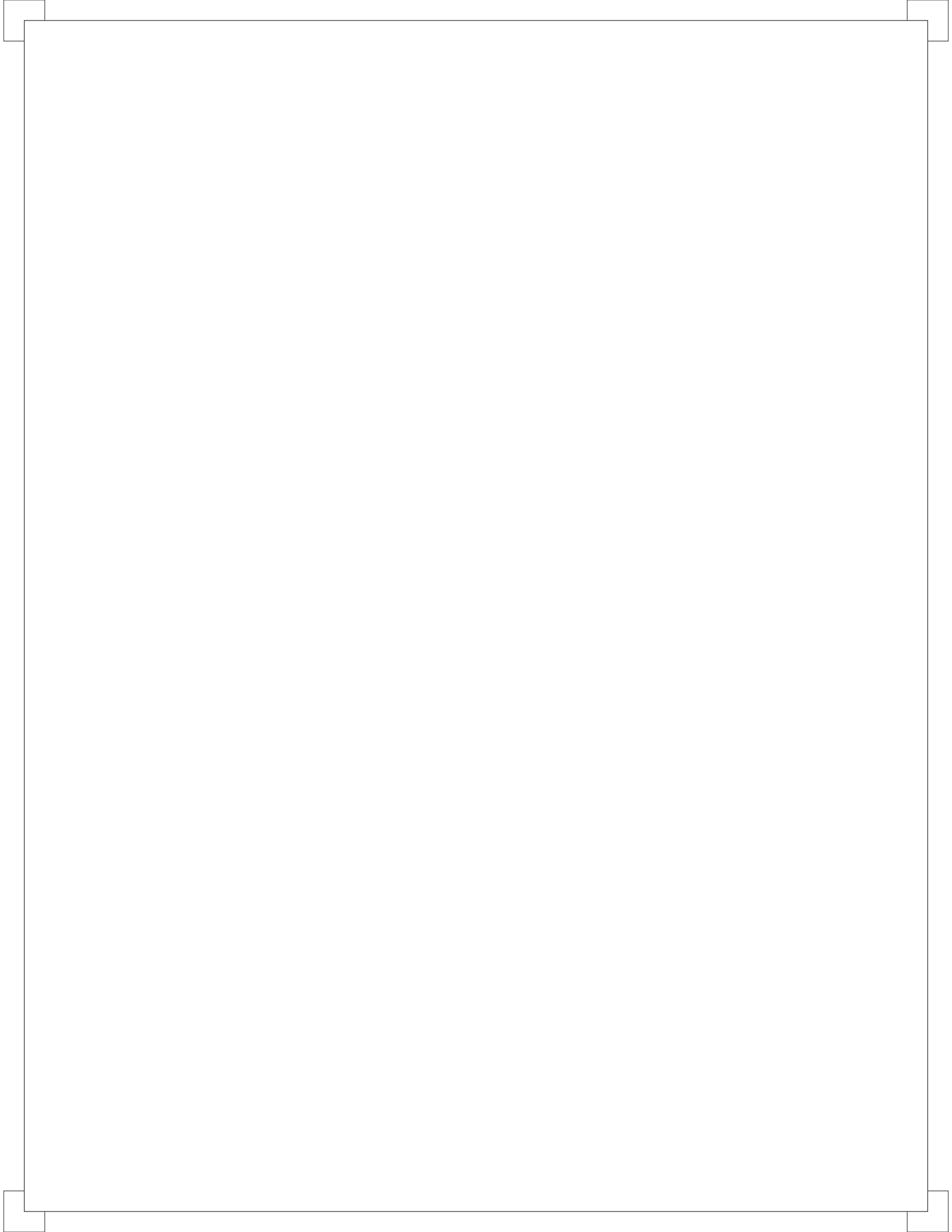


RENEWABLE ENERGY POLICY 2016



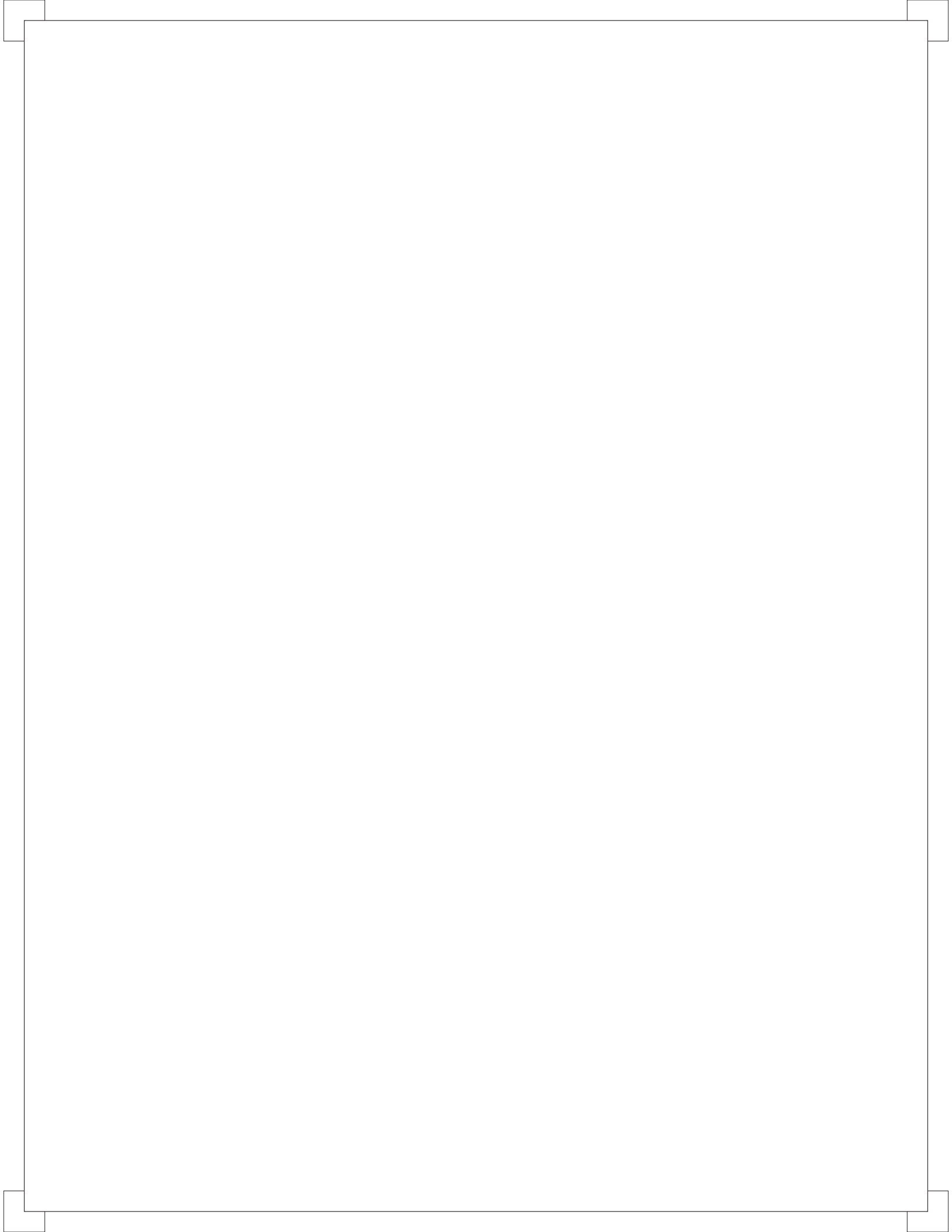
 **DISHA**
NEW OPPORTUNITIES





Government of Odisha

Department of Energy



1. Introduction

1.1. Preamble

Renewable energy assumes great significance in the wake of huge demand of electricity throughout the country outstripping the supply, which is being largely met from coal based thermal generation. Although Odisha has large deposits of power grade coal in Talcher and IB Valley Areas which has attracted a number of thermal generating plants both in the private and public sector, a commensurate effort is required to ramp up generation from renewable energy sources also. The Government of Odisha (GoO) had issued Policy Guidelines on Power Generation from Non-Conventional Energy Sources vide Notification No.6971/ST, Bhubaneswar, ST-IV-RE-13/2005, dated the 3rd December, 2005 with an objective to reduce dependence on conventional sources of power generation, protecting the environment, generation of employment in large scale, generation of grid-quality power, encourage entrepreneurial investment, and to extend such rational fiscal and promotional incentives so as to provide conducive atmosphere to attract private investment.

1.2. Renewable Purchase Obligation (RPO)

- 1.2.1. All Obligated Entities in the State are required to purchase quantum of renewable energy as prescribed by OERC in its Regulations Under Section 86(1)(e) of the Electricity Act 2003.
- 1.2.2. The Odisha Electricity Regulatory Commission (OERC) has also issued OERC (Procurement of Energy from Renewable Sources and its Compliance) Regulations, 2015 for purchase of electricity from Renewable Energy sources, making it mandatory for the obligated entities to source a certain percentage of their power purchase from Renewable Energy sources. Year-wise RPO percentage targets given by OERC are given in the Table below;

FY	State Energy Consumption (MU)	RPO Percentage (%)		Requirement in MU		Requirement in MW	
		Solar	Non- Solar	Solar	Non-Solar	Solar	Non- Solar
2015- 16	23748	0.5	2.5	118.74	593.7	91	136
2016- 17	24550	1.5	3.0	368.25	736.5	283	168
2017 -18	25500	3.0	4.5	765	1147.5	588	262
2018 -19	26500	4.5	5.0	1192.5	1325	917	303
2019 -20	27500	5.5	5.5	1512.5	1512.5	1163	345

(*Figures given in MU and MW are indicative in nature)

- 1.2.3. According to the revised National Tariff Policy notified on 28th January, 2016, the RPO percentage will reach 8% for Solar and 9% for Non-Solar Power by the year 2022 (leaving hydro consumption). According to the demand forecast done by the STU (OPTCL), the requirement of Solar & Non-Solar Power will reach up to 1850 MW & 600 MW respectively by the year 2022. Further, MNRE has communicated the cumulative Solar Power capacity addition target as 2191 MW by the year 2022 keeping in view the revised National Tariff Policy 2016.
- 1.2.4. Hence, developing alternative power through renewable energy sources has become urgent and the Odisha Renewable Energy Policy needs to be viewed from that angle. Over last few years, many developments have taken place necessitating a strong policy push to propel the growth of various renewable energy sources in Odisha. The present Policy had been framed against these developments and backdrop in line with the GOI Framework under the Electricity Act 2003 and the National Tariff Policy.

1.3. Vision

The vision of the Policy would be to harness green and clean energy from natural resources in the State of Odisha for benefit of the environment and to ensure energy security for the people of Odisha.

1.4. Mission

The mission of the Policy would be to provide a long term sustainable solution for meeting energy needs and reducing dependence on conventional sources of power while seeking to achieve the Renewable Purchase Obligation targets and also fulfilling the objectives of the State Action Plan for Climate Change.

1.5. Objectives

The Policy aims to achieve the following objectives:-

- (a) Contribute to long-term energy security of the State as well as ecological security by reduction in carbon emissions.
- (b) Create an environment conducive to public /private /community participation and investment in Renewable Energy Projects.
- (c) Create skilled and semi-skilled manpower resources through promotion of technical and other related training facilities.
- (d) Enhance the contribution of Renewable Energy Projects in the total installed capacity of the State through private participation.
- (e) Facilitate development of manufacturing units and Research & Development in the Renewable Energy sector.

1.6. Policy Period

The policy shall come into operation with effect from the date of its publication in the Official Gazette of the State and shall remain in force till 31st March, 2022 or till a new policy is announced, as decided by the State Government.

1.7. Targets Envisaged

The Government of Odisha envisage to achieve the following targets for addition of renewable energy capacity in the State by the year 2022:

Technology	Solar	Wind	Small Hydro	Biomass	WTE	Total
Target(MW)	2,200	200	150	180	20	2750

1.8. Power to Review and Interpret/Amend

- 1.8.1. The State Government may undertake review as and when the need arises in view of any technological breakthrough or to remove any inconsistency with Electricity Act 2003, Rules & Regulations made thereunder or any Government of India Policy/State Electricity Regulatory Commission's order or to remove any barriers/difficulties in promotion of renewable energy projects.
- 1.8.2. Government of Odisha will have the exclusive powers to interpret/amend any of the provisions of this policy.

2. Definitions

- (i) "Act" means the Electricity Act, 2003 (36 of 2003) as amended from time to time.
- (ii) "Biomass" means waste produced during agricultural and forestry operations (for example straws and stalks) or produced as a by-product of processing operations of agricultural produce (e.g., husks, shells, de-oiled cakes, etc); wood produced in dedicated energy plantations or recovered from wild bushes/weeds; and the wood waste produced in some industrial operations.
- (iii) "COD" means Commercial Operation Date.
- (iv) "Decentralised Distributed Generation (DDG)" means generation of electricity from any renewable energy source for local consumption, in off-grid or on-grid mode.
- (v) "Detailed Project Report (DPR)" is a Report that establishes the technical and commercial basis of the Project and includes all project technical and cost related details and is used for subsequent planning and implementation of the Project.
- (vi) "EIC (Electricity)" means Engineer-in-Chief (Electricity), Nodal Agency for implementation of small hydro power projects in the State of Odisha.
- (vii) "Feed-in-Tariff (FIT)" means a guaranteed price per unit of electricity determined by Odisha Electricity Regulatory Commission in accordance with Section 62 and Section 86(1)(e) of the Act for payment to the generator to enable it to obtain a reasonable return on renewable energy investments.
- (viii) "GEDCOL" means Green Energy Development Corporation of Odisha Ltd., a wholly owned subsidiary of Odisha Hydro Power Corporation Ltd. (OHPC) created with the main objective to explore the renewable energy resources in the State.
- (ix) "IDCO" is the Odisha Industrial Infrastructure Development Corporation established under the Odisha Industrial Infrastructure Development Corporation Act, 1980 as the nodal agency for developing infrastructure in the State of Odisha.
- (x) "Municipal Solid Waste" means the waste that includes commercial and residential waste generated in municipal or notified areas in either solid or semi-solid form excluding industrial hazardous wastes but including treated bio-medical wastes.
- (xi) "OPTCL" means Odisha Power Transmission Corporation Limited (OPTCL), the State Transmission Utility incorporated as a company wholly owned by the Government of Odisha to undertake the business of transmission and wheeling of electricity in the State.
- (xii) "OREDA" means Odisha Renewable Energy Development Agency (OREDA), constituted as a State Nodal agency under the aegis of Dept. of Science and Technology, Government of Odisha with a view to popularize the exploitation and use of renewable energy resources in the State.

- (xiii) "Renewable Energy Certificate (REC)" means the Certificate issued by the Central Agency under the provisions specified in the Central Electricity Regulatory Commission (terms and conditions for recognition and issuance of Renewable Energy Certificate for Renewable Energy Generation) Regulations, 2010 as amended from time to time.
- (xiv) "RESCO" means Renewable Energy Services Company as defined by MNRE from time to time.
- (xv) "Small Hydro Power (SHP) project" means a hydro power project with capacity up to 25 MW.
- (xvi) "Solar Park" means an exclusive area consisting of dedicated zones for development of solar power generation projects, solar manufacturing projects and R&D with basic infrastructure.
- (xvii) "Solar Rooftop Project" means a rooftop photovoltaic system connected on the consumer side of the meter.

The definitions not provided in this section but defined in the Electricity Act 2003 or the Odisha Electricity Reforms Act 1995 or the Policies/Resolutions framed thereunder or by OERC Regulations/Orders shall have the same meaning as provided in these documents.

Section B: Grid Connected Renewable Energy Projects

3. Solar

Odisha receives an average solar radiation of 5.5 kWh/sqr. mtr. area with an average CUF (Capacity Utilisation Factor) ranging from 15-17% across the Districts and around 300 clear sunny days every year. In order to develop the targeted capacity in the State, solar capacity will be added mainly through the following four areas/means:

3.1. Land Based Solar Projects

- 3.1.1. IDCO has identified large chunks of land under its Land Bank Scheme. Focus would be more on these patches of land to set up solar plants for generation of power to make these cost effective. GEDCOL as Nodal Agency will facilitate allotment of the land on lease as per the provisions of IPR-2015 for developing solar projects. However, it shall be the responsibility of the project developer to arrange land for the project.
- 3.1.2. The project developer may utilize the energy generated for self-consumption or sell power generated from such projects within or outside the State to any Procurer.

3.2. Projects Utilizing Water Bodies

- 3.2.1. Areas covered under water bodies such as reservoirs, lakes, canals and storage ponds can be considered for development of solar projects. Solar PV panels can be mounted on structures on canal tops. In addition, floating solar technologies can be considered, wherein solar panels can be mounted on floats and placed on water bodies.
- 3.2.2. GEDCOL shall be the Nodal Agency for development of solar projects utilizing water bodies. It shall undertake a survey of the water bodies to prepare a database of such areas, co-ordinate with the concerned departments/Authorities for permission to install solar projects on the water bodies and shall acquire the right to use the water surface/area for development of the solar projects. It should co-ordinate with GRIDCO for floating the tenders for power procurement from the selected sites through competitive bidding. The project developers shall be allotted land with no lease charge.
- 3.2.3. GRIDCO shall have the first right of refusal to procure power from the solar projects developed on water bodies at the tariff discovered during the competitive bidding process and approved by OERC.

3.3. Projects on Consumer Side of Meter

- 3.3.1. Solar energy is evenly spread over the land mass. It can be best utilised in a decentralised mode by way of promoting small scale solar PV projects on the consumer side of the meter. These projects would use the solar power within the institution/household during the day in tandem with grid power and export excess power, if any, to the grid at generic tariff determined by OERC. Investors/ consumers who want to develop rooftop PV projects can set up their facility by connecting to the grid either at 33 kV/11 kV three phase lines or at 440/220 Volt three/single phase depending on the size of the system. However, it shall be the responsibility of the project developer to arrange land required, if any, for the project.
- 3.3.2. OREDA shall be the nodal agency for the projects of below 1 MW capacity on the consumer side of the meter. The projects of 1 MW and above capacity will be implemented by GEDCOL. The net-metering facility will be extended to all the project developers who intend to set-up solar photovoltaic plants on their rooftops. Project developers shall follow the net metering Orders issued by the OERC from time to time.

3.4. Solar Parks

- 3.4.1. A solar park shall be an exclusive area consisting of dedicated zones for development of solar power generation projects, solar manufacturing projects and R&D with basic infrastructure. Odisha hosts a high capacity of captive power plants (CPPs) which are Obligated Entities and are required to meet the Solar Purchase Obligation (SPO) specified by the OERC. It is necessary for these Obligated Entities to either set up their own solar projects or purchase power from solar projects to meet their SPOs. Solar parks would create and provide ready to use infrastructure for such users apart from other commercial solar power developers. Solar parks would achieve economies of scale and will minimize the project risks.
- 3.4.2. There will be two modes of implementation of the Solar Parks depending upon the implementation agency, namely, GEDCOL Solar Parks and Private Park Developer model.
- (a) GEDCOL Solar Parks**
- 3.4.2.1. Under this model, GEDCOL shall develop all infrastructure facilities. GEDCOL shall either purchase the land or take it on long term lease from the Government. GEDCOL may also develop solar parks under the MNRE Scheme for Development of Solar Parks and Ultra Mega Solar Power Projects. It may develop these parks in partnership with Solar Energy Corporation of India (SECI) or other agencies.

- 3.4.2.2. Under this model, GEDCOL shall invite proposals from developers for allotment of plots for solar project development in the solar park. The developers shall pay the per MW facilitation charges as determined by GEDCOL. GEDCOL will provide the land to project developers on 30 years lease at a pre-determined lease/rent and other charges as per the agreed terms & conditions.
- 3.4.2.3. GEDCOL shall offer plots to project developers in the following order of priority:-
1. Projects being developed to meet SPO of Distribution Licensees/ GRIDCO.
 2. Projects being developed by CPPs in the State to meet their SPO.
 3. Projects being developed under Average Pool Power Cost (APPC)/ Renewable Energy Certificate (REC) route.
 4. Project developers who have won projects in competitive bidding undertaken under National Solar Mission/any other scheme of Govt. of India.
 5. Project developers who have won projects in competitive bidding undertaken by State utilities in other States.
 6. Project developers opting for open access/ third party sale model.
- 3.4.2.4. All solar PV and solar thermal project developers and manufacturers developing solar projects in notified Solar Parks shall be eligible for allotment of land. However, the share of land in the solar park allotted to the solar manufacturing capacity shall be limited to maximum of 10% of the allottable land. Hybrid power projects with other renewable technologies i.e. solar-biomass, solar-hydro, solar-wind etc., shall also be eligible for allotment of land. However, the ratio of solar generation, in energy terms, should be at least 60% of total electricity generated in a hybrid project.
- 3.4.2.5. The minimum capacity that can be allotted to any individual solar power developer shall be 10 MW. The maximum capacity allocated to a single developer shall be 30% of the Solar Park capacity. However, GEDCOL may relax the capacity norms on 'case to case' basis.
- 3.4.2.6. In case the proposals are more than the capacity invited, GEDCOL shall conduct competitive bidding on facilitation charges for selection of bidders i.e. the bidders who offer the highest premium over GEDCOL determined facilitation charges per MW would get priority.

(b) Private Park Developer Model

- 3.4.2.7. Under this model, the private solar park developer shall identify the suitable site and procure land for development of a solar park. In case of the Government land, the private developer would make an application to GEDCOL for allotment of the land. The Government land shall be leased out as per the provisions of Odisha Industrial Policy (IPR)-2015. A maximum 5 acre/MW of land shall be leased out for solar park

development. GEDCOL will give in-principle approval for setting up of the project and will coordinate with IDCO for providing the land on lease, if required. The required permits under the Orissa Land Reforms Act of 1960 and its Amendments, with respect to land ceiling shall also be facilitated by GEDCOL. The land allotted for solar power generation cannot be diverted for any other purpose.

- 3.4.2.8. The private developer shall be responsible for development of the basic infrastructure facilities like approach roads, boundary wall, security, water, auxiliary power, power evacuation facility, etc. and allotment of capacity to other solar power developers in the solar park. The solar park developer may either develop project on his own or further sub-let plots after creating infrastructure necessary for the solar project development. In such a case, the private developer shall be responsible for development of the basic infrastructure and allotment of capacity to other private power project developers in the solar park.
- 3.4.2.9. Under this model, the developer shall be responsible for execution of the project and the same shall be monitored by the GEDCOL. Private solar park developer may also develop solar park under the MNRE scheme for Development of Solar Parks and Ultra Mega Solar Power Projects. In case, 80% of the project capacity is not developed within a period of 5 years, penalty shall be imposed by GEDCOL. For every 1 MW shortfall in capacity, the solar park developer shall be liable to pay 3 times the lease rent for every year until 80% of the capacity is developed.

4. Small Hydro

The Engineer-in-Chief (EIC) (Electricity) shall be the nodal agency for small hydro projects.

4.1. Process of Selection of Developer and Allotment/ Cancellation of Projects

- (a) The responsibility of identifying small hydro projects in the State lies exclusively with the nodal agency. Self-identified small hydro projects shall not be allowed. The nodal agency shall prepare the DPRs and place the recommendations of the State Technical Committee (STC) for Small Hydro-electric Projects to the Government of Odisha for approval.
- (b) Selection of project developer other than State PSUs will be done on competitive bidding basis. The selected bidder will deposit the cost of DPR and other expenses upfront to the Nodal Agency.
- (c) OHPC will be the sole developer for dam-toe and canal based projects.
- (d) The already allotted projects that fail to achieve financial closure within six (6) months of the date of notification of this policy would be liable for cancellation.
- (e) The project allotted in pursuance of this policy would be liable for cancellation, if they fail to achieve financial closure within six (6) months of the date of allocation order.

4.2. Sale of Power

GRIDCO shall have the first right of refusal in case of all small hydro projects developed in Odisha, which it shall exercise at the time of scrutiny of the project by the STC. Where GRIDCO will procure power, such projects will be allocated on tariff based competitive bidding. In case of sale of power to entities other than GRIDCO, the project will be allocated on competitive bidding on the basis of maximum free power to be supplied by the developer to the State.

5. Wind

OREDA shall be the nodal agency for wind power development in the State.

5.1. Wind Resource Assessment:

- a) Wind Resource Assessment (WRA) is carried out by OREDA at various places including at hill tops. NIWE gives the coordinates of locations for WRA studies. Acquisition of land for setting up met masts (measurement towers) at these locations will be done by OREDA.
- b) For carrying out wind resources assessment studies, the private developer can also select the location for establishment of wind monitoring station and shall submit the application to the nodal agency as prescribed by it.
- c) The Government land required for setting up of wind monitoring station shall be allotted on temporary basis to the Developer for a maximum period of 3 years at the rate to be decided by the District Level Committee. The allotment of such land shall be done by the concerned District Collector on the recommendation of Nodal Agency. After completion of wind assessment studies, the wind monitoring station shall be dismantled at the cost of the Developer and land shall revert back to the State Government free from all encumbrances.
- d) Purchase and acquisition of private land, if any shall be the responsibility of the Developer.

5.2. Process of Selection of Developer and Allotment of Projects

- 5.2.1. Data for the sites where wind monitoring stations have been installed shall be made available to the applicants in accordance with the extant MNRE policy. The nodal agency would facilitate in making the land available to the project developer in accordance with the IPR-2015. For setting up wind power plants on sites identified by OREDA or by the private developers, the DPR shall be submitted by the developers to OREDA for techno-commercial assessment.
- 5.2.2. Applicants may apply to the nodal agency to set up the wind power project on the Government land or private land. If more than one application is received for setting up project at the same site on the Government land, then the allotment of project shall be done on competitive bidding on the basis of site premium amount. The projects shall be allocated to applicants on private land in accordance with their proposal.

5.3. Sale of Power

- 5.3.1. The project developer may utilize the energy generated for self-consumption or sell power generated from such projects within the State or outside the State to any Procurer in accordance with the relevant regulations of the OERC.
- 5.3.2. To kick start the wind power development in the State, GRIDCO shall purchase initial wind power capacity up to 50 MW at the generic tariff to be determined by OERC from time to time.

6. Biomass

OREDA shall be the nodal agency for development of Biomass based power projects in Odisha.

6.1. Identification of Biomass Catchments

Taking into account the commercial feasibility of Biomass Power Projects, the State nodal agency shall undertake resource assessment studies and supply chain mechanisms and identify biomass catchments in different parts of the State to harness the targeted capacity. After completion of such studies OREDA shall notify the biomass catchments and their power generation potential and invite developers to set up power projects.

6.2. Process of Selection of Developer and Allotment of Projects

- (a) If GRIDCO agrees to procure power, the selection of project developer will be based on a tariff based competitive bidding.
- (b) For third party sale based on open access regulations of OERC to any buyer other than GRIDCO, the nodal agency shall allocate the projects on first come first serve basis after examining the techno-commercial suitability of the proposal.

6.3. Land

The Government of Odisha would make land available to the project developer in accordance with the IPR-2015. Waste and fallow lands may also be allocated to the eligible developers for raising energy plantations so as to meet up to 20% of the annual biomass fuel requirement.

6.4. Sale of Power

The project developer may utilize the energy generated for self-consumption or sell power generated from such projects within the State or outside the State in accordance with the relevant regulations of OERC. GRIDCO shall have the first right of refusal. OERC shall determine the tariff for such projects from time to time.

7. Waste to Energy

OREDA shall be the nodal agency for development of Waste to Energy, mainly Municipal Solid Waste (MSW), Industrial and Agricultural Waste based power projects in Odisha.

7.1. Process of Selection of Developer and Allotment of Projects

The Urban Local Body (ULB) will select the project developer and allot the WTE projects. ULBs in Odisha, categorized as Municipal Corporations, Municipalities and Notified Area Councils shall be responsible for infrastructure development for collection, storage, segregation, transportation, processing and disposal of municipal solid wastes. The nodal agency shall interact with the urban local bodies (ULBs) in order to facilitate the process for supply of solid waste to the developers.

7.2. Availability of Solid Waste

It is the responsibility of the ULB to collect solid waste, process it and destroy the same. Solid wastes shall be provided to the power projects free of cost. To make this process less cumbersome and environmentally sustainable, it is appropriate that costs associated with collection and processing of solid wastes are borne by the ULB. The WTE power plants based on solid waste will be located close to the dumping grounds of the ULB.

7.3. Land

The ULBs would make land available at suitable location to the project developer for projects based on WTE as per the norms set in the IPR-2015.

7.4. Sale of Power

GRIDCO shall purchase the power from such projects at the generic tariff to be determined by OERC.

Section C: Decentralized Renewable Energy Applications

8.1. Types of Applications

Government will continue to encourage and support Decentralized Renewable Energy applications for on-grid / off-grid / hybrid modes to address the energy needs of poorer and deprived communities, to make efficient use of RE resources and to promote efficient demand side management. OREDA shall be the State Nodal Agency to execute and coordinate all projects under decentralised applications of Renewable Energy such as:-

- (a) All RE based small / mini/micro grids up to 1 MW
- (b) Rooftop Solar Projects
- (c) Solar water pumping for irrigation, drinking water supply etc
- (d) Wind-solar hybrid projects
- (e) Micro/Pico hydro projects
- (f) Biomass gasifier for power generation and thermal applications
- (g) Solar thermal projects
- (h) Biogas based projects for domestic application & power generation
- (i) Improved cook stoves
- (j) All new and innovative energy options

8.1.1. RE Based Mini/Micro Grid

A 'Mini Grid' is defined as a system having a RE based electricity generator (with capacity of 10 KW and above) and supplying electricity to a target set of consumers through a Public Distribution Network (PDN). A 'Micro Grid' system is similar to a mini grid but having a RE based generation capacity of below 10KW. Micro and mini grids generally operate in isolation to the electricity networks of the DISCOM grid (stand alone), but can also interconnect with the grid to exchange power. If connected to the grid they are termed as grid connected mini/ micro grid. A mini / micro grid can provide the electricity service to the consumers for various purposes including economic and livelihood generation activities.

8.1.2. Rooftop Solar Projects:

Rooftop solar power plants are defined as solar PV based electric generators either in stand alone or grid connected mode. The stand alone plants can work on complete DC mode or convert the DC power generated from SPV panel to AC power using power conditioning unit and feed the power to various captive loads. In grid

connected mode, they can feed the power to grid either at 33 kV/11 kV three phase or at 440/220 Volt three/single phase depending on the capacity of the system installed and the regulatory framework specified. They generate power during the day time which is utilized fully by powering the captive loads and feed excess power to the grid as long as grid is available. In case, where solar power is not sufficient due to cloud cover etc., the captive loads are served by drawing power from the grid. The grid-interactive rooftop system can work on net metering basis within the purview of the OERC Order.

8.1.3. Solar Water Pumping for Irrigation, Drinking Water Supply etc.

An SPV water pumping system consists of an SPV array of 200-5000 Wp capacity. The array is connected to a DC or AC pump of matching capacity that can be surface mounted, submersible or floating type. The SPV array converts the sun light into electricity and delivers it to run the motor with mono block DC pump. In case of AC pump an inverter is used to convert DC output of the array into AC. No storage battery is required in this type of pump. The normal pumping head is 10 m -100 m. This is most suitable for inaccessible areas where decentralised application is necessary and where grid is unstable.

8.1.4. Wind-Solar Hybrid Projects

Small wind power generators are aero-generators with maximum capacity of 10 KW that normally work in standalone mode to feed either to a mini/micro-grid or the captive loads. Wind -solar hybrid projects optimally use both wind and solar resources to meet the power requirement of a local grid or the captive loads. The maximum capacity cap of such systems is restricted to 50 KW in which the wind capacity shall be at least 60% of the renewable energy.

8.1.5. Micro/Pico Hydro Projects

Micro/Pico hydro projects are very small power projects with individual generation install capacity up to 100 KW. Such projects with capacities from a few kilowatt to 100 KW will be implemented by OREDA in either stand alone or grid connected mode.

8.1.6. Biomass Gasifiers for Power Generation and Thermal Applications

Biomass power generation through gasifier route is mainly targeted at meeting rural power requirement. MNRE is promoting multi-faceted biomass gasifier based power plants for producing electricity using locally available biomass resources, both woody and agro residues. The focus of this programme would also be to meet the captive electrical and thermal needs of rice mills and other industries, which in turn would help in replacing/saving the conventional fuels such as coal, diesel, furnace oil etc. The main components of the biomass gasifier programme would be:

- (a) Biomass gasifier based Distributed / Off-grid power for rural areas.
- (b) Captive power generation applications in Rice Mills and other industries.
- (c) Tail end grid connected power projects up to 2 MW capacity.

8.1.7. Solar Thermal Projects

The State will promote all types of solar thermal systems for which necessary norms will be prescribed by the Housing and Urban Development Department in consultation with the Science & Technology Department. These norms will encompass mandatory use of solar water heating system (SWHS) and other such applications in different categories of buildings covering residential, commercial and industrial requirements.

8.1.8. Biogas Based Projects for Domestic Application & Power Generation

The gas produced from dung or any other biodegradable waste is a source of fuel for rural and semi-urban areas. It is an appropriate and renewable energy source from waste, which is abundant in rural and semi-urban areas and provides a decentralized, cheap and environment-friendly energy. The methane gas which is one of the constituents of GHG emissions is most suitably utilized as fuel supplement. The process can be applied to small domestic units as well as larger farms and institutions. The size of domestic / household type biogas plant will depend upon the cattle available.

8.1.9. Improved Cook Stoves

Improved biomass cook stove is basically a combustion device which burns biomass fuel more efficiently with reduced emissions and offers cleaner cooking energy solutions. Biomass cook stoves are of two types; fixed type and portable type. The portable cook stoves are also of two types; natural draft and forced draft. Advanced cook stoves utilizing fans are more efficient compared to natural draft ones. Each type of cook stove can be used for domestic as well as community cooking applications. The improved cook stoves can be made from any suitable material.

8.1.10. All New and Innovative Energy Options

OREDA will explore and take up all new and innovative energy options in the area of tidal, geo-thermal, bio-fuel, triple effect and combination / hybrid of such options. It will also encourage R&D in these applications.

8.2. Implementation Mechanism

8.2.1. OREDA will prepare plans/proposals, DPRs or schemes for all such renewable energy interventions. OREDA shall also frame up Integrated Renewable Energy Plan in PVTG areas / inaccessible pockets of the State through DDG and mini-grid options towards energy access.

8.2.2. The selection of RESCO will be done by OREDA by inviting expression of interest. The formats for submitting project proposals under various off-grid applications shall be made available on the website by OREDA. The systems will have to qualify technical standards prescribed by MNRE.

Section D: Incentives and Institutional Mechanism

9. Nodal Agencies for Different RE Projects

- i) Green Energy Development Corporation Limited (GEDCOL) shall be the Nodal Agency for all on-grid solar and hybrid power projects of 1 MW and above capacity.
- ii) Engineer-In-Chief (EIC) (Electricity) will be the Nodal Agency for Small Hydro Electric Power Projects.
- iii) OREDA shall be the Nodal Agency for all other Renewable Energy projects.

10. Roles and Responsibilities of Various Institutions

10.1. Odisha Renewable Energy Empowered Committee (OREEC)

The Government of Odisha will set up a high powered Committee namely, Odisha Renewable Energy Empowered Committee (OREEC) under the chairmanship of Chief Secretary to take decisions relating to the implementation of this Policy, monitoring of the renewable energy projects and other important matters associated with the development of renewable energy in the State.

10.2. State Technical Committees

10.2.1. Three separate State Technical Committees (STC) shall be constituted to look into the following activities concerning the renewable energy projects:-

- a) Evolving criteria for selection of the project developer
- b) Selection of the project developer
- c) Approval of Detailed Project Reports (DPRs)
- d) Extension of the Projects
- e) Making recommendations for consideration of OREEC

10.2.2. The Committees shall comprise of the members as follows with the Principal Secretary of the respective Department as the Chairperson and head of the nodal agency as the Member-Convener.

(a) For GEDCOL

Principal Secretary, Energy Department	- Chairperson
Principal Secretary, Science & Technology Department	- Member
Principal Secretary, Industries Department	- Member
Managing Director, GRIDCO	- Member
Chief Executive, OREDA	- Member
Engineer in Chief – Electricity	- Member
Managing Director, OPTCL	- Member
Managing Director, DISCOM	- Member
Managing Director, GEDCOL	- Member-Convener

(b) For OREDA

Principal Secretary, Science & Technology Department	- Chairperson
Principal Secretary, Energy Department	- Member
Principal Secretary, Industries Department	- Member
Managing Director, GRIDCO	- Member
Engineer in Chief – Electricity	- Member
Managing Director, GEDCOL	- Member
Managing Director, OPTCL	- Member
Managing Director, DISCOM	- Member
Chief Executive, OREDA	- Member-Convener

(c) For EIC (Electricity)

Principal Secretary, Energy Department	- Chairperson
Principal Secretary, Science & Technology Department	- Member
Principal Secretary, Industries Department	- Member
Principal Secretary, Water Resource Department	- Member
Managing Director, GRIDCO	- Member
Chief Executive, OREDA	- Member
Managing Director, GEDCOL	- Member
Managing Director, OPTCL	- Member
Managing Director, DISCOM	- Member
Engineer in Chief – Electricity	- Member-Convener

11. Odisha Renewable Energy Development Fund (OREDF)

- 11.1. The State Government will create a Odisha Renewable Energy Development Fund (OREDF) within six (6) months of issuance of this policy for accelerated development of renewable energy in the State. Independent / private developer shall contribute 5 paise per unit of Renewable Energy sold outside the State towards generating financial resources for this Fund. This fund will be utilized as a revolving fund for creation of infrastructure such as transmission network, roads and training centres for accelerated development of renewable energy as per the guidelines to be issued by the State Government in this regard. The State Government shall provide a corpus of Rs. 250 crore spread over 5 years for creation of OREDF, which will be released by the Government in suitable tranches every year. The resources mobilized through Nodal Agencies by way of collection of development charges will be credited to OREDF. The State Government will also evolve other suitable mechanism for generating financial resources for increasing capital of this fund.
- 11.2. This fund will be utilised by the nodal agencies, as decided by the OREEC, for various activities including, inter alia, the following:
- a) Acquisition and development of land for various technologies;
 - b) Preparation of Detailed Project Reports for Small Hydro Electric Projects.
 - c) Development of infrastructure for power evacuation by OPTCL and DISCOMs;
 - d) Studies for assessment of potential for various technologies;
 - e) Capacity building and training of manpower;
 - f) Provide funds for innovation and demonstrative projects;
 - g) Provide loans to small enterprises for new business models.

12. Incentives and Other Support Measures

Following incentives shall be applicable for the Renewable Energy Projects:

12.1. Land:

- (a) Government land earmarked for industry under the "Land Bank" scheme of Odisha Industrial Infrastructure Development Corporation (IDCO) and other Government land, wherever available, may be allotted for the renewable energy projects at the rates as specified in IPR-2015 and subsequent revisions.
- (b) Exemption from the ceiling on land holdings as per the Land Reforms Act (1960) of Odisha and its amendments shall be applicable for renewable energy projects. OREDA/GEDCOL shall facilitate clearance to this effect for renewable energy project developers from the competent authority.
- (c) Land acquired for development of Grid-connected Renewable Energy projects for captive consumption/sale to GRIDCO/third party sale of power or development of Solar Parks, shall be deemed to be converted to Non-Agricultural status on payment of applicable conversion charges as per Land Reforms Act (1960) of Odisha and its amendments. The respective nodal agencies shall facilitate project developers to this effect.
- (d) Developers may rope in private land owners willing to lease out their land for renewable energy projects on long term lease basis for a minimum period of 30 years at the lease rates as will be mutually decided by the project developer and the private land owner.

12.2. Inter-connection Arrangement:

- (a) Infrastructure required to connect the project till inter-connection point shall be developed and maintained by the Developer at his own cost.
- (b) The main and check meters would be installed by the Developer at the inter-connection point of OPTCL/DISCOMs substation.
- (c) It shall be the responsibility of STU to ensure that all the infrastructure required beyond the inter-connection point is created in a timely manner for projects at 132kV and above. The STU shall claim the cost incurred on such development under its ARR (Annual Revenue Requirement).
- (d) It shall be the responsibility of DISCOM to ensure that all the infrastructure required beyond inter-connection point is created in a timely manner for projects at 11kV and

33kV. The DISCOM shall claim the cost incurred on such development under its ARR (Annual Revenue Requirement).

- (e) GRIDCO and OPTCL shall work in close coordination with the Nodal Agencies to ensure that requirements of the renewable energy generation are factored into while finalizing their transmission and distribution network plans.
- (f) Rooftop Solar PV sources shall be allowed connectivity at LV or MV or at 11 KV of the Distribution system of the licensee as considered technically and financially suitable by the licensee and the Developer.
- (g) To build the infrastructure using the highest possible standards, the whole solar power evacuation infrastructure in solar parks shall be designed and developed by the Developer by using the latest technologies like SCADA (Supervisory Control and Data Acquisition), GIS (Geographical Information System), Bay controller and Online monitoring equipment etc. The transmission network development shall be governed by the applicable CEA/CERC/OERC regulations/standards. Grid connectivity shall be compliant with applicable Grid code.

12.3. Transmission & Sale of Power:

- (a) Any person generating electricity from renewable energy sources, irrespective of installed capacity, shall have open access to any licensee's transmission system and/or distribution system, as the case may be.
- (b) On an application from such person, the transmission licensee or distribution licensee shall provide appropriate inter-connection facilities before commercial operation date of the renewable energy project. Such inter-connection shall follow the grid connectivity standards as specified in the Central Electricity Authority (Technical Standards for connectivity of the Distributed Generation Resources) Regulation, 2013 or the State Grid Code and its amendments, as the case may be. The transmission licensee/distribution licensee shall provide meters and associated facilities at the inter-connection point.
- (c) For projects on consumer side of the meter, inter-connection arrangements as specified under the Net-metering Regulations/Orders and their amendments from time to time shall be followed.
- (d) Communication system, if required by SLDC, between Grid Sub-station and the Generating Station shall be developed & maintained by the developer(s) at his own cost.
- (e) Charges regarding wheeling, banking, cross subsidy surcharge and additional surcharge for Open Access consumers as notified by OERC from time to time will be applicable. Presently, procurement of power through third party sale from Renewable Energy sources is exempted from the Cross Subsidy Surcharge and only 20% wheeling

charge is payable by the consumers drawing power from Renewable Energy source through Open Access excluding Co-generation & Bio mass power plants.

- (f) A Developer may utilize the renewable energy generated for captive use at the place of generation or may seek open access to transmission/distribution system of OPTCL/DISCOMs to carry the power to the destination of its use subject to technical feasibility on payment of transmission/distribution and wheeling charges as approved by OERC.
- (g) All renewable energy power systems shall be treated as 'Must Run' power plants and shall not be subjected to Merit Order Rating (MOR) / Merit Order Dispatch (MOD) principles subject to the applicable regulations of OERC and provisions of the relevant PPA.
- (h) Developers of Renewable Energy sources shall abide by all applicable codes, rules, regulations etc. in regard to operational & commercial practices issued by the OERC from time to time.

12.4. Concessions in Taxes & Duties and Other Benefits:

- (a) Renewable Energy projects would be treated as new industrial units with investment limits as applicable for MSMEs or Large sector and all incentives and concessions as per IPR-2015 would be accordingly made available for them.
- (b) No stamp duty will be required to be paid in respect of land allotted by the Government/IDCO to Solar Park Developers.
- (c) All new renewable energy projects developed under this policy who come into commercial production within the stipulated period shall be exempted from paying Electricity Duty for self-consumption for a period of 5 years from the date of achieving commercial operation as certified by the nodal agency.

12.5. Exemptions from Certificates, Fees & Charges:

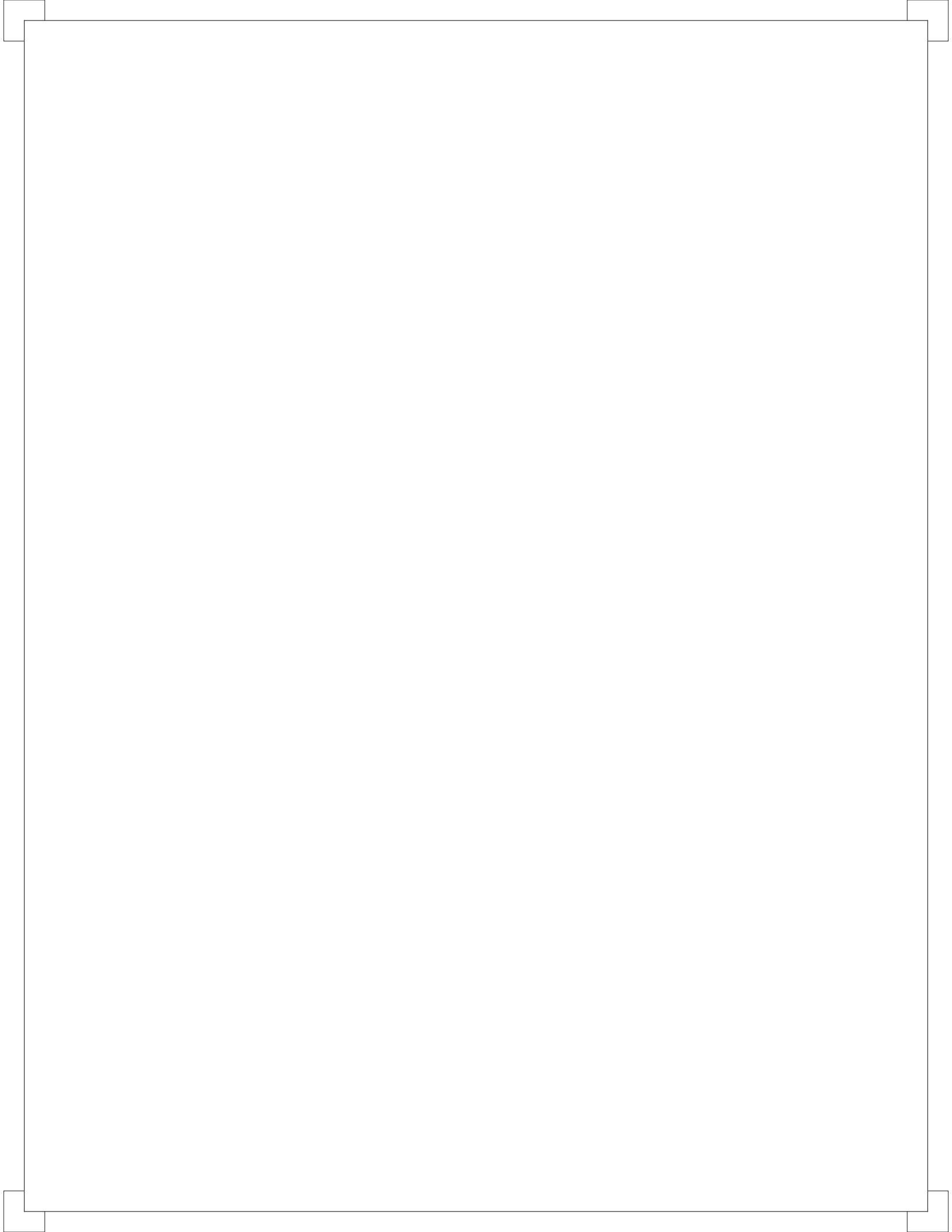
- (a) Nodal Agencies shall receive applications from investors and facilitate/co-ordinate for required clearances from various Departments or concerned Authorities within a time frame.
- (b) Testing charges of EIC would be waived for all new and renewable energy projects.
- (c) Supervision charges shall not be levied by DISCOM/OPTCL for projects under this Policy.
- (d) No clearance from State Pollution Control Board, Odisha would be required for Renewable Energy projects except Biomass and Municipal Solid Waste projects.

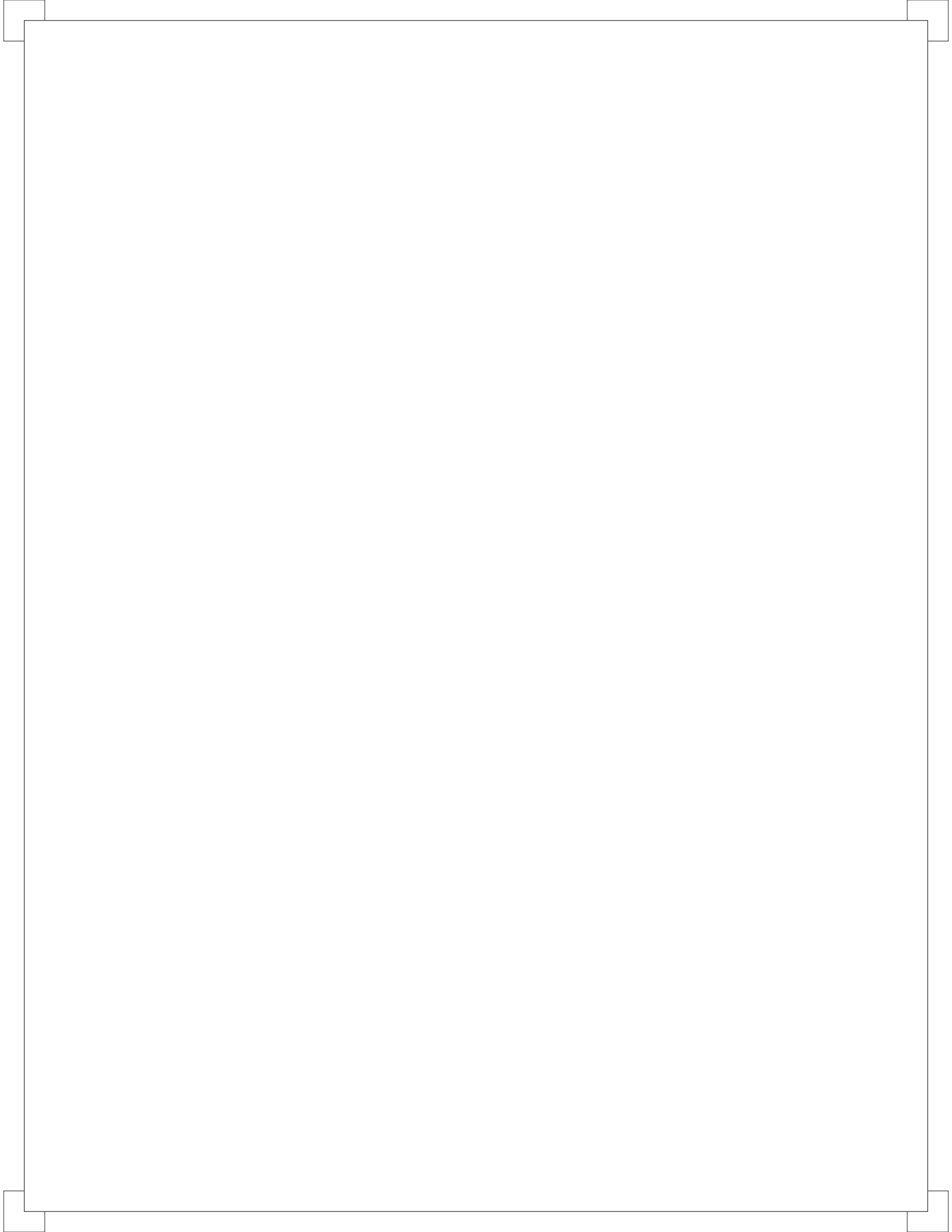
12.6. Special Incentives for Renewable Energy Manufacturing Units:

- (a) Any kind of RE manufacturing facility / hub shall be treated as Priority Sector as per IPR-2015. The relevant provisions under the Industrial Policy Resolution-2015 under priority sector shall be applicable to the entrepreneurs setting up manufacturing units of Solar PV Panels, other RE equipment and associated devices/equipment in Odisha with minimum investment and employment limits as Rs. 10 crore and 20 persons respectively for both category 'A' and category 'B' districts. The benefits of category 'A1' & category 'B1', as applicable, would be made available as per IPR-2015.
- (b) IPICOL shall act as facilitator in regard to allotment of land in Industrial Estates/Solar Parks to set up such units by private entrepreneurs and also for other clearances/concessions.

12.7. Miscellaneous:

- (a) The capital subsidy and other concessions as available under various Missions/Schemes/Projects/Programmes/Policies of the Government of India and State Government shall be administered/facilitated through the Nodal Agencies.
- (b) On-grid renewable energy projects involving innovative/new technologies may be given Viability Gap Funding (VGF) from OREDF. This would be provided on case to case basis as approved by OREEC.
- (c) The modalities of specific incentive schemes or structure for funding support for a particular off-grid RE program shall be published at the time of formulation of the specific off-grid RE program. The other terms and conditions for operations of such programs/ schemes shall also be notified by OREDA.
- (d) State Government may notify from time to time the mandatory provisions in Building bye-laws, other Regulations, environmental and conservation norms to promote decentralized RE solutions.







ODISHA
NEW OPPORTUNITIES

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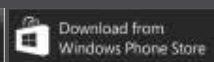
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