Contents

KERALA SMALL HYDRO POWER POLICY-2022

1. Preamble

Kerala is endowed with vast small hydro power potential to the tune of about 650 MW as per latest data of the Union Ministry of New and Renewable Energy. Presently the state produces only less than 30% of its annual power requirement inside the State. More power projects are required in the State to ensure our energy security. Government of Kerala has issued several guidelines from time to time for the development of small hydro power project since 1992. A policy by the name "Kerala Small Hydro Power Policy 2012" was promulgated on 3rd October 2012. The measures have encouraged private investment to harness green energy from natural resources. Till the end of March 2022, 19 Small Hydro Power projects with an installed capacity of 260 MW have been commissioned in the State of which 177MW is produced by the state funded utility the Kerala State Electricity Board Ltd (KSEBL).

In the year 2002, Small Hydro Power cell (SHP cell) started functioning in the Energy Management Centre (EMC) under the direct control of Principal Secretary-Power and the State Government decided to allot projects to private investors through the SHP cell. Majority of the projects allotted by the Government through SHP cell could not be commissioned till now. Some of the major reasons identified for the slower investments in the field are delay in getting clearances from various government departments/agencies, cumbersome procedures for getting land, bottlenecks in getting loans, challenges in project grants/viability gap funding, environmental/geographical challenges, variability of climate/rain, challenges in tariff fixation, inadequate BOOT period, power evacuation issues, operational challenges etc.

Cost effectiveness is an important factor for SHP projects. Since other renewable power is available in the market at very low rates, cost of energy from SHP projects should also be comparable in order to provide electricity at affordable tariff to the consumers. The Kerala Electricity Regulatory Commission (KSERC) has issued guidelines for purchase of electricity

from Renewable Energy sources including SHPs, making it mandatory for the distribution licensees to source a certain percentage of their power purchases from Renewable Energy sources. Generic tariff provided for lower capacity projects and project cost based tariff is provided for higher capacity projects as per KSERC (Renewable Energy & Net Metering) Regulations 2020 as amended in 2022. These tariffs had been above the average purchase cost of the KSEBL, due to which there is difficulty in arriving at PPA and financial closure.

Apart from providing electricity contributing to the energy security of the State, SHP projects in remote places will also bring local development, irrigation and tourism potential.

Variability of power had been a major disadvantage of must-run renewable energy coming up from solar and wind projects. One way to overcome this is to have hydro power projects with storage which can adjust its generation of power based on demand in the grid. The must-run status of a SHP projects can be altered with sufficient water storage associated with it. Thus, a SHP project, even though small, assumes importance in the present and future contexts.

In view of all the above issues and challenges, the Government of Kerala has decided to revisit the prevailing Small Hydro Power policy in the state with an intention to invite more investment in small hydro power development and to ensure better self-reliance in power sector.

2. Title and Enforcement

This Policy will be known as Kerala Small Hydro Power Policy, 2022 and will be applicable to projects with installed capacity up to 25 MW. The Policy will come into operation prospectively with effect from the date of its publication in the Official Gazette of the State.

3. Vision

The Vision under this Policy shall be to harness the green, clean and natural resource of small hydro potential in the State for environmental benefits, local development, energy security and to provide affordable power to the consumers.

4. Policy Objectives

The Objectives of this Policy shall be to:

4.1 Enhance the contribution of environmentally benign natural resources, to the socio-economic development of the State and to supplement rural energy needs through speedy and expeditious commissioning of Small Hydro Power Projects.

4.2 Create an environment conducive to public /private /community/stakeholder participation and investment in Small Hydro Power Projects.

4.3 Enhance the contribution of Small Hydro Power Projects in the total installed capacity of the State from existing 260 MW to 500 MW within eight years of implementation of this policy through participation of Independent Power Producers (IPP), Captive Power Producers (CPP), Local Self Governments (LSG), Cooperative Sector, Public sector Undertakings and Merchant Power Producers (MPP).

4.4 Achieve possible developments in drinking water, irrigation, tourism, fish farming and the overall infrastructure development of the area of the project

4.5 Enhance the energy security of the State and provide affordable power to the consumers

5. Stakeholder Organisations

The major stakeholders related to small hydro power development in the state would be the KSEBL, Energy Management Centre (EMC), Technical committee formed by SHP Cell in EMC, Water Resources Department, Forest Department & Wildlife Department, Revenue Department, Local Self Government Department, Fire & Rescue Department, other departments concerned, Project Developers etc.

6. Small Hydro Project cell

SHP Cell functioning in EMC under the direct control of Secretary, Power Department will be facilitating the promotion of this policy. SHP Cell will develop the database on potential Small Hydro sites in the State and also create development models to harness the targeted

capacities during the ensuing years. The SHP cell will be provided necessary data in this regard by the KSEBL and other stakeholder departments. SHP Cell will also monitor the progress of the allotted projects and give necessary advice and help for timely completion of the projects.

Government will strengthen the SHP Cell with formation of a committee of experts from all stakeholders including that from Manufacturer, Consultants, Departments, etc., headed by the Director (EMC) under the control of the Secretary, Power Dept. Necessary infrastructure and support staff will be provided to the Head SHP cell to carry out the following responsibilities:

6.1 Acting as a permanent nodal officer in the state for the development of SHPs in Kerala

6.2 Identifying SHP projects to be earmarked for development by LSGs, IPPs and CPPs, etc and obtain approval from Government.

6.3 Prepare necessary guidelines for the effective application of this policy with approval of Secretary, Power Department.

6.4 Prepare DPR of the SHP projects with the help of external agency, if required.

6.5 SHP cell shall constitute a technical committee consisting of experts and eminent engineers, to scrutinize and recommend to SHP cell on the basic design and Technical parameters (TP) of the detailed proposal submitted by the developer.

6.6 Obtain No Objection Certificate / in principle clearance from various departments and agencies for the projects before the tendering/ allotment process.

6.7 Give recommendation of feasible SHP projects to the Government for floating the bids for allocation.

6.8 Recommending the Technical feasibility of a project or any other matter related to SHPs to the Government.

6.9 Monitoring the execution of projects and reporting the progress to the Government. A separate guideline in this regard will be issued by the SHP Cell.

6.10 SHP cell shall prepare guidelines and obtain the approval of the Government, separately on the Select ion of the Developer for SHP projects, Procedures for Bid preparation, Bid processing, allotment and prepare model implementation agreements/BOOT agreements, Power Purchase Agreement, etc., in collaboration with stakeholder organisations.

6.11 SHP cell shall prepare a guideline and obtain the approval of Govt. on "Single window clearance procedure obtaining final clearances from various agencies/departments related to SHP projects".

6.12 The SHP cell will also carry out other responsibilities mandated in various sections of this policy.

7. Strategic initiatives

7.1 Segregation of projects based on capacity: SHP Projects shall be segregated into 3 categories based on specific limits of installed capacities in consideration of ease of establishment and strategic importance. Separate guidelines will be prepared and issued SHP cell with approval of Secretary Power Department for each limits of capacity.

7.1.1 Project with capacity up to 10kW (Group A - Pico Hydro)

7.1.2 Projects with capacity above 10kW up to 100kW (Group B- Micro Hydro)

7.1.3 Projects with capacity above 100kW up to 2 MW (Group C- Mini Hydro)

7.1.4 Projects with capacity above 2MW up to 25 MW (Group – D Small Hydro)

7.2 Allocation of projects:

7.2.1 All Small Hydro Power Projects identified by Kerala State Electricity Board Ltd or any other agency designated by the Government and not set apart by the Government for private participation, including all dam-toe projects in existing dams, utilizing the controlled release of water from the existing reservoir based hydropower and/ or irrigation projects shall be reserved for development by Kerala State Electricity Board Limited or any other agency authorized by the Government.

7.2.2 Small Hydro Power Projects identified by the Government or Government agencies such as EMC-SHP Cell, KSEBL, ANERT, etc., and not reserved as mentioned in 7.2.1 above, shall be assigned to private developers as independent power projects or captive power project through the competitive bidding route on Build Own Operate Transfer (BOOT) mode.

7.2.3 Government may allocate SHP projects to LSGs, without competitive bidding based on recommendations of SHP Cell on a case-to-case basis. Financial status of the LSGs and unanimity among the three tiers of the Local Bodies regarding

the assignment of the project and/or LSG department may also be taken into consideration before allocation in such cases

7.2.4 Government will declare SHP projects proposed to be given as IPPs / CPPs to the developers based on the recommendation of the SHP Cell on a regular basis.

7.2.5 Small Hydro Power Projects identified by private persons/entities with proposal for utilization of their own land will be assigned to the owner(s) of the land subject to payment of the specified minimum upfront premium and as per guidelines prepared by SHP Cell.

7.3 Types of project allotment: SHP Cell may process allotment in four different categories as mentioned below. Separate guidelines will be prepared and issued by SHP cell with approval of Secretary Power Department for each type of allotment.

7.3.1 Through Government tendering route

7.3.2 As Projects identified/selected by LSGs other than through the tender process

7.3.3 Projects identified in own/private land

7.3.3.1 Projects identified by Private persons/Entities

7.3.3.2 Projects identified by Cooperative Societies / Cooperative Institutions

7.3.3.3 Projects identified by Government Departments / PSUs

7.3.4 Projects allotted directly by the Government

7.3.4.1 Through Investor's meets

7.3.4.2 Through Cabinet Decisions

7.3.4.3 Through partnerships between Government Agencies

7.4 Allotment validity: The developer should ensure that the Project components do not fall in the wild life sanctuaries, national parks, Eco protection zones etc. and also do not interfere /overlap with the existing/ ongoing / proposed Hydel Projects of KSEBL, Government of Kerala undertakings, Private Investors, before submitting their offers on the prescribed format.

Notwithstanding anything contained above, the initial validity of the sanction is up to 3 years from the date of allotment for categories 7.3.2, 7.3.3 and 7.3.4 mentioned above is limited to 3 years. If SHP Cell identifies that no progress is made in the implementation of the allotted project, the allotments for such projects may be automatically annulled.

However, a time extension may be considered by the Government for such projects, based on the recommendation of the SHP Cell, if there is a valid reason. The initial allotment of the project will be for a period of three years by which time if the project does not achieve financial closure with valid reasons, time extension can be granted on case-to-case basis, for a further periods but limited to maximum of 1 year at a time.

The projects allotted by the Government to the developers shall not be denied or delayed without sufficient reason notified to the developer. If any such delay is noticed, it shall be brought to the notice of the SHP cell, which in turn will resolve the interface issues with other departments through mutual discussions.

7.5 Deemed Approval will be admitted as per the guidelines issued by the Government on the clearances of SHPs, in case of undue delay from departments.

7.6 In the projects undertaken by LSGs and public sector enterprises, the civil works can be entrusted to PWD accredited agencies.

7.7 If 75% or more of the land required for the Small Hydro Project has been purchased by the developer, Government may assist the developer through action under the Land Acquisition Act for acquiring balance land.

7.8 As the state intends to promote small hydro power with in state through IPPs, the state-owned utility KSEBL shall purchase entire power produced by SHPs up to 2MW at the generic tariff approved by KSERC.

8. Process of allotment by Tendering

8.1 The allotment process shall be done in two stages. In the first stage, bidders will submit request for qualification (RFQ), which will be evaluated based on Pre-Qualification (PQ) criteria and technical parameters that would be made during Pre-Bid stage and the Bidders who are satisfying all PQ requirements with respect to Technical and financial criteria mentioned in the Bidding document would only be allowed/considered during commercial evaluation.

8.2 In the second stage, the short-listed applicants will be requested for proposals and bids. For each project, the short-listed applicant will be required to quote for a premium per MW payable or a tariff for sale of power for the allotted project based on allotment procedure prescribed in RFP document and as per the following.

8.3 During an Upfront Premium based bidding process, the applicant will be required to quote the Premium per MW pro-rata, subject to the minimum threshold premium specified in respective guidelines issued by SHP Cell with approval of Secretary, Power Department, payable upfront to the SHP Cell.

8.4 During a tariff based bidding process, the applicant will be required to quote the ceiling tariff rate at which the applicant will sell power to the grid from a project along with payment of the minimum threshold premium as may be specified in respective guidelines issued by SHP Cell with approval of Secretary, Power Department, payable upfront to the SHP Cell.

8.5 The SHP cell should also collect the cost of DPR preparation and pre-bid expenses with respect to the specific project including the apportioned administration and general expenses of SHP cell, as mentioned in the Bid documents.

8.6 The projects for which the bids are cancelled as above will be offered to CPPs and Merchant Power Plants (MPPs) through a fresh bid, where the bid criteria will be highest upfront premium offered to Government. The upfront premium shall not be considered in the project cost. The applicable criterion will be specified in the bid documents.

8.7 Government will facilitate through its agencies as well as through approved consultants of the Ministry of New & Renewable Energy, such as the Hydro and Renewable Energy Department of IIT Roorkee (formerly AHEC), the development of appropriate standards for SHPs. The cost-effective design for Small Hydro Power Projects to obtain maximum power from such natural resources and cluster-based sites for SHPs will also be explored. Standardization of electro-mechanical equipment will be given thrust as a means for cost reduction.

8.8 The BOOT period of the SHP projects will be 35 years from the scheduled Commercial Operation Date (COD) or actual COD whichever is early

9. Guidelines & Technical requirements

9.1 SHP cell shall prepare a guideline and construction standards in connection with the standard equipment to be used, various types of turbines, Dams / weir, Water conducting system, Powerhouse, Generator and other ancillaries with an intention to

optimise and standardise the SHP installations, without violating the quality and safety requirements.

9.2 The guidelines shall also describe the method of survey, calculation of maximum capacity, optimum level of production, etc in order to have uniform procedure to prepare DPR and the capacity of the plant.

9.3 SHP cell shall also encourage the usage of new technology in upcoming plants. The developers may deviate from the technologies in the approved DPR ensuring that the new technology is superior and standardized than the original proposals at their own risk cost and responsibility.

10. Clearances & Technical Parameters

10.1 Technical committee formed by SHP cell will scrutinize and recommend to SHP cell on the design and Guaranteed Technical Parameters (GTP) of the detailed proposal submitted by the developer.

10.2 Within 30 days of the approval issued on detailed engineering, the contractor shall submit the application in the Single Window Clearance Board for SHPs constituting by all concerned departments (LSGD/KSEB/Revenue/Irrigation/CEI/Fire/PCB etc), along with their in-principle approval/NOC and necessary documents. The maximum time for these clearances including the clarifications and reply shall be 6 months and SHP cell shall monitor the same.

10.3 Clearances for the Small Hydro Power Project shall be required from

(a) Local Body where the project is located,

(b) the Revenue Department in case the land involved is Government land

(c) the Forest Department in case forest land is involved, and

(d) No Objection Certificate from Irrigation Department.

10.4 Where the Small Hydro Power Project falls in forest land, the case will be processed and considered by the Kerala Forest Department under the provisions of the Forest Conservation Act, 1980 subject to the guidelines of Ministry of Environment and Forest on an application through their Single window portal “PARIVESH” or similar.

10.5 Where the Small Hydro Power Project is located on Government land the developer will be given the land on license for implementation period (Construction period + operation and transfer period) from the date of assignment of project to him subject

to payment of license fee as fixed by Government from time to time. Government shall give permissive sanction for utilisation of land coming under Kerala Land Conservancy Act 1957 for development of Power by Private Developers.

10.6 Where the development of the Small Hydro Power Project requires land owned by other private individuals, it shall be the responsibility of the developer to accomplish purchase of such land. Such land is also to be transferred as part of the project to the Government at the end of the BOOT period at the rate fixed by revenue authorities.

10.7 The Chief Electrical Inspector shall accord necessary permission for the power being produced by the developer to be connected to the State grid duly complying with electrical safety precautions and grid standards

10.8 The transmission and distribution facilities for power evacuation up to the inter-connection point shall be constructed by the developer through STU/Distribution Licensee as a deposit work at the cost and responsibility of the developer.

10.9 The IPPs above 2MW are free to approach KSEBL for a PPA at the Rate discovered through Tariff Based Competitive Bidding (TBCB) route and approved by KSERC.

10.10 Regulatory commission may be requested to consider two-part Tariff with Time-of-Day consideration for injecting the electricity to the grid so that the injection during the peak time will be yielding more to the developer.

11. Financial Support Schemes and Incentives

The various concessions, incentives and subsidies if any allowed by Governments for detailed survey & investigation /detailed project report preparation, generation based incentive etc. will be passed on to the developer.

For the SHP projects of and below 2 MW, Government will be issuing a policy directive to KSEBL for purchasing entire power generated at the generic tariff approved by KSERC.

As no permanent water extraction from water courses is envisaged in Small Hydro Power Projects, IPPs shall not be charged with levy of water cess under the Kerala Irrigation and Water Conservation Act, 2003 (Act 31 of 2003).

The Royalty as per norms of Government of Kerala for CPPs shall be collected by the utility/grid owner connected to that CPP along with their regular energy charges and paid to

Government regularly. The exemption of royalty if any announced by Government shall be approved by KSERC also.

Government may also think of mobilizing a consortium of banks to provide priority lending for longer period at favourable interest rates to support the investors and will be operated through tripartite agreement based on an escrow account.

12. Tariff and Conditions of Sale of Power

Kerala State Electricity Board Ltd shall have the first right to purchase the power generated by IPPs and surplus of power from CPPs at a tariff and other terms and conditions approved by the Kerala State Electricity Regulatory Commission

If KSEBL or it successor entity is not intending to purchase the power, the Distribution Licensees will have the option to procure power partly or fully from the Small Hydro Power Projects at the tariff approved by the KSERC. Balance power shall be offered to other distribution licensees and open access consumers as approved by appropriate commission.

Transmission and Wheeling charges as per the rate fixed by KSERC from time to time will be levied from the developer. T&D losses in the Transmission & wheeling of energy from generating station to the consumption point for captive producers shall be fixed by KSERC and governed by the regulation in force from time to time

Necessary Main and Check meters having import–export registering facility and allied equipment as prescribed by STU/Distribution Licensee shall be installed at the inter-connection point at the cost of the developer. All the meters will be under the custody of STU/Distribution Licensee. Cost of installing and maintaining meters, CT, PT protective equipment etc. including their replacements / repair whenever necessary shall be borne by the developer. State Electricity Regulatory Commission will permit non-discriminatory open access within the State of Kerala to sell the power to any entity within Kerala.

Kerala State Electricity Regulatory Commission may permit open access for sale of power outside Kerala duly complying with the Section 11 of EA 2003. For open access, the Rules framed by KSERC shall be applicable.

13. Quality and Safety requirements

Technical Committee shall have the right to ensure the quality and to insist on compliance with the designs as per standard specification. The broad details of layout and the detailed design and drawing of the hydraulic structures shall be approved by Technical Committee. Design Safety Certificate shall be given by the Design Consultant of the Developer to the Technical Committee/Government and quality standards shall be certified by the agency supervising the works and countersigned by the Developer.

14. Environment aspects and social responsibility

While according technical approval, water utilization for the project shall be given after considering the issues germane to the Kerala Irrigation and Water Conservation Act, 2003 (Act 31 of 2003), and particularly that the proposed project(s) does not infringe on the drinking and irrigation rights of the local inhabitants.

For giving technical clearance, the Technical Committee shall look into all aspects of development of the projects, evacuation arrangements for the power generated, effective utilization of natural resources, interference if any with upstream and downstream existing and proposed projects implemented /being implemented by different agencies etc.

The SHP developer has to make suitable financial provisions for mitigation of adverse impacts as per the approved environmental impact assessment plan. Environment Management Plan, measures for mitigation of degradation of environment, watershed area management, afforestation, and soil moisture conservation due to disturbance of eco-system, and rehabilitation & resettlement package, should be incorporated in the project cost. Adequate care should be exercised in dealing with environmental-related issues such as disposal of blasting muck and soil.

Developers will be expected to adopt Corporate Social responsibility (CSR) in project implementation. They will be urged to provide funds to adopt local people to provide job-oriented training programmes available in the locality and to provide funds for furnishing government educational and other institutions. The Government may constitute a Local Area Development Committee to provide assistance to the developer for speedy implementation and to monitor CSR.

15. Monitoring

The quarterly performance report of the plant, deviations from the expected performance (if any) and issues related to O&M of the plant etc shall be submitted to SHP cell for any intervention needed.

If the developer intends to continue with refurbishment of the project, he shall submit the detailed proposal for Renovation, Modernisation and Upgradation (RMU) of the project, Remanent Life Assessment (RLA) study by authorized agency, Cost of refurbishment etc for approval from Government through the SHP Cell, at least Two years before the scheduled expiry of the BOOT period.

The BOOT period will normally be not extended except due to force majeure condition resulting in the stoppage of the power plant operation for one complete season or a considerable period. In such cases, based on the application from the developer, SHP cell will examine in detail and submit the report to the government for appropriate decision.

16. Scope for collaboration and stakeholder participation

The policy will explore and adopt allied developments in project locations by encouraging multiple usage of SHP project facilities for drinking water, irrigation, tourism, fish farming, etc., and for the overall infrastructure development of the areas. Collaboration on cost of such infrastructure development could be shared by the concerned departments, so that it will not add to the cost of the SHP project.

17. Other conditions

The Generating companies have to operate the station as per the instruction of State Load Dispatch Centre (SLDC). In case if the generation has to be regulated due to constraints in the power system, the generation from the scheme will have to be regulated /stopped as directed by the Load Dispatch Centre. The Generating Company will not be compensated for the shortfall in revenue due to intervention by SLDC. In extraordinary circumstances arising out of threat to security of the State, public order or a natural calamity or such circumstances arising out of the public interest, the developer will have to operate the generating station in accordance with the directives of the State Government. In case of shutdown, no claim on account of loss of generation will be entertained.

The Distribution Licensee will provide a relief in demand charges to HT/EHT captive consumers for continuously operating their captive power plant based on the approved procedure stipulated by regulatory commission for a minimum of 15 days during a month, limited to 50% of the value arrived as per the formula approved by commission. During the period of power cut and /or other restrictions, if there is any cut and/or restriction in maximum demand, the quota of maximum demand for the company and their associates shall be worked out on the same principles as applicable to other consumers during such periods and the maximum demand quota from the utility grid allotted accordingly. The company and their associates shall be permitted to utilise the maximum demand in excess of the quota limiting to the maximum demand by virtue of its contribution of power generation and supply to the grid which will be worked out on the formula approved by commission. Any further additionality shall be supplied subject to availability and terms applicable to other consumers during such periods. No relief in maximum demand shall be permitted during such occasions. A separate agreement in this regard has to be executed by the captive consumer with the Distribution Licensee.

18. Inspection by Dam Safety authorities:

The Dam Safety Authority may inspect the dam site of all commissioned projects and examine the operation and maintenance of the dam and other appurtenant structures and may suggest remedial measures to improve the general condition of the dams and other appurtenant structures from the point of view of safety. Safety monitoring as well as safety aspects of the structures shall be made transparent. Safety audit shall be compulsory for all commissioned projects to ensure periodical evaluation and prescribe the corrective measures.

19. Cancellation and takeover of assigned project

In case the developer leaves the project incomplete, or closes the industry or abandons the project, or violates any conditions of allotment, the Government reserves the right to take over the project or transfer the project to other agencies without any compensation and free from encumbrances.

On completion of BOOT period, the entire project components including land and transmission system shall be transferred by the developer to the Government in proper working condition, free of cost and free of all encumbrances.

The Government will not have any liability to take over the employees engaged in the project by the developer.

In case any developer wishes to continue with the project, the developer has to apply for continuation of BOOT period with Remanent Life Assessment (RLA) study and Capital needed to invest, two years before the expiry date of the period and Govt. may decide suitably in the interest of the State

In case the Government does not extend the BOOT period and the developer does not transfer the project components as specified above, the Government or any agency authorized by the Government, shall have the right to recover the property with all the project components.

In case there is any subsisting liability, the developer shall be personally liable for the same.

20. Amendments /Relaxation / Interpretation/ Implementation of the Policy:

Government of Kerala will have powers to amend /relax/interpret any of the provisions under this Policy. A high level inter-departmental review committee will be constituted to regularly monitor the smooth implementation of all provisions of this policy. This Committee will also ensure issue of necessary Government Orders by various departments in relation to this policy without loss of any time for mid-course correction, if required for the smooth implementation of the policy.