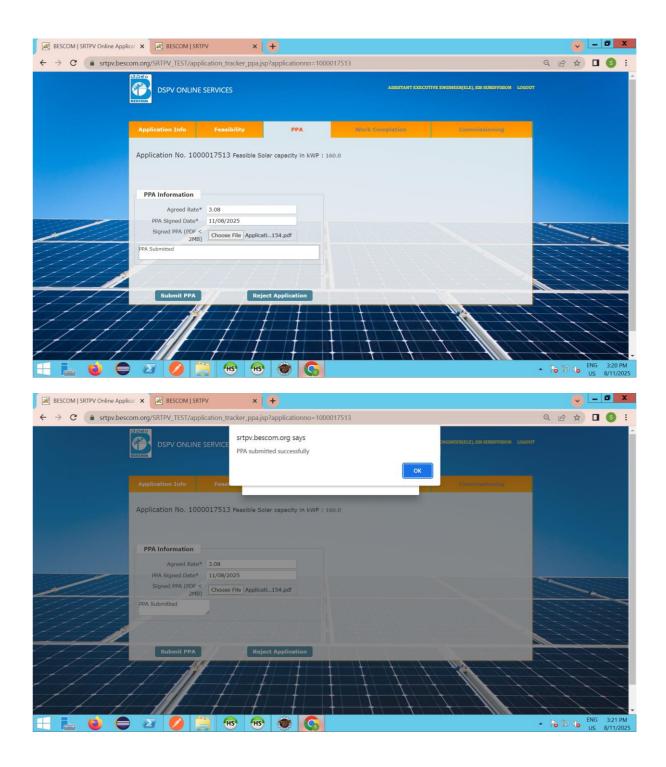


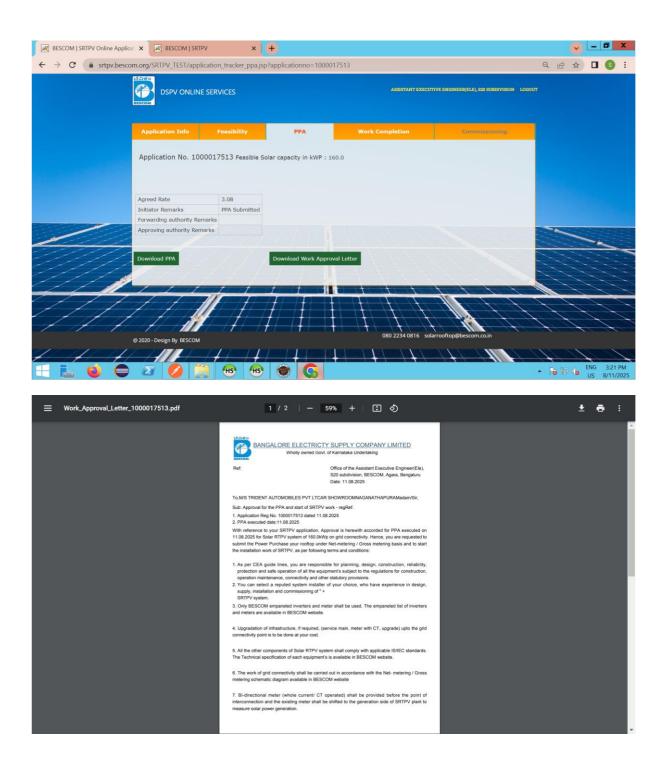


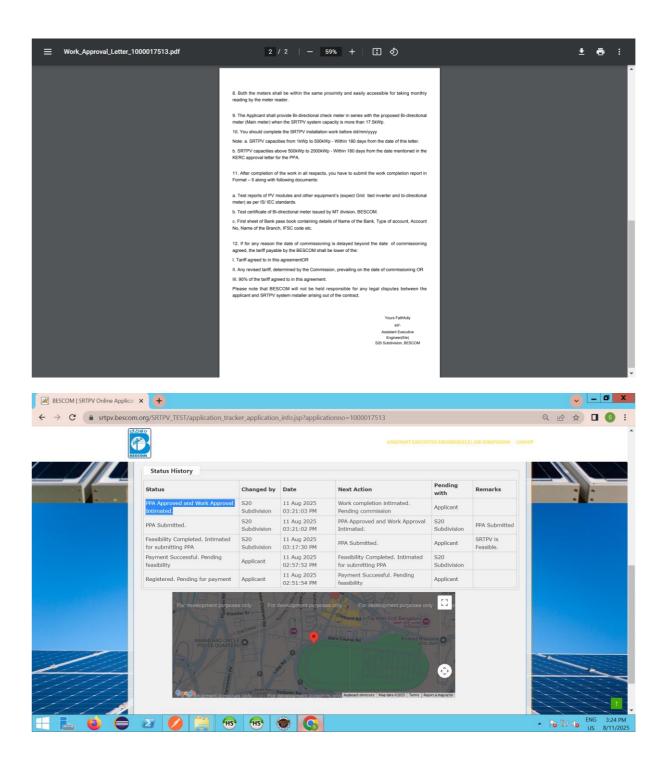


PPA Step



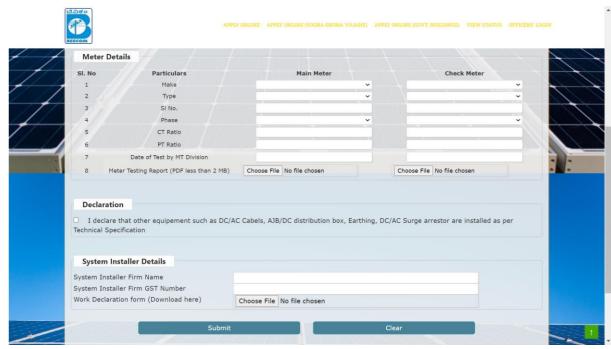




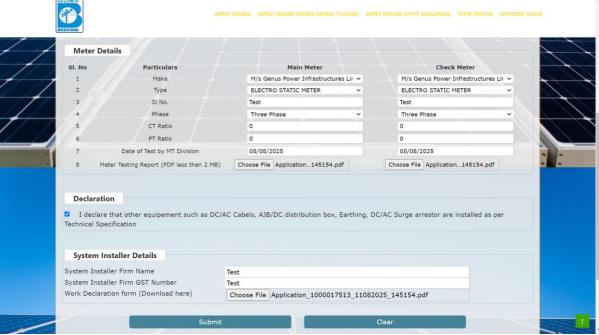


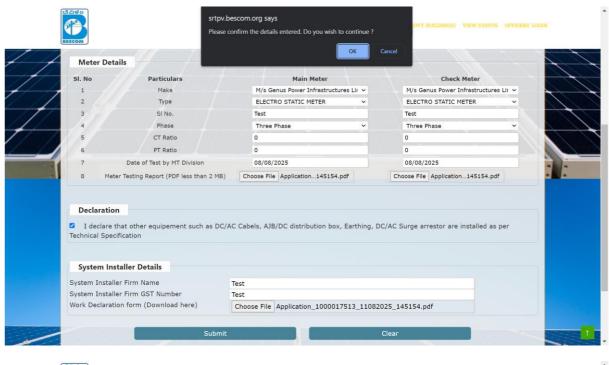
Work Completion Step

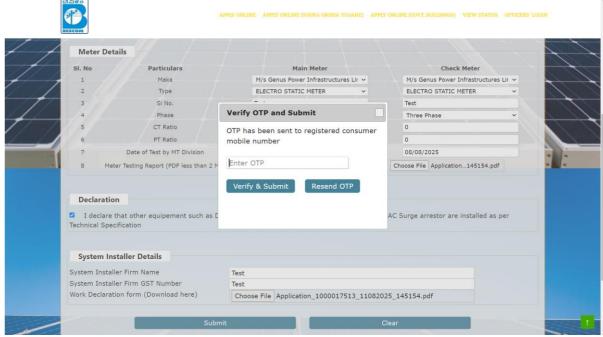


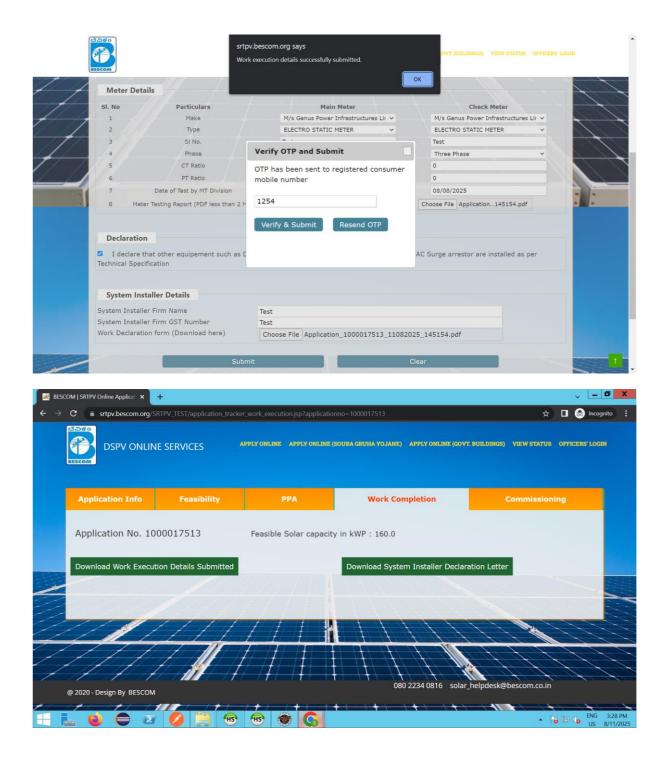


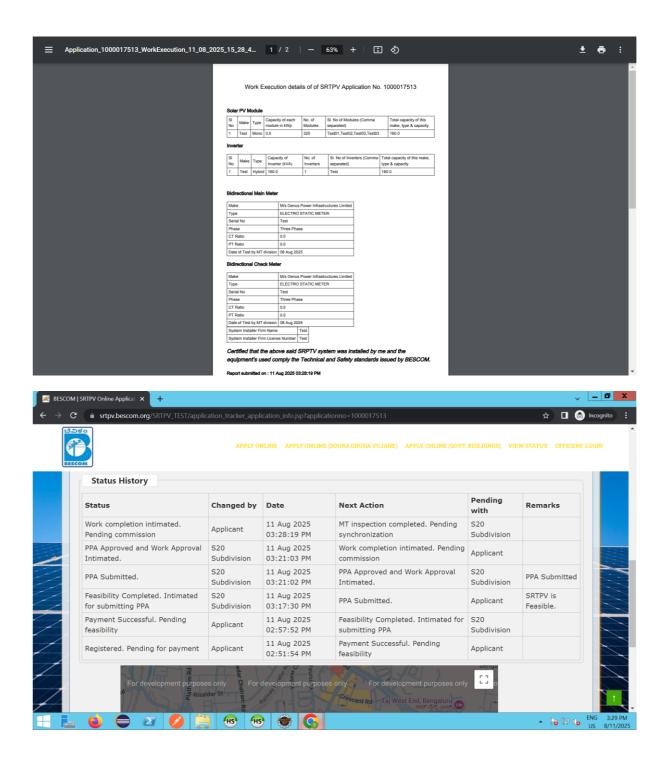




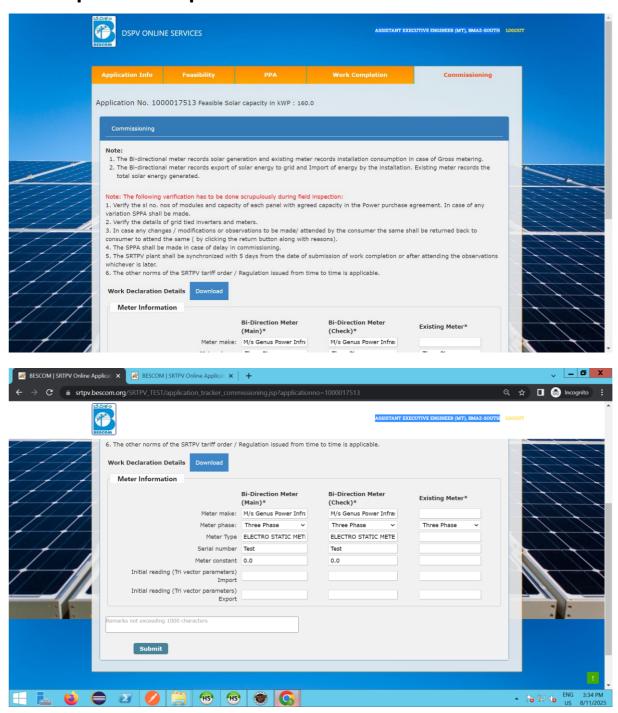


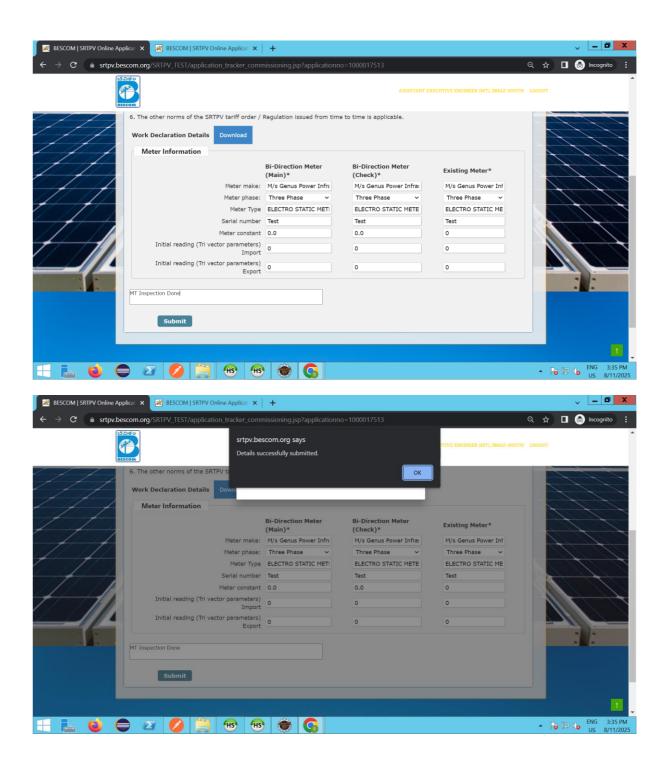


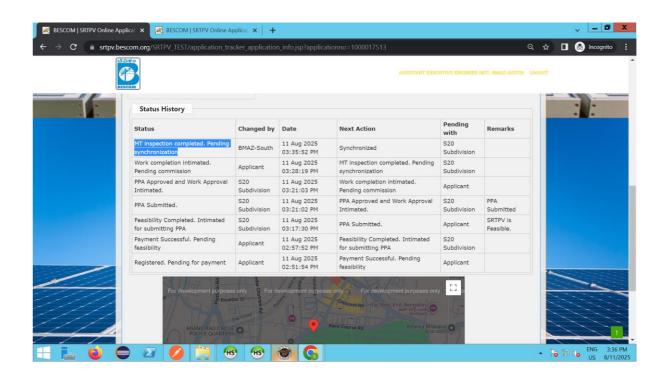




MT Inspection Step







Commission Step

