The Uttar Pradesh Solar Energy Policy, 2022 [Draft]

UPNEDA has notified draft "Uttar Pradesh Solar Energy Policy, 2022" on 09.08.2022.

The summary of the document is as follows:

- **Introduction:**

  To meet the global commitment Government of India has fixed a national target of 500 GW installations from Non Fossil Fuels. Out of which as per CEA report on "Optimal Generation Capacity mix for 2029-30", 280 GW will come from Solar Energy. This will reduce dependence on conventional sources of energy by promoting non-conventional energy sources.

  The State has vast and largely untapped potential and availability of vast barren/un- cultivable unutilized government/private land in Bundelkhand. This has potential to make Uttar Pradesh a highly preferred destination for solar energy at the global level.

  Although Solar Energy is a day time energy it becomes necessary to promote storage systems to ensure Round the clock power supply at the same time this is also necessary to ensure grid stability in a long run. Uttar Pradesh values the commitment to develop Round the clock Power using Non-conventional Energy sources.

  To align with India's ambitious solar PV capacity expansion program, the State envisages to accelerate the deployment of solar power by means of implementation of large-scale projects, small scale distributed systems, establishment of ultra-mega solar parks and Rooftop solar PV projects. These targets will be achieved by introducing new mechanism that will support consumers, businesses and developers in the sector.

  Accordingly, State Government of Uttar Pradesh hereby declares and adopts **Solar Energy Policy, 2022**, with a target of 16000 MW solar power projects up to 2026-27 distributed according to the following table and, shall remain in operation for a period of 5 years.

S.No.	Particulars	Capacity
1	Utility/Grid Scale Solar Projects/Parks	10000 MW
2	Solar Rooftop	4,000MW
3	Distributed Solar Generation	2000 MW
4	Employment Generation	10000 No's

  Uttar Pradesh New and Renewable Energy Development Agency (UPNEDA) will be the Nodal Agency for implementation of this policy.

- **Vision & Objective:**
  - Low cost and reliable power.
  - Reduce the dependence on fossil fuels and achieve Optimal Energy Mix and Energy Security in the State.
  - Provide hassle free conducive environment for private sector investment in the field of solar Energy generation and storage.
  - Human resource development particularly to renewable energy skill enhancement and generation of employment opportunities.
  - Awareness about so1ar power technologies amongst all the electricity consumers

- The Policy provide the timelines and conditions for installation of Roof top Solar Systems, off-grid solar applications, utility scale grid connected solar projects, solar power projects with storage, solar parks and the details of incentives and facilities applicable for the said different types of the installation.

The document can be found here.

CER Opinion

1. **Basic Design Feature of Solar Policy:** The Draft Solar Policy is largely similar to the UP Solar Policy 2017. Given that most of the key objectives of the policy were unmet (till its target year 2022), it should be noted that something was inherently flawed in the basic design of the previous policy. Feedback from stakeholders (who have invested and who did not) is necessary to address lacunae in the previous policy, which is largely been followed in its design as well as content. Answers to the following questions should help identify areas for improvement and, hence, help design of the solar policy.

   Why was there slippage in the targets? Is it because the targets were very ambitious or there was something missing in the enabling environment for investment?
   How did various stakeholders perform in their respective domain to help meet the policy target?
   What was the experience of the empowered committee and up to what extent they were able to address the bottlenecks?
   Which type of sub-sectors fared well in solar rooftop implementation? What were the factors for limited participation of the others?

2. **Policy Target (Clause 5.i):** The draft policy seems to justify almost all the possible ways of promoting solar, without a relative assessment of strength and weaknesses of sub-components of the target. This is likely to be economically inefficient and, would most likely be reflected in slippages across sub-targets to a variable degree. The draft policy targets to achieve 16000 MW solar capacity, up from about 2244 MW now. Required growth of solar capacity is highlighted in Table below.

S. No.	Particulars	All India – Installed Capacity	UP - Installed Capacity	UP - Proposed Capacity Target	UP - Growth Multiple (CAGR)
1	Utility/Grid Scale Solar Projects/Parks	47765.87	1851.5	10000	5.4 (40%)
2	Solar Rooftop	7083	258.7	4000	15.5 (73%)
3	Off-Grid /Distributed Solar Generation	1744.24	134.28	2000	14.9 (72%)
4	Solar Hybrid	1380.4	0.00		
5	Total	57973.80	2244.56	16000	7.1 (48%)

So: Physical Progress Report MNRE 31st July, 2022 and Draft Solar Policy, 2022

   The capacity growth target has a CAGR of 48%, with that for various sub-heads ranging from 40% to 73% (see table above). Given the historical experience and the fact that policy design is largely similar to the previous ones, with additional features, the identified targets are very ambitious. For example, Solar Policy 2017 targeted 4300 MW for solar rooftop by 2022, whereas, only 258 MW was achieved. This highlights the need to identify policy gaps and implementation issues from the experience of UP Solar Policy 2017.

   Furthermore, the Policy should highlight RE generation i.e. actual (MWh) while keeping capacity addition in mind. This would ensure that efficient technology is deployed and utilized at locations where it can generate more energy, and it can be operated and maintained in a sustainable manner. Historical experience suggests that capacity based targets (especially for rooftop/off-grid installations) do not translate to contribution to MWhs as effectively due to lack of an institutional framework to ensure sustained operation, maintenance and its monitoring.

3. **Need for a Study to Assess VRE Absorption Capacity in UP:** Each state's power system's capability to absorb variable renewable energy (VRE) depends a variety of factors including the

current energy mix, RE resource profile of the state, expected growth of conventional generation capacity, expected load profile and its mix, cost of various sources of power, transmission capacity etc. Target for RE capacity addition potential in the state should be based on a techno-economic study and its economic impact on the cost of power procurement and consumers tariff. A study of such kind needs to be undertaken for the state to identify the RE capacity potential and need for regulatory and policy interventions.

4. **Vision and Objectives (Clause 2.a):** The draft clause states *"To provide low cost and reliable power to the people of Uttar Pradesh".* The objective of the Solar Energy Policy to '*provide low cost and reliable power'* have an inherent trade-off as the two objectives cannot be attained at the same time given the current technological status and their economics. Costs associated with the system imbalance and cost of storage, due to variability and uncertainty associated with solar energy would lead to higher costs. The overall objectives of the Solar Policy should link up with the nation's commitments under the policy framework for Climate Change (as recently drafted for the NDC). Apart from this, solar energy plays an important role in reducing variable cost of power purchase[1], to supplement clean energy access and to improve reliability in case solar rooftops/mini-grids (with storage) also function in the islanded mode.

5. **Optimal Energy Mix (Clause 2.b):** Draft clause states *"To reduce the dependence on fossil fuels and achieve "optimal energy mix" of conventional and renewable power…"* The 'optimal energy mix' is neither defined not justified and hence does not add any clarity to the objective. The term *"optimal energy mix"* may be substituted with *'low carbon/greener/cleaner energy mix'*.

6. **Environment for Investment (Clause 2.c):** Draft clause states *"To provide hassle free conducive environment for private sector investment…."* This seems to exclude a role of DISCOMs/public sector entities to make investment. As per the draft policy, the latter is also expected to play a crucial role to achieve the objectives of the policy. Hence, the clause should make room for 'public sector' investment as well.

7. **Segregated Agriculture Feeders (Clause 5.b):** Draft clause states*"Promotion of small Decentralized Grid Connected Solar Power Projects by solarization of segregated agriculture feeders".* It is highlighted that 'hard feeder segregation' is much costlier than 'soft feeder segregation' or 'Virtual Feeder Segregation'[2] in an economical manner. Given that there is significant lack of financial resources, cost effective options should be adopted. Further, the relevance of feeder segregation is on wane if availability of power has improved across the state. Virtual Feeder Segregation rather than the physical segregation should be implemented as physical segregation is very costly, time consuming and complex. (RoW issues make it even more complex to implement. MNRE has commissioned 11 KV Manota feeder on 9th December, 2021 as a pilot for IoT based virtual feeder Segregation.

8. **Solar Installations along expressways and Railway tracks (Clause 5.c):** Draft clause states *"Promotion of solar installations along expressways and Railway tracks."*. The policy should focus on areas presenting comparative advantage. Significant dust load along railway tracks and roads, and demand for water for its cleaning should be weighed. Access to transmission line and solar radiation should also play an important role in such a selection. Limited pilots should be planned for such capacity before scaling up in areas with high insolation, low dust and adequate water availability.

9. **Storage Systems (Clause 5.e):** Given the high cost of energy storage (read battery) and lack of potential for pumped storage in the state, high reliance on costly storage systems should be weighed against the benefit it would bring to the power system of the state (this re-emphasises need for a study as mentioned above). Hence, the policy should emphasise ***'cost effective'*** storage systems based on their own economic merits.

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[1] Limit to integration of variable renewable energy including solar in a power system

[2] Virtual feeder segregation is implemented through application of IoT and requires significantly less investment. Experience of deployment of the technology on 11 kV Manota Feeder (Rajasthan) in December, 2021 should provide more insights to the same.

10. **Home Lighting Systems (Clause 5.g):** Draft clause states *"Promotion of Off-Grid Solar applications like Solar Water Pumps, home lighting systems, water heater, etc".* If electricity access has reached nearly 100% in the state, the merit for home lighting system is very limited. Scarce financial resources should instead be utilized for applications that merit attention especially solar water pumps, public tube wells, lift irrigation etc which can operate during the day and utilize solar energy during the day.

11. **Online Portal and Registration of Solar Projects (Clause 6.1.1):** Draft clause states *"UPNEDA will act as a single window to cater all type of solar Projects on behalf of the Govt. of Uttar Pradesh"*. Given the awareness of use of online platforms/App, a centralised portal should make the process of registration, monitoring and follow-up, requiring least human intervention. A portal should be developed for information dissemination, registration, follow-up, monitoring and feedback. It is suggested that the nodal agency should be more proactive in the virtual space than physical space.

12. **E-Bidding /Reverse e-bidding for Solar Power Projects** (**Clause 6.1.2):** Draft clause states *"Approval of Solar Power Projects includes facilitation of Projects for competitive bidding, PPA, statutory clearances, coordination with MNRE and other central Agencies, facilitation for approval of Power evacuation Plan and allocation of Bays."*

    Solar policy should adopt e-bidding/reverse e-bidding for development of solar capacity in the state. Electronic platform based approach would also attract more bidder and thus contribute to the achievement of solar capacity targets. An approach similar to ultra-mega power projects needs to be adopted (even though it aims to cater to projects of various size). The identified companies / nodal agency should acquire land, obtain necessary approvals, seek connectivity and then offer the project sites for bidding. Since most of the risks would have been addressed prior to bidding, one should expect lower bids and lesser room for rent seeking. The bidding document should be pre-approved by UPERC ensure that adoption of tariff (under section 63 of Electricity Act 22003) for such solar projects is faster and soother process. The modal bid document and power purchase agreements used by SECI, and which follow the Competitive Bidding Guidelines, should be a starting point for the same so as to ensure a faster rollout of the policy.

13. **Facilitation for Government Land/Space (Clause 6.1.4):** Draft clause states *"Facilitate allotment of suitable land/space in control of State Government or its agencies."* The proposed companies (in draft policy) or a new company may be floated by UPNEDA to acquire the land and create a land bank. A transparent and non-discriminatory process should be followed for land transfer to successful bidders.

14. **'Solar Cities' Vs 'Solar Villages' (Clause 7):** Draft clause states *"It proposes to establish "…Solar Cities" across the State with emphasis on Solar Rooftops and other allied off-grid solar installations…"* While Solar Cities may be the ultimate long-term goal of the policy, it should begin with targeting limited localities of identified cities (especially new developments/sectors) as well as semi-urban areas. In fact, Solar Village should be the primary target of the policy as it would reduce the subsidy burden. It would also be relatively easy to develop few villages as modal solar villages with 24x7 assured power, thus leading to a greater adoption across the state.

    New urban area developments as well as sectors/schemes developed by local authorities may be mandated to ensure adoption of solar thermal or Solar PV as an integral plan of housing approval. This should go hand-in-hand with the nodal agency ensuring that all the approvals as well as financial incentives are made accessible in a streamlined fashion.

15. **Solar Cell:** Draft clause states **"***In order to facilitate Solar Rooftops and net metering, a committee (Solar cell) is being established…"* This committee may be renamed as *'Solar Energy Development Cell'* or other suitable name as the term *"Solar cell"* is largely associated with the technology.

16. **Promotion of MSME and Startups**: This is dependent on organisations other than those in the energy sector. A mechanism should be established, involving the relevant departments/ministry/SIDBI etc,, which should provide an enabling framework for incubation of startups/MSME. Portal of the nodal agency should provide necessary details for the process flow and contact persons in the respective organisations.

17. **Government/Govt. owned Public Institutions/Educational Institutions (Clause 7.1.iii):** Draft clause states *"Secondary schools, Govt. colleges, Technical Institutions and Universities across the State shall be covered in phased manner with Solar Rooftops."* The targeted universal solarisation of schools should be evaluated against the sustainable maintenance and security of the assets, and be carried out in a phased manner so as to ensure that public funds are used efficiently. This would allow to build upon the experience and scale up the scheme in phases. Institution-/School-level committee should be established to ensure that projects are implemented in consultation with the, who also have sufficient buy-in in sustained operation of the same. For effective monitoring and evaluation, following information should be archived and publicly available for each project on the nodal agency's portal

    - Month and Year of sanction
    - Month and Year of installation
    - Total sanctioned load of the institution
    - SPV capacity installed
    - Type of technology (e.g. Mono/poly crystalline, with/without storage)
    - Storage capacity and technology
    - Daily/weekly generation and utilization data
    - Total cost of each project
    - Subsidy/funding provided by each agency (state/central)
    - Name of implementing agency/company etc.
    - Name, designation and contact information of the nodal official at the institution
    - Name, designation and contact information of the nodal official of the discom

    This should also be accompanied by responsibility chart for each project so that any issue leading to sub-optimal operation and maintenance of the plant are reported and addressed.

    This would enable effective monitoring and, would also support associated research studies evaluating effectiveness of such deployments. This should be an integral part of the design of the scheme and be mandatorily followed. Lack of such detailed information on previously implemented projects with public funding support, especially on their effectiveness does not enthuse confidence in efficient use of scarce funds.

18. **Nagar Nigam (Clause 7.1.iv):** Draft clause states *"Nagar Nigam assets will be solarised using Solar Rooftops"*. Selected Nagar Nigam assets, which have sufficient and secure space, should be identified for implemented this in the first phase. Given that many dilapidated Nagar Nigam buildings may not be suitable for mounting SPV on the rooftop and storing associated balance of plant, a phased approach should be followed where by such buildings are selected based on a pre-defined set of criteria and those meeting a minimum criteria across all the desirable heads be solarised. This would also allow the local authorities sufficient time to address the gaps to make the Nagar Nigam premses more suitable for rooftop installation. For effective monitoring and evaluation, following information should be archived and publicly available for each project on the nodal agency's portal

    - Month and Year of sanction
    - Month and Year of installation
    - Daily/weekly generation and utilization data,
    - Total sanctioned load of the Nagar Nigam
    - SPV capacity installed
    - Type of technology (e.g. Mono/poly crystalline, with/without storage)
    - Storage capacity and technology

- Total capital cost
- Subsidy/funding provided by each agency (state/central)
- Name of implementing agency/company etc.
- Name, designation and contact information of the nodal official at the Nagar Nigam
- Name, designation and contact information of the nodal official of the discom

This should also be accompanied by responsibility chart for each project so that any issue leading to sub-optimal operation and maintenance of the plant are reported and addressed. Sharing of this information should be an integral part of the design of the scheme and be mandatorily followed.

19. **An Index Based Approach to Identify Sites for SPV Installations:** An index based approach, considering site preparedness, solar radiation (incl shading), safety of assets, connectivity, and local institutional mechanism for operation, maintenance and monitoring etc. Only sites rated above a minimum threshold should be identified for implementation of PSV projects on rooftops of schools/institutions/Nagar Nigam[3]. The excluded sites, based on the index sub-components, would also be able to identify areas for improvement.

20. **Revenue Model (Clause 7.1.vi):** Draft clause states *"A* revenue *model is being developed whereby Nodal Agency, UPNEDA will play an active role in collection of demand for installation of Grid connected Solar Rooftop Power Plants from Government departments."* It is not clear as to which 'revenue model' is being referred to. Is UPNEDA expected to get a share of revenue? UPNEDA should follow the competitive bidding based model applied by SECI in award of capacity for institutional rooftop SPV installations across the country.

21. **Net Metering (Clause 7.2.2.iv):** Draft clause states *"Net Metering Facility will be given to residential consumers as per regulations as notified by Uttar Pradesh Electricity Regulatory Commission from time to time."* The policy should not limit reference to 'Net Metering', as the regulatory environment for rooftop SPV may change as per the prevailing regulations of Uttar Pradesh Electricity Regulatory Commissions (UPERC). A number of State Electricity Regulatory Commissions (SERCs) have adopted gross metering/net billing/virtual metering or group metering

22. **Time Period of Installation (Clause 7.2.2.v):** Draft clause states *"Time Period of Installation of Residential Rooftop Solar Systems will be"* A portal should be developed for Submission and instantaneous Acknowledgment of Application.

- Maximum Time Period for rooftop solar installations should be 30-45 days, in place of 90 days.
- Installation of Rooftop Solar System and required testing of the meter may run in parallel to save time.
- Current scheme proposes that each consumer would be provided assistance from the respective scheme after the installation. This passes on risk to the consu mers, who would have made partial/full payment for the installation. In case of any delay or shortcoming on part of the vendor, the consumer cannot make would be left to fend for itself. This would raise the uncertainty for the consumers and may make the scheme less attractive to consumers. As an alternative, assistance may be disbursed to the vendors after satisfactory installation and its validation by the consumer through a two-layer OTP based verification mechanism with physical record. This will allocate the risk of delay, satisfactorily installation and testing to the vendor, who should rightfully be bearing that risk.

23. **Monitoring framework:** Based on the installed capacity, following operational monitoring should be implemented. Cost associated with the same should be included in the overall capital cost of the plant.
    i. 1 MW & Above: - Block wise (15 min) monitoring of solar radiation, generation, utilisation and injection to the grid. Weekly report.
    ii. 20 kW -1 MW: - Block wise (15 min) monitoring of generation, utilisation and injection to the grid for a sample of units[4]. Weekly report.

[3] Separate threshold for index for each type of applications.
[4] Additional cost for such units, if any, to be borne by the discom/nodal agency.

iii. Below 20 kW:- Monthly report on generation, utilisation and injection to the grid.

The above information should be archived and accessible publicly through Discom/nodal agency's portal.

24. **RPO target (Clause 9.1):** To justify the targeted solar capacity addition, UPERC would have to raise RPO for the state to more than 20% by 2026-27 (Refer to calculations in Table below). This would have financial implications for the discoms and would be reflected in final tariff to be paid by the consumers. An assessment of the same should be carried out to ensure that the financial stress faced by the discoms is not exacerbated, which would have implications for the final consumers as well.

FY	Installed capacity (GW)	CUF# (%)	Generation from Solar (BU)	(Projected) Energy Requirement (BU)	Solar RPO (%)	Target Solar RPO (%)
2021-22	2.24	20	3.93	106.57	3.69%	4%
2026-27	16	20	28.03	133.76*	20.64%	-

- Assuming 20% CUF.

Above calculations are based on data from Draft Solar Policy, 2022, UPERC Tariff order 2021-22 and MNRE, Physical Progress Report, 31st July, 2022. Growth in energy requirement is 25.51% (as per CEA report on Long Term Demand Forecasting published on August, 2019).

25. **Normative Cost of Transmission Infrastructure for Utility Grid Power Projects of capacity 5 MW and above (Clause 9.1b):** Draft clause states *"For grid connectivity of Standalone Solar Power projects of capacity 5 MW and above proposed to be set up in Bundelkhand and Purvanchal region, State Government will bear the cost for construction of maximum transmission line length…"*

    The draft document proposes cost verification for the transmission line by executives of UPPTCL. The policy should adopt a **normative cost based structure for the transmission line**. This would not only bring cost efficiency in its deployment but also avoid any room for cost padding and rent seeking. Benchmark transmission line cost as per prevailing UPERC/CERC Regulations may be adopted for the purpose. Reimbursement of the cost of the transmission line should be limited to the efficient benchmark cost, any cost over and above the same should be borne by the developer. Such cost disbursement should be done only after the plant has achieved CoD, to ensure that the developer has the incentive to complete the project in time. All such costs reimbursed, along with name of the project, voltage level, location, line length, date of approval, and date of CoD and date of reimbursement etc should be reported on the nodal agency's website. This would provide confidence to the future investors as well.

26. **Solar Power Projects for sale of power to Third party or Captive use (Clause 9.2):** Draft clause states *"Many power guzzler industries require solar energy to reduce their thermal demand"*. The context of the statement is not clear and seems a misfit here.

27. **Exemption on wheeling charges/transmission charges (Clause 9.2.1):** Draft clause states *"Exemption of 50 % on wheeling charges/transmission charges on Intrastate Sale of Power to third party or in case of Captive use."* Sine this is in the context of solar power only, reference to the same may be added for clarity and avoiding legal disputes later. The applicable wheeling/transmission charges are determined by UPERC. The draft policy can propose to reimburse 50% of those charges but cannot exempt this as determination and applicability of the tariff falls within the jurisdiction of UPERC.

28. **Solar power projects set up of floating /reservoir/canal top (Clause 9.3):** Draft clause states *"The State will promote setting up of floating/reservoir top/canal top Solar Power Projects for sale of power to DISCOMs through competitive bidding or for captive use/third party sale."* Since most of water bodies are public properties or are common property resources, how could these be

exploited by private individuals for captive generation and third party sale? Such applications would thus be limited to the owners of the water bodies, e.g. the irrigation dept. The policy should provide an enabling framework with a transparent policy for award of such spaces for SPV applications.

29. **Ground mounted solar PV Systems in Open Spaces (Clause 9.4):** Draft clause states *"State will promote setting up of Ground mounted solar PV systems on open spaces across the state. Open spaces is defined as any unused land available within buildings premise, campus where connectivity can be provided through the grid under UPERC regulations…".* It is unclear as to which kind of open spaces (as defined in this clause) can accommodate SPV installations of 600 MW and beyond, and that too at 765 kV! Has any such open space been identified in the state?

30. **Development of Solar Parks by Private Sector (Clause 9.4):** Solar parks, particularly in the Bundelkhand and other regions with high solar potential can provide a conducive environment for setting up large size grid interactive solar PV plants. Such parks may be developed in coordination with SECI and central sector entities, which have experience in setting up the same across the country.

31. **Solar Power Projects with Storage Systems and RECs (Clause 11.2):** Draft clause states *"The minimum rated energy capacity of an energy storage system shall be equal to 4 hour storage capacity of the installed capacity of the project in MW."* The policy should promote energy storage on its value proposition. The competitive bidding process should be adopted for supply of solar energy during evening peak hours. Appropriate technology may be allowed to be selected by the bidders to meet the supply requirements. Renewable Energy Certificate Mechanism may be adopted to ensure guarantee of origin for such stored energy. Some of the related suggestions[5,6,7,8,9] on the same in response to CERC/POSOSO's draft regulations/process may be referred for further clarity.

32. **Research and Development Solar Power Projects with Storage Systems (Clause 11.3):** The policy should focus on creating an enabling environment for investment in solar energy development in the state. Research and development should be best left to the private sector who would make efficient use of financial resources with a clear objective targets for the same. The policy can promote the same by mandating a component for **Solar Research Park** within identified Solar Parks to be developed by the private sector. The scarce public funds can thus be efficiently allocated elsewhere to meet the objectives of the policy.

33. **Solar Power Projects on Private Land (Clause 12.1.1):** Draft clause states *"The State shall provide facility of deemed land conversion from Agriculture use to Non Agriculture use on approval by the State Nodal Agency"* Easy conversion of agricultural land should be balanced with loss of arable land to avoid food security concerns over a long run. There should be a provision to monitor and review the extent to which private agricultural land has been converted to non-agricultural usage.

34. **Solar Power Projects on Private Land (Clause 12.1.3):** Draft clause states *"The price of land lease will be determined at market rates on a yearly basis up to thirty years"* A market rate for

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[5] Anoop Singh, Comments on MoP Discussion paper on Redesigning the Renewabke Energy Certificate (REC) Mechanism, June 2021, cer.iitk.ac.in/blog

[6] Singh, A. 2010. "*Economics, Regulation and Implementation Strategy for Renewable Energy Certificates in India*" in India Infrastructure Report 2010, Oxford Univ. Press. -https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3440253

[7] Anoop Singh, Comments on *"CERC (Terms and conditions for recognition and issuance of Renewable Energy Certificate for renewable energy generation) (Second Amendment) Regulations, 2013",*

[8] Anoop Singh, Comments on *"WBERC (Co-generation and Generation of Electricity from Renewable Sources of Energy) (First Amendment), Regulations, 2020*"

[9] Anoop Singh, A market for *Renewable Energy Credits (REC) in the Indian Power Sector: Renewable and Sustainable Energy Reviews, www.researchgate.net/profile/Anoop-Singh-28*

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land lease in most of the rural and remote areas may not be available. A minimum benchmark, which may be linked to circle rate, may be specified so as to address concerns of the landowners.

35. **Stamp Duty Land (Clause 13.2):** The 100% exemption on stamp duty on the land used for setting up of Solar Power Plant /Solar Park would encourage investors. The exemption should be notified at the very outset to address uncertainty for the investors.

36. **Capital Interest Subsidy (Clause 13.3):** Draft clause states *"The State Government shall provide capital Interest subsidy to the extent 5 % per annum for five years in the form of reimbursement on loan taken for procurement of plant and machinery subject to annual ceiling of 50 Lakhs"* It is suggested to replace the existing text with "The State Government shall provide capital Interest subsidy to the extent 500 BPS/ annually for the first five years in the form of reimbursement interest paid to the lender."

Draft clause states *"This subsidy will be applicable to Utility scale Solar Power Projects with a capacity* ***more than 5 MW.****"* Capacity of **5 MW or more** should be used.

37. **Infrastructure subsidy (Clause 13.3):** Draft clause states *"The State Government shall provide a capital subsidy for transmission systems to evacuate solar power"*It is suggested that all incentives should be listed in competitive bidding document and **capital subsidy should be discouraged as this incentivises overcapitalisation and inefficient use of funds**. Instead, **higher interest rate subvention can be considered as a superior alternative.**

38. **Energy Banking (Clause 13.3):** Draft clause states *"Banking of energy in every financial year shall be permitted, subject to verification by the officials…"* Banking of energy should be permitted as per the UPERC regulations.

39. **Environmental Clearance (Clause 13.8):** Draft clause states *"Solar PV projects shall be exempted from obtaining Environmental clearance."* Need for environmental clearance would arise especially in case of a proejct's impact on forest, biodiversity and those located near ecologically sensitive areas.

40. **Pollution Control Board (Clause 13.9):** Draft clause states *"Grid connected Solar PV Projects will be given NOC/ Consent for establishment and operation on application to U.P. Pollution Control Board."* It is suggested that an appropriate notification regarding the same should be issued by U.P. Pollution Control Board at the very outset to address uncertainty for the investors.

41. **State Action Plan for climate change (Clause 15):** Draft clause states *"to meet its commitments under the State Action Plan for climate change for Renewable energy sector."* State Action Plan for Climate Change (SAPCC) and Solar Policy should be coherent in their objectives as far as development of solar energy is concerned. SAPCC should be highlighted at the very outset in the Solar Policy, if the aim is to garner international development funding for the same.

42. **Time frame for completion of solar Projects (Clause 16):** Draft clause states *"….In case of any delay in project execution penalty would be imposed as per the contract."* Instead to loosely referring to 'any delay', delay with respect to CoD is crucial and be referred to. Penalty for delay beyond CoD should be incorporated in the Bid document.

43. **Employment Generation & Skill Development (Clause 16):** Draft clause states *"10000 youth to be trained as Surya Mitra at UPNEDA training center, U.P. Skill development Mission & National Institute of Solar Energy certified Training centers in the next 5 years."*

The proposed training should be brought near to the people. Access to the mentioned training would otherwise be limited to those in the nearby areas. Each project developer should be tasked with the training needs for the development of solar energy sector in the state in general, and as per the need of the project site in particular. Hosting training workshops ONLY at UPNEDA centres would limit their reach to people in need.

44. **Timeline and Task Ahead for Nodal Departments:** To ensure that the identified policy steps are notified and implemented at the earliest and the investors have clarity and assurance of these policy steps, each of the identified departments should have a checklist of tasks to be undertaken along with their timeline. These should be updated at the webpage specially designed for implementing the Solar Policy. The page can be hosted at UPNEDA portal with clear visibility through its home page.