Mukhyamantri Saur Krushi Vahini Yojana 2.0

Scheme document and implementation guidelines

महाराष्ट्र शासन

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Table of abbreviations

Acronym	Description
Ag/ Agri.	Agriculture
AOA	Article of Association
APMC	Agriculture Produce Market Committee
BOD	Board of Directors
C&I	Commercial & Industrial
Capex	Capital Expenditure
CEO	Chief Executing Officer
CFA	Central Finance Assistance
CMS	Central Monitoring System
CUF	Capacity Utilisation Factor
Dept.	Department
Discom	Distribution Company
DSO	Days Sales Outstanding
ED	Energy Department
EI	Electrical Inspector
EOI	Expression of Interest
FAQ	Frequently Asked Questions
FI	Financial Institution
GENCO	Generation Company
GIS	Geographic Information System
GoMH	Government of Maharashtra
Govt.	Government
GR	Government Resolution
GST	Goods & Service Tax
Ha	Hectare
HP	Horsepower
IDC	Interest During Construction
HV	High Voltage
IREDA	Indian Renewable Energy Development Agency Limited
KUSUM	Kisan Urja Suraksha evam Utthan Mahabhiyan
KYC	Know Your Customer
kV	Kilo Volt
LV	Low Voltage
MEDA	Maharashtra Energy Development Agency
MERC	Maharashtra Electricity Regulatory Commission

Acronym	Description
MNRE	Ministry of New and Renewable Energy
MOA	Memorandum of Association
MRSAC	Maharashtra Remote Sensing Application Centre
MSEB	Maharashtra State Electricity Board
MSEDCL	Maharashtra State Electricity Distribution Company Limited
MSETCL	Maharashtra State Electricity Transmission Company Limited
MSKVY	Mukhya Mantri Saur Krishi Vahini Yojana
MSLDC	Maharashtra State Load Despatch Centre
MSPGCL	Maharashtra State Power Generation Company Limited
MU	Million Unit
MW	MegaWatt
NA	Non-Agriculture
NABARD	National Bank for Agriculture and Rural Development
NGO	Non-Government Organization
NoC	No Objection Certificate
LV	Low Voltage
LOA	Letter of Allocation
PBG	Performance Bank Guarantee
PCB	Pollution Control Board
PFC	Power Finance Corporation
PPA	Power Purchase Agreement
PSA	Power Supply Agreement
PPP	Public Private Participation
PS	Principal Secretary
PSU	Public Sector Undertaking
PTC	Permission to Commission
PV	Photo Voltaic
PWD	Public Works Department
RE	Renewable Energy
REC	Rural Electrification Corporation
RMS	Remote Monitoring System
RMU	Remote Monitoring Unit
RPO	Renewable Purchase Obligation
RTU	Remote Terminal Unit
S/s	Substation
SEM	Smart Energy Meter
SCoD	Scheduled Commercial Operation Date

Acronym	Description
SDM	Sub Divisional Magistrate
SEM	Special Energy Meter
SLA	Service Level Agreement
SLDC	State Load Dispatch Center
SOP	Standard Operating Procedure
SPD	Solar Project Developer
SPV	Special Purpose Vehicle
SWP	Single Window Portal
TBCB	Tariff Based Competitive Bidding
TILR	Taluka Inspector of Land Records
Transco	Transmission Company
TV	Television
UIDAI	Unique Identity Authority of India
VSAT	Very Small Aperture Terminal
VGF	Viable Gap Funding

1. Preface

a) Subsidized electricity to agriculture has played a key role in the growth of groundwater irrigation and agriculture production but is also often seen as a major reason for the financial losses of distribution companies (Discoms). Agriculture (AG) sector often gets unreliable and night-time electricity supply.

b) Out of Maharashtra's total power consumption, around 22% is used by the agriculture sector. 50% Agri load is served during the daytime as per rostering. Under the same 33/11 kV substations not all agriculture feeders are served together for the day-time supply. Govt. provides subsidy to MSEDCL in order to provide cheaper power to Ag consumers. MSEDCL also cross subsidizes AG consumers by charging higher rates to Commercial &Industrial consumers.

c) AG substation level solarization can bring down the existing average cost of power supply for agriculture by ~ 25% Moreover, this will have added benefits of daytime, reliable and better-quality power. It also allows for the Discom to account for its mandated solar purchase obligation. A 2–25 MW scale solar PV power plant can be interconnected to the LV side of 33/11 kV Ag sub-station or 132/33kV sub-station. A 2-MW solar plant can support ~ 700, 5-hp pumps (in terms of annual energy required) which would be given reliable day-time electricity for between 8 a.m. and 6 p.m.

d) The Govt. of Maharashtra launched the Mukhya Mantri Saur Krushi Vahini Yojana in June 2017. It was focused on developing distributed renewable power for agriculture sector. The SPDs were selected through competitive bidding process. So far 550 MW of solar generation capacity has been commissioned under this scheme. However, it is required to speed up the pace of implementation.

e) MSKVY2.0 program envisages solarization of 30% agricultural feeders by 2025. That translates into contracting solar power capacity of ~ 7000 MW by December 2025.

f) To achieve above objectives, the MSKVY2.0 scheme aims to facilitate faster capacity addition in "Distributed RE Mode". It would interconnect solar PV projects of appropriate size to source enough solar energy to meet supply requirement for agriculture use. This program aims to reduce cost to serve agriculture consumers in Maharashtra. This will reduce the cross-subsidy burden on the Industrial and Commercial consumers. This is going to improve financial health of MSEDCL.

g) Moreover, technology will play important role in supporting investment and management decisions, seamless flow of information and prevent delay in coordination for this program. Therefore, this scheme identifies specific use cases with Nodal Agency, Landowners, Distribution utility, project developers and for government of Maharashtra.

Acknowledgements

MSKVY2.0 scheme has been a journey full of learnings and insights. We are deeply grateful to the Deputy Chief Minister and Minister for Energy, Govt of Maharashtra Shri Devendra Fadnavis who inspired the vision and tabled this scheme before Maharashtra state cabinet of ministers. Our gratitude to Smt. Abha Shukla, IAS, Principal Secretary, Energy, who was our constant anchor and leader from front.

On behalf of the Energy department, we express our gratitude to all the Departments of Government of Maharashtra for their inputs and support.

Our thanks to the teams that put in tireless work. PricewaterhouseCoopers (PwC) and MSKVY study group for in depth assistance in conceptualizing this program. They held incisive discussions and insisted on rigaour and professionalism all through.

We hope this scheme serves a path finder to demonstrate a citizen sensitive vision for a prosperous Maharashtra.

2. Construct of this scheme document and implementation guidelines

MSKVY2.0 is aims to add large quantum of distributed RE projects in a short span. The scale and complexity involved are enormous. Therefore, this scheme document and guidelines are formed to convey the spirit of the program and ways in which multiple stakeholders shall operate in tandem to achieve desired outcomes in timely manner.

a) This scheme defines how small projects can be aggregated for large bid quantities to leverage economies of scale. It covers identification of the substations, sizing of desired capacity solar projects at substations, and aggregating the land for those projects.

b) Selection of sound project developers is essential. The guidelines cover various transaction structures to be deployed at different phases of this program, approach for grouping various projects under the bid, several measures to enabling competitive tariffs and specific guidance on the bid documents as well as on managing the bid process under this program.

c) For timebound development of projects the aspects on de-risking before the bid process, single window clearances and several other innovations are provided in these guidelines.

d) Government and various departments will undertake timely actions to effectively implement the strategy enumerated in this scheme document. This may include issuing necessary detailed procedures, standard operating protocols, government resolutions, finetuning the bidding process and bidding documents, seeking regulatory approvals, etc. Program objectives can be achieved with the active participation of all stakeholders, the Government, MSEDCL, MEDA, MahaGENCO and other government agencies/departments, private sector developers, research organizations, and most importantly farmers.

e) To achieve mission objectives by 2025, technology enabled sound performance monitoring framework for the program is put in place. Further, the performance monitoring of the installed projects would be undertaken to derive insights for further policy interventions. The roles and responsibilities of concerned stakeholders are indicated in this document.

3. Aggregating the bid capacity for this program

3.1. Identifying the substations

a) Substations having downstream agricultural load shall be selected based on following criteria:

   a. 33/11 kV substations: having agriculture consumption load in the range of 0.5 MW or more

   b. 132/33 kV substations: having agriculture consumption load in the range of 5 to 25 MW either directly or through the downstream substations of 33/11 kV

   c. 132/33kV or 33/11kV Substations with no space for bay at LV side can be included only if there's additional land available for such expansion

b) For easy and faster rollout of MSKVY2.0 program, the preference shall be given to the substations with higher availability of LV bus bar, power transformer and HV side systems.

c) The substations to be covered under this program shall be identified by MSEDCL as per the approach mentioned at Annexure 1: Approach to identify substations and desired solar capacity under substations and a program for regular maintenance of 33kV & 11kV feeders and 33/11kV Substations shall be chalked out by MSEDCL to improve their reliability

d) MSEDCL shall plan for any capex required (feeders /breakers/ transformer capacity etc.) to accommodate the incoming solar power at the substations. Government of Maharashtra would provide 'a one-time grant' of up to Rs. 25 Lac/Substation from Green Cess Fund for strengthening of identified substations of MSEDCL to accommodate projects under MSKVY2.0.

e) MSKVY2.0 applies to the substations with mixed as well as segregated agriculture feeders. In the case of the latter, supply would be limited to only daytime[1] to prevent losses for MSEDCL.

f) Updated data of the substations shall be made available to the prospective bidders through data room at the time of inviting the bids. This will include-

   a. Latitude and longitude of substations, and

   b. The details of agriculture load served downstream (in terms of hp, and MU[2] over the year)

   c. MW capacity already installed downstream under MSKVY

   d. Details of spare bay available at LV side of substations

3.2. Sizing of the projects under MSKVY2.0

a) Aggregated solar power capacity under MSKVY2.0 at the identified substations shall be worked out considering the current[3] and upcoming agricultural consumption, present and planned network capacity in the area. Please refer to the Annexure 1: Approach to identify substations and desired solar capacity under substations

[1] Or eight (8) hours of supply as per the policy decision by GoMH on agriculture power supply
[2] The empirically observed energy supplied per hp of agriculture load on segregated feeders would be used to assess the unmetered agriculture consumption on mixed feeders
[3] Agriculture load corresponding to already installed solar projects under MSKVY so far shall be netted of for the purpose of this criteria

b) The geographies with concentrated agriculture consumption can also explore for developing floating solar projects[4] under MSKVY2.0.

c) At 33/11 kV substations, up to 5 MW scale of solar projects can be interconnected with 11kV single circuit injection line by the selected SPD. Such projects shall be planned preferably within ~ 5km radius from the identified 33/11 kV substations.

d) At 132/33 kV substations, 5-25 MW scale of solar projects can be interconnected with 33kV injection line by the selected SPDs. Such projects shall be planned preferably within ~ 10km radius from the identified 132/33 kV substations.

e) The aggregated solar PV capacity installed at any substation should be limited to the Ceiling Capacity thresholds stipulated under this program.

f) It is clarified that the projects belonging to the same bidding group (having common SPD, PPA tariff and awarded together) can be allowed to share the common injection line/ incoming bay without needing any further metering or energy accounting arrangements. They would be considered as pooled injection. This will optimize the cost of evacuation for the SPD and economize the tariff for the discom. However, the interface metering shall be done at both the ends of Pooling Substation and Generation end.

3.3. Aggregating the land

a) Land related aspects bring most of the uncertainty and consume the highest time while developing the project. Hence, MSKVY2.0 aims to improve the ease of doing business through aggregating land bank under this program. MSKVY2.0 can be implemented on both revenue land as well as private land.

Revenue land

b) The unutilized revenue land parcels of unfertile lands, of 4 Ha to 50 Ha[5] within 5/10 km radius of the selected substations shall be identified by the Nodal Agency through respective district collectors. It shall be given on a nominal annual lease rent of Rs 1/Ha under this program.

c) Water Bodies of Irrigation Dept etc. will also be considered for the development of projects in the range of 10MW-50MW in floating configuration.

d) For initial phase of the program, early traction is the key. The Nodal Agency/ MSEDCL are empowered to create bid SPVs. Revenue land parcels aggregating 500-600 Ha would be assigned to such SPV for the purpose of developing the solar projects of about 250 MW. Key statutory clearances[6] that can be accorded before selection of the SPD would be given to those SPVs. Also, the solar projects would be eligible for CFA[7] under KUSUM-C program of Government of India as per the applicable criteria of the concerned authority. This will significantly de-risk and expedite the project development under MSKVY2.0 with highly competitive tariff. The SPV shall be transferred to the winning bidder through a Share Sale and Purchase Agreement[8]. Please refer to Annexure 2: SPV creation, its objective and scope of work.

[4] Dams at Ujani, Paithan, etc. can be explored for this.
[5] Equivalent to 2 MW-25 MW
[6] Please refer to the Annexure 3: Indicative list of statutory clearances and approvals
[7] Up to Rs. 1.05 Cr./MW as per the notification of MNRE in the matter of KUSUM program component C
[8] SPV formation and transfer as part of competitive bidding would be similar to that observed under Tariff Based Competitive Bidding for Transmission projects. In such case, a project SPV is created by subsidiaries of PFC/ REC prior to competitive bidding and the same is transferred to the winning/ successful bidder.

Private land

e) Bulk of the scale for this program would be achieved through the land offered by the private owners[9]. Bidders can also consider the land already available with them[10] if it meets the proximity criteria for substation under MSKVY2.0 program.

f) To facilitate the SPDs to spot such lands and pre-feasibility for the projects, a land aggregation portal shall be operated by the Nodal Agency through respective district collectors. They would map the land parcels within 5 km radius of the substations identified under this program. Land parcels nearer to the substations shall be given priority. Details of land like shape of land, distance from nearest substation, level land or undulating etc. will be captured in this Portal. MSEDCL's existing land aggregation portal could be evolved for this purpose.

g) To de-risk the land matters, the Nodal Agency is encouraged to consider following aspects while aggregating the land for the projects under MSKVY2.0:

   a. Ensuring authenticity of land

      Respective district collectors shall onboard the interest from the private landowners around the identified substations on MSEDCL's land portal. Authenticity of land shall be ensured by respective collectors in this process.

      When the landowner directly expresses the interest to offer land, the survey number/Gat number along with the 7/12 extract details of the landowner of that land parcel (which is already mapped with land records of Maharashtra) shall be tagged to facilitate the interested bidder to contact the landowner. Ownership of the land shall be shown on the MSEDCL's land portal to facilitate the interested bidder to contact the landowner.

      Also, the offeror of the land shall upload 7/12 extract, relevant power of attorney while offering the land.

   b. Ensuring commitment on pricing

      Lease rent shall be fixed as INR 1,25,000/Ha or 6% of ready reckoner rate whichever is higher with provision of 3% escalation annually.

h) Nodal Agency with back-to-back lessor and lessee arrangement: The Nodal agency can also become the single entity to sign land lease agreement with all landowners whose lands are identified by the successful bidder. This way, individual owners wouldn't need to interface with the SPD/ face uncertainty in timely lease payment. At the same time, the SPD too would enjoy a single land sublease agreement with Nodal Agency than having to interact with each landowner individually. An arrangement shall be worked out wherein for the purpose of lease rental, the Nodal Agency can tap into MSEDCL's payment to the SPD for the power it sold. This model shall be attempted once the MSKVY2.0 program gains the traction, and to de-risk subsequent batches of tenders for which the land pockets might be scattered. Further guidelines in this regard would be issued later.

i) Following data[11] about the land shall be made available to the prospective bidders[12] through data room before conducting the bids under MSKVY2.0 program. It will provide visualization and aid in optimizing the project cost by the prospective bidders at the tender stage itself.

[9] Collectors, local institutions would need to play active role in encouraging registration of land by the land offerors. Please refer to the separate guidelines to be issued on Approach to aggregate land for MSKVY2.0

[10] After winning the bid, the SPD would need to register such lands on the land aggregation portal for future monitoring by Nodal Agency

a. Polygon of the land parcel along with latitude and longitude,

b. GIS layers of solar irradiation resource maps, location of substations identified under MSKVY2.0 with their MW capacities[13], transmission lines, interlinking with PM Gati Shakti portal and derive information about railway line or highway crossings, water bodies, rainwater submergence, etc.

[11] It is clarified that data provided on the portal would be indicative only and on the best-efforts basis. The bidders are advised to assess accuracy of it and use their discretion

[12] Only approved government land parcel(s) shall be considered by MSEDCL (nodal agency) for leasing out to the SPV under MSKVY2.0 scheme and shall be made available to the bidders. Similarly, the details of feasible privately owned land parcels only shall be made available to the bidders, for them to engage with the land owners and take necessary steps to lease out the lands under MSKVY2.0 scheme.

[13] Derived based on Annexure 1: Approach to identify substations and desired solar capacity under substations and after netting off the MW capacity already allotted downstream under MSKVY program

4. Selection of solar project developers

4.1. Transaction structure

a) The SPDs in this program will construct, operate, and maintain the projects for specified period of 25 years.

b) Nodal Agency shall select the SPD based on tariff based competitive bidding on least levelized cost of solar power offered at the receiving station of MSEDCL. SPDs will sign power purchase agreements with MSEDCL. Post the PPA period, the project shall be handed over to the Nodal Agency[14].

c) In the SPV mode structure of the bidding, the winning SPD shall execute share sale and purchase agreement with the Nodal Agency to take over the SPV for developing the project under this program.

d) SPDs can also sign land lease agreements with private landowners as per their requirement

e) In the transaction structure involving Nodal Agency as intermediatory, the PPA and PSA would involve Nodal Agency accordingly.

4.2. Grouping of the projects under MSKVY2.0

a) MSKVY2.0 is the program with distributed RE projects. Though the scale of the individual projects is relatively small, it can enjoy the economies of scale and attract large credible SPDs if multiple such projects are grouped as one bidding group. The bidders will have to bid for group as a whole while participating in the bid.

b) The groups shall be composed such way that bidding groups are homogenous among themselves though consisting of heterogenous mix of the individual land parcel sizes under them. Each group will be of the size of ~ 600 Ha of land (equivalent to ~ 250 MW or higher capacity). Moreover, the developers would be given a flexibility to bring in additional land parcels which can host up to 20% of the awarded capacity in the substations covered under the project group, without breaching Ceiling Capacity thresholds stipulated under this program.

c) The bidder would need to quote the tariff common for all projects under the group. The project group shall have a single PPA. Accordingly billing and collection process would also be optimized for the projects falling under a common group.

d) Once most of the project groups with geographical proximity are awarded, the scattered and left out land parcels meeting proximity criteria and within substations' available capacity limit, can be awarded[15] under Feed-in-Tariff (FiT). The individual project size in such case shall be at least 0.5 MW up to 5 MW[16]. MSEDCL shall approach MERC to determine the cost reflective generic FiT on yearly basis till 2025 before starting to award any project under this mode.

4.3. Enabling competitive tariffs

a) To improve the counterparty credit profile, following payment security mechanism are suggested under the MSKVY2.0 program:

[14] Nodal Agency would need to get extension of the land lease beyond 25 years as per the requirement
[15] Beyond corporates, the proprietors, cooperatives etc. can also participate under this mode
[16] As per the guidelines from GoI on procurement of solar power by the utilities

a. Letter of credit: Letter of credit (of amount equivalent to 1 month of estimated billing for all projects under the bid group) shall be opened by MSEDCL in the favor of respective SPDs before Scheduled Commissioning Date of the projects under PPA.

b. Revolving payment security fund with replenishment: The fund of Rs. 100 Crore for every 1 GW or part there of commissioned projects shall be earmarked from Green Energy Cess Fund[17] to create revolving credit guarantee for enhancing payment security under MSKVY2.0 program. It would be at the disposal of Nodal Agency for providing payment security to SPDs if MSEDCL delays on the payment for energy sold under their PPA. If MSEDCL delays payment to any project group beyond 3 months, that amount will be paid by the Nodal Agency to release as the payment to SPD from this Guarantee Fund. The Nodal Agency shall be paid additional 1% as administrative fees for this payment security. Such total amount shall be offset against accrued payout for GoMH's subsidy to MSEDCL to replenish the guarantee fund immediately.

c. Nodal Agency as intermediary: Nodal Agency can become an intermediary in power sale transaction between the SPD and MSEDCL with back-to-back PPA-PSA (Power Sale Agreement). In such case the nodal agency would need to take intra-state trading license and offer the payment comfort to the SPD for the power sold under this scheme. The payment security of above-mentioned revolving fund shall be provided to the Nodal Agency in such case.

   To further de-risk the transaction, the Nodal Agency can also become lessor and lessee for the lands aggregated under MSEDCL's land portal. Once the successful bidder informs the chosen land parcels, Nodal Agency can execute land lease agreement with the respective owners and have the common lease agreement for all projects under the project group. This will give lease payment comfort to the landowners, and Nodal Agency can net-off the lease amount from the power bill it was to pay to the SPD for the energy sold under PPA. Taxation aspects shall be assessed appropriately under such arrangement.

   It is clarified that once Nodal Agency activates such mode as Agriculture Supply Company, all PPAs already executed with SPDs shall be transferred to it without any cost implications to MSEDCL and SPDs. This will enhance operational efficiency of the Nodal Agency.

b) In case of any billing dispute between the SPDs and MSEDCL, 80% of the payment has to be made within time, under protest. Post resolution, the balance payout or recovery (for either side) shall be entitled to a carrying cost at applicable interest rate for working capital as approved by MERC for MSEDCL for the respective year.

c) SPDs shall not be charged at HT consumer tariff for drawing power for start-up and while under maintenance. Power imported will be net-off while accounting for the energy sold to MSEDCL. It is clarified that such net-off would also be counted towards Solar RPO compliance of MSEDCL.

d) Nodal agency shall onboard financial institutions (IREDA, high penetrated banks in the bid area, NABARD, etc.) for this program via workshops/ roadshow etc. The nodal agency would strive to pre-clear the bid documents with the identified financial institutions for their comfort on project finance. This will help the winning SPD with speedy financial closure and faster commissioning of the projects.

e) Nodal Agency shall attempt to explore avenues to tap from concessional funding/ line of credits sponsored by the international donor agencies for this program.

[17] Created under TOSE Act of Maharashtra

f) All incentives under Government of India - MNRE (or any others ministry), such as Central Financial Assistance, VGF, etc. as eligible shall be extended to the SPD. The Nodal Agency shall pre-clear the eligibility of all Government benefits before inviting bids.

g) To further encourage the distributed RE projects under MSKVY2.0 scheme, following incentives will be extended through the Nodal Agency by GoMH from Green Cess Fund:

   a. The projects injecting energy at 11 kV bus bar shall be given an incentive of Rs. 0.25/ kWh and for 33 kV bus bar shall be given an incentive of Rs. 0.15/ kWh for the power sold to MSEDCL for first 3 years, provided the projects have executed PPAs before Dec, 2025; and they are commissioned within the timeline as stipulated in the PPA.

   b. Grant of up to Rs. 25 Lac per substation for relevant strengthening shall be given to MSEDCL to accommodate projects under MSKVY2.0 scheme

   c. A social benefit grant of Rs. 5 Lakhs/year shall be given to the Gram panchayats in whose area the solar projects are installed under this program. Such grant will be provided for 3 years from the commissioning of such projects.

h) Subsequent batches of tenders where the bidding group have dispersed projects/ projects are with relatively smaller capacities – both leading to upward bias in cost of solar power the avenues for cheaper financing shall be explored. Rural Infrastructure Development Fund (RIDF) of NABARD can be tapped for MSKVY2.0 program through endorsement by Department of Finance, GoMH.

4.4. Specific aspects in bid documents

a) The bid process will be conducted based on standard bid documents notified by MNRE as evolved from time to time. Given the specific context for this program, some provisions for the bid documents would be evolved by the Nodal Agency. It will take approval from MERC on such modified version before starting the bid process.

b) If possible, MERC could be prayed for one time approval if the same document is to be used for multiple phases of bids without any further modifications. The bid documents shall be hosted on the MSKVY2.0 portal for the reference of the bidders.

c) Deemed generation shall be allowed to the developers at 100% of appliable tariff in case of generation loss due to interruption in utility's network while evacuating the power. The quantification for the deemed generation would considering the time-of-day and seasonal generation index derived based on historical output from the respective project. For the first year of commercial operation, the same would be determined based on specific formula to be mentioned in the bid document.

d) The SPD shall need to maintain minimum annual CUF at 19%. Any shortfall in generation below CUF 19% shall be penalized by MSEDCL at the rate of 1.5xPPA tariff for the extent of shortfall of energy.

e) In case, the delay in Grant of connectivity is on part of MSEDCL which causes delay in commissioning and commercial operation, deemed generation shall be allowed.

f) A condition subsequent on part of MSEDCL before the SCoD will be expressly specified in the bid documents. Nodal Agency shall monitor the compliance on MSKVY2.0 portal

g) Early commissioning would be permitted if at least 10% of the awarded group capacity become ready before SCoD. It shall lead to deemed enhancement of the PPA duration for such capacity commissioned early without affecting the sunset date of PPA signed for the whole project group. Similarly, the delay in commissioning would attract the Liquidated Damages (LDs) which would be first offset from the contract performance guarantees deposited by the SPD during PPA signing, and then

subsequently from the revenue accruing from the projects which are already commissioned under that project group.

h) Projects under this program shall be implemented under three modes of PPAs:

   a. Selected SPDs/ bid SPVs signing PPA directly with MSEDCL for the group of projects

   b. Selected SPDs signing PPA with Nodal agency and the Nodal agency will sign PSA with MSEDCL for the group of projects

   c. SPDs signing PPA directly with MSEDCL for the individual project at Feed-in-tariff

4.5. Specific aspects while managing the bid process

Bid phasing:

a) Initial phase of the program shall aim for the SPV based bidding on the group of revenue land parcels

b) Aggregation of land bank, quantum of energy required for agriculture, and intensity of solar irradiation would determine subsequent zones for the bidding under this program

Eligibility:

c) Proprietor, Cooperatives, Corporates (both national and international), PSUs (both state and central level) would be eligible for participation.

d) The qualifying requirement for the bidding on project group would have technical and financial criteria linked with the MW size of the project group. It will have corresponding technical requirement of having commissioned same scale of projects in past in India, having commissioned at least one ground mounted solar project from 2-25 MW with the distribution licensee interconnection point. The financial requirement would have corresponding net worth and credit worthiness criteria linked with the MW size of the project group.

e) For competitive bidding process guidelines of central govt, Maha Govt. and MERC[18] will be followed. The competitive bidding for project groups shall have two stages – close envelop electronic bidding, immediately followed by the reverse auction on the nationally renowned auction portal. Close envelop electronic bidding would discover the L1 price which would be starting tariff for the reverse auction. H1 bidder at the close envelop bidding would be eliminated and would not enter into the reverse auction. This will ensure healthy and competitive participation at the first stage itself.

f) The bidders would be allowed to source equipment via the open category. Domestic content restrictions will not be applicable on the bidders unless the projects are tagged under component C of PM-KUSUM program.

g) Every project commissioned under this project shall have data logger with Remote Monitoring Unit (RMU) capable of sending project operation data over the communication network. Nodal Agency will track the performance of projects set up under this scheme through centralized data server. Nodal Agency shall have unambiguous right on the use of data so collected for its analytics, policy, and program function to promote renewable energy sector in Maharashtra.

h) Nodal Agency shall make use of the actual performance data to address the concerns of the bidders for the subsequent phase of this program.

[18] The bid documents would be preapproved from MERC before the bid submission date to avoid any modification after shortlisting the bidders

5. Timebound development of projects

5.1. Installation timeline

a) The program aims for adding solar power capacity of ~ 7000 MW by December 2025. Hence, it is important to ensure timely progress during the development phase of the projects.

b) The SPD shall need to achieve COD for all projects under the bidding group within **12 months** of the date of signing of PPA for SPV mode bids (and within 15 months for other bids).

5.2. Single window mechanism

a) To implement the Single window mechanism under this Program, a Standing committee will be formed under the chairmanship of PS (Energy) in which officials from energy department entities (MSEDCL, MSPGCL and MEDA), agriculture department, revenue department and finance department (if any fiscal incentives are involved).

b) As part of the Single window mechanism, full workflow of granting approvals to SPD from respective authorities shall be brought under a single portal with dedicated log-in access.

c) The single window portal developed by MEDA shall be used to track status of project approvals and clearances. This portal shall be used by the SPDs for making online requests, raising queries, and obtaining update on their application. The portal will also have the facility to send update on notifications via emails and text messages to SPDs regarding status of their applications, queries raised by departments, etc.

d) The departments concerned shall use a standard timeline to give their assent

e) However, the concerned authorities shall also identify the activities where approval time can be reduced and identify activities which can run parallelly so that the total lead time in providing all the approvals is optimized. An illustrative optimized workflow for all clearances under the Single window mechanism is provided as Annexure 3: Indicative list of statutory clearances and approvals

f) The portal shall also have provision for sending escalation mails upon inaction by any officer/department. Further, it shall send reminder mails to the concerned officer for the clearance of the application(s).

g) If no action is taken by the concerned officer within the stipulated SLA, then the system shall trigger the email to the higher official. A reasonable time period shall be available to concerned higher official for taking an action. In case the concerned higher official doesn't take an action within the stipulated reasonable period, then the system shall mark that stage as deemed approved.

6. Performance monitoring

6.1. The progress of this program

a) All stages of the project development under the LOAs issued under different phase of tenders shall be mapped and monitored through MSKVY2.0 program portal.

b) Once a project site is awarded/allocated, the Nodal Agency shall continuously monitor progress of development till it is commissioned. The SPD shall be obliged to allow unhindered access to the project site and provide requisite information to the Nodal Agency/ any other entity nominated by of the Nodal Agency for proper monitoring of the project progress.

c) Nodal Agency shall have powers to monitor and report to Standing committee on the progress of the program and projects under development. The Standing committee shall be an apex body adjudicating body on the coordination matters and delays associated with that. Its directions shall be binding on all the stakeholders to expedite the progress on this program.

6.2. The performance of the projects under this program

a) The Nodal Agency shall determine various milestones from project award/allotment till commissioning.

b) Projects during the operation phase will be monitored at various levels – zone, divisions & subdivisions. Data from RMU will be pulled by CMS to create asset performance database which will be integrated with the MSKVY2.0 portal. Periodic reporting of the performance of projects shall be made to the Standing committee. Automated reports will be generated for reporting and resolution of issues. Red flags will be raised to the Standing committee in case of performance related issues.

c) A Standard Operating Manual will be prepared by the nodal agency for Operation and Maintenance of the projects.

d) It shall also be mandatory for SPDs to provide real time electricity generation to MSEDCL through RTU-DC, V-SAT or any other standard protocol as decided by MSEDCL. MSEDCL shall further share single value of total generation values of projects under MSKVY2.0 with MSLDC for display purpose.

e) The MSKVY2.0 portal will also have a mechanism for grievance redressal and Chat-bot integration for FAQs.

f) The MSKVY2.0 portal shall also host dedicated email Id(s) and Phone number(s) to answer queries and for providing information

7. Roles and responsibilities among stakeholders[19]

7.1. For the Nodal Agency[20]

a) MSEB holding company limited (or any other agency nominated by the Government of Maharashtra) shall be the Nodal Agency for implementation of this scheme. For strengthening institutional capacity of Nodal Agency, the competent officers from other entities under energy department can be deputed in the Nodal Agency.

b) The Nodal Agency shall provide a single window facility for approval of all projects under the program in the state. The Nodal Agency shall facilitate approval/allotment of all projects in a time-bound manner.

c) The Nodal Agency shall assist the SPD in obtaining the consents, clearances, and permits, by providing letters of recommendation to the concerned authorities, as may be requested by the SPD. However, the Nodal Agency shall not be accountable for any delays in obtaining the consents, clearances, and permits required for development of projects. It will the responsibility of the developer to acquire all statutory clearances required for the project development.

d) The nodal agency will facilitate the same SPD in bundling multiple approvals, PPAs, Payment transactions, etc. at multiple locations/departments into a single package in order to expedite clearances/approvals.

e) The SPD will be provided with access to workflow with approvals and SLAs for tracking of various applications. This will be made part of the MSKVY2.0 portal.

f) Continuously identify projects in coordination with all State Government entities, departments, PSUs and create a pipeline of projects which are to be awarded/allotted under this scheme.

g) Conduct the bid process, scrutinize applications, and select the developers.

h) Ensure proper pre-developmental work of identified projects is completed till it is allocated/awarded to the developers.

i) Facilitate allotment of Government Land for projects.

j) Facilitate approval of power evacuation plan, allocation of bays and other related facilities for development of projects.

k) Facilitate and expedite access to various concessions and incentives provided by Govt of India / Govt of Maharashtra.

l) Facilitate tagging projects under this program with feeder level rollout of component-C of PM-KUSUM to avail Central Financial Assistance for the SPDs.

m) Provide project development assistance, technical advice, and assistance for implementation of the projects in State.

n) Monitor progress of projects at pre developmental and post allotment/award stages as per the bidding/ allotment terms and conditions.

[19] Indicative and non-exhaustive

[20] For initial phase of the Program (equivalent to solar projects of ~ 250 MW/ 500 MW), a dedicated cell (constituting of members on Deputation/engagement of retired employees from revenue dept. etc.) shall be created under the nodal agency; Subsequently, greater institutional strengthening of nodal agency can be done for implementation of the Program

o) Coordinate with and support MERC in framing various Regulations and orders that are required for implementation of this program.

p) Impose penalties and/or deallocate projects in case of non-compliance/non-performance by the developers in accordance with the terms and conditions of the bidding process. SPDs will be made aware of the necessary actions due from them.

q) Publicize MSKVY2.0 at field level for better participation by farmers/local population.

r) Develop publicity plan for the program in electronic and print media

s) Act as single window facilitator for allotment of projects/clearance of proposals received from Private sector.

t) Revise the scheme document from time to time

7.2. For the MSEDCL

a) Set a target and prepare an annual plan for project implementation of MSKVY2.0. The MSKVY2.0 portal as a source of data will help visualization of the data with geospatial details which otherwise might be very difficult to comprehend by the SPDs.

b) Create a data room for sharing of information related to substations, evacuation lines, land, infrastructure, mapping of available land vis-à-vis spare capacity at substation, etc. with bidders in an efficient and secure way.

c) Maintain reliability of substations and connected power evacuation lines.

d) Create a dedicated system for displaying real time data of MSKVY2.0 operational projects.

e) Create and maintain adequate spare capacity in substations and transformers for this program. Data regarding such capacity to be made available through the portal by monitoring the status and daily operation parameters of the project from the centralized dashboard for operational projects.

f) Monitor the performance of operational projects on a regular (day-to-day) basis.

g) Analyze the pay-out under deemed-generation provisions over the contract year, and propose avenues to upgrade the network assets capacity through CapEx program before MERC to address concerns in future

h) File necessary related petitions related to MSKVY2.0 with MERC.

i) Undertake joint meter readings with SPDs on a monthly basis.

j) Settle deemed generation on a monthly basis.

7.3. For the Solar project developer

a) Operation and maintenance of the project and power evacuation lines to the substation will be the responsibility of SPDs.

b) Be responsible for all statutory clearances.

c) Be responsible for signing PPA with the power procurer.

d) Maintain connectivity and accuracy of remote monitoring system (RMS) with MSEDCL’s system.

e) Maintain guaranteed performance parameters.

f) Undertake joint meter readings with MSEDCL on a monthly basis.

g) Raise invoices in a timely manner. Invoice raising and DSO can be tracked and monitored by implementing agency through the portal to avoid delay in payments.

h) Make lease rental payments to landowners, including the time till projects get commissioned.

7.4. For MEDA

a) Register MSKVY2.0 projects and provide clearances and approvals through a single window system in a time bound manner.

b) MEDA will monitor the project development and operation and reimburse the applicable amount to the SPDs on successful completion of the project. Monitoring will be done through the MSKVY2.0 portal, and the status will be available for viewing to both SPDs as well as Agencies and GOM in a transparent manner.

c) Monitor project development including equipment quality and raise any red flags to the Nodal agency. MEDA will also monitor and analyze the annual performance of SPDs.

7.5. For GoMH

a) Issue a new Government Resolution (GR) or amend the existing GRs regarding changes in MSKVY2.0.

b) Provide guidance to the Nodal agency and related stakeholders so as to make the Program successful.

c) Monitor the progress of MSKVY2.0 against targets on a monthly basis.

d) Aid the nodal agency in the form of interventions including changes to Program guidelines.

e) Aid the nodal agency to onboard FIs like IREDA, high penetrated banks, NABARD, etc. on PPA terms.

f) Issue instructions to the district revenue officials to provide full support for speedy execution of MSKVY2.0.

g) Publicize MSKVY2.0 through various communication channels such as advertisement on television, radio, newspapers, etc.

7.6. For the Standing committee

a) For implementation of the program, a Standing committee will be constituted under the chairmanship of Chief Secretory with officials from Energy dept., Revenue dept., forest dept., water resource dept., agriculture dept., MSEDCL, MSPGCL and MEDA. The committee would meet once in a month to take stock of updates on progress of the program. The nodal agency shall be responsible for monitoring of the progress towards program targets, resolving inter departmental challenges, interfacing with SPDs, onboarding stakeholders and spreading awareness about the program.

8. Interpretations and Removal of Difficulties

a) Government of Maharashtra may undertake a mid-term review of this Program as and when needed to remove any inconsistency with Electricity Act, 2003, Rules and Regulations made there under or due to any policy change made by Government of India or for any other purposes deemed necessary to meet the objectives of this Program. The incentives and waivers provided under this scheme are being provided considering the overall RE investment environment in the State, current RE market in the country and the national policies/guidelines/rules. The incentives, waivers and concessions will be calibrated in line with any changes in national policies/rules/guidelines during the period of implementation of the program. Retrospective amendments to the incentives available under this Program shall be avoided.

b) The Department of Energy can amend or review or relax or interpret any of the provisions under this Program as and when required. If any difficulty arises in giving effect to any provision of this Program, Department of Energy is empowered to issue clarifications and interpretations to such provisions of the Policy, as may appear to be necessary and expedient for removing the difficulties either on its own or after hearing those parties who have represented for change in any provision.

c) This policy authorizes the Department of Energy to issue orders clarifying and/or interpreting the provisions of this Program. The department is also authorized to modify the Program, based on guidelines or directions issued by the Government of India or the Government of Maharashtra, so as to streamline implementation of the program.

9. Annexure 1: Approach to identify substations and desired solar capacity under substations

9.1. Selection of Substations with agricultural load

Substations catering to agricultural load (excluding agricultural load already mapped with installed solar projects), shall be selected based on following criteria:

A. **33/11 kV substations:** having agriculture consumption load in the range of 0.5 to 5 MW.

B. **132/33 kV substations:** having agriculture consumption load in the range of 5 to 25 MW either directly or through the downstream substations of 33/11 kV

C. Substations with no space for bay at LV side can be included only if there's additional land available for such expansion

9.2. Shortlisting of Substations

MSKVY2.0 shall be implemented in a phase wise manner. Each phase shall consist of certain substations which would be detailed out in the tender documents that are prepared and floated for the specific phase.

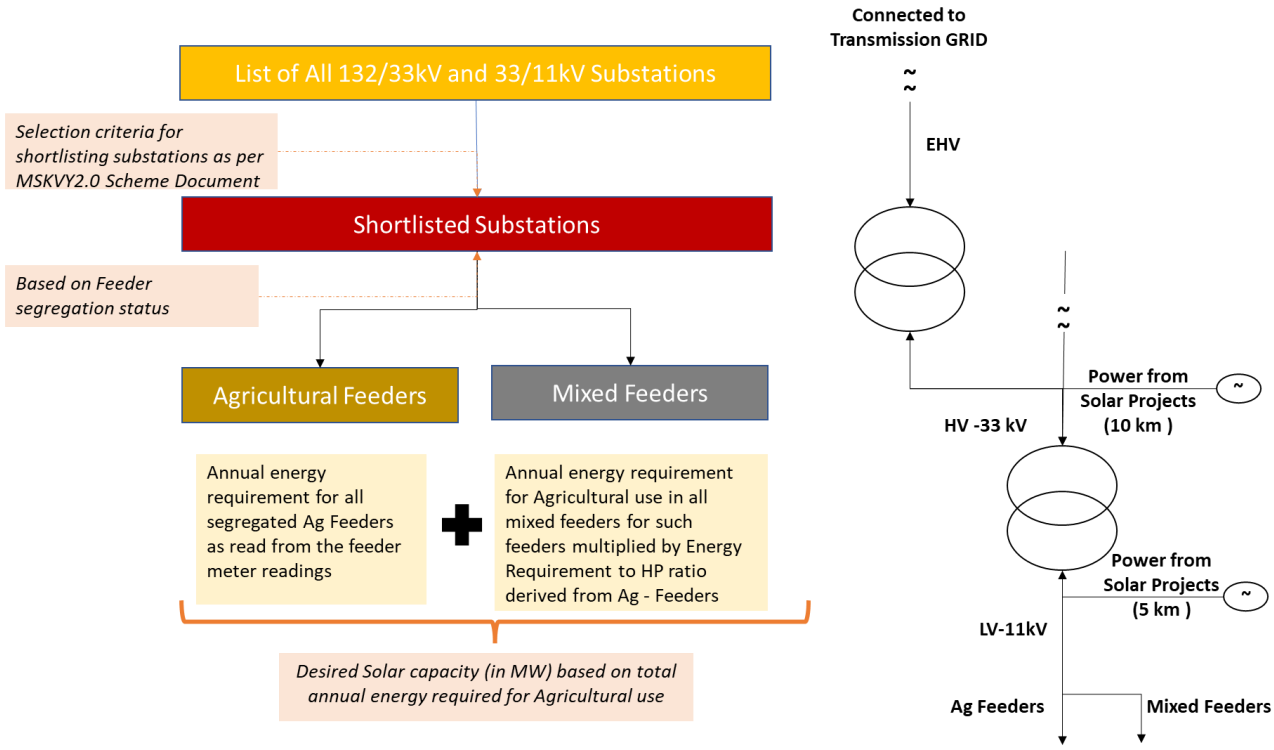
The list of all the substations with the agricultural load shall be further analysed for energy supply to agriculture and HV side reliability parameters to understand which substation(s) can be targeted and prioritized for implementation in a phased manner.

9.3. Sizing of MW at substations

The sizing of solar projects capacity shall be derived from the following

- **For Agricultural Feeders:** The annual energy requirement for agricultural use would be arrived from the meters installed at the substation for the segregated Agricultural feeders.
- **For Mixed Feeders:** The ratio of annual energy requirement to the HP load of all segregated Agricultural feeders (clubbed together) would be determined for the respective substation. The relevant annual energy requirement on the mixed feeders would be arrived by multiplying the above ratio with the HP load connected on the mixed feeders.
- **The total annual energy required for Agricultural use for the substation** shall be calculated for the as the summation of such required energy[21] for segregated Ag feeders and the Mixed feeders of that substation
- Such annual energy required for the agricultural use (in kWh) would be converted to the desired solar capacity in MW by considering 19% CUF
- **Ceiling Capacity –** In normal circumstances, transformation capacity at the substation would not pose as a constraint. However, the following would define the Ceiling Capacity at given substation.
    - The aggregated solar PV capacity installed at any substation under this program would be limited to the rated capacity of power transformer of the said substation.
    - The cases where, the injection of solar power at LV side of 132/33kV substation which leads to power flow at downstream 33/11kV substation, power transformer at 11kV substation shall also be assessed for the constraint.

[21] In line with the MNRE's Guidelines for Implementation of Feeder Level Solarisation under Component-C of PM-KUSUM Scheme (https://mnre.gov.in/img/documents/uploads/file_s-1607072960786.pdf)



9.4. Illustration for Solar capacity sizing at substation

Name of the Substation = 33/11 kV ADAWAD
Number of Total Outgoing Feeders = 10
Number of Segregated agricultural feeders = 7
Number of Mixed Feeders = 2
Capacity of power transformer = 20 MVA

Segregated agricultural feeders: Count 7

- A = No. of Ag consumers = 3631
- B = Load of Ag Consumers 16488 hp
- C = Ag Sales in MUs = (Not to be considered for sizing solar PV)
- D = Annual energy requirement for all segregated Ag feeders = 30.72 MUs

Mixed Feeders: Count 2

- P = No. of Ag consumers = 76
- Q = Load of Ag Consumers 3078 hp
- R = Ag Sales in MUs = (Not to be considered for sizing solar PV)
- S = Annual energy requirement for Ag use in all Mixed feeders = 0.55 MUs

Total Solar MW capacity sizing for the substation

- X = Total annual energy required for Agricultural use in MUs = S + D = 31.25 MU
- CUF for MSKVY2.0 solar PV projects = assumed as 19%
- Desired solar capacity = X / (CUF*24*365) = 22 MW. This is as against 10 MW [calculated as (Q+B) @1 HP= 0.746 kW]
- The power transformer capacity of 20 MVA would make the ceiling capacity = 20 MW
- Therefore, Solar Capacity at this substation = Minimum of (22 MW, ceiling of 20 MW) **= 20 MW Solar**

Solar PV MW capacity allocation would be bottom-up from 11kV to 33kV level, after netting of the MW capacity already awarded under MSKVY program. Solar PV MW capacity at 33kV LV side of 132/33 kV substation would consider downstream energy required for all direct feeders serving Ag load as well as those from downstream 33/11kV substations. In above case, the **residual 2 MW capacity** would be added for solarization at 33kV LV side of parent 132/33kV substation.

Goal of such solar PV sizing methodology is to ensure enough solar energy is produced to meet annual supply requirement for agriculture consumption. This approach will reduce loading of 132kV line, 33kV line as well as power transformers in 132/33kV and 33/11kV substations.

10. Annexure 2: SPV creation, its objective and scope of work

In order to improve the rollout of MSKVY Scheme in Maharashtra, GoMH is considering innovative measures to reduce the risk profile and speed-up the implementation of the program. It is proposed to incorporate a pre-bid Special Purpose Vehicles (SPVs) under one of the transaction structures.

Objectives of Pre-bid SPV

1. Reduce uncertainty on the land for projects by offering revenue land under GoMH

2. Obtain key statutory clearances and approvals in advance to speed up implementation of project

3. Increase the scale of bid capacity to attract wider participation from the potential bidders

4. Significantly de-risk the project development to discover very competitive tariffs for MSEDCL

Scope of work under SPV

5. Executing land lease and securing possession of 500-600 Ha of revenue land in 5/10 km vicinity of the substations identified for MSKVY2.0 program

6. Obtaining the statutory clearances and approvals for the purpose of developing ~ 250 MW or higher capacity bid groups. Indicative list is mentioned below

    - ✓ Consent from local panchayat/ the District Collector for development of project site
    - ✓ NOC from town planning
    - ✓ Pollution Control Board NOC, Consent to establish
    - ✓ Approval for use of ground water
    - ✓ Grant of connectivity for evacuation at respective substations
    - ✓ Registration of project with MEDA
    - ✓ Eligibility for CFA under PM-KUSUM Component C program, etc.

Rationale behind SPV:

7. For the initial phase of the program, it is critical to send a right market signal to all the stakeholders and gain traction. To achieve the same, reducing the risks faced by developers, shall enable to elicit maximum response from the potential bidders.

8. One of the major challenges faced by project developers, as inferred during various consultations with the project developers, is the time involved in land identification, its acquisition, and obtaining the statutory clearances for the purpose of developing the project.

9. In utility scale RE projects, this issue is addressed through the Solar Parks. The risk of the projects is minimized by getting requisite land in possession in advance, establishing evacuation infrastructure, and obtaining some of the clearances before bringing in solar project developer. This also speeds up time to commissioning for the project developer.

10. On similar concept, a pre-bid SPV is proposed to be formed to facilitate development of distributed solar projects for a bidding group of ~ 250 MW under the MSKVY.

11. Unutilized revenue land parcels of unfertile **government-owned** lands in 5/10 km vicinity of the identified substations for MSKVY program would be identified through collectors and revenue department. 500-600

Ha of such land parcels may be housed under the pre-bid SPV for the purpose of developing the solar projects of about 250 MW.

12. Key statutory clearances that can be accorded before selection of the SPD would be given to those SPVs. Also, the eligibility of CFA under KUSUM-C would be ensured. SPV would aim to obtain clearances and approval on best effort basis before the bidding. As Is status on clearances and associated documents would be hosted in the data room for the interest bidders' due diligence. There would not be any liability on pre-bid SPV on this account.

13. Key benefits from creation of a pre-bid SPV are listed below:

    a) **Expeditious construction and commissioning of solar project:** It is envisaged that the project developer(s) may be able to reduce the solar plant setting up time from the typically required period of 18 months to 12 months due to the time saved in land identification and attaining the statutory clearances. It is pertinent to note that some of the clearances and approvals which are developer specific in nature, cannot be provided in advance. Such approvals may be possible only after awarding of such projects. Such approvals may not be accorded in advance through the SPV.

    b) Due to de-risking of the solar projects to a large extent and reduction in time in setting up of projects, it is envisaged that it may lead to reduction in tariffs due to **savings in Interest During Construction (IDC) and other administrative expenditure** involved in attaining statutory clearances in case of bids through a non-pre-bid SPV route.

    c) After award of the project, developer submits the bank guarantee. The period of uncertainty on pre-operative activities would be greatly reduced in such pre-bid SPV structure.

    d) It is further recommended that the **SPVs may be housed under a nodal agency (such as the MSEB Holding Company)/ MSEDCL** as the case may be, which shall be able to drive the bidding process in an independent manner without any conflict of interests.

Structure of SPV

14. SPV would be a private limited company. Several corporate bidders prefer that structure for executing solar PV projects. This also has minimal requirement of compliances among limited liability companies.

15. For the Private Limited company would have a minimum Authorized Capital of Rs. 1 Lakh to incorporate the Company. It would be contributed by the company under which the SPV is being formed.

16. SPV would avoid doing any financial transactions under it to the extent possible. All costs (including direct and indirect) incurred by the Parent Company/ Nodal Agency for the SPV in relation to the activities concerning the MSKVY2.0 program shall be recovered from the winning bidder, by including it in the Acquisition Price. Till then such expenses will be funded by the parent company.

17. In order to form a Private Company, a minimum two directors are required as per Section 149 of the Companies Act, 2013. For the SPV, those two directors can be nominated from the BOD of the entity under which such SPV is being formed. They will get signing rights on behalf of SPV.

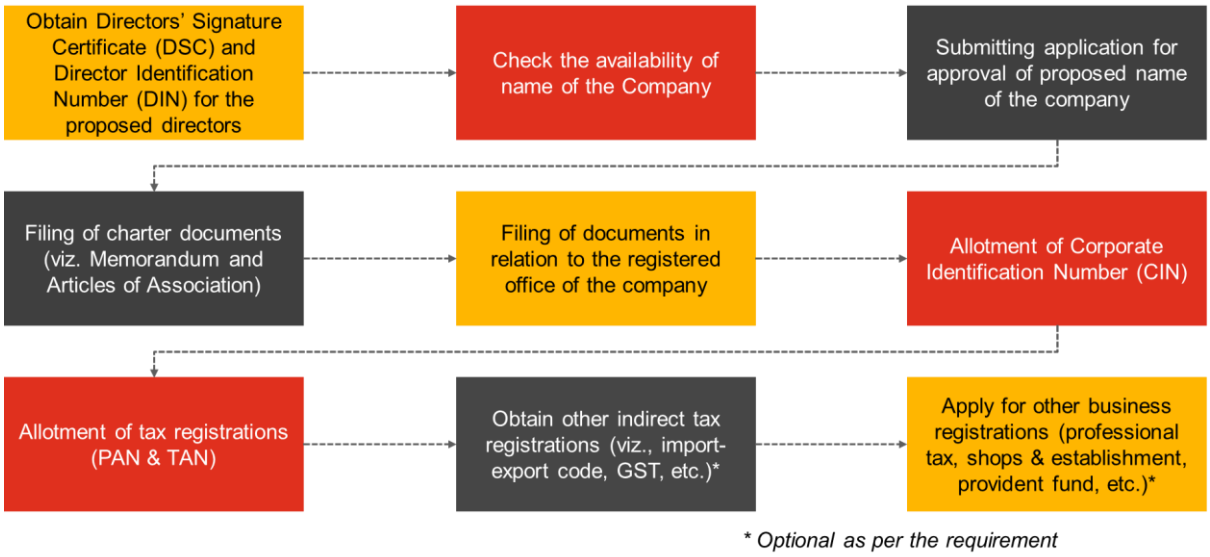
18. There is no need to deploy any further staff/ employee under the SPV so created. All works related to getting revenue land-lease for SPV, obtaining needful clearances before bidding, etc. would be done by designated officials of the "Nodal Agency". Those officials would work for all such SPVs created during implementation of MSKVY2.0 program.

To form an SPV

19. AoA and MoA of the Nodal Agency/ MSEDCL shall be assessed if they enable to form company/ subsidiary as needed. With such provisions, there would not be need for obtaining separate approval from GoMH to form an SPV.

20. To avoid ambiguity, MSKVY2.0 scheme document would have express provision to empower the Nodal Agency/ MSEDCL to form subsidiary/ SPV (private limited or public limited, as needed) for the purpose of implementing MSKVY 2.0 program.

21. An overview of the brief process for registration of company in India is shown as below.



Handover of the SPV

22. The project developer will be selected through bidding for the lowest levelized tariff for supply of solar power at the substation. The SPV would be transferred to the winning bidder through a Share Sale and Purchase Agreement[22].

23. SPV would sign a single PPA with MSEDCL for sale of power for its aggregated bid capacity.

24. After taking over the SPV, the winning bidder would have a flexibility to purchase private land/ include other land in its possession to enhance the project capacity on the substations already tagged for its bid group. Such capacity enhancement would be within permissible limits to safeguard the eligibility for CFA for MNRE's PM-KUSUM program component C.

25. The winning bidder would develop the land, power plant and other associated evacuation infrastructure.

[22] SPV formation and transfer as part of competitive bidding would be similar to that observed under Tariff Based Competitive Bidding for Transmission projects in line with the guidelines of Ministry of Power. A project SPV is created by subsidiaries of PFC/ REC prior to competitive bidding and it is transferred to the winning bidder. https://powermin.gov.in/sites/default/files/uploads/Revised_Guidelines_and_Standard_Bidding_Documents_SBDs_for_procurement_ISTS_through_TBCB_process.pdf

11. Annexure 3: Indicative list of statutory clearances and approvals

11.1. List of clearances

S.No	Name of the clearance	Department
1	Vendor registration/Clearance	MEDA
2	Project registration /Clearance	MEDA
3	Industrial Clearance	Department of industries
4.2	Clearance from PWD Office	PWD
4.3	Clearance from ZP Office	Zila Parishad (PWD)
4.4	Clearance from CEO Office	Zila Parishad (CEO)
4.5	Irrigation officer	Irrigation Department
4.6	Clearance from rehabilitation Centre	Rehabilitation Department
4.7	Forest Clearance	Forest Department
4.8	Clearance from Joint Measurement	Bhumi Abhilekh Dept. (TILR)
4.9	Town Planning clearance	Urban Department
4.10	Land Valuation clearance	Stamp Duty Department
4.11	Circle Revenue clearance	Circle Revenue Office
4.12	Tehsildar clearance	Tehsildar /Taluka Revenue office
4.14	Clearance from Sub divisional revenue office	Prant Office (SDM)
4.15	Clearance from district collector office	Collector Office
5	Environmental clearance	PCB
6	Contract Labor approval	State labor department
7	Fire Safety Certificate	Fire Department
8	Clearance from Chief Electrical Inspector for plan	PWD
9	Power evacuation clearance	MSEDCL
10	Specification approval	MSEDCL
11	SLD/Connectivity diagram approval	MSEDCL
12	Clearance for Metering	MSEDCL
13	Startup Power approval	MSEDCL
14	Elec. Insp. - Charging Permission	EI Office
15	NOC for SEM Charging	MSEDCL

S.No	Name of the clearance	Department
16	Installation of SEM Meter	MSEDCL
17	Final Grid Connectivity Approval from MSETCL	MSETCL
18	Synchronization permission from SLDC	SLDC
19	Permission to Commission (PTC)	MSEDCL
20	Project Commissioning by Field Office	MSEDCL
21	Monthly Generation Report	MSEDCL & Developer

12. Annexure 4: Financial implications

12.1. Estimated financial burden on GoMH

a) Early commissioning generation incentive of Rs 0.15/kWh and Rs 0.25/kWh for projects injecting energy at 33 kV and 11 kV busbar respectively, for three years – Impact of Rs 682 Cr

b) System strengthening grant up to Rs 25 lakhs/ substation to MSEDCL – Impact of Rs 351 Cr

c) A social benefit grant to the Gram Panchayat of Rs 5 lakhs/project/year for three years – Impact of Rs 211 Cr

d) Total outlay of GoMH over the lifecycle of project (a+b+c) – Rs 1,244 Cr

Summary of financial burden on GoMH over lifecycle of project

	2023	2024	2025	2026	Total
Capacity (MW)	750	1250	2000	3000	7000
Early commissioning generation incentive (Rs Cr)	73	122	195	292	**682**
System strengthening grant (Rs Cr)	38	63	100	150	**351**
Social benefit grant to the gram panchayat (Rs Cr)	23	38	60	90	**211**
Total	**134**	**223**	**355**	**532**	**1,244**

Note: The numbers denote financial burden over the lifecycle of project for the capacities commissioned in respective years. For instance, for the 750 MW capacity commissioned in 2023, early commissioning generation incentive shall be Rs 73 Cr over 3 years

12.2. Summary of benefits to GoMH

a) Revenue from GST on the capital expenditure incurred by project developers – Benefit of Rs 1,533 Cr

b) Revenue from GST on annual operations and maintenance expenditure incurred by project developers – Benefit of Rs 945 Cr

Summary of benefits to GoMH over lifecycle of project

	2023	2024	2025	2026	Total
Capacity (MW)	750	1,250	2,000	3,000	7,000
Revenue from GST on capex (Rs Cr)	164	274	438	657	**1,533**
Revenue from GST on O&M (Rs Cr)	101	169	270	405	**945**
Total	**265**	**443**	**708**	**1,062**	**2,478**

Note: The numbers denote financial benefit over the lifecycle of project for the capacities commissioned in respective years. For instance, for the 750 MW capacity commissioned in 2023, revenue from GST on O&M shall be Rs 101 Cr over 25 years

Summary of net benefits to GoMH over lifecycle of project

	2023	2024	2025	2026	Total
On annual cash flow basis					
Burden on GoMH (Rs Cr)	134	223	355	532	1,244
Benefits to GoMH (Rs Cr)	265	443	708	1,062	2,478
Net benefits to GoMH (Rs Cr)	**131**	**220**	**353**	**530**	**1,234**
On Net Present Value (NPV) basis					
Burden on GoMH (Rs Cr)	124	206	330	495	1155
Benefits to GoMH (Rs Cr)	202	336	538	806	1882
Net benefits to GoMH (Rs Cr)	**78**	**130**	**208**	**311**	**727**

12.3. Yearly budgetary provision needed and benefits to GoMH

	2023	2024	2025	2026	2027	2028	Total
Annual capacity (MW)	750	1,250	2,000	3,000	-	-	7,000
Cumulative capacity till the year (MW)	750	2,000	4,000	7,000	-	-	
Cost of incentives							
Early commissioning generation incentive (Rs Cr)	25	65	130	203	162	96	**682**
System strengthening grant (Rs Cr)	38	63	100	150	**-**	**-**	**351**
Social benefit grant to the gram panchayat (Rs Cr)	8	20	40	63	50	30	**211**
Annual cost of incentives (A)	**70**	**148**	**270**	**416**	**212**	**126**	**1,244**
Provision for revolving payment security fund as per Clause 4.3 (a)b	100	200	400	700	700	700	
Annual budgetary provision	170	348	670	1116	912	926	
Benefits to GoMH							
Revenue from GST on capex (Rs Cr)	164	274	438	657	-	-	1,533
Revenue from GST on O&M (Rs Cr)	4	11	22	38	38	38*	945
Annual benefits to GoMH (B)	**168**	**284**	**459**	**694**	**38**	**834^**	**2,478**

**For each year up to 25th year; ^Cumulative up to 25th year*

12.4. Other benefits

a) Reduction in cost of supply of MSEDCL resulting in reduction in cross-subsidy burden on industrial and commercial consumers to the tune of nearly **Rs 20,000 Cr over** the lifecycle of projects; Shall aid

reduction in tariffs/ avoided tariff hikes for a prolonged period and savings in GoMH subsidy for industries

a) Avoided cost of RPO compliance for MSEDCL since solar power from such projects shall aid in meeting RPO – **Benefit of nearly Rs 2,000 Cr over** the lifecycle of projects

b) Agriculture consumers: Day time reliable and quality power supply, and possibility of reducing the electricity tariffs paid by farmers