

# Bangalore Electricity Supply Company Limited

(A Govt. of Karnataka Undertaking)

(CIN No.: U04010KA2002SGC030438)



RFP No.:BESCOM/GM(DSM)/BC-51/KUSUM-C/2022-23/CALL-2

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## Request For Proposal (RFP) Document

for

Selection of Solar Power Generators (SPGs) on the basis of Build, Own & Operate (BOO), for Design, Survey, Supply, Installation, Testing, Commissioning, Operation & Maintenance of grid connected distributed solar power plants for solarization of selected Agri feeders at Sub-Station (SS) level in BESCOM jurisdiction covering 2,62,331 IP sets, its associated 11kV line to connect the plant with concerned SS and Remote Monitoring System (RMS) of solar power plants through RESCO mode, for 25 years under Component C-Feeder Level Solarization of PM-KUSUM scheme

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## LIST OF ABBREVIATIONS

AC	Alternating Current
Ag.	Agriculture
BOS	Balance-Of-System
CEA	Central Electricity Authority
CEIG	Chief Electrical Inspector of Government
CERC	Central Electricity Regulatory Commission
CFA	Central Financial Assistance
COD	Commercial Operation Date
CPV	Concentrator Photo Voltaics
CT	Current Transformer
DC	Direct Current
DCR	Domestic Content Requirement certificate
DSM	Demand Side Management
HP	Horse Power
IEC	International Electro technical Commission
IEEE	Institute of Electrical and Electronics Engineers
IoT	Internet of Things
INDC	Intended Nationally Determined Contribution
IS	Indian Standard
IST	Indian Standard Time
KERC	Karnataka Electricity Regulatory Commission
kV	Kilo Volt
kW	Kilo Watts
kWp	Kilo Watt peak
LOA	Letter Of Award
LT	Low Tension
MCB	Miniature Circuit Breaker
MDAS	Meter Data Acquisition System
MIS	Management Information System
MNRE	Ministry of New & Renewable Energy, Government of India
MW	Mega Watt
ITB	Invitation to Bidders
OEM	Original Equipment Manufacturer
PBG	Performance Bank Guarantee
PCU	Power Conditioning Unit
PID	Potential-Induced Degradation
PPA	Power Purchase Agreement
PT	Potential Transformer
PV	Photo Voltaic
PVC	Poly Vinyl Chloride
RCCB	Residual Current Circuit Breaker
RESCO	Renewable Energy Service Company

RMS	Remote Monitoring System
RTC	Real Time Clock
SCADA	Supervisory Control And Data Acquisition
SEDM	Solar Energy Data Management
SMB	Sub Miniature version Board
SNA	State Nodal Agency for Renewable Energy
SPG	Solar Power Generator
SPV	Special Purpose Vehicle
SS	Sub Station
STC	Standard Testing Condition ("STC" shall mean Standard Testing Condition for solar cells and PV modules with air mass AM1.5, irradiance 1000W/m <sup>2</sup> , and cell temperature of 25°C)
TPI	Third-Party Inspection
TPIA	Third-Party Inspection Agency' appointed by BESCO and / or MNRE as may be applicable
UAT	User Acceptance Test
W	Watt
Wp	Watt peak

# **VOLUME – I**

  

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# **SECTION-1**

# **INVITATION TO BIDDERS**

# 1 INVITATION TO BIDDERS

## 1.1 Preamble:

Bangalore Electricity Supply Company Limited, a company formed and incorporated in India under the Companies act, 1956, with its registered office located at K.R.Circle, Bengaluru-560001 and is responsible for Power distribution in eight districts of Karnataka (Bangalore Urban, Bangalore Rural, Ramanagara, Chikkaballapura, Kolar, Davanagere, Tumkur and Chitradurga).

## 1.2 About PM-KUSUM Scheme:

1.2.1 Pradhan Mantri Kisan Urja Suraksha evam Utthaan Mahabhiyan (“**PM-KUSUM**”) scheme is aimed at ensuring energy security for farmers in India, along with honouring India’s commitment to increase the share of installed capacity of electric power from non-fossil-fuel sources to 40% by 2030 as part of Intended Nationally Determined Contributions (INDCs).

1.2.2 In March 2019, Government of India launched **PM-KUSUM** scheme with the objective of financial and water security to farmers. The Ministry of New & Renewable Energy (MNRE), Government of India (GoI) vide OM no.:32/645/2017-SPV Division dated 22.07.2019 issued operational guidelines for implementation of PM-KUSUM scheme for the following three components:

- i) **Component-A:** Setting up of decentralized ground mounted grid connected renewable power plants of individual plant size up to 2 MW;
- ii) **Component-B:** Installation of stand-alone solar powered agriculture consumers of individual pump capacity up to 7.5 HP; and
- iii) **Component-C:** Solarization of grid connected agriculture pumps of individual pump capacity up to 7.5 HP. This component also included feeder level solarization.

### 1.2.3 Feeder Level Solarization under Component –C:

The MNRE, GoI vide OM no.: 32/645/2017-SPV Division, dtd 04.12.2020 have issued separate operational guidelines for Feeder Level Solarization under Component-C. The scheme shall be implemented where agriculture feeders have already been separated.

Feeder level solar power plant may be installed to cater to the requirement of power for a single feeder or for multiple agriculture feeders emanating from a Sub-station (**hereinafter referred to as “SS” in this RFP**) to feed power at 11 kV side of the SS depending upon factors like availability of land, technical feasibility, etc.,

1.2.4 The Government of Karnataka (GoK) has nominated BESCO as Nodal & Implementing agency for Feeder Level Solarization in its jurisdiction and to implement the scheme through RESCO mode.

## 1.3 Sanctioned Capacity:

MNRE has sanctioned 2,62,331 IP sets to BESCO under the scheme.

## 1.4 Objective:

BESCOM intends to select competent and eligible bidder, hereinafter to be referred as “**Solar Power Generator (“SPG”)**” for the work of Design, Survey, Supply, Installation, Testing, Commissioning, Operation & Maintenance of grid connected distributed solar power plants for solarization of selected Agri feeders at Sub-Station (SS) level in BESCOM jurisdiction covering 2,62,331 IP sets, its associated 11kV line to connect the plant with concerned SS and Remote Monitoring System (RMS) of solar power plants through RESCO mode, for 25 years under Component C-Feeder Level Solarization of PM-KUSUM scheme.

The selected SS(s) hereinafter to be referred as “**Project(s)**”. List of Projects is detailed in **Annexure-XX**.

## 1.5 Location of Solar Power Plant Installation:

- 1.5.1 The RESCO Developer (Successful bidders hereinafter referred as “**SPGs**”) shall identify the land nearer to the Sub-station for setting up the Project on the locations within the geographical boundary of BESCOM and make arrangements for associated infrastructure for development of the Project. The solar plant shall be installed by the successful bidder for the capacity allotted and power shall be injected at 11 kV bus of the SS through single/multiple evacuation line(s).

## 1.6 Scope of Bidding:

- 1.6.1 The Bidder shall bid for the total capacity of the Project. Each bidder can bid for any number of Projects subject to Techno-Commercial criteria. The bidder is not allowed to bid for partial capacity of the Project, when a Project is having more than one Agri feeder.
- 1.6.2 The basis of evaluation of the Price bids shall be the levelized quoted tariff for 25 years in Rs.X.XX per kWh in the price schedule. To further clarify, all the costs including applicable taxes (incl. GST), duties, etc. pertaining to “*Design, Survey, Supply, Installation, Testing, Commissioning, Operation & Maintenance of grid connected distributed solar power plants for solarization of selected Agri feeders at Sub-Station (SS) level in BESCOM jurisdiction covering 2,62,331 IP sets, its associated 11kV line to connect the plant with concerned SS and Remote Monitoring System (RMS) of solar power plants through RESCO mode, for 25 years under Component C-Feeder Level Solarization of PM-KUSUM scheme*”, shall be inclusive in the Price Bid quoted by the Bidders for the purpose of comparison and evaluation. Bidders are required to quote the tariff upto Two (2) decimal and no price variation on any account shall be considered.
- 1.6.3 This RFP document is common for all the Project(s). However, it may be noted that, for all intents and purposes, the Project(s) are independent of each other and the Bidder shall, as part of its Financial Bid, shall quote tariff separately for each Project for which the bidder submitting the Bids in accordance with this RFP document.
- 1.6.4 It is important to note that, the Bidder including its Parent, Ultimate Parent, Affiliate, Group Business Entity (‘ies) or any other Group Entity (‘ies) either bidding as Single Bidder or as a Consortium can submit only One (1) Bid per Project.

- 1.6.5 An Individual Bidder cannot at the same time be member of a Consortium applying for qualification. Further, a member of a particular Consortium cannot be a member of any other Bidder Consortium or an Individual Bidder applying for qualification.
- 1.6.6 The Bidder shall furnish details including its Parent, Ultimate Parent, Affiliate, Group Business Entity ('ies) or any other Group Entity ('ies) either bidding as Single Bidder or as a Consortium participating in the Bidding Process as per the format provided in 'Details of the Bidder' in Annexure-III.

## 1.7 Role of the SPG/Successful Bidder:

- 1.7.1 The SPGs shall be responsible for "Design, Survey, Supply, Installation, Testing, Commissioning, Operation & Maintenance of grid connected distributed solar power plants for solarization of selected Agri feeders at Sub-Station (SS) level in BESCO jurisdiction covering 2,62,331 IP sets, its associated 11kV line to connect the plant with concerned SS and Remote Monitoring System (RMS) of solar power plants through RESCO mode, for 25 years under Component C-Feeder Level Solarization of PM-KUSUM scheme", in accordance with the provisions of the PPA to be entered into between the SPG and BESCO. **The tariff discovered through bidding process, will be sent to KERC for approval. After approval of KERC, the SPG shall execute the PPA as per this RFP and the SPG shall pay necessary charges to KERC.**
- 1.7.2 The SPGs shall identify the land nearer to SS, get ownership of land or its lease rights or combination of the above required for the Project at their own discretion. The responsibility of the successful Bidders shall include but not limited to identification of such land, conducting a due diligence upto the Bidder's satisfaction, negotiation of the land/lease price with the land owners as per the direction of Deputy Commissioner of the concerned district.

## 1.8 Capacity of the Project:

- 1.8.1 As per MNRE guidelines, the capacity for a Project is limited to the annual consumption of the selected Agri feeders of respective SS & the solar energy to be injected to SS is detailed in Annexure-XX.
- 1.8.2 The Bidder is eligible to quote the price for number of Projects based on the Financial Criteria as stipulated under Clause 5.2.2 of this RFP.

**Illustration:** For avoidance of doubt, in case a Bidder is eligible to quote for 20 MW (AC) capacity in aggregate based on its Technical and Financial Criteria, then the Bidder can quote the respective Tariff for one or more Projects with the total capacity of the Projects quoted shall not exceed 20 MW (AC). In case the Bidder quotes cumulatively for more than 20 MW (AC) across Project (s), all the Bids submitted by the Bidder shall be summarily rejected.

Examples are as detailed in below table:

Sl.No.	Name	Project Capacity (in MW)	Eligibility
1	Project-1	20 MW (AC)	Eligible to bid for the total capacity of Project with 20 MW(AC)
2	Project-2	15 MW (AC)	Eligible to bid for the total capacity of Project and Bidder can still quote for the balance 5MW under

Sl.No.	Name	Project Capacity (in MW)	Eligibility
			any another Project(s) with 5 MW (AC) capacity
3	Project-3	10 MW (AC)	Eligible to bid for the total Project capacity and Bidder can still quote for the balance 10 MW under any another Project(s) with 10 MW(AC) capacity
4	Project-4	5 MW (AC)	Eligible to bid for the total Project capacity and Bidder can still quote for the balance 15 MW under any another Project(s) with 15 MW(AC) capacity

- 1.8.3 On opening of the Price Bid, BESCO reserves the right for allocation of the final Project capacity for all the Successful Bidders corresponding to their quoted/negotiated Tariff.

## 1.9 Selection of Bidders:

- 1.9.1 The techno-commercial bids of the bidders will be evaluated as per the Section 5 of this RFP.
- 1.9.2 Price bids of only techno-commercially (Technical criteria & Financial capacity) qualified bidders will be opened.
- 1.9.3 It is pertinent to the bidders shall specify the list of Projects while submitting the technical bids, without disclosing the price quoted, as per the format provided in **Annexure-XVII**. The bids received with price list during techno-commercial evaluation will be considered as non-responsive.
- 1.9.4 Ranking list of Techno-Commercially qualified bidders will be prepared for each Project in ascending order (L1, L2, L3, .... Ln) by listing each of the Tariff quoted in the Price schedule.
- 1.9.5 –Void-
- 1.9.6 BESCO will negotiate with L1 bidder(s) of each Project in the Bidding portal, in an effort to get it reduce further and after such negotiations, the tariff discovered/negotiated will be sent to KERC for approval. After obtaining approval from KERC for the negotiated L1 tariff, LOA will be issued to the successful Bidders and such bidders shall execute the Power Purchase Agreement (hereinafter referred as the “PPA”) as per the conditions stipulated in Clause 9.1 and 9.3 of this RFP.

## 1.10 Connectivity with the Grid:

- 1.10.1 SPGs shall carry out any evacuation assessment study with respect to the connectivity of the Project to the respective grid sub-station. SPG shall inject power at 11kV of the SS and the metering shall be done at the delivery point(s) of respective SS. The SPG may setup Solar Power Plant upto maximum of 6.5 MW capacity per 11kV bay nearer to the delivery point(s).
- 1.10.2 The SPG shall Commission the Project(s) as stipulated under Clause 4.8, 4.9 & 4.11 of this RFP document.