महाराष्ट्र शासन
उद्योग, ऊर्जा, कामगार व खनिकर्म विभाग
शासन निर्णय क्रमांक:-अपाऊ-२०२५/प्र.क्र.२२/ऊर्जा-७
हुतात्मा राजगुरू चौक, मादाम कामा रोड,
मंत्रालय, मुंबई- ४०० ०३२.
दिनांक:- १८ मार्च, २०२६.

वाचा :-

१. उद्योग, ऊर्जा, कामगार व खनिकर्म विभाग शासन निर्णय क्र. अपाऊ-२०२०/प्र.क्र.१३७/ऊर्जा-७, दि. ३१.१२.२०२० व त्याअंतर्गत निर्गमित करण्यात आलेली शुध्दीपत्रके.
२. उद्योग, ऊर्जा, कामगार व खनिकर्म विभाग शासन निर्णय क्र.अपाऊ-२०२०/प्र.क्र.१३७ (अ) /ऊर्जा-७, दि. ११.०५.२०२२
३. उद्योग, ऊर्जा, कामगार व खनिकर्म विभाग शासन निर्णय क्र. अपाऊ-२०२१/प्र.क्र.२२४/ऊर्जा-७, दि. ३०.०६.२०२२

प्रस्तावना :-

राज्यातील वाढते औद्योगिकीकरण व शहरीकरणामुळे दिवसेंदिवस वीजेच्या मागणीमध्ये मोठ्या प्रमाणात वाढ होत आहे. वीजेची निर्मिती प्रामुख्याने कोळसा, पेट्रोलजन्य पदार्थ, नैसर्गिक वायू या पारपंरिक ऊर्जा स्त्रोतांपासून तसेच, सौर, पवन, सहवीज, जल इत्यादी नवीकरणीय ऊर्जा स्त्रोतांपासून केली जाते. पारंपरिक ऊर्जा संसाधने मर्यादित स्वरुपात असून, ती भविष्यात संपुष्टात येणारी आहेत. तसेच, अशा स्त्रोतांचा वापर केल्याने प्रदुषण, वैश्विक तापमान वाढ इत्यादी समस्या निर्माण होतात. जागतिक कार्बन उत्सर्जनाचा मोठा भाग ऊर्जा उत्पादन आणि वीजेच्या वापराशी संबंधित आहे. केंद्र शासनाने नवीकरणीय ऊर्जा स्त्रोतांचे महत्त्व विचारात घेऊन नवीकरणीय ऊर्जा स्त्रोतांपासून सन २०३० पर्यंत ५०० गिगावॅट वीज निर्मिती करण्याचे उद्दिष्ट निश्चित केले आहे. सदर उद्दिष्टामुळे भारताच्या सन २०७० पर्यंतच्या Net Zero Emission चे ध्येय प्राप्त करण्यास मदत होणार आहे. भारताने सन २०३० पर्यंत कार्बन उत्सर्जन ४५ टक्क्यांनी (सन २००५ च्या तुलनेत) कमी करण्यास आणि एकूण वीज निर्मितीच्या ५० टक्के क्षमता नवीकरणीय ऊर्जा स्त्रोतांपासून निर्मिती करण्यास कटीबध्दता दर्शविली आहे.

महाराष्ट्र राज्यात मोठ्या प्रमाणावर वाढत असलेल्या औद्योगिकीकरण आणि शहरीकरणामुळे वीजेची मागणी वाढली आहे. यासाठी आवश्यक वीज बहुतांशी पारंपरिक ऊर्जा स्त्रोतांद्वारे निर्माण केली जाते. मात्र, आता नवीकरणीय ऊर्जा स्त्रोतांपासूनच्या ऊर्जा निर्मितीकडे कल वाढत आहे. राज्यामध्ये नवीकरणीय ऊर्जा क्षेत्राला प्रोत्साहन देण्याकरीता शासनाद्वारे यापूर्वी सन २००८, २०१५ व २०२० मध्ये राज्याचे अपारंपरिक ऊर्जा निर्मिती धोरणे जाहिर केली आहेत. सन २०१५ व सन २०२० च्या अपाऊ धोरणाच्या अंमलबजावणीमुळे राज्याने फेब्रुवारी, २०२५ पर्यंत एकूण १८.५ गिगावॅट इतकी अपारंपरिक ऊर्जा निर्मिती क्षमता प्राप्त केली आहे. राज्याच्या एकूण ऊर्जा निर्मितीमध्ये नवीकरणीय ऊर्जेचा जवळपास १५ टक्के इतका हिस्सा आहे. राज्याने मार्च, २०२५ मध्ये ३०.७ गिगावॅट इतकी वीजेची मागणी नोंदविली आहे. ही वीजेची मागणी सन २०१५ पासूनची सर्वाधिक आहे. सन २०१५ मध्ये २०.४ गिगावॅट इतकी वीजेची मागणी होती यामध्ये जवळपास ५० टक्के इतकी वाढ झाली आहे. याशिवाय,

सन २०१४-१५ मध्ये राज्याने १३३ बिलियन युनिट इतका वीज पुरवठा केला असून, यामध्ये ५२ टक्के वाढ होऊन सन २०२४-२५ मध्ये २०१.८ बिलियन युनिट इतका वीज पुरवठा केला आहे. यानुसार राज्यामध्ये सन २०३० पर्यंत जवळपास २६०-२७० बिलियन युनिट इतकी वीज मागणीमध्ये वाढ होऊ शकते.

२. मा.महाराष्ट्र वीज नियामक आयोगाने आरपीओ (RPO) आणि आरईसी (REC) विनियमामध्ये सुधारणा केल्या असून, सन २०३० पर्यंत आरपीओ (RPO-Renewable Energy Purchase Obligation) आणि ESO (Energy Storage Obligation) करीता अनुक्रमे ४३.३३ टक्के आणि ४ टक्के इतके उद्दिष्ट निर्धारित केले आहे. याशिवाय, ग्रीन ओपन ॲक्सेस विनियम, सौर आणि पवन ऊर्जा निर्मितीकरीता पूर्वानुमान, काल व परिणाम निर्धारण (शेड्युलिंग) आणि तफावतीची हिशोबपूर्ती विनियम, सोलर रुफटॉप करीता Grid Interaction RE विनियम इत्यादी नवीकरणीय ऊर्जेशी संबंधित विनियमामध्ये मा. वीज नियामक आयोगाने सुधारणा केल्या आहेत.

सौर आणि पवन ऊर्जा स्त्रोतांमधील बदल आणि अस्थिरता यामुळे ग्रिडच्या उपयुक्त संचलनाकरीता अडचणी निर्माण होत आहेत. या नवीकरणीय ऊर्जा स्त्रोतांपासून निर्माण होणारी अधिकची ऊर्जा स्टोरेज करुन ती Low RE hour वेळी वापर करण्याकरीता "एनर्जी स्टोरेज" सिस्टम उपयुक्त ठरू शकतात. ही सिस्टम ग्रिडच्या व्यवहार्य संचलनाकरीता देखिल उपयुक्त ठरते.

राज्य शासनाचे यापूर्वीचे अपारंपरिक ऊर्जा निर्मिती धोरण, मा.महाराष्ट्र वीज नियामक आयोगाचे विविध विनियम, नवीकरणीय ऊर्जा आणि एनर्जी स्टोरेजची पुढील दहा वर्षातील मोठ्या प्रमाणात होणारी वाढ आणि गरज लक्षात घेता नवीन व नवीकरणीय ऊर्जा आणि एनर्जी स्टोरेजच्या विकासाकरीता **"महाराष्ट्र नवीकरणीय ऊर्जा आणि ऊर्जा साठवणूक धोरण-२०२५-२६ ते २०३५-३६"** ला मान्यता देण्याची बाब शासनाच्या विचाराधिन होती.

<u>शासन निर्णय</u> :-

या शासन निणर्याद्वारे परिशिष्ट-अ मध्ये सोबत जोडल्याप्रमाणे "महाराष्ट्र नवीकरणीय ऊर्जा आणि ऊर्जा साठवणूक धोरण-२०२५-२६ ते २०३५-३६" ला मान्यता देण्यात येत आहे. सदर धोरण या शासन निणर्याच्या दिनांकापासून लागू होईल.

२. या शासन निणर्याद्वारे संदर्भाधीन क्र. १ येथील शा.नि. व संबंधित शुध्दीपत्रकान्वये निर्गमित करण्यात आलेले अपारंपरिक ऊर्जा निर्मिती धोरण-२०२० तसेच संदर्भाधीन क्र. २ येथील शासन निणर्यान्वये निर्गमित करण्यात आलेले अपारंपरिक ऊर्जा निर्मिती धोरण-२०२० अंतर्गत प्रोत्साहनात्मक सुधारणा अधिक्रमित करण्यात येत आहेत.

३. "महाराष्ट्र नवीकरणीय ऊर्जा आणि ऊर्जा साठवणूक धोरण-**२०२५-२६ ते २०३५-३६**" या धोरणातील तरतुदीनुसार आवश्यक ते कार्यान्वयन आदेश संबंधित प्रशासकीय विभागाने / कार्यालयाने / कंपनीने विहीत मुदतीत निर्गमित करावेत. तसेच मा. महाराष्ट्र विद्युत नियामक आयोगाने या धोरणातील तरतूदींच्या अनुषंगाने त्यांचेशी संबंधित नियमने इत्यादीमध्ये आवश्यकतेनूसार सुधारणा करावी, अथवा आवश्यकतेनूसार नवीन नियमने निर्गमित करावीत.

४. या धोरणातील तरतूदींसंदर्भात ऊर्जा विभागाचे स्पष्टीकरण अंतिम राहील.

५. सदर शासन निर्णय दिनांक २२.०२.२०२६ रोजी झालेल्या मा. मंत्रिमंडळ बैठकीमध्ये घेण्यात आलेल्या निर्णयाच्या अनुषंगाने निर्गमित करण्यात येत आहे.

सदर शासन निर्णय महाराष्ट्र शासनाच्या www.maharashtra.gov.in या संकेतस्थळावर उपलब्ध करण्यात आला असून त्याचा सांकेतांक क्र. २०२६०३१८१८४८३६५८१० असा आहे. हा आदेश डिजीटल स्वाक्षरीने साक्षांकित करून काढण्यात येत आहे.

महाराष्ट्राचे राज्यपाल यांच्या आदेशानुसार व नावाने.

JAYANT SHARAD SAGADE

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(जयंत सागडे)
अवर सचिव, महाराष्ट्र शासन

प्रत:-

१. मा.राज्यपाल यांचे प्रधान सचिव.
२. मा. मुख्यमंत्री यांचे अपर मुख्य सचिव, मंत्रालय, मुंबई - ३२.
३. मा. उपमुख्यमंत्री (नगर विकास व गृहनिर्माण) यांचे प्रधान सचिव, मंत्रालय, मुंबई - ३२.
४. मा. उपमुख्यमंत्री (राज्य उत्पादन शुल्क, क्रिडा व युवक कल्याण, अल्पसंख्याक व औफाफ), महाराष्ट्र राज्य यांचे सचिव, मंत्रालय, मुंबई- ३२.
५. मा.मंत्री (महसूल) यांचे खाजगी सचिव, मंत्रालय, मुंबई-३२
६. मा.मंत्री (जलसंपदा) यांचे खाजगी सचिव, मंत्रालय, मुंबई-३२
७. मा.मंत्री (अपारंपरिक ऊर्जा) यांचे खाजगी सचिव, मंत्रालय, मुंबई - ३२.
८. सर्व मा. मंत्री यांचे खाजगी सचिव, मंत्रालय, मुंबई - ३२.
९. मा. राज्यमंत्री (ऊर्जा) यांचे खाजगी सचिव, मंत्रालय, मुंबई - ३२.
१०. सर्व मा. राज्यमंत्री यांचे खाजगी सचिव, मंत्रालय, मुंबई - ३२.
११. सर्व विधानसभा/विधान परिषद सदस्य विधानमंडळ सचिवालय,विधानभवन, मुंबई-३२.
१२. मा. मुख्य सचिव, मंत्रालय, मुंबई - ३२.
१३. अपर मुख्य सचिव (जलसंपदा), जलसंपदा विभाग, मंत्रालय, मुंबई - ३२.
१४. अपर मुख्य सचिव (वित्त) मंत्रालय, मुंबई-३२.
१५. अपर मुख्य सचिव (ऊर्जा), उद्योग, ऊर्जा, कामगार व खनिकर्म विभाग, मंत्रालय, मुंबई-३२.
१६. अपर मुख्य सचिव (महसूल), महसूल व वन विभाग, मंत्रालय, मुंबई-३२.
१७. सचिव (नियोजन) मंत्रालय, मुंबई-३२.
१८. अपर मुख्य सचिव/प्रधान सचिव/ सचिव, सर्व मंत्रालयीन विभाग, मंत्रालय, मुंबई-३२.
१९. व्यवस्थापकीय संचालक, महाराष्ट्र राज्य विद्युत मंडळ सुत्रधारी कंपनी, फोर्ट, मुंबई.
२०. अध्यक्ष तथा व्यवस्थापकीय संचालक, महाराष्ट्र राज्य विद्युत वितरण कंपनी, प्रकाशगड, बांद्रा (पूर्व), मुंबई.
२१. अध्यक्ष तथा व्यवस्थापकीय संचालक, महाराष्ट्र राज्य विद्युत पारेषण कंपनी, प्रकाशगंगा, बांद्रा (पूर्व), मुंबई.
२२. अध्यक्ष तथा व्यवस्थापकीय संचालक, महाराष्ट्र राज्य वीज निर्मिती कंपनी, प्रकाशगड, बांद्रा (पूर्व), मुंबई.
२३. महासंचालक, महाराष्ट्र ऊर्जा विकास अभिकरण, पुणे.
२४. सर्व विभागीय आयुक्त.
२५. सर्व जिल्हाधिकारी.
२६. सर्व कार्यकारी अधिकारी, सर्व जिल्हा परिषदा.
२७. मुख्य विद्युत निरिक्षक, मुख्य विद्युत निरिक्षक यांचे कार्यालय,चेंबुर, मुंबई.
२८. सचिव, मा. महाराष्ट्र विद्युत नियामक आयोग, मुंबई.(पत्राने)
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परिशिष्ट – "अ"

Industries, Energy, Labour, and Mining Department
Government of Maharashtra

Maharashtra Renewable Energy & Energy Storage Policy 2025-26 to 2035-36

Powering Viksit Maharashtra 2047 through Green Energy

March 2026

Contents

1. Preamble

India has committed to reduce its emissions intensity by 45% by 2030 (compared to 2005 levels) and aims to achieve 50% of cumulative electric power capacity from non-fossil fuel sources by 2030. It also plans on promoting a sustainable way of living through the 'LIFE' (Lifestyle for Environment) movement. All of these goals form part of the updated NDC submitted to the UNFCCC (United Nations Framework Convention on Climate Change) in August 2022. The Government of India has also set an ambitious target of achieving 500 GW generation capacity from non-fossil fuel sources by 2030. These targets contribute to India's long-term goal of reaching net-zero emissions by 2070 and active participation by all the states will go a long way in achieving these targets.

The State of Maharashtra is experiencing rapid growth in industrialization and urbanization, which has led to increase in demand for electricity. Till recently, most of it was being met through conventional sources of energy but there is a rapidly increasing shift towards renewable sources of energy.

To encourage renewable energy, the state government has been formulating policies on renewables energy generation since 1995. With the help of such policies (the most recent ones being the renewable energy policy of 2015 and 2020), the state has reached 31.3 GW of RE by the end of January 2026.[1] Out of this, around 24.3 GW capacity[2] has been commissioned since March 2015 with the support of state RE policies of 2015 and 2020.[3] Similarly, the electricity generation from renewable energy sources has increased from 10.7 BU in FY 2015-16 to 19.6 BU in FY 2024-25.[4] However, in terms of installed capacity (incl. allocated share in joint and central sector utilities) of Utilities, Maharashtra has around 60.6 GW of generation capacity as on January 2026, out of which 50% is from renewable energy sources.[5] The state generated a total of 170 BU electricity in FY 2024-25, out of which around 150 BU electricity comes from conventional sources of electricity and 19.6 BU from renewable sources.[6] By including large hydro, the total electricity generation from renewable energy sources is around 25 BU (15%).

The state met 30.7 GW of peak demand in March 2025[7], which is also the all-time highest peak demand for the state till March 2025. This is a near 50% increase since March 2015, when the peak demand was around 20.4 GW.[8] Additionally, the state was supplied with 201.8 BU[9] of electricity in the financial year 2024-25, which has increased by 52% from the 133 BU supplied during FY 2014-15.[10] The state's energy demand may increase to 260-270 BU by 2030 considering a growth of 5-6% from 2025-30.

Since 2017, the government has implemented Mukhyamantri Saur Krushi Vahini Yojana (MSKVY), which targets installing solar projects at agricultural feeders to meet agricultural demand during day time. The recently approved MSKVY 2.0 policy[11] targets shifting 100% of agriculture load to day-time by September 2026 and installing around 16 GW solar capacity by March 2027. Realising the importance of energy storage and Green Hydrogen & Green Ammonia for the energy transition, the state government has also issued specific policies in the form of Pumped Storage Policy[12] and Green Hydrogen Policy[13] in 2023.

Added to this, the honourable State Electricity Commission, MERC has recently amended its RPO-REC regulations wherein it has specified RPO target of 43.33% by FY 2029-30 and 4% Energy Storage Obligation (ESO) targets for obligated entities. Further, the Commission has incorporated changes in various regulations related to renewables in the state. This includes formulation of Green OA regulations, changes in Forecasting and Scheduling regulation for solar and wind generation and Grid Interactive RE regulations which deals with solar rooftop projects in the state.

Due to their variable and intermittent nature, increasing share of variable renewable energy sources such as solar and wind poses new challenges for reliable grid operation. In this context, energy storage systems (ESS) can help in reliable grid integration of such RE sources by storing excess energy for use during low RE hours.

Building on these policies and regulations and considering the need for rapid renewable energy and energy storage growth in the state over the next 10 years, the Energy Department, GoM has framed this policy for grid-connected Renewable Energy and grid-connected Energy Storage development in the State.

2. Vision

The Renewable Energy & Energy Storage Policy 2025-26 To 2035-36 aims to significantly increase the generation and consumption of low cost, eco-friendly grid-connected renewable energy and energy storage in Maharashtra's electricity sector over the next decade. This will improve affordability, energy security, competition, and consumer choice.

3. Guiding Strategies

This vision shall be realised through focused efforts on six strategies:

1. Ambitious and long term renewable energy targets
2. Focus on hybrid projects and energy storage
3. Enabling transmission infrastructure and land availability
4. Promoting competition and consumer choice
5. Incentives and ease of doing business
6. Strengthening institutions, promoting innovation and piloting new initiatives

This document provides broad policy guidance to implement these strategies. This policy is in addition to and will supplement other green energy-related policies such as the Green Hydrogen Policy 2023, the Pumped Storage Policy 2023, the Small Hydro Projects Policy, 2024[14], the Electric Vehicles Policy 2025[15], and Mukhyamantri Saur Krushi Vahini Yojana (MSKVY) 2.0.

Overarching provisions for effective implementation of the policy

a. **Periodic review:** Considering the dynamic and complex nature of the emerging energy sector which is poised to confront a multitude of challenges, this policy will be reviewed and modified from time to time by the Govt. of Maharashtra to complement the vision and guiding strategies elaborated in this policy document. These challenges necessitate innovative solutions, and it is imperative that policy responds in a timely manner to effectively address them.

b. **Supplementary documents:** Specific procedures, guidelines, methodologies circulars etc. as needed to implement and operationalise provisions of the policy will be issued by appropriate agencies in a timely manner and would also play an important and integral part of implementing these strategies. A detailed indicative list of all such documents is listed in Annexure 1. These may be supplemented by additional clarifications as may be needed from time to time about the contents of this policy or in the implementation of this policy. The explanation given by the Department of Energy, GoM will be final and binding on all concerned.

c. **MERC and regulatory framework:** While formulating its regulations and orders, the Honourable MERC shall be guided by the approach detailed in this policy and shall undertake appropriate steps to facilitate the implementation of this policy and achieving targets set in this policy.

d. **Policy period:** This policy will be effective from the day of its publication as Government Resolution to 31st March, 2036. The previous Govt. of Maharashtra RE policy of 2020 is superseded by this policy except as provided in para 3(f) of this Policy. However, projects already under construction or operational under the 2015 and 2020 RE policy will be governed by those policies.

e. **Applicability of the policy**: This policy is applicable for grid-connected Renewable Energy and grid-connected Energy Storage projects. "Renewable Energy Sources" means the renewable sources such as wind, solar, large hydro, mini hydro, micro hydro, small hydro, biomass including bagasse, bio fuel cogeneration, urban

or municipal solid waste, Hybrid RE based on RE technologies and such other sources as are recognized or approved by MNRE and MERC. As of 2019[16], GoI has declared large hydro power as renewable energy.

The policy aims to give long term guidance for the renewable energy sector and its associated stakeholders. This policy will be implemented literally and in principle by Government of Maharashtra. However, failure to implement any part of this policy shall not be construed as "change of law" for the purposes of legal agreement between the parties.

f. **Following policies and GRs as listed below as amended from time to time will remain in effect.**
   1. For distributed off-grid renewable energy like off-grid solar agricultural pumps, solar street lights, rooftop off grid / hybrid solar power plants, solar water heaters, solar steam cooking system, decentralized micro grid projects, rural electrification, solar cold storage, solar dryers etc., part B of the existing 2020 RE policy as amended from time to time will remain in effect.
   2. GR dated 8th May, 2023 - MUKHYAMANTRI SAUR KRUSHI VAHINI YOJANA-2.0. Campaign to provide uninterrupted and sustainable electricity supply to farmers agricultural pumps during day time.

4. Long Term Role of Renewable Energy and Storage

Considering the rapidly growing demand in the state and taking advantage of the fixed low-cost tariffs of renewable energy and energy storage, the State is already on the firm path towards achieving 50% of its electricity demand from renewable energy sources by FY 2029-30.

Building on this solid foundation and based on the evolution of the techno-economics of the RE and ESS sectors, electricity markets, transmission and regulatory frameworks, the State will strive towards procuring 65% renewable energy as a share of electricity demand by FY 2035-36. The largest contribution to these RE targets is likely to come from solar and wind energy sources. Electricity demand in the state is expected to grow from 202 BU in FY 2024-25 to around 350-360 BU by FY 2035-36. Given this ambitious target, the entire increase in demand in the coming decade of FY 2025-26 to FY 2035-36 shall be met through additional renewable energy procurement.

However, given the variable and intermittent nature of renewable energy, energy storage systems (ESS) will become increasingly critical for reliable integration of such renewable energy systems in the grid. This would be essential to ensure grid stability, reliability, and optimal energy utilization. As per the National Electricity Plan published by the Central Electricity Authority, to integrate the 364 GW of solar and 121 GW of wind capacity by 2031-32, India would require 73.93 GW/411.4 GWh of storage capacity (26.69 GW/175.18 GWh from PSP and 47.24 GW/236.22 GWh from BESS).

As such, to ensure system reliability with high shares of RE, electricity distribution companies in the state shall procure energy storage capacity equivalent to at least 10% of their demand by FY 2035-36. This obligation shall be treated as fulfilled only when at least 85% of the total energy stored is procured from renewable energy sources on an annual basis. The renewable energy used for charging ESS shall be considered as part of RPO.

The State will strive towards procuring 65% renewable energy as a share of electricity demand by FY 2035-36 and electricity distribution companies in the state shall procure energy storage capacity equivalent to at least 10% of their demand by FY 2035-36.

For the purposes of the above targets, "Renewable Energy Sources" means the renewable sources such as wind, solar, large hydro, mini hydro, micro hydro, small hydro, biomass including bagasse, bio fuel cogeneration, urban or municipal solid waste, Hybrid RE based on RE technologies and such other sources as are recognized or approved by MNRE and MERC. Similarly, Energy Storage System or “ESS” in relation to the electrical system, means a facility where electrical energy is converted into any form of energy which can be stored, and subsequently reconverted into electrical energy and injected back into the grid. ESS technologies include Pumped Hydro Storage (PSP) or Battery Energy Storage Systems (BESS) and any other storage technologies as are recognized or approved by MNRE and MERC from time to time.

Considering estimated demand of 350 BU by FY 2035-36, the generation needed from RE would need to be around 228 BU by FY 2035-36. The equivalent RE capacity needed for meeting these targets would be around 100 GW considering an average CUF of 26%. Similarly, the generation needed from energy storage would be around 35 BU/year by FY 2035-36. The equivalent storage capacity needed for meeting this target would be around 100 GWh/day by FY 2035-36 (20 GW assuming an average 5 hours duration).

The equivalent RE capacity needed for meeting the 65% target would be around 100 GW. Similarly, the equivalent storage capacity needed for meeting the 10% ESO target would be around 100 GWh/day by FY 2035-36.

The Government of Maharashtra notified the 'Policy for Development of Pumped Storage Projects (PSPs),' on 20th December 2023. As per this policy, electricity distribution licensees shall retain the Right of First Refusal (RoFR) for all energy and benefits offered by such projects. It is clarified that electricity distribution licensees in the state are not obligated to procure power or provide pumping energy to PSPs, however, the concerned DISCOM must communicate its decision to exercise the RoFR within 30 days of receiving formal communication from the project developer. In the event that no decision is communicated within the stipulated period of 30 days, the same shall be deemed to constitute refusal by the Distribution Licensee. PSP developers shall utilize / sale PSP power as per their chosen arrangement once state utilities exercise their RoFR.

5. Emphasis on Energy Storage and Hybrid Projects

Several power sector modelling studies have explored scenarios of high renewable energy. They broadly conclude that a combination of low-cost renewable energy (especially solar + wind) coupled with energy storage (BESS+/PSP) and demand-side flexibility can meet demand in a cost-effective and reliable manner. Thus, the role of energy storage becomes crucial in the coming years. With the share of renewables rapidly expected to increase over the years, the policy strongly emphasizes the need for adequate capacity of energy storage to help reliably integrate such renewable energy. Energy storage could be co-located with renewable energy projects or it could be built as a stand-alone project as well. Both approaches will be allowed and promoted under this policy.

The minimum connectivity threshold for ESS seeking connectivity to the InSTS network shall be 5 MW. A standalone ESS shall apply for grant of connectivity for a quantum of its proposed maximum injection to InSTS or proposed maximum drawal from InSTS, whichever is higher.

5.1. Applicability of InSTS transmission charges and DISCOM demand charges

Energy storage is a uniquely flexible resource, capable of acting as a generator when discharging, a load when charging, and a grid support asset by providing ancillary services. Hence it needs to be defined as a unique asset class within the regulatory framework. *Rule 18 of the Electricity (Amendment) Rules, 2022, dated 29th December, 2022, specifies that Energy Storage System (ESS) is part of the power system, as defined under clause (50) of section 2 of the Act and provides further clarification about the legal status and operation of various ESS ownership and operation models.* The relevant MERC regulations shall be modified for providing clarity about status and operation of ESS. Necessary procedures for connectivity and operational purposes shall be prepared by STU, SLDC and related entities as per these regulations.

ESS shall be granted InSTS connectivity as permitted under the MERC Transmission Open Access Regulations, as amended from time to time. Such ESS may also draw power through InSTS for its charging. ESS may also request connectivity to the distribution network (33 kV or 11 kV), provided that such ESS shall not be permitted to send/transmit power outside Maharashtra.

The ESS, connected either to InSTS or the distribution network (33 kV or 11 kV) when drawing power for intermediate storage purpose; shall not be levied transmission charges; or distribution demand and wheeling charges, electricity duty and cross subsidy surcharge, provided that the stored energy is consumed within the state of Maharashtra. However, consumers consuming electricity from such ESS shall continue to pay applicable tariff for such consumer category.

The scheduling of ESS shall be as per the relevant Grid code, regulations and procedures thereof as amended from time to time. The drawl and injection schedules of the ESS will be subject to the MERC DSM regulation and applicable charges thereof as amended from time to time.

5.2. Energy storage co-located with renewable energy (only solar PV & wind) projects

One route to reduce the variability and intermittency of single source RE projects is to have hybrid projects. Hybrid projects are generally of three types, (a) combining one source of RE (wind/solar) with energy storage, (b) combining two sources of RE (wind and solar) together and, (c) combining two sources of RE together with energy storage. Several CPSUs and Renewable Energy Implementing Agencies (REIAs) such as SECI, NTPC, NHPC and SJVN have been coming out with tenders for such hybrid projects with varying levels of energy storage and different availability and capacity utilisation factors. These include wind-solar hybrids, solar+BESS, RE-RTC and FDRE (peak and load following) etc. Such projects will deliver far greater value to the State in terms of better alignment to State's load profile, higher CUFs (depending on level of storage), further optimisation of transmission costs from higher utilisation and meeting Maharashtra's share in the national coincident peak demand. This policy will actively promote such projects as detailed below.

5.2.1. New solar PV and wind projects:

The policy envisages at least 10 GW of new contracted RE (limited only to Solar PV, Wind and Wind-Solar Hybrid) capacity with co-located storage by FY 2029-30 and 25 GW of RE (limited only to Solar PV, Wind and Wind-Solar Hybrid) with co-located storage projects by FY 2035-36. Here, RE shall be limited to single source like wind, solar PV etc. or hybrid in the form of wind-solar capacity as well. To achieve this, RE (limited only to Solar PV, Wind and Wind-Solar Hybrid) capacity to be procured by distribution licensees shall include hybrid projects with energy storage. The storage capacity should be equivalent to at least 50% of the RE capacity and the storage duration shall be at least 2 hours for projects commissioned by end of FY 2029-30 and at least 4 hours for projects commissioned from start of FY 2030-31.

5.2.2. Adding energy storage or another energy resource to existing RE (only solar PV and wind) projects:

As the costs of energy storage are expected to further reduce over the years, it will become increasingly viable to add storage to existing RE projects. Similarly, existing single source RE projects could also be converted into hybrid by adding another RE source to it. Both these routes namely, adding energy storage to existing RE projects and making a single source RE project into a hybrid project (co-located with another RE source) shall be allowed under the policy. No changes in the existing PPA (in terms of tariff, rights, duties and obligations) would take place on this account. However, increasing capacity of the existing project shall be allowed as long as the injection in to the grid does not exceed the quantum granted under grid connectivity in any time block.

Such additional capacity (of RE or ESS) may be utilised as per the discretion of the concerned project developer subject to the condition that there shall be no change in any obligations or rights with respect to existing PPA with any DISCOMs in the State. For such additional capacity, the concerned developer shall comply with all applicable Rules and Regulations such as metering, DSM, Forecasting and Scheduling etc.

Existing and upcoming RE (limited to only Solar PV, Wind and Wind-Solar Hybrid) projects evacuating power through a common pooling substation shall also be allowed to set up storage projects. Storage could be integrated with individual RE (limited to only solar PV and wind and Wind-Solar Hybrid) projects or could be integrated at the level of the pooling substation as a whole for multiple RE projects. However, this shall be allowed only as long as the metering arrangements which are put in place are such that verification of captive status, DSM requirements, individual project level energy accounting etc. can be done by the appropriate agencies in line with applicable Rules and Regulations. The metering arrangements for such systems shall be governed by the Metering Code based upon the operational modalities of such systems. Necessary amendments to the Metering Code shall be taken up by STU in consultation with stakeholders and approval from MERC as may be needed.

5.3. Stand-alone energy storage projects

Apart from storage co-located with RE, the policy also promotes setting up of stand-alone energy storage projects (Pumped Storage Systems (PSP) as well as Battery Energy Storage Systems (BESS)). Apart from PSP or BESS specific stand-alone storage tenders, DISCOMs may also issue technology-agnostic standalone storage tenders, wherein only the procurer's requirement (MW, MWh, year of delivery etc.) will be specified. This will allow for more market innovation and possibly better price discovery.

The storage system may be operated in single cycle or multiple cycles (two or more) per day depending on the storage technology (cycle life, degradation etc.), configuration (stand-alone, co-located with RE, inter-connected on the DC or AC side, considering power and energy rating etc.) and availability of low cost power during different times of the day.

ESS has the capability to give storage service for multiple purposes to the buyers, sellers and grid operators. Hence, standalone Energy storage projects with capability to give storage as a service or provide other kinds of

ancillary service to the grid operator shall be permitted under the policy. The applicability of transmission charges and losses will be as defined in the 5.1.

5.4. Distributed energy storage projects

The role of distribution grids to provide reliable electricity supply is crucial. De-centralised BESS deployment to meet reliability needs for rural feeders, critical social and strategic loads (such as remote health care centres, small scale industries, and cold storage systems etc.) and manage areas with high rooftop solar penetration in urban areas can be very effective. MSEDCL has already begun procuring distributed battery storage systems to reliably integrate the distributed solar projects under MSKVY 2.0 as approved by MERC in Case No 173 of 2024.[17] Similarly, Tata power is planning to deploy 100 MW of BESS in Mumbai for reliable back up for critical infrastructure.[18]

To improve supply reliability and increase the integration of distributed RE projects, DISCOMs will conduct cost-benefit analysis to assess the value of distributed storage in rural and urban areas within 1 year of the notification of the policy. DISCOMs will put forward such analysis to the honourable MERC for approval and consider it under the Demand Flexibility Portfolio Obligation (DFPO) regulations and ESO targets. The policy envisages about 10% of the overall storage target (ESO) to be met through such decentralised ESS. This will be deployed in a distributed manner for this objective of improving distribution reliability and system flexibility. These investments can be financed through DISCOM ARR either in Capex or TOTEX mode. Procurement of the BESS infrastructure shall be conducted through a transparent bidding process in line with the bidding guidelines issued by MoP under section 63 of the EA, 2003 and with MERC approvals as may be needed.

From the date of the notification of the policy, DISCOMs shall give priority for grant of connectivity to RE projects under the Grid Interactive Rooftop Renewable Energy Generating Systems regulations provided that such RE (limited to only solar PV and wind) projects are integrated with a minimum level of energy storage as described below. Further, for projects above a threshold of 100 kW seeking connectivity from 1st April 2026 or any other date as may be notified by the Government of Maharashtra, it would be mandatory for developers/prosumers to install a minimum level of storage capacity and duration for such RE (limited to only solar PV and wind) under the Grid Interactive Rooftop Renewable Energy Generating Systems regulations. To begin with, from April, 2026, or any other date as may be notified by the Government of Maharashtra, the minimum level of storage would be for 50% of the RE capacity and for 2 hours duration. This minimum level of storage requirement would be reviewed and updated every two years and would be applicable to new projects. Existing rooftop solar projects (under all accounting frameworks – net-metering, BTM, gross metering, net billing etc.) will be allowed and encouraged to supplement their existing projects with energy storage.

5.5. Urban and industrial Solar+Storage hubs

To meet rising urban electricity demand and enhance reliability and resiliency, Maharashtra will promote the development of solar-plus-storage installations near major cities and industrial clusters. These may be multiple projects of 100-250 MW each around major urban and industrial areas. With solar and battery costs trends, such systems have the potential to provide decentralised, clean and reliable power. These decentralised energy hubs will reduce grid congestion, transmission losses, defer costly upgrades, and enhance resiliency during peak and outage events. Policy and regulatory frameworks to support such hubs will be developed.

5.6. Bundling of Thermal power stations with RE and or Energy Storage

On 5 April 2018, the Ministry of Power (MoP), Government of India issued the 'Flexibility in generation and scheduling of thermal power stations to reduce emissions' (MoP Bundling Scheme 2018) to provide power generators an opportunity to optimally utilize generation from RE sources and also help in reducing emissions.

The MoP Bundling Scheme 2018 was revised, in November, 2021, to cover replacement of thermal and hydro power with RE Power or RE combined with battery energy storage systems which was known as 'Renewable Energy Power Bundling and Flexibility in Generation and Scheduling of Thermal/Hydro Power Stations' (MoP Bundling Scheme, 2021). The MoP vide its notification dated 12 April 2022, issued the revised 'Scheme for flexibility in generation and scheduling of thermal/hydro power stations through bundling with renewable energy and storage power' (MoP Bundling Scheme, 2022) which is applicable to all new and existing thermal or hydro power stations. Further, vide letter dated 26 May 2022, MoP has issued trajectory for replacement of thermal energy by renewable energy. Recently on 21 June 2023, the MoP has issued Bundling Scheme, 2022 being 'Amendment in the Scheme for Flexibility in Generation and Scheduling of Thermal/Hydro Power Stations through bundling with renewable energy and storage power' (Amendment 2023) which allows RE plants to be set up in EPC mode, which are not co-located and through Joint Venture (JV).

MERC in its order, Case No. 246 of 2023, dated 4th Feb, 2025 has directed the Grid Co-ordination Committee to undertake a detailed study for exploring implementation of the MoP Bundling Scheme in the State. To encourage such bundling of RE (mainly solar PV) and or battery storage which would use common transmission evacuation system with existing thermal plants and to reduce fuels costs, the MSPGCL and other IPPs selling power to DISCOMs in Maharashtra are encouraged to explore such projects. The policy envisages a target of 2 GW of RE and or ESS by FY 2029-30 and 5 GW of RE and or ESS by FY 2035-36 through this route.

6. Enabling Land Availability and Transmission Infrastructure

Scaling up of renewable energy needs two key enablers namely, land with good quality RE resource and transmission connectivity and associated infrastructure. Government of Maharashtra (GoM) already has a solar-specific land-use policy under MSKVY 2.0 that encourages long-term land leasing with fair compensation to the landowners. GoM has fixed a minimum land lease rate of ₹1.25 lakh/hectare per annum with an annual escalation of 3% for 25 years. Nearly 10,000 farmers have voluntarily registered their land, under this initiative, totaling ~ 1 lakh acres which could support 25 GW of solar capacity.

6.1. Availability of Government land for RE (wind and solar) and BESS projects

The following policy shall be adopted regarding the availability of government land for renewable energy and BESS projects:

Government land will be categorized into the following three types:

Type 1: Land owned by various departments, companies, boards, public undertakings, administrative departments of the State Government, urban and local self-government bodies, universities, etc. (excluding land owned and controlled by the Revenue Department), including land owned by the Revenue Department but leased to such entities.

Type 2: Land owned and in the possession of the Revenue Department.

Type 3: Privately owned land or land owned/possessed by the Central Government, Central institutions/ boards / public undertakings, ordnance factories, defense forces, etc.

Type 1:

A) For the purpose of establishing RE (wind and solar) projects on Type 1 land, the respective institutions holding jurisdiction over such land shall enter into agreements with distribution/generation/renewable energy companies. Such agreements may be in the form of lease agreements or based on revenue-sharing models, whichever is mutually agreed upon by both parties.

If the land has been granted by the government under specific non-transferable and restricted usage conditions, prior approval may be obtained at the competent level to permit its use for RE (wind and solar) purposes. Other conditions—such as lease duration, lease rent, etc.—shall continue to apply.

Additionally, where the leased land has the provision for sub-leasing, land may also be made available by forming a Special Purpose Vehicle (SPV) for specific objectives. In such cases, prior approval from the competent authority who originally allotted the land shall be obtained to change the designated use of the land for renewable energy projects.

In the case of land held by local self-government bodies:

- If the land required for the project is up to 15 acres, it may be made available at the Gram Panchayat level.
- For land between 15–25 acres, it may be made available at the Panchayat Samiti level.
- For land exceeding 25 acres, it may be made available at the Zilla Parishad level.

  Necessary amendments shall be made in the relevant policies to facilitate this process.

However, if the land held by local self-government bodies has already been transferred or leased for a specific purpose, prior approval from the government shall be required for its use in this scheme. In the case of urban local bodies, the concerned urban body shall make decisions and enter into final agreements based on applicable terms and conditions for making such land available. For land held by administrative departments and other such bodies, the concerned administrative department or institution shall have the authority to decide on the applicable terms and lease out the land. Thereafter, if these departments/institutions intend to

set up RE (wind and solar) generation projects on their owned land, they shall do so in accordance with the provisions of this policy.

B) For the transmission of power generated from renewable energy sources, such land may also be provided by the concerned institutions/departments, etc., on a priority basis.

The land can be made available on appropriate terms and conditions through a lease agreement or at a nominal rent of ₹1 per annum for a 30-year lease, whichever option is mutually agreeable to both parties.

Type 2:

A) In the case of land under the jurisdiction of the Revenue Department, the distribution, generation, and renewable energy agencies shall submit their proposals to the respective District Collectors for land required for RE (wind and solar) projects. Based on the said proposals, the concerned District Collector, excluding land reserved for priority government administration purposes or other restricted lands, may make such land available for RE (wind and solar) projects as per the prevailing government policies. The land can be made available on appropriate terms and conditions through a lease agreement or at a nominal rent of ₹1 per annum for a 30-year lease, whichever option is mutually agreeable to both parties. The District Collectors and Divisional Commissioners shall transfer such land to the concerned parties within their delegated authority and obtain approval from the competent level as required.

B) Further, if the distribution, generation, and renewable energy agencies are developing their RE (wind and solar) projects themselves or through a developer (under PPP mode), and if the required land is fragmented, they may request the concerned District Collector for the integration of the government land portion within that fragmented plot. Based on such a request, the District Collector, within their authority, may prioritize and make the required land available for the execution of the RE (wind and solar) project, and seek approval from the competent level where required. A nominal lease rent of ₹1 per annum for a 30-year lease maybe levied in this case.

C) Additionally, for the purpose of transmission of renewable energy, the concerned District Collector, within their authorized powers, may prioritize and make the necessary land available at the prevailing standard ready reckoner rates.

6.2. Land lease rates for private land for RE (wind and solar) and BESS projects

While seeking required private land on lease for RE (wind and solar) projects the base annual lease rate shall be as may be mutually agreed or the higher of: 6% of the land value determined for the year by the Registration and Stamps Department, or ₹1,25,000 per hectare. This base lease rate (Base Rate) shall increase by 3% annually using a flat escalation method.

6.3. Procedure for use of land for non-agricultural use for RE and BESS projects

The recently enacted Maharashtra Land Revenue Code (Second Amendment) Act, 2025 has streamlined and simplified the procedure for Non-Agricultural use of land. Non-agricultural tax / premium shall be waived for renewable energy and energy storage projects established under this policy. The revenue department will issue necessary notification within 3 months, for the same in accordance with the applicable legal and procedural provisions.

6.4. Renewable Energy (Wind and Solar) Industrial Zones (Parks) (REIZ)

To encourage the balanced development of wind and solar across the various districts (with good resource potential) of the state, to assist Intra-State transmission planning and to encourage direct RE (wind and solar) & storage procurement by OA and CPP consumers in Maharashtra from projects located within the state and connected to the InSTS, it is necessary to provide ready infrastructure and land. For this purpose, Renewable

Energy Industry Zones (REIZ), specific to wind and solar power shall be developed across the state. The policy envisages the development of at least 10 REIZs across the state by FY 2029-30 and 15 REIZs by FY 2035-36. The size of these REIZs shall be at least 100 MW. This minimum threshold will be reviewed and updated from time to time.

REI Zones may be developed by designated REIZ/Park Developer. Designated REIZ / Park Developer may be

- a). State PSUs or
- b). JVs between State and Central PSUs or
- c). in public private partnership (PPP) mode with State PSUs and private sector entities or
- d). in public private partnership (PPP) mode with State PSU and Central PSUs and private sector entities.

Designated agency for REIZ, District Collectors, Maharashtra Remote Sensing Application Centre (MRSAC), Nagpur, MSEDCL, MSETCL and any other agencies as needed shall collaborate and share the list / information of government / semi-government / private land available for RE (wind and solar) projects. Based on digital maps prepared for the PM Gati Shakti portal, land suitability for RE (wind and solar) projects shall be assessed using layered mapping, considering factors such as terrain, soil type, flood risk, railway lines, etc. Probable and indicative locations of the REIZs will be identified by Designated agency for REIZ and District Administration based on multiple criteria such as optimising transmission lines and costs, land suitability for RE (wind and solar) and likely generation profile and resource potential.

REIZ developers will aggregate land suitable for one or more RE (wind and solar) technologies, undertake basic land development, road infrastructure development and secure InSTS connectivity and right of way for evacuation lines if necessary. REIZ developer can aggregate government land or private land and lease it as per the lease rates detailed in section 6.2 or purchase/lease private land through direct mutual negotiations. REIZs can also aggregate land from farmers in the form of project equity by offering mutually agreed valuation of the land and return on equity to be paid to the farmers. REIZs can have single or multiple RE (wind and solar) projects while meeting metering, evacuation and forecasting and scheduling related requirements of concerned agencies. REIZ developers can also sell or auction REIZ to other interested project developers for development of RE projects in the REIZ.

To kick-start this activity, aggregate budgetary support of Rs. 500 crores shall be provided to designated State REIZ Developer or joint ventures involving State PSUs. Detailed guidelines for State PSU participation in the REIZ scheme shall be issued by Energy Dept, GoM within three months of the notification of the policy.

6.5. Enabling transmission infrastructure and reliable grid operation

MSETCL has a large transmission network with 51,518 ckt kms of transmission lines including 742 EHV substations with 1,38,598 MVA of transformation capacity. This network handled around 21 GW of power and has transmitted 1,91,536 MUs of electricity in FY 2023-24.[19] Given the changing dynamics in generation (increasing renewables incl. hybrids, decentralised RE, changing share of in-state and out of state generation and their geographical location being quite different from conventional generators), demand (electrification of new end uses like transport, cooking and Green Hydrogen), increasing open access and captive projects based on renewables, likely changes in consumption profiles with introduction of ToD tariffs and energy storage (PSP and BESS at scale) transmission planning and operation needs to undergo a paradigm shift. This calls for improvements in transmission planning with greater coordination, network optimization, reliable grid integration of RE and adequate investments in transmission including through the private sector. The inter-state transmission (ISTS) charges waiver for renewable energy is coming to an end and the next phase of RE growth would be dominated by projects connected to the InSTS grid. To encourage the development of projects connected to the InSTS, the STU has released *Revised procedure for Grant of Grid Connectivity to projects based on Renewable Energy sources to Intra-State Transmission System* on 7th January, 2025. Further

in line with the State Grid Code requirements, the STU has prepared its ten-year Transmission System Plan (FY 2024 - 25 to FY 2033-34), according to which 81,950 MVA and 6,879 ckt-km line length at various voltage levels are planned to be added as new corridor schemes.[20] As per the State Grid Code, STU in consultation with the SLDC develops the Integrated Resource Plan for the State for a period of five years. Further, STU prepares and publishes Transmission System Plan comprising of a short term, medium term and long term Transmission System Plan which it updates yearly or every two years depending on term of the plan.

STU in consultation with the Maharashtra State Load Despatch Centre (MSLDC) shall revise the Transmission Integrated Resource Plan for the State and the Transmission System Plan taking into consideration the policy target of 65% share of RE by FY 2035-36 and 10% ESO by FY 2035-36. The revised IRP Plan and Transmission System Plan shall be finalised after due public consultation in line with the processes and timelines outlined in the State Grid Code. While preparing these plans, the following aspects shall be specifically considered by the STU.

A. **Proactive planning for REI Zones**: MEDA shall declare preferential/potential RE development zones/parks. STU shall closely coordinate with the REIZ / Park developer appointed for development for RE Zones as described in section 6.4 above for creation of transmission evacuation infrastructure for those areas in a phased manner.
B. **Optimisation through energy storage**: Cost effective Energy Storage has the potential to significantly change the future peak load as well as line loading and utilisation and hence should be clearly factored into planning. Several independent studies as well as official studies from CEA have established the importance of energy storage for the reliability of the grid in meeting peak demand, to integrate large share of RE and for balancing. STU/MSETCL shall specifically study Energy Storage deployment with transmission infrastructure to optimize and defer transmission infrastructure investments, maximize the utilization of the transmission assets, reduce state level congestion, RE curtailment and strengthen grid stability. Based on study by STU, within one year of the notification of the policy, MSETCL shall undertake assessment of transmission linked storage requirements and initiate necessary regulatory approvals for procurement thereafter. Based on study by STU, MSETCL may undertake innovative InSTS and Storage projects and request funds from MEDA's Harit Urja Nidhi for this purpose. The policy envisages an indicative target of 4 GWh by FY 2029-30 and 10 GWh by FY 2035-36 to be deployed for this objective of improving transmission utilisation, optimising investments, reliability and system flexibility.
C. **Solar hour and Non-solar hour access for RE projects:** To further encourage solar+storage projects and hybrid RE (incl. ESS) projects and to enhance the utilisation of the transmission network, access with injection scheduling rights maybe differentiated between solar hours and non-solar hours for RE projects as the case maybe. Such a framework has recently been adopted for ISTS connected RE projects as part of CERC's Connectivity and General Network Access to the inter-State Transmission System) (Third Amendment) Regulations, 2025.[21] STU in consultation with MSLDC shall study this possibility within 12 months of the notification of the policy and initiate action to operationalise this for InSTS.
D. **Optimisation of transmission network:** While preparing transmission plans, STU/MSETCL shall ensure that as far as possible multiplicity of lines is avoided and available corridors are utilized optimally. Use of appropriately located energy storage and flexible AC transmission system devices shall be considered to ensure optimal investments in expansion of InSTS system. Hybrid operation of two or more renewable energy sources with or without storage shall be encouraged to reduce the variability in supply, and lead to optimum usage of the transmission system. Distributed resources like solar (connected to the 33/11 kV feeders and rooftop solar) and storage can reduce need for transmission investments and hence would be encouraged.
E. **Right-of-way (RoW) and reconductoring**: Significant investments are needed in transmission to handle long term growth in demand and supply. However, in the short term, from an implementation perspective, the

Right-of-way (RoW) issues are increasingly affecting construction of new transmission lines. Reconductoring / Upgradation of existing AC transmission lines to higher voltage AC lines with multi circuits / multi voltages and uprating by use of new generation High Temperature Low Sag (HTLS) conductors shall be explored to conserve existing RoWs and to enhance power flow and reduce loses per meter of RoW. MSETCL shall undertake a reconductoring study of the InSTS network and submit it to the Energy Department, GoM within 1 year of this policy being notified. Based on this study, specific reconductoring projects shall be undertaken if required. MSETCL shall give priority to such projects where reconductoring improves RE power evacuation or integration.

F. **Advanced conductors**: New RE corridors will explore using advanced high-capacity conductors.

G. **Grid strengthening**: MSETCL will take up necessary grid strengthening measures, if required, in areas where RE projects are connected to minimise curtailment of RE power. Similar grid strengthening shall be taken up by MSETCL for identified repowering projects.

H. **Grid forming inverter-based resources**: With rising shares of solar and wind energy, coupled with BESS, the share of inverter-based resources (IBR) in the grid is increasing while that of synchronous generators is falling. This brings with it new operational challenges for grid operators around inertia, frequency and voltage control, protection systems etc. Grid-forming inverters can provide critical system strength, inertia, and voltage, frequency control—functions traditionally delivered by synchronous generators—ensuring grid stability in high-RE scenarios. Thus, there is a need for studying this aspect in Maharashtra's context and specifying the technical standards and the need for grid-forming inverters are part of future regulations and tender documents.

I. **5-year grid strengthening and modernization plan:** With due consideration to issues in point no. A to H above and in view of challenges such as existing RoW issues and its mitigation measures, delay in land acquisition for substations, ageing of transmission assets, live assets completed regulated useful life, up-gradation and/ or reconductoring options, grid strengthening by way of addition of transformation capacity by augmentation / replacement of transformer in existing substations; STU shall prepare grid strengthening plan while Transmission Licensee shall proactively prepare five year plan for grid modernization and seek STU approval for implementation.

6.5.1. Competition and pricing of RE related transmission infrastructure

While the TBCB threshold for InSTS projects has been lowered from Rs 500 cr to Rs 200 cr, to encourage the faster development of state transmission network, as far as possible new transmission projects related to RE evacuation may be taken up under TBCB mode in line with the Guidelines for Selection of Transmission Projects to be executed under TBCB issued by STU. Further, as far as possible, the transmission project development timelines will be synchronised with the timelines for RE project development.

6.5.2. Transmission connectivity for projects based on RE sources and for Energy Storage Systems

In order to promote RE and Storage investment in the state and to facilitate genuine participants, there was need for dedicated procedure for allotment of grid connectivity based on appropriate application entry routes and security mechanism for transmission infrastructure development, by suitably adopting the approach at Central level. The new and separate RE grid connectivity procedure, dated 7th January, 2025 has been formulated by MSETCL/STU and this brings in clarity on several aspects. To further streamline and accelerate RE connectivity process, the STU shall bring in amendments to this procedure as needed from time to time to enhance flexibility in various aspects such as partial project commissioning, increasing existing RE project capacity, land requirements, metering requirements for multiple projects in a REIZ etc.

6.5.3. Maharashtra State Load Despatch Centre (MSLDC) and State Transmission Utility (STU) autonomy

To further improve power system operation and planning, as envisaged under Section 39 and Section 31(2) of the EA, 2003, GoM shall initiate steps for restructuring of MSETCL within one year of the notification of this policy. In order to ensure autonomy and accountability, STU, MSLDC and MSETCL functions shall be restructured and ring fencing / independence of STU and SLDC activities will be ensured through new structural arrangements. The newly formed structural arrangements shall ensure the autonomy of MSLDC and STU. While creating these new structural arrangements, the existing structural arrangements at central level like CEA (regarding transmission planning), CTU and Grid India will be considered and new arrangements shall be designed to cater to state specific needs.

6.5.4. Distribution System Operators (DSO)

Considering the expected large RE generation and BESS connected at the distribution network and need for multi-layered control architecture and the increasing complexity of system operation, STU, SLDC and MSEDCL will conduct a study to assess the concept and feasibility of a Distributed System Operators in Maharashtra and shall submit the same to the Energy Dept, GoM for further consideration within 1 year of the notification of this policy.

6.5.5. Reliable grid operation and integration of renewables

To ease the issue of reliable grid integration of RE, the F&S regulations shall be made more effective by giving appropriate incentive and penal frameworks to improve RE forecasting and reduce deviation errors and reflective of the fact that Maharashtra is heading towards 50% RE by FY 2029-30. Appropriate changes in F&S regulations such as aligning the deviation formula with conventional DSM processes, tightening of deviation bands and charges over time will help the state to accommodate more renewable energy resources without burdening the grid, and this will enable discipline in accurate forecasting by the RE generators. The regulations will be framed in such a way that stability of the grid is maintained all the time but may also consider flexibility like allowing pooling of schedules for the purpose of calculation of deviations from schedule.

Further, MSLDC will conduct a study on the need for various ancillary services for reliable grid operation in the future and suggest implementable measures for strengthening the grid. The study will stress on the role of different stakeholders in this regard. Such studies will be conducted within a year of notification of this policy and will be revisited in three years of policy notification. These studies will be submitted to the Energy Department, GoM and MERC which will take appropriate next steps.

Within one year of this policy, MSETCL/STU in consultation with MSLDC shall prepare a plan to set up a 500 - 1000 MW grid connected BESS/Energy storage plant specifically to improve grid stability and provide ancillary service.

7. Promoting Competition and Consumer Choice

Over the past decade, Maharashtra has witnessed a steady growth in consumer-led renewable energy adoption. Rooftop solar installations have expanded across residential, commercial, and industrial segments, driven by declining technology costs, supportive net metering regulations, and growing consumer awareness. As of January, 2026[22], the state had seen 5 GW of installed rooftop solar capacity (incl. PM Surya Ghar). In parallel, renewable energy-based Open Access and Captive projects have enabled large consumers—particularly in the industrial and commercial sectors—to directly procure solar and wind power at competitive tariffs. Maharashtra has emerged as one of the leading states in total RE Open Access capacity addition during this period, reflecting both consumer appetite and investor confidence. As of FY 2023-24, the OA and Captive consumption in Maharashtra was 7763 MU of which nearly 90% was through the captive route and just under 50% was based on renewables.

As the sector matures, it is imperative to ensure that the frameworks governing direct procurement by consumers continue to evolve in a manner that safeguards the broader electricity ecosystem. Consumer choice must be preserved and expanded, while also ensuring a fair allocation of risk and reward across all stakeholders. DISCOMs, as the universal service providers and custodians of the distribution network, play a critical role in enabling such choice through reliable wire infrastructure, grid balancing, and customer service. This policy therefore seeks to promote consumer access to renewable energy—through rooftop solar, Open Access, and emerging models—while ensuring financial sustainability of DISCOMs and cost-reflective pricing for network and reliability services. A stable, transparent, and equitable framework will be critical to scale up consumer-driven decarbonization without undermining the health of the distribution sector.

7.1. Direct RE procurement by small consumers (1-100 kW)

The Maharashtra Electricity Regulatory Commission (MERC) has established a comprehensive regulatory framework to promote grid-interactive renewable energy systems, including rooftop solar installations. The MERC's (Net Metering for Roof-top Solar Photo Voltaic Systems) Regulations, 2015 laid the foundation for net metering in the State, enabling consumers across various categories to install rooftop solar systems and receive energy credits for surplus generation exported to the grid. These were superseded by the MERC's (Grid Interactive Rooftop Renewable Energy Generating Systems) Regulations, 2019 with amendments in 2023 and 2024. These regulations incorporate evolving technical standards, consumer eligibility, and system capacity limits in line with Central Rules and guidelines. MERC has also provided clarity on gross metering, virtual net metering for group housing societies, and behind-the-meter installations, ensuring broader participation. Distribution Licensees, including MSEDCL, have issued detailed implementation guidelines and standard operating procedures to operationalise these regulations. Together, this framework has played a key role in scaling rooftop solar adoption across Maharashtra while maintaining grid safety, metering integrity, and consumer protection.

To enable a balanced and equitable growth of direct RE procurement by small consumers (1-100 kW), the policy proposes a layered framework based on project size. The broad objectives and principles of the proposed approach are

1. Enabling access to alternate supply options for most consumers.
2. Ensuring cost reflective charges for all DISCOM services.
3. Protection of small consumers and provision of reliable, affordable supply.

7.1.1. Options for direct procurement up to 100 kW

The table below gives a broad indicative framework for direct procurement options for all consumer categories up to 100 kW. This framework may be considered by Honorable MERC for establishing the regulatory framework for such direct procurement by consumers.

RE Capacity / Contract Demand	Up to 3 kW	3 - 10 kW	10-100 kW	
For individual projects	Concessional Net Metering	Net Metering	Net-Billing	Optional Green OA
Capacity and Procurement agreements	Individual consumer RE capacity to be restricted to Contract Demand. Off-site generation (virtual metering) and aggregation of consumers allowed.			Group Captive, aggregation for same consumer. RE capacity limit not linked to Contract Demand.
Banking Framework	Annual Banking and across ToD slots. No Banking charge	Monthly Banking and across ToD slots. Banking/Reliability charge - Grid Support Charge (GSC) levied per kW of renewable energy contracted	Monthly, only within a ToD slot. Banking/Reliability charge - Grid Support Charge (GSC) levied per kW of renewable energy contracted	Banking allowed across ToD slots; Banking charge per kWh of energy banked, should be reflective of energy storage costs, or different between ToD tariffs in non-solar peak and solar slots
Energy Accounting and Metering	ToD slot-wise energy accounting; Smart or ToD Meter			Special Energy Meter
Surplus energy at the end of accounting period	To be purchased by DISCOM at the average G-DAM market price for that ToD slot for that month.			Not Applicable
Settlement of injected energy across ToD slots	Not applicable given annual banking.	Bucket filling, from lowest to highest ToD slots	Not applicable	Bucket filling, from lowest to highest ToD slots
Scheduling and DSM	Not applicable			As per applicable regulations

Aspects which will be common to all procurement options shall be as follows.

a. Any virtual or offsite arrangement will have to bear the full wires (transmission and or distribution) charges and losses.
b. There shall be no storage mandate specifically on the consumer.
c. Any arrangement will have a minimum lock in period of 1 year.
d. For consumer/ beneficiary under net metering/net billing, RE capacity should not exceed contract demand.
e. Net balance drawal from the DISCOM charged at applicable telescopic tariff slab.
f. Inverters and communication devices deployed under schemes such as PM Surya Ghar: Muft Bijli Yojana shall adhere to the prevailing MNRE guidelines. These require integration of Machine-to-Machine (M2M) SIM-based communication protocols, and mandatory connectivity to MNRE-managed National Servers for secure and reliable real-time data transmission.

7.1.2. Virtual, aggregate metering for public bodies

To increase future collection efficiency and reduce build-up of dues from government departments and public bodies, there shall be an emphasis on implementing virtual, aggregate metering arrangement for public bodies. Under the scheme, electricity consumption of bodies such as Municipal Corporations, ULBs, RLBs,

Water boards etc. would be aggregated and equivalent solar capacity may be set up by the Government of Maharashtra or any public body.

7.1.3. Battery Energy Storage Systems (BESS) for MSME

In order to improve competitive supply procurement by MSMEs and to meet their energy banking requirement and to enhance reliability, deployment of BESS systems at consumer end will be valuable. This will also support reliable grid operations. A bulk procurement program of BESS systems between 10-100 kW with two to four hours storage shall be undertaken by MSEDCL to reduce cost of such systems for MSME consumers. Partial financial support for such bulk procurement may be borne out of the Harit Urja Nidhi.

7.2. Direct RE procurement by medium and large consumers (>100 kW) through long term Green OA

The Electricity Act, 2003, the Green Open Access Rules, 2022 and the Open Access Regulations of MERC provide the legal eligibility and supporting framework for consumers to exercise their choice to directly source or generate their power. The MERC through their second amendment to the Distribution OA regulations, dated 10th November, 2023 have enabled the provisions related to Green Open Access. Further the MSEDCL has come out with commercial circular on 9th September, 2024 for operationalising the same.

This policy intends to further such consumer choice and competition by enabling a simplified, harmonious long-term open access framework which balances the risks and rewards for open access consumers, discoms, and their non-open access consumers. State utilities and the regulator must strive to create facilitative frameworks towards increasing competition and market development in the state. In FY 2024-25, ~ 8,400 MU of energy was wheeled under open access in the state of which just under 50% was from renewable energy. Going ahead, the share of RE in OA sales is expected to sharply increase along with the overall quantum of OA sales. This is apart from the 3,034 MW of rooftop capacity installed by consumers by Jan, 2025. This share is going to increase in the future with the availability of low-cost renewable energy and energy storage. RE based captive, open access and rooftop solar promotion will result in enhanced cost competitiveness of Maharashtra enterprises and would also encourage private investments in the state towards renewable energy and energy storage deployment.

At the same time, migration of consumers poses significant risks to DISCOMs in terms of revenue attrition, challenges with power procurement planning, grid operations and planning network investments. While it is crucial that consumers are provided choice to opt for open access, captive and rooftop solar, it is also critical that DISCOMs continue to operate without bearing significant risks due to promotion of consumer choice. A balanced approach would involve a three-pronged strategy. The first aspect of this strategy emphasizes on establishing facilitative frameworks to ensure transparency and ease of doing business with non-DISCOM supply options. The second aspect is dedicated to creating frameworks that identify and mitigate risks to DISCOM operations. This includes ensuring that DISCOMs receive adequate compensation for the services they provide, thereby facilitating a smooth migration process. The third aspect involves investment in power procurement planning as well as network and metering infrastructure to enable DISCOMs to provide quality service and ensure advanced energy accounting to price services appropriately.

From the date of the notification of the policy, STU/MSETCL shall give priority for grant of connectivity to RE projects under the Distribution and Transmission Open Access Regulations provided that such RE (limited to only solar PV, Wind and Wind-Solar Hybrid) projects are integrated with a minimum level of energy storage as described below. Further, for all RE projects seeking transmission connectivity from 1st April 2026 or any other date as may be notified by the Government of Maharashtra, it would be mandatory for developers to install a minimum level of storage capacity and duration for such RE (limited to only solar PV, Wind and Wind-Solar Hybrid) projects above a threshold of 100 kW under the Distribution and Transmission Open Access Regulations. To begin with, from 1st April 2026 or any other date as may be notified by the Government of

Maharashtra, the minimum level of storage would be for 50% of the RE capacity and for 2 hours duration. This minimum level of storage requirement would be reviewed and updated every two years and would be applicable to new projects. Existing RE (limited to only solar PV and wind) projects will be allowed and encouraged to supplement their existing projects with energy storage.

7.2.1. Ease of accessing Green Open Access: simplified procedures with timebound clearances

By lowering the eligibility threshold for Green Open Access to 100 kW from erstwhile 1 MW, access to competitive choice to a wide number of consumers, especially MSME is now available. This RE policy envisages focus on operationalising this choice for MSME consumers in a transparent manner and to ensure ease of doing business in Maharashtra. This choice for consumers will be governed by the applicable regulations. Building on the procedures and platforms created to facilitate this choice, the STU and MSLDC along with all DISCOMs in the state will hold consultations with relevant stakeholders (RE generators and existing OA/CPP and potential Green OA consumers) within 2 months of the notification of this policy. Based on this, within 2 months, further necessary modifications and changes will be made to the SLDC, STU and DISCOMs portals and the application process to streamline it and reduce timelines. This must ensure single window clearance of all required aspects of seeking Green OA for all eligible consumers in a time-bound manner as stipulated in the Rules and Regulations. Building on this, a detailed and updated user-manual shall be published by DISCOMs.

Additionally,

a) The state LDC and STU green open access portals will also seamlessly interface with the National Green Open Access Registry to ensure streamlined and transparent processing of applications across all stages.
b) Assistance would be provided to consumers using the portal with a dedicated call centre, standard operating procedures and practice directions in line with existing and applicable regulations. A user-friendly guide, addressing key bottlenecks in completing the application process, shall be made available.
c) DISCOMs shall appoint a dedicated officer, not below the rank of Superintendent Engineer, in each Zone to provide support to MSMEs seeking green open access and help them in completing necessary procedures.
d) The state green open access portal shall publish status of all applications including milestones such as portal registration, grant of connectivity, obtaining requisite clearance from DISCOMs etc.
e) The portal shall publish aggregate statistics of applications accepted, rejected and pending along with average pendency at every stage of the application process. In addition, the portal shall publish periodic reports with ten most common reasons provided by the appropriate nodal agency for rejection of applications. This will be analysed to understand and address systemic and procedural issues (related to regulatory lacunae, infrastructure bottlenecks, etc.).

7.2.2. Targets, project sizing flexibility and incentives

To further enhance flexibility in project sizing, encourage long-term green OA which can allow up to 100% of power requirements being met directly by the consumer, the policy envisages a target of 5 GW/10 BU of long-term Green Open Access procurement in the state by FY 2029-30 and 10 GW/20 BU by FY 2035-36.

Further, long-term Captive Green OA projects in Maharashtra and which supply power within Maharashtra which integrate energy storage (for a minimum of 4 hours of 50% of the RE capacity contracted) into the projects (either at the generation end or at the consumer end), thereby reducing the need for banking services from the DISCOMs shall be exempt from payment of Electricity Duty for 10 years from the commissioning date.

Energy Department, GoM shall set up a committee consisting of representatives from MSETCL, STU, MSLDC and any other stakeholder as may be needed to assess the possibilities of

- Rationalizing the transmission charges for RE based MTOA and LTOA projects.
- Enabling higher RE project sizing in relation to Contract Demand/Sanctioned Load considering the issue of *'resultant power flow'*.

- Rationalising the charges for auxiliary consumption from RE projects and the need for taking some level of contract demand from DISCOM.
- Avoiding multiple OA applications along with its fees and registrations with both, MSEDCL and MSLDC.

The report of the committee shall be submitted to the MERC and GoM.

7.2.3. Pricing DISCOM services at cost

a) Presently DISCOMs provide crucial grid services to facilitate non-DISCOM supply options. Unbundling of tariff charged by DISCOMs will enable that crucial services such as balancing, banking, grid support services are priced at cost. The recent trends from Power Exchanges prices make it quite clear that the day time prices with ever increasing share of low-cost solar are in the range of Rs 2.5-3/kWh while evening and night time peak prices can be much higher and be at the ceiling price of Rs 10/kWh on many occasions.

b) Concessional provision of services (especially renewable energy banking, balancing) distorts price signals and economic incentives to adopt measures to align demand with available supply or undertake measures for grid integration at the consumer end. Further, concessions also implies that the services provided ultimately results in losses for DISCOM or translate to additional cost burden for smaller consumers who are unable to exercise consumer choice or avail competitive supply. It leads to a situation where smaller consumers pay the price for services provided either through deterioration of supply quality from a loss making DISCOM or higher tariffs. Similarly, net metering services provided to prosumers with onsite renewable system is also highly concessional. With renewables becoming economically viable, it is important to limit these services to smaller consumers who have limited options for non-DISCOM supply and no access to electricity markets.

c) The framework for pricing DISCOM services shall ensure that:
   - the services provided are accounted for adequately and compensation is linked to services provided rather than the mode of migration.
   - the compensation arrived at does not erode away majority of the savings from sales migration for the consumer.
   - pricing incentivises consumer behaviour to align demand with supply availability and private investment in storage technologies.
   - For Open Access and Captive Systems > 100 kW, energy accounting shall be done on a 15-minute block wise basis along with appropriate banking charges.
   - there is transition financial support provided for revenue attrition of DISCOMs in the medium term.
   - there is review and revision of pricing based on demand-supply situation, market and technology changes in the sector.
   - There is long term certainty and clarity for consumers about various charges and methodology.

7.2.4. Meeting industrial and commercial demand for 24X7 renewable electricity

Due to expected carbon taxes like CBAM, stringent ESG requirements and voluntary commitments, there is increasing demand from various C&I consumers for 100% RE consumption which is verified for each time block and not based on monthly/annual notional accounting with energy banking. Given the demand diversity and scale, DISCOMs are also well suited to cost-effectively provide such solutions to customers.

DISCOMs are encouraged to offer this service under special tariff category and approach the MERC for necessary approvals. Provided that such 100% RE contracts will be for a minimum of one year and will have an additional 'RTC' green tariff as may be decided by MERC and considering principles mentioned in earlier section. Based on the MERC approval, necessary procedures shall be developed by concerned agencies.

GoM may designate any existing State Company or also consider setting up a new company specifically to provide 100% RE power to interested consumers. This company may also apply for being registered as a REIA (Renewable Energy Implementing Agency) by the Ministry of Power.[23] This will further enable the new company to sell such RE-RTC power to other states and consumers in other states.

7.3. Facilitative regulatory framework

The Honourable MERC may establish a comprehensive framework for giving effect to various policy approaches (such as net-metering, net-billing, Green OA, banking, standby, grid support charge etc.) suggested in this section 7, through appropriate modifications to its regulations, practice directions and orders. Further, green tariffs opted by the consumers shall be provided at premium rates which shall be determined by the Commission.

8. Ease of Doing Business

8.1. Further simplification and streamlining of processes

A single window web portal for RE projects has been developed by MEDA as was directed under the earlier 2020 RE policy. MEDA shall review all procedures and registration requirements from time to time and shall undertake necessary modifications in the same to improve ease of doing business for RE developers. This will include processes and procedures related to land, RE project and developer registration and Wind micro-siting amongst other things. Specifically, the registration and other related processes for smaller projects (up to 5 MW) will be further simplified by MEDA.

As part of the next phase of development of the portal, the Energy Department will ensure that all processes which are part of the portal registration & monitoring process, some of which are currently processed off-line by allied agencies such as the Electrical Inspectorate, DISCOMs etc. will also be completed only in the online mode through the portal. This will ensure that all processes to be done by the developers and allied state agencies are integrated into the online portal.

9. Strengthening Institutions, Promoting Innovation and Piloting New Initiatives

The ever-growing complexity of the energy sector and rapidly changing technologies as part of the energy transition means that the State need a strong institutional architecture to adapt, learn and benefit from this constant change. The intuitional structure needs to be nimble enough and open to innovation and trying out new pilots and ideas given the plethora of options out there. Over the long run, no one can pick out winners and losers with any level of certainty since a lot of the risks and benefits are not adequately known at this stage. This underlines the need for experimentation and piloting of a variety of approaches.

9.1. Skill building and human resource development

To meet the planning, operational, legal, monitoring and reporting demands of the energy transition with increasing share of renewables, energy efficiency, market operations, energy storage etc., there shall be a renewed focus on continuous training, skill building across the human resource value chain in all power sector institutions in Maharashtra. Similar to the provision in the National Training Policy of 2012, at least 2.5 percent of its annual salary budget shall be allocated for training, related infrastructure and procurement of advanced analytical tools, licenses and services.

With increasing size and challenges in the power sector, there is a need for review of roles and functional skill sets of personnel in the Regulatory Commission and other organizations like Energy Dept, GoM, STU, MSLDC, MEDA, MSETCL, MSPGCL, DISCOMs to align with new requirements. Within 6 months of this policy, Energy Dept, GoM, shall come out with a report outlining the need for new personnel and skills within all State power sector agencies. All agencies shall be adequately supported for training in the emerging technologies and skills in the power sector.

Specific training modules (both on-site and online) in traditional and emerging areas would be organised regularly based on the needs outlined in the above report. These will include but not be limited to power sector capacity addition and production cost optimisation modelling, IRP and RA modelling, power system protection, data analytics, cyber security, smart metering, energy storage etc. Modules can also include crucial areas involving legal, regulatory and economic aspects.

Leading training and research institutions across India, as well as higher education institutions in Maharashtra would be roped in for skill building and training exercises as appropriate.

9.2. Meeting challenges of the energy transition – building data, knowledge and planning expertise

9.2.1. Periodic data collection and public sharing

In today's age, one does not have to reiterate the importance of good quality, up to date and granular data across the various functions of the power sector. Data is key to good planning, forecasting, Monitoring & Verification and timely corrective actions if any. The Energy Dept, GoM in coordination with and with support of other sector entities in the state shall publish an annual electricity dataset for Maharashtra for improved transparency. The same data will also be part of a new Electricity Portal for Maharashtra.

Further, MEDA shall enhance and update its existing dashboard for renewable energy and energy storage project monitoring for review of the progress under this policy. This dashboard will include but not be limited to details of project registration (with details of energy resources, size, location etc.), project completion, energy generation, subsidies and benefits availed, land use for RE and ESS projects etc.
Within three of months of the end of each financial year, MEDA will publish a progress report on the RE&ES policy implementation. For this purpose, all entities including DISCOMs, MSLDC will share project wise monthly generation data from RE and ESS projects with MEDA in a timely manner. Further all sector agencies like DISCOMs, MSETCL, STU, RE and ESS project developers etc. will share all necessary data needed for the annual progress report and monitoring dashboard with MEDA in a timely manner.

9.2.2. Dedicated and analytically empowered cells/wings to undertake critical functions

As part of redefining and reimagining the new HR framework for the power sector, there is a need for further empowering existing cells or establishing dedicated and analytically empowered cells which will be housed within appropriate agencies to undertake specific and critical functions. These shall be set up within 6 months and would include

- Planning Cell, housed in DISCOMs, which will assist in demand forecasting, power procurement planning, innovative tendering, etc.
- Power Sector Modelling Cell, housed in MSLDC, which will assist in capacity addition, production cost optimisation, Resource Adequacy and IRP modelling studies including overall demand forecasting of all DISCOMs.
- Trading Cell, housed in DISCOMs, which will undertake efficient trading to maximise benefit of electricity markets, green credits and future carbon trading for consumers.
- Legal Cell, housed in DISCOMs, which will undertake coordination and faster responses to legal issues and build electronic repository of documents for legal processes and tracking.
- Optimal power procurement, trading and storage planning is extremely essential to ensure reliability of supply in a cost-effective manner. This requires significant analytical capacity and modern planning tools. Power procurement depts/cells across DISCOMs shall be suitably strengthened to undertake this complex power procurement planning. To provide certainty and visibility to investors, DISCOMs shall publish an annual calendar of generation and storage capacity procurement up to FY 2029-30.

9.2.3. Building institutional framework for state wide coordination and planning

With increasing complexity of Energy Transition related developments as well as evolving institutional structure and multiplicity of entities involved in generation, transmission, distribution and market mechanisms, it is critical to have state level coordination and coherent approach to electricity sector planning. To facilitate this, an empowered institutional structure is necessary. Energy Department, GoM shall propose such an institutional structure within 6 months of the notification of the policy.

9.3. Maharashtra R&D, innovation, and start-up centre for renewable energy and energy storage

The GoM shall establish a new R&D, Innovation and Start-up Centre for Renewable Energy in the state. This centre could be housed in appropriate academic or electricity sector institution in the state and would provide support for multi-disciplinary and multi-stakeholder (industry, academics, start-ups, research institutions, civil society group etc.) research and innovation in the electricity sector. The centre will work closely with electricity sector entities in the state such as MERC, DISCOMs, SLDC, MSETCL, MEDA, MSPGCL etc. as well as higher education institutions in the state. The Centre/s shall be initially supported by budgetary grant of Rs 100 crore / year for 3 years by the GoM.

The Centre shall undertake several activities, prominent among which could be

- Research and Development (R&D) and Adoption of New Technologies
- Promotion of Start-ups in energy, climate change, data, AI/ML based Support System for Energy Portfolio Management, IoT, storage etc.

There is a need for trying out various pilots and initiatives to better understand the risks and benefits of various approaches. Hence the above Centre could support pilots on topics such as: Agro-voltaics, Demand Response and aggregation; Load shifting; Metering and Billing Innovations, Green Manufacturing, new BESS technologies, Trading of rooftop solar amongst users, etc.

As part of its mandate, the Centre shall also explore pilot initiatives such as 'Storage-as-a-Service' and 'Vehicle-to-Grid' (V2G) applications. These pilots will assess technical feasibility, regulatory readiness, and commercial models suitable for Maharashtra's energy transition, particularly in urban transport and decentralized storage ecosystems.

9.4. Repowering wind power projects

MNRE has come out with its National Repowering and Life Extension Policy for Wind Power Projects in December, 2023. NIWE has estimated the repowering potential at just over 3 GW for Maharashtra. The national policy lays down the various eligibility criteria, implementation modalities along with roles and responsibilities of various relevant entities and the same shall be followed for any wind repowering projects in Maharashtra.

This policy envisages a target of 1 GW of wind repowering projects by 2030 and to that effect proposes the following incentives.

a. For projects selling power to MSEDCL through competitive bidding route, repowering projects shall be eligible for an additional Government of Maharashtra incentive payment of Rs 0.5/kWh for the first 5 years from the date of CoD.
b. For projects set up for captive consumption, repowering projects shall be eligible for Electricity Duty exemption for the first 10 years from the date of CoD.
c. A designated REIZ agency may explore taking over an existing old wind power site and do the Repowering Site Preparation work with the cost being borne out of the Harit Urja Nidhi. Following this, location specific bidding for wind projects for sale to MSEDCL would be carried out by MSEDCL.

9.5. Gearing MSPGCL for the energy transition

As the energy landscape transitions toward a clean energy future, Maharashtra State Power Generation Company Limited (MSPGCL) must evolve from a predominantly thermal power utility into a diversified, future-ready generation company. With the growing cost-competitiveness of solar, wind, and energy storage technologies—and their increasing share in the grid—MSPGCL is well-positioned to play a central role in Maharashtra's clean energy build-out. Following the example of national counterparts such as NTPC, MSPGCL will be expected to strategically expand its portfolio to include large-scale renewable energy projects, hybrid systems with storage, and flexible capacity that can complement variable renewable energy sources.

As part of its broader transformation, MSPGCL shall simultaneously enhance the efficiency, flexibility, and environmental compliance of its existing coal-based fleet. A detailed roadmap shall be prepared within 1 year to improve operational flexibility of thermal units, including reduction in technical minimums, faster ramp rates, and improved start-stop capabilities, in alignment with CEA guidelines.

In this regard, MSPGCL shall ensure compliance with the *Central Electricity Authority (Flexible Operation of Coal based Thermal Power Generating Units) Regulations, 2023*, notified on 25th January 2023. All thermal units shall be suitably retrofitted or operated to achieve a minimum power level of 40% and shall demonstrate ramp rate capabilities of at least 3% per minute between 70%–100% Maximum Continuous Rating (MCR), and 2% per minute between 55%–70% MCR.

Further, to address persistent slippage in coal quality (GCV) between billed and received supplies, MSPGCL shall engage with the Ministry of Power (MoP), Ministry of Coal (MoC), and Indian Railways to minimize discrepancies and secure appropriate compensation wherever justified. Additionally, recognizing that a portion of the State's coal fleet is aging and approaching end-of-life and considering the stability needs of the grid, MSPGCL shall formulate a strategic plan for phased decommissioning or modernization of such units, ensuring that these decisions are taken in an economically, socially, and environmentally responsible manner, in consultation with all relevant stakeholders.

To this end, MSPGCL shall prepare and submit to the Government of Maharashtra a comprehensive business and organisational transformation plan within six months of the notification of this policy. This plan will outline a phased roadmap for asset diversification, institutional capacity building, workforce reskilling, and financial restructuring necessary to become a competitive player in the renewable and storage sectors. MSPGCL will also identify opportunities to repurpose existing land and transmission assets at its thermal stations for solar and hybrid energy parks, thereby leveraging legacy infrastructure for the energy transition.

9.6. Restructuring and transforming MEDA for the energy transition

Over the past two decades, the renewable energy and energy storage sectors have undergone a fundamental transformation, moving from early-stage demonstration projects to becoming a central pillar of India's energy future. The steep decline in costs of solar, wind, and now energy storage technologies, coupled with the rapid evolution of business models such as open access, hybrid RE-storage systems, and distributed energy solutions, has shifted the sector from one requiring subsidy and awareness-building to one needing sophisticated market integration, regulatory foresight, and innovation-led facilitation. The scale and complexity of projects is also increasing. In this new paradigm, the role of institutions must evolve accordingly.

Originally conceived to promote awareness and pilot renewable energy projects, MEDA needs to be re-envisioned in the context of the strategic and operational imperatives of this new era. To respond to this shift, the Government of Maharashtra will initiate a comprehensive restructuring of the Maharashtra Energy Development Agency (MEDA). GoM will form an expert Committee within 3 months to propose a comprehensive restructuring plan within 1 year of the notification of this policy.

9.7. Feasibility study for innovative two-part tariff for wind and solar power

Nearly all large utility scale variable RE (VRE), especially wind and solar power procurement is taking place through the competitive bidding route in line with the TBCB guidelines issued by MoP as per section 63 of the EA, 2003. As part of this framework, the wind and solar tariff is a single part tariff which is fixed for the duration of the PPA, usually 25 years. As the share of wind and solar in the overall procurement mix increases, the marginal capacity value of every subsequent RE capacity addition reduces. For example, as the share of solar power increases, the net demand in the day-time keeps reducing and capacity value of subsequent solar capacity reduces unless it is paired with energy storage which can shift its time of generation. Wind and solar curtailment is also expected to increase as net demand reduces beyond a point while all coal capacity is

already operating at their technical minimum generation levels. An innovative approach to partly address this falling capacity value of wind and solar power and their curtailment is to have a two-part tariff for wind and solar power like thermal or hydro power plants. DISCOMs shall study this possibility of two-part tariff of wind and solar power for future procurement and submit this report to the Energy Dept, GoM and MERC within 6 months of the notification of the policy. As part of this study, they will analyse the advantages and challenges of this approach and further outline the changes needed in TBCB guidelines, regulations and other operational practices.

9.8. Harnessing demand-response initiatives for a greener and robust grid

Maharashtra's peak demand has increased to ~30 GW in early 2025 and is expected to grow significantly in the coming decade. To prevent load shedding and shortages in the future, it is paramount to build a robust grid that not only balances the demand with optimum supply options, but also induces/incentivises consumers to shift their loads to high energy availability periods and away from stress periods. While effective ToD tariffs is one of the critical steps in this process, another important piece of the puzzle is to deploy demand-response (DR) measures. In line with this objective, a three-year programme to carry out at-scale demand-response pilots to assess their scalability and techno-economic feasibility shall be initiated by MSLDC / DISCOMS.

These pilots should have the following elements:

- Manual and Auto DR should be tested
- Should be targeted at Residential, Commercial, and Industrial consumers
- Should meet a pre-determined cost-effectiveness criterion
- Should have rigorous monitoring, verification, and evaluation mechanisms
- Should focus on scaling up

An appropriate budget may be allocated for conducting these pilots which will enable the State to align policies and regulations to minimise shortages during peak periods and increase savings.

10. Policy Implementation, Monitoring and Review Structure

10.1. State-Level Steering Committee

To ensure the successful and effective implementation of this policy, achieve the intended objectives, address operational challenges arising under existing policies or procedures, and make necessary amendments from time to time, a *State-Level Steering Committee* is hereby constituted under the chairmanship of the Hon'ble Chief Minister / Energy Minister, as detailed below:

Composition of the Committee:

1. Hon'ble Chief Minister / Energy Minister – Chairperson
2. Additional Chief Secretary / Principal Secretary (Energy), Industries, Energy and Labour Department – Member and Convener
3. Principal Secretary (Industries), Industries, Energy and Labour Department – Member
4. Principal Secretary (Revenue) – Member
5. Chairperson and Managing Director, MSEDCL – Member

Functions of the Steering Committee:

1. Review the implementation of this policy once every quarter to ensure it is proceeding appropriately.
2. Resolve issues or inter-departmental challenges arising during the implementation of this policy.
3. Evaluate experiences and lessons learned during the implementation of the policy and accordingly recommend necessary changes or improvements.
4. Issue directions to the implementing agencies and ensure coordination among them. Experts, relevant departmental officials, etc., may be invited to the meetings of the committee as required.
5. To ensure effective and timely implementation of the policy, the steering committee shall have the power to clarify or resolve ambiguities, and to remove difficulties if any, in the provisions of this policy

10.2. Implementation Committee

To ensure successful and time-bound implementation of the policy, an *Implementation Committee* is hereby constituted under the chairmanship of the Principal Secretary (Energy), as detailed below:

Composition of the Committee:

1. Additional Chief Secretary / Principal Secretary (Energy) – Chairperson
2. Chairperson and Managing Director, MSEDCL – Member
3. Chairperson and Managing Director, MahaGenco – Member
4. Chairperson and Managing Director, MahaTransco – Member
5. Managing Director, MahaUrja – Member
6. Chief Electrical Inspector, Industries, Energy and Labour Department, Chembur – Member
7. Executive Director, MSLDC - Member
8. Deputy Secretary (Renewable Energy), Energy Department – Member Secretary

Functions of the Committee:

1. Ensure timely implementation of interventions under the policy such as improvements, modifications in working procedures, financial incentives, policy outreach, and achievement of intended objectives.
2. Monitor the same and conduct periodic reviews.
3. Review the status of action plans, completed activities for each month, and future targets and plans; ensure implementation and monitor progress.
4. In case of any issues arising during implementation, evaluate and recommend necessary modifications to the State-Level Steering Committee.

5. Issue necessary instructions to all concerned stakeholders/agencies for speedy implementation and ensure coordination among them.

As required, the Committee may invite experts, concerned departmental officers to its meetings.

* * * * *

Annexure 1: Indicative list of actions, documents, and timelines for different entities.

No	Agency	Topic	Section within policy	Timeline (from notification of the policy)
1	Energy Dept, GoM.	Further, for all RE projects seeking connectivity from 1st April 2026 or any other date as may be notified by the Government of Maharashtra, it would be mandatory for developers/prosumers to install a minimum level of storage capacity and duration for such RE (limited to only solar PV and wind) projects above a threshold of 100 kW under the Grid Interactive Rooftop Renewable Energy Generating Systems regulations.	5.4, 7.2	
		GoM may also consider setting up a new company specifically to provide 100% RE power to interested consumers. This company may also apply for being registered as a REIA (Renewable Energy Implementing Agency) by the Ministry of Power.	7.2.4	
		Committee under MSETCL, STU and MSLDC for operationalising Green OA.	7.2.2	3 months
		To further improve power system operation and planning, as envisaged under Section 39 and Section 31(2) of the EA, 2003, GoM shall initiate steps for restructuring of MSETCL within one year of the notification of this policy. In order to ensure autonomy and accountability, STU and MSLDC, MSETCL functions shall be restructured and ring fencing / independence of STU and SLDC activities will be ensured through new structural arrangements.	6.5.3	12 months
		Publish an annual electricity dataset for Maharashtra. The same data will also be part of a new Electricity Portal for Maharashtra.	9.2.1	
		Detailed guidelines for State PSU participation in the RE Industrial Zone scheme. Nomination of designated REIZ developer.	6.4	3 months
		Report outlining the need for new personnel and skills within all State power sector agencies	9.1	6 months
		As part of the next phase of development of MEDA's RE registration portal, the Energy Department will ensure that all processes which are part of the portal registration & monitoring process, some of which are currently processed off-line by allied agencies such as the Electrical Inspectorate, DISCOMs etc. will also be completed only in the online mode through the portal.	8.1	
		Energy Department, GoM shall propose an Institutional Framework for State wide coordination and planning.	9.2.3	6 months
		Establish a new R&D, Innovation and Start-up Centre for Renewable Energy in the state.	9.3	
		Initiate a comprehensive restructuring of MEDA. GoM will form an expert Committee within 3 months to propose a comprehensive restructuring plan within 1 year of the notification of this policy.	9.6	3-12 months

2	MERC	The Honourable Commission shall be guided by the approach detailed in this policy and shall undertake appropriate steps including amendments in existing regulations to facilitate the implementation of this policy and achieving targets set in this policy	3 (c); 4, 5.1, 5.2.2; 6.5.5; 7.1.1, 7.3; 9.7	
3	MEDA	Revised Developer/Project registration process and updating RE web portal.	8.1	
		Publish a progress report on the RE&ES policy implementation. Enhanced Monitoring Dashboard for Implementation and Tracking of RE&ES Policy	9.2.1	3 months after end of each FY
4	STU / MSETCL	Revise RE and ESS Grid Connectivity Procedures	6.5.2	3 months
		Revised IRP and Transmission System Plan for 65% RE and 10% ESS by 2035-36.	6.5	
		STU/MSETCL shall specifically study Energy Storage deployment with transmission infrastructure to optimize and defer transmission infrastructure investments, maximize the utilization of the transmission assets, reduce state level congestion, RE curtailment and strengthen grid stability. Based on study by STU, within one year of the notification of the policy, MSETCL shall undertake assessment of transmission linked storage requirements and initiate necessary regulatory approvals for procurement thereafter.	6.5 (B)	
		To further encourage solar+storage projects and to enhance the utilisation of the transmission network, connectivity for solar projects (without storage) maybe restricted only to solar hours. Study this possibility and initiate action to operationalise this for InSTS once the same is adopted at the central level.	6.5 (C)	12 months
		A comprehensive set of guidelines on implementation, sizing, safety and operation of grid-interactive hybrid RE projects and energy storage projects (stand-alone or co-located with RE) for new and existing projects.	5.2.2, 5.3	3 months
		STU shall prepare grid strengthening plan	6.5 (H)	
		Transmission Licensee shall proactively prepare a five year grid modernization plan and seek STU approval for implementation	6.5 (H)	
		STU, SLDC along with MSEDCL will conduct a study to assess the concept and feasibility of a Distributed System Operators in Maharashtra and shall submit the same to the Energy Dept, GoM For further consideration.	6.5.4	12 months
		Further necessary modifications and changes will be made to the LDC and STU Green OA portals and the application process to streamline it and reduce timelines.	7.2.1	3 months
		Ease of accessing Green Open Access: simplified procedures with timebound clearances	7.2.1	
		Submit a plan to set up a 500-1000 MW BESS/Energy storage plant specifically to improve grid stability and provide ancillary services.	6.5.5	

5	Revenue Dept	Standardised/Model Land Leasing Agreement if needed		3 months
		Notification for waiver of NA tax / premium for RE and ESS	6.3	3 months
6	MSPGCL	To encourage such bundling of RE (mainly solar PV) and or battery storage which would use common transmission evacuation system with existing thermal plants and to reduce fuels costs, the MSPGCL and other IPPs selling power to DISCOMs in Maharashtra are encouraged to explore such projects.	5.5	
		MSPGCL shall prepare and submit to the GoM a comprehensive business and organisational transformation plan	9.5	6 months
		MSPGCL shall ensure compliance with the Central Electricity Authority (Flexible Operation of Coal based Thermal Power Generating Units) Regulations, 2023, notified on 25th January 2023. All thermal units shall be suitably retrofitted or operated to achieve a minimum power level of 40% and shall demonstrate ramp rate capabilities of at least 3% per minute between 70%–100% Maximum Continuous Rating (MCR) and 2% per minute between 55%–70% MCR.	9.5	
7	MSLDC	A three-year programme to carry out at-scale demand-response pilots to assess their scalability and techno-economic feasibility shall be initiated	9.8	
		Further necessary modifications and changes will be made to the LDC and STU Green OA portals and the application process to streamline it and reduce timelines.	7.2.1	3 months
		Power Sector Modelling Cell, housed in MSLDC, which will assist in capacity addition, production cost optimisation, Resource Adequacy and IRP modelling studies including overall demand forecasting of all DISCOMs.	9.2.2	
8	MSEDCL	For BESS projects connected to the LT network, guidelines will be proposed by DISCOMs. Among other things, the guidelines will cover procedures related to energy accounting frameworks, connectivity, metering requirements, data collection and reporting etc.	5.1	3 months
		A bulk procurement program of BESS systems between 10-100 kW with two to four hours storage shall be undertaken by MSEDCL to reduce cost of such systems for MSME consumers.	7.1.3	
		Feasibility study for innovative two-part tariff for wind and solar power projects.	9.7	6 months
9	DISCOMs	To improve supply reliability and increase the integration of distributed RE projects, DISCOMs will conduct cost-benefit analysis to assess the value of distributed storage in rural and urban areas	5.4	1 year
		Appoint a dedicated officer, not below the rank of Superintendent Engineer, in each Zone to provide support to MSMEs seeking green open access and help them in completing necessary procedures.	7.2.1	

		DISCOMs are encouraged to offer 24X7 RE power for interested consumers under special tariff category and approach the MERC for necessary approvals.	7.2.4	
		Dedicated and analytically empowered cells/wings to undertake critical functions (Planning, Trading, Legal, Power procurement)	9.2.2	
10	DISCOMs, MSETCL / MSLDC / STU / MEDA as the case maybe	Ease of accessing Green Open Access: simplified procedures with timebound clearances and unified single window clearance portal.	7.2.1	
		Meeting Industrial and Commercial demand for 24X7 renewable electricity - Based on the MERC approval, necessary procedures shall be developed by concerned agencies.	7.2.4	

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