"ഭരണഭാഷ- മാതൃഭാഷ"

കേരള സർക്കാർ

സംഗ്രഹം

ഊർജ്ജ വകുപ്പ് - സംസ്ഥാനത്തിന്റെ ഉപ്പുവെള്ള/കായൽ, തരിശായി കിടക്കുന്ന ജലാശയങ്ങളിൽ ഫ്ലോട്ടിംഗ് സൗരോർജ്ജ നിലയങ്ങൾ സ്ഥാപിക്കുന്നതിനുള്ള മാർഗ്ഗനിർദ്ദേശങ്ങൾ - അംഗീകരിച്ച് ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു.

ഊർജ്ജ (പി എസ്) വകുപ്പ്

സ.ഉ.(കൈ) നം.4/2025/POWER തീയതി,തിരുവനന്തപുരം, 01-03-2025

പരാമർശം:-
1. 09-12-2022 ലെ സ ഉ (സാ ധാ) നമ്പർ 212 / 2022 /ഊർജ്ജം
2. 05-01-2022 ലെ സ ഉ (സാ ധാ) നമ്പർ 2 / 2023 /ഊർജ്ജം
3. ചീഫ് സെക്രട്ടറി അധ്യക്ഷനായുള്ള ഉന്നതതല കമ്മിറ്റിയുടെ 02 / 11 / 2024 ലെ യോഗനടപടിക്കുറിപ്പ്.
4. 23/01/2025 ലെ ANERT-RD/31/2023-17 നമ്പറായ അനെർട്ട് ചീഫ് എക്സിക്യൂട്ടീവ് ഓഫീസറുടെ കത്ത്.

ഉത്തരവ്

പരാമർശം (1) ലെ ഉത്തരവ് പ്രകാരം സംസ്ഥാനത്തിന്റെ ഉപ്പുവെള്ള/കായൽ, തരിശായി കിടക്കുന്ന ജലാശയങ്ങളിൽ ഫ്ലോട്ടിംഗ് സൗരോർജ്ജ നിലയങ്ങൾ സ്ഥാപിക്കുന്ന പദ്ധതിയുടെ നടത്തിപ്പിനായുള്ള മാർഗ്ഗനിർദ്ദേശങ്ങൾ തയ്യാറാക്കുന്നതിനും പദ്ധതി നടത്തിപ്പിൻ്റെ വിവിധ പ്രവർത്തനങ്ങൾ ഏകോപിപ്പിക്കുന്നതിനുമായി ചീഫ് സെക്രട്ടറിയുടെ അധ്യക്ഷതയിൽ ഒരു ഉന്നതതല കമ്മിറ്റി രൂപീകരിക്കുകയുണ്ടായി.

2. പരാമർശം (2) ലെ ഉത്തരവ് പ്രകാരം അനെർട്ടിനെ ടി പദ്ധതിയുടെ നോഡൽ ഏജൻസിയായും, അനെർട്ട് ചീഫ് എക്സിക്യൂട്ടീവ് ഓഫീസറെ ടി പദ്ധതിക്കുള്ള അപേക്ഷകൾ പരിശോധിക്കുന്നതിനും ചുമതലപ്പെടുത്തുകയുണ്ടായി.

3. ഇതിനെ തുടർന്ന് അനെർട്ട് ചീഫ് എക്സിക്യൂട്ടീവ് ഓഫീസർ, സംസ്ഥാനത്തെ ഉപ്പുവെള്ള/കായൽ, തരിശായി കിടക്കുന്ന ജലാശയങ്ങളിൽ ഫ്ലോട്ടിംഗ് സൗരോർജ്ജ നിലയങ്ങൾ സ്ഥാപിക്കുന്ന പദ്ധതിയുടെ കരട് മാർഗ്ഗ നിർദ്ദേശങ്ങൾ തയാറാക്കി സർക്കാരിന്റെ അംഗീകാരത്തിനായി സമർപ്പിച്ചു. ആയതിന്മേൽ ബന്ധപ്പെട്ട വകുപ്പുകളുടെ അഭിപ്രായങ്ങൾ ലഭ്യമാക്കുകയും വിവിധ തലങ്ങളിൽ ചർച്ചകൾ നടത്തുകയുമുണ്ടായി. പ്രസ്തുത ചർച്ചകളുടെ അടിസ്ഥാനത്തിൽ കരട് മാർഗ്ഗ നിർദ്ദേശങ്ങൾ പുതുക്കുകയും 02.11.2024-ൽ ചേർന്ന ഉന്നതതല സമിതിയുടെ യോഗത്തിൽ കരട് മാർഗ്ഗ നിർദ്ദേശങ്ങൾ സംബന്ധിച്ച് വിശദമായി ചർച്ച ചെയ്യുകയും കരട് അന്തിമമാക്കുന്നതിനു വേണ്ട നിർദ്ദേശങ്ങൾ നൽകുകയും ചെയ്തു. ആയതനുസരിച്ച് പുതുക്കി അന്തിമമാക്കിയ ഫ്ലോട്ടിംഗ് സോളാർ സ്ഥാപിക്കുന്ന പദ്ധതിയുടെ കരട് മാർഗ്ഗനിർദ്ദേശങ്ങൾ അനെർട്ട് ചീഫ് എക്സിക്യൂട്ടീവ് ഓഫീസർ പരാമർശം (4) പ്രകാരം സമർപ്പിക്കുകയുണ്ടായി.

4. സർക്കാർ ഇക്കാര്യം വിശദമായി പരിശോധിച്ചതിന്റെ അടിസ്ഥാനത്തിൽ ഈ സർക്കാർ ഉത്തരവിനോടൊപ്പം അനുബന്ധമായി ചേർത്തിട്ടുള്ള സംസ്ഥാനത്തിന്റെ ഉപ്പുവെള്ള/കായൽ, തരിശായി കിടക്കുന്ന ജലാശയങ്ങളിൽ ഫ്ലോട്ടിംഗ് സൗരോർജ്ജ നിലയങ്ങൾ സ്ഥാപിക്കുന്നതിനുള്ള മാർഗ്ഗനിർദ്ദേശങ്ങൾ അംഗീകരിച്ച് ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു.

5. സർക്കാർ സ്കൂളുകളിലെ റൂഫ്ടോപ്പ് സോളാർ പാനലൈസേഷൻ സമയബന്ധിതമായി നടപ്പാക്കുന്നതിന് പൊതുവിദ്യാഭ്യാസ വകുപ്പും അനെർട്ടും നടപടികൾ സ്വീകരിക്കേണ്ടതാണ് എന്നുകൂടി ഉത്തരവാകുന്നു.

(ഗവർണറുടെ ഉത്തരവിൻ പ്രകാരം)
കെ ആർ ജ്യോതിലാൽ
അഡീഷണൽ ചീഫ് സെക്രട്ടറി

ഉത്തരവിൻ പ്രകാരം
Signed by Rajeev. P
Date: 01-03-2025 15:28:12
സെക്ഷൻ ഓഫീസർ

ചീഫ് എക്സിക്യൂട്ടീവ് ഓഫീസർ, അനെർട്ട്
വനം / തദ്ദേശ സ്വയംഭരണ / ധനകാര്യ / മത്സ്യബന്ധന / റവന്യൂ / ജലവിഭവ / പരിസ്ഥിതി / കൃഷി/ വ്യവസായ / പൊതുവിദ്യാഭ്യാസ / വകുപ്പുകൾക്ക്.
പൊതുഭരണ (എസ് സി) വകുപ്പ് (27/ 02 / 2025 ലെ ഇനം നമ്പർ : 2698 പ്രകാരം)
കരുതൽ ശേഖരം
ഓഫീസ് ഫയൽ

പകർപ്പ്:
ബഹു. വൈദ്യുതി വകുപ്പ് മന്ത്രിയുടെ അഡീഷണൽ പ്രൈവറ്റ് സെക്രട്ടറിയ്ക്ക്
ബഹു. പൊതുവിദ്യാഭ്യാസവും തൊഴിലും നൈപുണ്യവും വകുപ്പ് മന്ത്രിയുടെ പ്രൈവറ്റ് സെക്രട്ടറിയ്ക്ക്

ഊർജ്ജ വകുപ്പ് അഡീഷണൽ ചീഫ് സെക്രട്ടറിയുടെ പി. എ. യ്ക്ക്

ഊർജ്ജ വകുപ്പ് ജോയിന്റ് സെക്രട്ടറിയുടെ സി. എ. യ്ക്ക്

Guidelines on Development of
Floating Solar Power Plants
in reservoirs, backwaters, fresh water bodies formed of mining, quarrying, etc. and land found unusable for agriculture

Approved as per
G.O. (MS) No. 4/2025/POWER dated 01-03-2025

Contents

Guidelines on development of floating solar power plants in reservoirs, backwaters, fresh water bodies, formed of mining, quarrying, etc. and land found unusable for agriculture

1. Introduction and background

Kerala had announced a Solar Energy Policy in 2013 wherein floating solar PV ("floatovoltaic") was mentioned as an important potential area for solar power project development in Kerala. The Policy also had specified that "only lands which do not have an immediate productive use" shall be permitted for development of solar projects. The Policy also constituted an Empowered Committee at the State level for the administration of the policy.

The policy helped in the formulation of Regulations and programmes for the implementation of grid-tie distributed solar PV power plants widely. The estimated potential is over 6000 MW and MNRE had put a tentative target of 1870 MW by 2022 from solar energy in Kerala. The state itself has set a target of 3000 MW solar by 2025. Most parts of Kerala receive nearly 300 sunny days a year. From a capacity of less than 1 MW in 2012, now we have nearly 1600 MW solar power plants in the state including rooftop solar and larger ground mounted ones.

A high-level committee headed by the Chief Secretary was constituted in the State vide G.O. (Rt) No. 212/2022/POWER dated 9.12.2022 for coordinating the activities for the development of floating solar power plants.

Some of the features of floating solar PV include the following:

- It is benign to the nature in view of the fact that only the floating device is anchored to the bed of the water body and the structure made of HPDE floats on the water surface, thereby reduces evaporation loss of water bodies.

- It has an increased capital cost of 10-15% compared to land-based systems, but increased generation of 5-10% (due to the cooling effect of water) compared to land-based systems, enabling quicker recovery of the additional capital cost
- The gaps in structure allow sunlight to fall on the water bodies providing necessary sunlight to the ecosystem in the water, and could potentially increase fish hatching and overall amount of aquatic life below such structures as floats can act as artificial reefs and fish aggregation devices, thereby restore damaged ecosystems, according to experts in the discipline
- Floating solar can help in achieving the target of 3 GW capacity addition in the next 2 years
- When combined with pumped storage projects in dams with hydel projects, the problem of energy storage can also be addressed
- The structures in water bodies and water-logged lands could be classified as temporary structures and hence will not attract the provisions of Conservation of Paddy Land & Wetland Act and the Coastal Regulation Zone norms.
- Two areas are available for development of floating solar power plants: (1) Projects in reservoirs of Kerala State Electricity Board (KSEBL), Kerala Water Resources Department (with a potential of about 5000 MW capacity by utilising 10% of reservoir); (2) Projects in the backwaters, fresh water bodies formed of mining, quarrying, etc. and land found unusable for agriculture (with a potential of about 1500 MW utilising 10% of such available areas)
- Also in view of the importance being given to hydrogen economy, industries working in green hydrogen value chain such as production, transportation, storage, export, etc. shall be able to utilise energy from these plants for their requirement. Green hydrogen through electrolysis can be generated utilising the energy generated from these plants. In this regard, it is a proposal with wide ranging and long term implications

A single window system shall be deployed where the interested developer can apply for permissions and the portal would help coordinate and track the approvals from various departments for implementing the projects.

2. Challenges

With the peculiar situation in Kerala of not having large tracts of land for ground based megawatt level solar power plants, Kerala had been depending on distributed renewable energy sources especially solar rooftop power plants of small capacities in the kilowatt range for capacity addition in the state. Kerala has limited other options for adding electricity generation within the state and continues to explore new upcoming technologies, particularly in the context of environmental challenges that the State faces. Floating solar photovoltaic power plants offers to provide solution to this situation, however, there are some challenges associated with it as follows:

- Natural water bodies like lakes and backwaters would have many current uses like fishing and water transport which are directly linked to the livelihood of the people nearby
- Agricultural lands flooded with saline/brackish water due to various reasons including sand and clay mining, and have become uncultivable may need a hybrid of structures with those similar to land-based power plants and some part floating. This is because there may be many shallow areas and the water level can vary drastically. The clearance for use of such land also has to be done carefully to prevent misuse of the provisions for floating solar projects. Structures not affecting agriculture (raised structure such as for 'agri photovoltaic' projects) can also be considered wherever possible.
- The mooring and power evacuation from floating structures in reservoirs pose more challenges wherever there are greatly varying water levels.
- Solar energy being intermittent and variable in nature, poses challenges in power despatch. This is expected to be offset with the integration of storage (Storage Obligation is also now planned to be implemented

along with Renewable Purchase Obligations) including pumped storage and Hydrogen.

3. Clearances and approvals

The projects are expected to be implemented under the supervision of the state level High Level Committee. There shall also be District Level Committees for coordinating the development of smaller power plants of capacity up to 5 MW.

Applications for floating solar projects shall be processed in three modes:

1. Applications based on Notice Inviting Tender (NIT)/ Expression of Interest (EOI) issued by Government Agencies
2. Applications directly initiated by Developers
3. Applications proposed by Developer in Land Bank sites

The three modes are briefly explained below.

3.1 Applications based on Notice Inviting Tender (NIT)/ Expression of Interest (EOI) by Government Agencies

In this mode, the site is identified by a Government agency, the state level committee would clear the site for inviting proposals and the site will be notified for inviting proposals for setting up a project. This mode is likely mainly for projects proposed in dams/ reservoirs set up by various government agencies.

EOI may be prepared by ANERT including technical specifications in consultation with all concerned (KSEBL, Irrigation, Revenue) and cleared by the concerned agencies in a time-bound manner, with approval deemed to be received in case of delays beyond 15 days.

In this case, the process is expected to be smoother and faster since many of the required clearances would already have been received for the site. But technical clearances would have to be processed. Most of these cases would be based on a competitive bidding to get the best benefit to the public and would be accepted based on a thorough cost-benefit analysis. The agency owning the

reservoir/ dam/ site shall be eligible for a lease-rent from the developer, fixed by the HLC.

District Level Committees do not have a role of clearances in this mode of implementation. But they can identify and propose to the High Level Committee suggested sites (for land bank) for preliminary clearances and approval for inviting bids.

For each of the sites identified, a feasibility report shall also be prepared by ANERT and placed before the High Level Committee with the recommendation of the Empowered Committee. Once the HLC clears these sites, they shall be part of a project bank, based on which proposals/bids would be invited from developers.

The bids shall be announced through a suitable online platform. It shall be transparent competitive bidding process to select the developer. For capacities that KSEBL commits to purchase, it shall be a tariff based competitive bidding. For other projects developers shall be selected based on the revenue shared per unit of energy sold or lease rent to be paid by developer, with minimum values and qualification criteria mentioned in the bid document.

For KSEBL dams, the bids shall be floated by KSEBL. For other sites, it shall be notified by ANERT or an SPV under ANERT. The notification for sites through ANERT shall be done only after obtaining clearance of tariff/ open access/ wheeling from KSEBL, which shall have the same timeline as that for their 'first refusal'. KSEBL shall, on best effort basis, endeavour to provide grid connectivity for power evacuation at a point nearest to the site.

The potential environmental issues to be evaluated through an EIA prior to incurring any cost to the project by the Developer.

3.2 Applications directly initiated by the Developer

In this mode, the developer identifies a suitable private site, and proposes to set up the project. Mostly the site would not have been cleared by the High Level Committee and hence would have to be fully processed for acceptance.

In this mode, the application to set up a project shall be given by the developer through an online single window portal. Lease/ revenue sharing arrangements

between land owner and project developer shall be finalised by the developer before submitting the application.

All the departments and institutions involved in granting clearances shall give their clearances or denials through the portal only. The portal shall have clear timelines for completing each of the tasks with provision for alerts and escalations of delays. This includes mechanism for NOC/ consent/ clearance from all the concerned agencies/ departments, including coastal zone and other regulatory requirements, certifying use of flooded/uncultivable paddy fields, areas not affecting fishing, etc.

3.3 Applications proposed by Developer in Land Bank sites

District Level Committee shall create land banks and publish the details. Based on such lands, interested private developers can propose projects through the single window portal. More details of creation of land banks are provided in sub-section '3.6 District Level Committees'.

3.4 Coordinating agency

ANERT shall be coordinating agency for the floating solar projects.

For plants in reservoirs of the Kerala Water Resources Department/KWA, the Department/KWA will have the first right to consume the power generated from these plants.

KSEBL shall have the right of first refusal for power from the plants, as envisaged in the solar policy, except for those under the Kerala Water Resources Department/KWA, in which the Department/KWA will have the right of first refusal, followed by KSEBL. The first refusal should be time bound, say within a period of 30 days of proposal. But if KSEBL is not willing to procure the power, wheeling of energy and Open Access should be easily facilitated. KSEBL shall also examine if concessional rates are possible on the wheeling charges with the requisite regulatory approval in order to provide renewable energy in the state.

For attracting competent developers to invest in floating solar plants as those developed by NTPC in Kayamkulam (100 MW) and Ramagundam (100 MW),

ANERT under Power Department, acting as the Nodal Agency, will float suitable notification and seek applications through a single window portal as the one used by the Industries Department (K-SWIFT). All departments and agencies who shall accord clearances and approvals, will register in the Portal. The requisite participant departments of Power, Agriculture (cases where land unusable for agriculture is proposed to be used), Environment, Local Self Government Revenue, Fisheries, Forests (where forest land is involved), Water Transport/ Maritime Board, KSEBL and Finance will participate.

The Fisheries Department and Agriculture Department may provide inputs where fisheries interests are involved and use of wetland or agricultural land respectively is considered. In addition to ensuring regulatory approvals, the High Level Committee may also fix the lease rent due from developers for public water bodies or uncultivable public land at rates moderated to attract sufficient interest and investment from developers in view of rising prices/higher infrastructure costs for floating solar. The water/land leases may be provided for 25 years for ensuring financing facility for the developers. Obtaining Environmental Clearance, wherever required, shall be the responsibility of the Developer subject to applicable rules and regulations issued by the State and Central agencies from time to time.

ANERT shall make efforts to promote the project amongst leading developers and conduct promotional events and road shows to attract investment in the mode and provide requisite handholding to interested applicants with assistance in documentation, securing the regulatory approvals, liaison with financing agencies/banks and providing project oversight with periodic reporting to the district and state level single window committees.

3.5 High Level Committee

The High Level Committee (HLC) comprises of the Chief Secretary as the Chairman, Secretary (Power Department) as Convenor and Secretaries of the participant departments (Agriculture, Environment, Finance, Fisheries, Forests, Irrigation/Water Resources, Local Self Government, Revenue) and CEO (ANERT) as members. The Secretaries of the respective Departments or nominees of the

rank of Joint Secretary or above/Chief Engineer/equivalent may form the state committee which shall meet every quarter or when sufficient applications are to be considered.

The state level high-level committee shall have the following powers and responsibilities:

a) fixing of lease rent – generic/nominal lease rent shall be fixed for different areas with Government Agencies to avoid project based lease rents, if found necessary
b) arrangements on land allocation – a standard lease agreement shall be approved to be entered into between the agency/ owners and the developer
c) deciding on how to take it forward in tune with KSERC regulations and the benefits to be made available to developers, including green hydrogen industries
d) clearances and approval for sites proposed by the District Level Committees
e) clearances and approval for projects proposed by developers
f) measures for attracting competent developers to invest in floating solar plants

3.6 District Level Committees

In addition to the High Level Committee chaired by Chief Secretary, there shall also be a District Level Committee (DLC) chaired by the respective District Collectors with the District-level Officers or nominees of the Departments (Agriculture, Local Self Government, Revenue, Fisheries, Forests, Water Resources/Irrigation, Water Transport/ Maritime Board, Industries). In case the water body proposed involves national waterways, the officer in charge of the National Waterway shall also be included in the committee.

This committee would be delegated with regulatory approval and fixation of lease rent for land with Government agencies, following the guidelines to be issued by the HLC, to proposals limited to 5 MW capacity or 25 acres of maximum lease land involved. Respective District Engineer, ANERT shall be the nominee of CEO, ANERT in the DLC. Power Department would issue orders to constitute District Level Committees.

The district-level committee for clearances shall have the same powers as the high-level committee for items 3.5 (a) to (b) for projects within the district, but limited to a maximum power plant capacity of 5 MW.

As mentioned earlier, the District Level Committee can identify suitable sites for development of floating solar projects in private lands. The clearances for these sites can be arranged in advance. Feasibility studies can also be conducted on such sites through ANERT. Such sites can be added to a land bank/ shelf of projects. Private developers can propose projects in such sites and District Level Committee can clear projects up to 5 MW.

A land bank shall be prepared by the DLC within 6 months of notification as described in section 3.6.1 below.

The district level committee can also propose suitable sites owned by Government agencies for the consideration and notification by HLC.

Once the District Level Committee clears the proposal, no approval of individual departments at the District level shall be necessary.

3.6.1 Land Bank

A land bank shall be formed by the District Level Committee by identifying privately owned areas or areas with Government agencies suitable for installing floating solar power plants. These sites could be mostly non-productive lands which has become unsuitable for cultivation due to sand mining or other natural or human activities. Agricultural lands that have become water logged due to quarrying or sand/ clay mining, uncultivable due to saline water ingress/regulators, or any such sites without any immediate productive use could be made part of the land bank. Permission of owners of private land should be taken before considering them for including in Land Bank

The District Level Committee shall be chaired by the respective District Collector and shall include district level officials of departments such as Agriculture (Principal Agricultural Officer), Fisheries (Deputy Director), representatives from Forest/ Irrigation/ Water Resources departments, Local Self Government (Joint Director), Water Transport/ Maritime Board, ANERT and Deputy Collector (LR).

The committee shall also arrange for clearances in advance from various departments and local governments. For determining whether the land proposed for Land Bank is not suitable for cultivation, committee constituted at the local level with Grama Panchayat President, Agriculture Officer, representative of Fisheries department shall be constituted. This committee shall also ensure that the installation of solar arrays in the area proposed does not affect the provisions of the Kerala Conservation of Paddy Land and Wetland Act, 2008. The committee shall also ensure, including through stakeholder consultations, that the proposed project does not affect fishing or any other livelihood related activities in the water bodies proposed. This local level committee shall give their decision within the specified timeline. The clearance of the DLC shall be based on this. Consultation with stakeholders / public hearing shall also be done by DLC as required.

The land bank details shall be published on a public platform for private developers to consider and propose projects in such sites. The developer can have arrangements with the land owners and apply through the single window portal.

Government shall also consider arranging for studies to determine feasibility in such potentials sites through ANERT. If studies have not been conducted, the developer would have to do the studies on feasibility.

Initially man-made water bodies are considered for projects. Studies shall be done by independent bodies like KUFOS on the impact of such power plants on population and availability of fishes, and some revenue from the power plants would be set aside for these studies. Since this will not be an issue in man-made water bodies, these guidelines can be implemented there. Studies could also be done on the existing floating solar plants in natural water bodies. Power plants on natural water bodies shall be considered based on the study report to be completed within a year, and guidelines could be modified accordingly.

3.7 Empowered Committee

An empowered committee chaired by the Secretary to Government, Power Department shall also be constituted with the following members:

i. Secretary, Power Department (Chairman)
ii. Chairman & Managing Director, KSEBL (Member)
iii. Chief Electrical Inspector to Government (Member)
iv. Director (Transmission & System Operations), KSEBL (Member)
v. Director (Distribution), KSEBL (Member)
vi. Director of Industries and Commerce / MD, KSIDC (Member)
vii. CEO, ANERT (Convenor)

The empowered committee shall have the following responsibilities:

a) Review of the technical aspects of the project including the suitability of technology to the area in which installation is proposed (similar to the sanction for wind power projects) before sanction/ allotment
b) Review and clearances of power evacuation and grid-connectivity aspects
c) Review of the progress of implementation of the allotted projects periodically
d) Reviewing final clearances (on implementation) for energisation, connectivity, PPA, etc. are progressing as per the timelines
e) Identifying sites and proposing to the HLC potential sites for development

Suggested workflow for the application, clearances, approvals and allotment process is given as Annexure 2. The requirements for the single window portal shall be based on the workflow and shall be prepared on finalisation of the guidelines.

The suggested timelines for the private owned site/ developer proposed site modes are given in Annexure 3. In the case of government identified site, the timeline shall depend on the schedule of the bidding process.

3.8 Lease rent

The first meeting of the High Level Committee held on 16-Jan-2023 has decided to fix a lease rent of ₹1/- (Rupee One only) per acre for development of floating solar power plants for the first 10 years from the date of commissioning. After 10 years, the lease rent will be ₹1000/- (Rupees thousand only) per acre till 20 years and ₹2000/- (Rupees two thousand only) per acre from 21 years to 30

years. This shall be the maximum rate of lease rent applicable for government/ public areas.

In the case of development of projects in private lands, the lease rent shall be arrived at by the developer and land owner on mutually agreed terms.

4. Guidelines to developers

4.1 Eligibility

Any developer with experience in electrical energy generation projects can apply for setting up floating solar power plants. They should have set up a power plant of at least one-third the capacity of the project capacity proposed.

4.2 Application

Application for the projects shall be given online by the developer through a single window portal in case of sites identified by them. In case of Government identified sites, the developer has to respond to notifications/ bids for such projects. In this case it shall be through a secure online platform.

4.3 Mode of Operation

The projects shall be developed and operated on a Build-Own-Operate (BOO) model.

4.4 Project Duration

The project is expected to have a life time of 25 years, and hence the access/rights to the area in which the project is being set up would be available to the developer for a minimum period of 25 years.

4.5 Allotment of areas under Government control or public areas/ water bodies

a) Allotment of Government land will be based on a two-stage bidding process. In the first stage applicants will be pre-qualified.

b) Pre-qualification evaluation will be based on balance sheets, annual reports and other reports/ evidence of financial and technical capacity. The weightage to be given to financial capacity, technical capability, past experience and other relevant attributes of the applicants, their inter-se weightage and the criteria for evaluation will be specified in the bid document for pre-qualification. Based on the above criterion, the applicants will be shortlisted and pre-qualified.

c) In the second stage, proposals and bids of the pre-qualified applicants shall only be considered for allotment, based on the energy tariff quoted, the timeline for implementation and the lease rent for project area offered.

d) Failure to meet the timelines shall automatically cancel the allotment of the project area to the developer.

e) The bidding process shall be through a suitable online platform as notified by the concerned agency.

4.6 Development of projects in private areas

The Developer shall identify potential sites belonging to private parties and meeting the general requirements and conditions for using such sites. The Developer should have made a basic assessment of the likelihood of clearances in such areas. The Developer should have made arrangements with owners either through purchase or through lease rent/ revenue sharing for access and use of the proposed site.

Developers can also propose projects in sites mentioned in the land bank prepared by DLCs, in which case the clearances may already have been obtained.

The project proposal for all these projects shall be submitted through a single window portal for all necessary clearances and approvals including fixing of tariff, connectivity, etc.

The tariff in this mode of implementation shall be fixed by the KSERC in case of acceptance by KSEBL. In the case of refusal by KSEBL, the Developer shall make arrangements for bilateral/ third party sale and permissions for connectivity,

open access etc. and monitoring by SLDC shall be obtained through single window portal. Lease arrangement, if any, with land owners shall be the responsibility of the Developer.

4.7 Technical Proposal

The Technical Proposal shall cover all aspects connected with the development of the floating solar plant including technical specification of SPV modules and power conditioning unit, structure and mechanisms for floating and mooring, boundary clearances, evacuation plans, cost of civil and electrical works, cost of equipment including structure, cost of transmission lines for evacuation of power up to KSEBL grid, interconnection point including all metering and protective equipment etc.

4.8 Infrastructure development

The Developer at their own cost and responsibility shall carry out development of necessary infrastructure facilities such as approach roads, improvements to existing roads etc.

In the case of already identified sites where competitive bids are invited to select developers, the State shall also endeavour to get such projects included in the Solar Park scheme of Government of India, and any assistance available for development of infrastructure of such parks shall be available to the developer. The availability of such facilities shall vary from site to site and shall be mentioned in the notification inviting competitive bids. The bids by the developer should take into account the necessity or not of developing the basic infrastructure.

4.9 Transmission, wheeling, Grid interface, metering

The Developer shall construct and maintain the tie lines/ evacuation lines approved by the transmission/ distribution utility (as the case may be), at their own cost. The maintenance of the project components, equipment and transmission line up to the point of interconnect shall be carried out by the Developer at his own cost in co-ordination with and as per the directions of

distribution/ transmission utility. KSEBL shall, on best effort basis, endeavour to provide grid connectivity for power evacuation at a point nearest to the site.

Necessary main and check meters having import-export registering facility and allied equipment as prescribed by KSEB/ STU shall be installed at the interconnection point at the cost of the Developer. Cost of installing and maintaining the meters, CT, PT, protective equipment etc. including their replacements/ repairs whenever necessary shall be borne by the Developer.

KSEBL/ STU will provide its surplus transmission capacity available with it for wheeling power from the generating station to their captive consumption end or to a third party consumer (if KSEBL refuses PPA) on payment of wheeling charges and other levies as determined by SERC. Transmission and distribution losses for wheeling power will be accounted at the rate determined by SERC.

4.10 Detailed technical requirements

ANERT shall separately propose to government/ high level/ empowered committee for its approval, in consultation with the KSEBL and CEIG, the detailed technical requirements for the projects for its approval.

4.11 Storage

Developers shall endeavour to incorporate storage up to 50% for the energy generated from such plants.

4.12 Grid Discipline

The Developer shall operate the generating unit as per the instructions of SLDC or other grid control centres established by KSEBL/ STU.

4.13 General conditions

The Developer shall abide by the rules and regulations framed by the Government from time to time in matters of Electricity and related activities by private agencies.

All directions/ approvals/ rules laid down in the relevant Acts/ Rules/ Regulations issued by CEA/ CERC/ KSERC or other Government Departments/ Agencies from time to time shall be binding on the Developer.

5. Annexures

A.1 Government order constituting high level committee

A.2 Suggested Workflow for clearances/ approvals

(a) For projects notified by Government agencies inviting Developers

(b) For projects proposed by Developer in private lands, which requires all clearances

(c) For projects proposed by Developer in Land Bank sites

(d) For identification of Land Bank sites by District Level Committee

A.3 Suggested timeline for processing clearances/ approvals

"ഭരണഭാഷ- മാതൃഭാഷ"

കേരള സർക്കാർ

സംഗ്രഹം

കേരളത്തിലെ കായലുകൾ, നദികൾ, ഉപയോഗ ശൂന്യമായ നെൽ വയലുകൾ , തണ്ണീർത്തടങ്ങൾ,ഡാമുകൾ, ജലാശയങ്ങൾ ,വെള്ളം കെട്ടികിടക്കുന്ന മറ്റ പ്രദേശങ്ങൾ, എന്നിവയിൽ ഫ്ളോട്ടിംഗ് സോളാർ പദ്ധതി നടപ്പാക്കുന്നതിന് വേണ്ട പദ്ധതി രൂപരേഖയും മാർഗ്ഗ നിർദ്ദേശങ്ങളും തയ്യാറാക്കുന്നതിനും പദ്ധതിനടത്തിപ്പിന്റെ വിവിധ പ്രവർത്തനങ്ങൾ ഏകോപിപ്പിക്കുന്നതിനായി ഉന്നതതല കമ്മിറ്റി രൂപികരിച്ച് ഉത്തരവാകുന്നു.

ഊർജ്ജ(പി എസ്)വകുപ്പ്

സ.ഉ.(സാധാ) നം.212/2022/POWER തീയതി,തിരുവനന്തപുരം, 09-12-2022

പരാമർശം:- 1. 09/11/2022 ൽ ബഹു. മുഖ്യമന്ത്രിയുടെ അദ്ധ്യക്ഷതയിൽ നടത്തിയ യോഗത്തിന്റെ മിനിറ്റ്സ്.

ഉത്തരവ്

പ്രകൃതിയെ യാതൊരു തരത്തിലും ഹനിക്കാത്ത രീതിയിൽ കേരളത്തിലെ കായൽ, നദികൾ , ഉപയോഗ ശൂന്യമായ നെൽ വയലുകൾ , തണ്ണീർത്തടങ്ങൾ, ഡാമുകൾ, ജലാശയങ്ങൾ, വെള്ളം കെട്ടികിടക്കുന്ന പ്രദേശങ്ങൾ, എന്നിവയിൽ ഫ്ളോട്ടിംഗ് സോളാർ പദ്ധതി നടപ്പാക്കുന്നതിന് **09/11/2022** ൽ ബഹു. മുഖ്യമന്ത്രിയുടെ അദ്ധ്യക്ഷതയിൽ ചേർന്ന യോഗത്തിൽ തീരുമാനമെടുക്കുകയുണ്ടായി.

2 . മേൽ പദ്ധതി നടത്തിപ്പിനാവശ്യമായ വിവിധ പ്രവർത്തനങ്ങൾ ഏകോപിപ്പിക്കുന്നതിനും പദ്ധതി രൂപ രേഖയും മാർഗ്ഗ നിർദ്ദേശങ്ങളും തയ്യാറാക്കി മന്ത്രി സഭയുടെ അംഗീകാരത്തിന് സമർപ്പിക്കുന്നതിനുമായി ഊർജ്ജം / മത്സ്യബന്ധനം / റവന്യൂ / തദ്ദേശ സ്വയംഭരണം / ഇറിഗേഷൻ / പരിസ്ഥിതി / വനം തുടങ്ങിയ വകുപ്പുകളുടെ സെക്രട്ടറിമാർ ഉൾപ്പെടുന്ന ചീഫ് സെക്രട്ടറി തലത്തിലുള്ള കമ്മിറ്റി രൂപികരിക്കുന്നതിനും മേൽ യോഗത്തിൽ തീരുമാനമെടുത്തിരുന്നു.

3. മേൽ തീരുമാനപ്രകാരം ഫ്ലോട്ടിംഗ് സോളാർ പദ്ധതി നടത്തിപ്പിനാവശ്യമായ വിവിധ പ്രവർത്തനങ്ങൾ ഏകോപിപ്പിക്കുന്നതിനും പദ്ധതി രൂപ രേഖയും മാർഗ്ഗ നിർദ്ദേശങ്ങളും തയ്യാറാക്കി മന്ത്രി സഭയുടെ അംഗീകാരത്തിന് സമർപ്പിക്കുന്നതിനുമായി താഴെ പറയും പ്രകാരം അംഗങ്ങളെ ഉൾപ്പെടുത്തി ഉന്നതതല കമ്മിറ്റി രൂപികരിച്ച് സർക്കാർ ഉത്തരവ് പുറപ്പെടുവിക്കുന്നു.

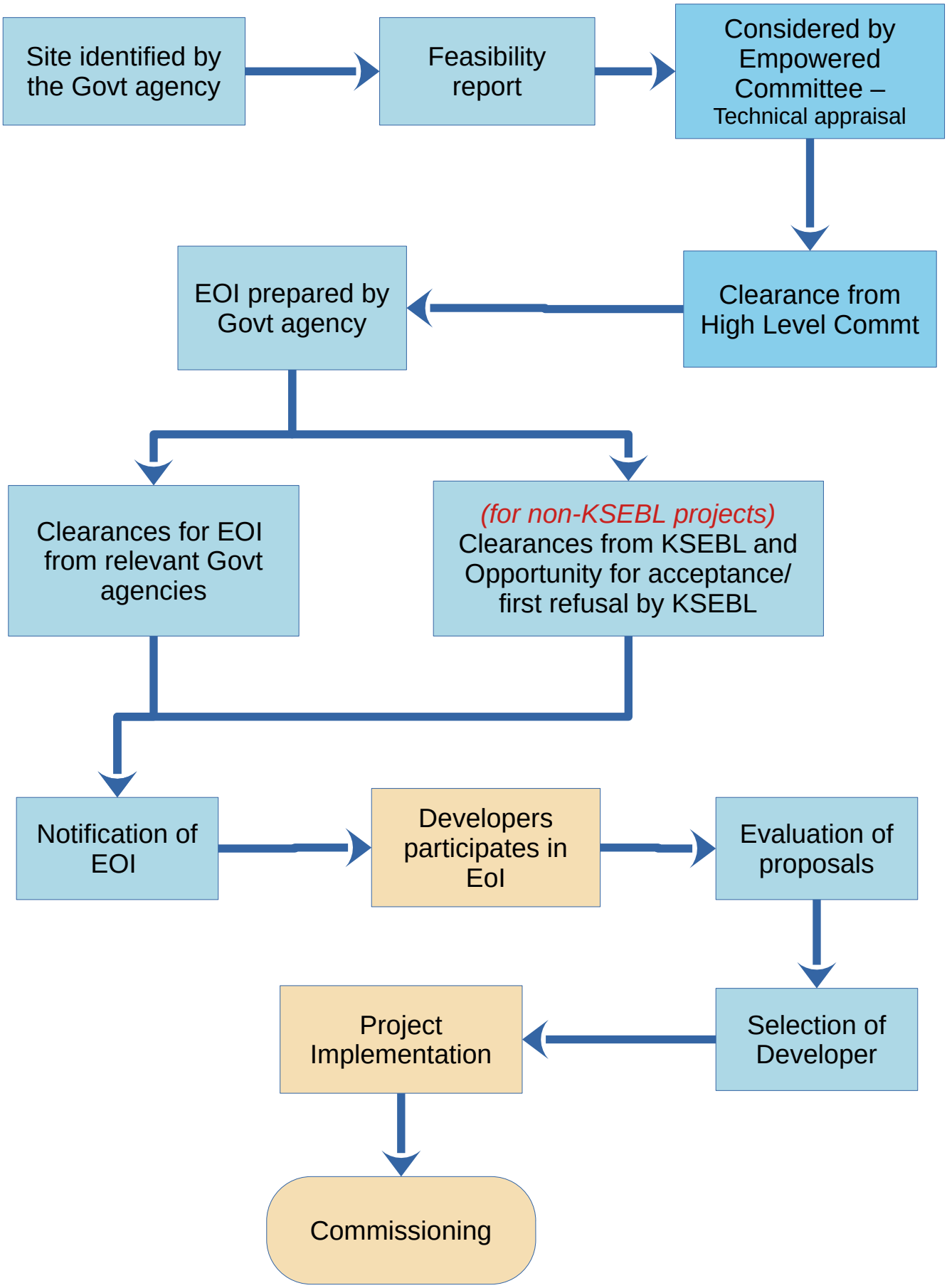
1. ചീഫ് സെക്രട്ടറി (ചെയർമാൻ)
2. പ്രിൻസിപ്പൽ സെക്രട്ടറി ഊർജ്ജവകുപ്പ്(കൺവീനർ)

3. പ്രിൻസിപ്പൽ സെക്രട്ടറി,ധനകാര്യ വകുപ്പ്
4. പ്രിൻസിപ്പൽ സെക്രട്ടറി, മത്സ്യബന്ധന വകുപ്പ്
5. പ്രിൻസിപ്പൽ സെക്രട്ടറി,റവന്യൂ വകുപ്പ്
6. പ്രിൻസിപ്പൽ സെക്രട്ടറി, തദ്ദേശ സ്വയം ഭരണ വകുപ്പ്
7. പ്രിൻസിപ്പൽ സെക്രട്ടറി, ഇറിഗേഷൻ വകുപ്പ്
8. പ്രിൻസിപ്പൽ സെക്രട്ടറി, പരിസ്ഥിതി വകുപ്പ്
9. പ്രിൻസിപ്പൽ സെക്രട്ടറി, വനംവകുപ്പ്
10. പ്രിൻസിപ്പൽ സെക്രട്ടറി, കൃഷി വകുപ്പ്
11. ചീഫ് എക്സ്ക്യൂട്ടീവ് ഓഫീസർ, അനെർട്ട്

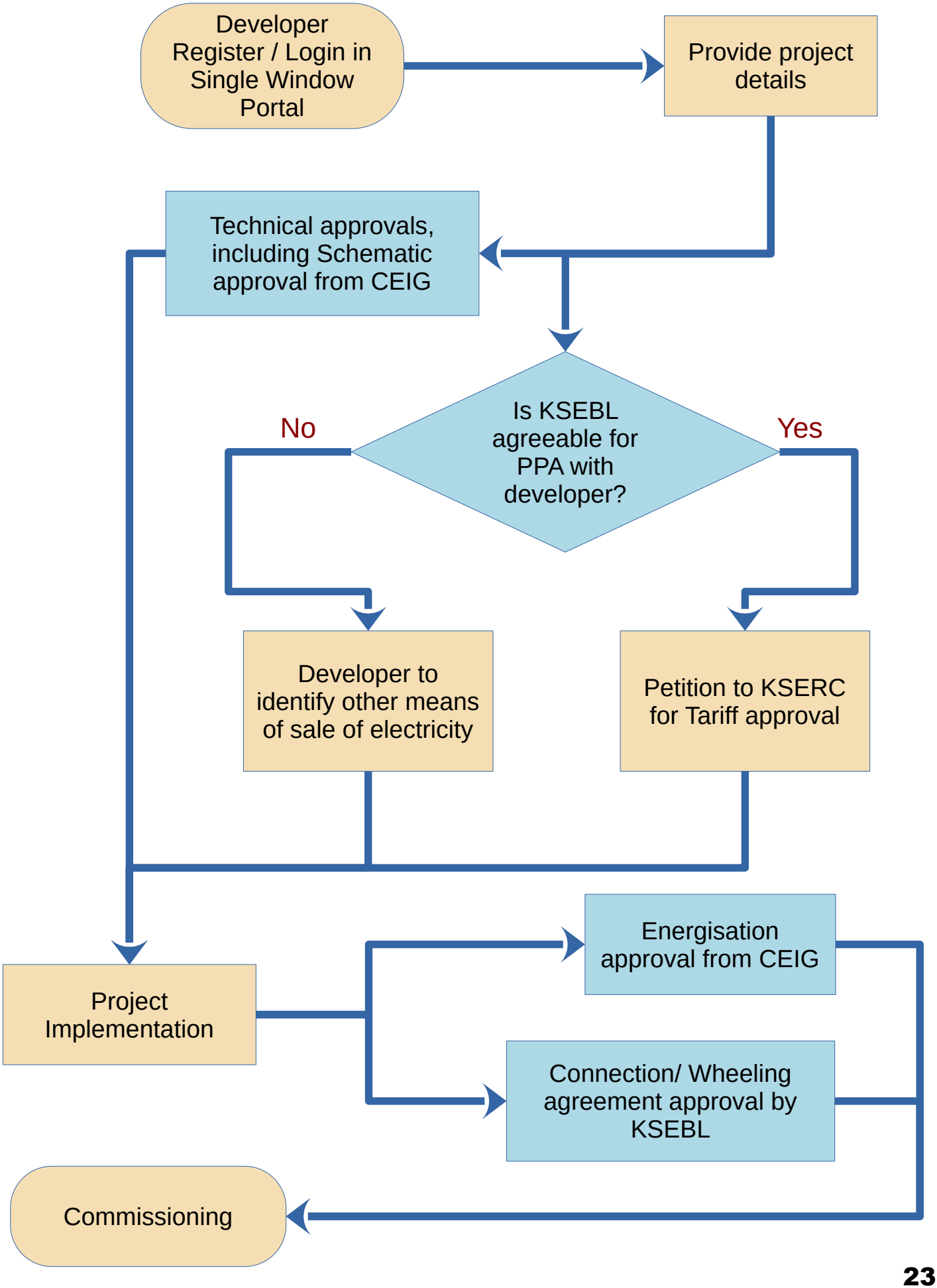
(ഗവർണറുടെ ഉത്തരവിൻ പ്രകാരം)
ഡോ. വി പി ജോയ്
ചീഫ് സെക്രട്ടറി

ഉത്തരവിൻ പ്രകാരം
Signed by K R Remya
Date: 10-12-2022 17:29:43
സെക്ഷൻ ഓഫീസർ

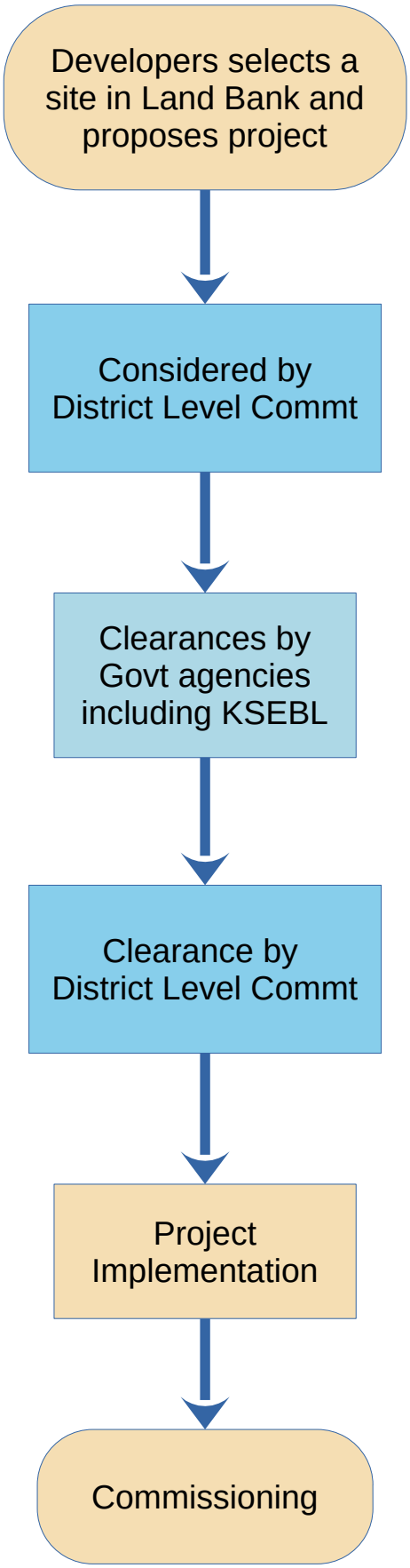
A.2 (a) Workflow for projects notified by Government agencies inviting Developers



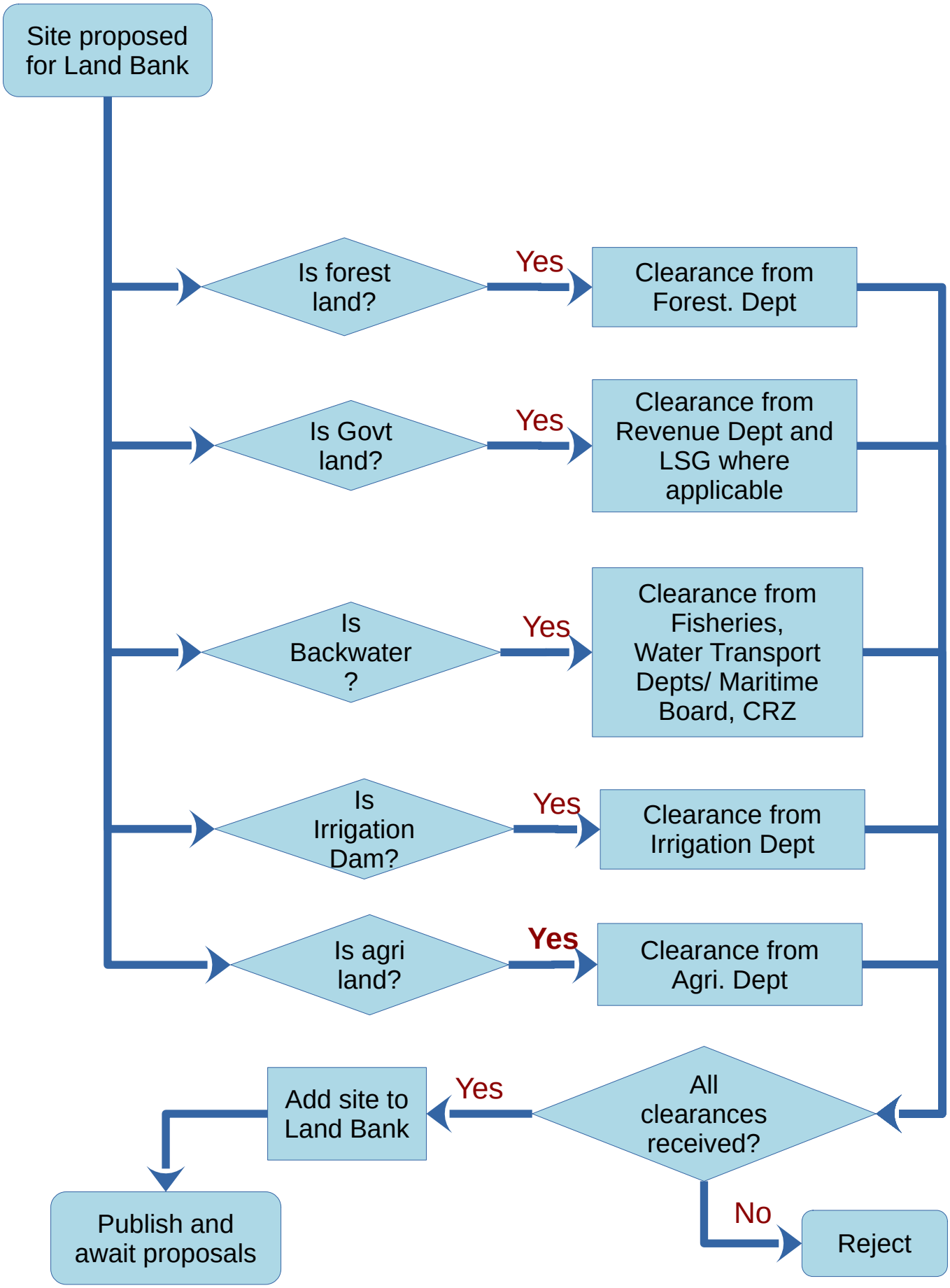
A.2 (b) Workflow for projects proposed by Developer in private land



A.2 (c) Workflow for projects proposed by Developer in site listed in Land Bank (maximum 5 MW)



A.2 (d) Work flow for identification of sites for Land Bank by District Level Committee



A.3 Suggested timeline for processing clearances/ approvals for formation of land bank

The suggested timelines for clearances/approvals, in cases where the site is proposed by Developer, is as follows:

S/N	Activity	Max. Duration (days)*	Responsibility
a.1	Clearance related to unproductive/ uncultivable agricultural land	15	Agriculture Dept. (Local/District level)
a.2	Clearance regarding forest land	15	Forest Dept. (District level)
a.3	Clearance for backwater / lakes	20	Fisheries and Water Transport/ Maritime Board
a.4	Clearance from Revenue Dept/ LSG related to govt land	10	Revenue Dept. / Local Govt
b.1	KSEBL decision on PPA ('first refusal right') OR approval of open access / wheeling	30	KSEBL
b.2	Technical Committee clearance	30	Technical Committee
c.	High level committee approval	30	HLC

* Duration is expected to be in parallel/simultaneously for each of the sets of clearances at 'a' and 'b' above