Explanatory Memorandum

FOR

Draft Himachal Pradesh Electricity Regulatory Commission (Promotion of Generation from the Renewable Energy Sources and Terms and Conditions for Tariff Determination) Regulations, 2017.

11th August, 2017

HIMACHAL PRADESH ELECTRICITY REGULATORY COMMISSION

Vidyut Aayog Bhawan, Block No.-37, SDA Complex, Kasumpti, Shimla-171009

www.hperc.org

Explanatory Memorandum for the Draft Himachal Pradesh Electricity Regulatory Commission (Promotion of Generation from the Renewable Energy Sources and Terms and Conditions for Tariff Determination) Regulations, 2017.

1. Promotion of Renewables:-

(a) Small Hydro Projects:- Himachal Pradesh is bestowed with renewable energy potential especially small hydro. The total potential of Small Hydro Projects (SHPs) is about 2500 MW. Till 2016-17, SHPs of more than 550 MW capacities have been commissioned. Out of this, about 100 MW capacities have been developed in the State sector i.e. by HPSEBL and HIMURJA and remaining capacities have been commissioned through IPPs. It is estimated that by 2022 more than 1650 MW additional capacities in SHP category will be harnessed. Therefore, an adequate regulatory framework for development of SHP is required.

(b) Solar power potential:- National Institute of Solar Energy (NISE) has estimated a potential of 34 GW taking into account 3% of total wasteland and roof top surface areas of the consumers for this purpose. Indian Renewable Energy Development Agency Limited (IREDA) has estimated a potential of about 53 GW taking in to account 5% of the waste land. Therefore, the State has huge solar power potential. The PPAs under preferential tariff for capacity about 24 MW have already been executed by the IPPs and HPSEBL.

With the enactment of the Electricity Act, 2003 and launch of the National Action Plan on Climate Change (NAPCC), the renewable energy development has assumed significant importance. Some of the legal and policy provisions for promotion of renewable energy have been discussed in the following paragraphs:

1.1 The Electricity Act, 2003

1.1.1 The Electricity Act, 2003 emphasises the importance of non-conventional energy sources and mandates for the promotion of electricity generation from non-conventional energy sources including co-generation.

1.1.2 Section 86(1) (e) of the Electricity Act, 2003 empowers the Commission to promote co-generation and generation from renewable sources of energy by providing suitable measures of connectivity with the grid and sale of electricity to any person, and also to specify percentage of renewable energy to be procured as renewable power purchase obligation for the distribution licensees.

1.1.3 Section 61(h) of the Electricity Act, 2003 further stipulates that –

> "The Appropriate Commission shall, subject to the provisions of this Act, specify the terms and conditions for the determination of tariff, and in doing so, shall be guided by the following, namely:-
>
> ---
>
> ---
>
> (h) the promotion of co-generation and generation of electricity from renewable sources of energy";

1.1.4 Section 3 of the Electricity Act, 2003 provides for formulation of the National Electricity Policy and Plan for development of power system based on optimal utilisation of resources including renewable sources of energy.

1.2 National Tariff Policy

The National Tariff Policy (2016) also reiterates the importance of the renewable energy generation and consequent benefits for the country. Key extracts from para 6.4(1) and 6.4(4) are as under:-

> "6.4(1) Pursuant to provisions of section 86(1)(e) of the Act, the Appropriate Commission shall fix a minimum percentage of the total consumption of electricity in the area of a distribution licensee for purchase of energy from renewable energy sources, taking into account availability of such resources and its impact on retail tariffs. Cost of purchase of renewable energy shall be taken into account while determining tariff by SERCs..... ."
>
> 6.4(4) In order to incentivize the Distribution Companies to procure power from renewable sources of energy, the Central Government may notify, from time to time, an appropriate bid-based tariff framework for renewable energy, allowing the tariff to be increased progressively in a back-loaded or any other manner in the public interest during the period of PPA, over the life cycle of such a generating plant. Correspondingly, the procurer of such

bid-based renewable energy shall comply with the obligations for payment of tariff so determined."

1.3 National Electricity Policy

Section 61 of the Electricity Act, 2003 requires the Commission while specifying the terms and conditions for determination of tariff to be guided by the National Electricity Policy. Some of the main provisions of the National Electricity Policy are as under:-

"(i) Para 5.2.20 - Feasible potential of non-conventional energy resources, mainly small hydro, wind and bio-mass would also need to be exploited fully to create additional power generation capacity. With a view to increase the overall share of non-conventional energy sources in the electricity mix, efforts will be made to encourage private sector participation through suitable promotional measures."

"(ii) Para 5.12.1- Non-conventional sources of energy being the most environment friendly there is an urgent need to promote generation of electricity based on such sources of energy. For this purpose, efforts need to be made to reduce the capital cost of projects based on non-conventional and renewable sources of energy. Cost of energy can also be reduced by promoting competition within such projects. At the same time, adequate promotional measures would also have to be taken for development of technologies and a sustained growth of these sources."

"(iii) Para 5.12.2- The Electricity Act 2003 provides that co-generation and generation of electricity from non-conventional sources would be promoted by the SERCs by providing suitable measures for connectivity with grid and sale of electricity to any person and also by specifying, for purchase of electricity from such sources, a percentage of the total consumption of electricity in the area of a distribution licensee."

1.4 Renewables potentials and capacity additions in the State:

1.4.1 Small Hydro Generation-

Himachal Pradesh has been promoting development of small hydro projects on priority and, therefore, the updated achievements and future plans are highly progressive. Of the total estimated potential of 2500 MW, Projects of about 2000 MW capacities upto 25 MW have been allotted in the private sector and State Sector for development, out of which SHPs of about 550 MW capacity have been commissioned. The project upto 5 MW having capacity 122 MW are under construction stage and capacity about 355 MW are under the process of obtaining clearances. Himachal Pradesh had been pioneer in development of SHPs and due to the progressive policies and strategies of the State Government, it has emerged as leader in development of SHPs amongst the hill States.

1.4.2 **Solar Power Generation**

In the North-West Himalayan region with solar radiation 5.4-5.8 KWh/m^2/day and low average summer temperature are the main features for solar generation in the State. The efficiency of solar cells is maximum at low temperatures prevailing in the State of Himachal Pradesh. The solar potential of the region is vast. The utilisation of southern mountain slopes without trees and roof tops of buildings for off grid and grid connected power generation can easily be exploited. As per the centre for excellence in Energy and Environment at NIT Hamirpur, the integration of solar PV with hydro, geo-thermal, wind sources of the region will result in a sustainable model to save the ecologically fragile Himalayas.

1.4.3 The Commission had awarded a consultancy for identification of efficient sites for solar PV generation in four districts i.e. Sirmour, Solan, Bilaspur and Una and couple of specific identified sites in Mandi and Nurpur sub-division of Kangra Distt. The Aryabhatt Centre (AGISAC) was also involved for GIS Mapping of the sites. More than 10,000 MW capacity solar PV generation sites on waste land have been identified by the NIT, Hamirpur in the aforesaid districts.

1.4.4 **Wind Power Potential**

There is no study/survey of total and site specific potential available. However, the estimation of installable potential of wind power at 80 mtr. Level and 50 mtr. Level by C-WET for the State of Himachal Pradesh are as under:

State	Estimated Potential in (MW)	
	@ 50 m	**@ 80 m**
Himachal Pradesh	20	64

1.4.5 **Bio Mass Power Generation**

Biomass based power plants have the highest PLF amongst all the renewable sources. According to FSI Report 2003, 66.52 % of the area of Himachal State falls under forest area and the same area can

be defined as 37,0000 Km^2. According to Forest Report,2011, Forest and Tree cover is 27.49% of the geological area of the State. The forest waste i.e. dry leaf/needles have very less use as such they usually get burnt in the summer season. The dry broad leaf species and dry needle leaf species are available in a huge quantity in the State forest for the generation of Biomass Power. Biomass power may also be one of the viable sources of Renewable power generation in the State of HP. However, it requires adequate studies and linkages."

1.5 National Action Plan on Climate Change

1.5.1 The Prime Minister of India announced the country's National Action Plan on Climate Change (NAPCC) on 30 June, 2008. There are eight National Missions which form the core of the National Action Plan. The NAPCC consists of several targets on climate change issues and addresses the urgent and critical concerns of the country through a directional shift in the development pathway. It outlines measures on climate change related adaptation and mitigation while simultaneously advancing development. The Missions form the core of the Plan, representing multi-pronged, long-term and integrated strategies for achieving goals in the context of climate change. NAPCC set the target of 5% renewable energy purchase for FY 2009-10. Further, NAPCC envisages that such target will increase by 1% annually for the next 10 years. This would mean NAPCC envisages renewable energy to constitute approx 15% of the energy mix of India by 2020 including a minimum obligation of solar energy component.

1.5.2 The NAPCC is the national strategy of India to achieve a sustainable development path that simultaneously advances economic and environmental objectives. This National Action Plan hinges on the development and use of new technologies. The National Solar Mission is one of the eight National Missions which form the core of the National Action Plan. Based on this vision a National Solar Mission was launched.

1.6 Renewable Purchase Obligation (RPO)

1.6.1 For promotion of renewables, long term visibility of RPO is necessary and, therefore, the Commission notified the Himachal Pradesh Electricity Regulatory Commission (Renewable Power Purchase Obligation and its Compliance) Regulations, 2010, in the Rajpatra, Himachal Pradesh, dated 29th May, 2010.

1.6.2 (i) The aforesaid RPO Regulations, 2010 are based on the FOR Model RPO Regulations. The solar and non-solar RPO trajectory, as per NAPCC, specified in the Regulations upto FY 2021-22.

(ii) The MoP, GoI has notified the long term growth trajectory of Renewable Power Purchase Obligations (RPPOs) for non-solar and solar energy, uniformly for all the State/UTs as per the provisions of para 6.4(i) of Tariff Policy, 2016, initial for 3 years from FY 2016-17 to 2018-19 vide Order No. 23.03.2016-R&R dated 22.07.2016. This has necessitated the amendment of aforesaid RPPO trajectory already provided in the HPERC RPPO Regulations, 2010 upto FY 2021-2022. The RPPO targets of FY 2016-17 has modified to the extent that the same are in line to the targets fixed under NAPCC. The amended trajectory as specified by the Commission is given in the below table:

Year	**Minimum Quantum of Purchase in percentage (%) from renewable sources (in terms of energy in kWh) of total consumption.**		
	Non-Solar	**Solar**	**Total**
2016-17	9.50%	2.50%	12.00%
2017-18	9.50%	4.75%	14.25%
2018-19	10.25%	6.75%	17.00%
The RPPO will be on total consumption of electricity by an obligated entity, excluding consumption met from hydro electric sources of power.			

2. Legislative and Policy provisions for tariff determination

2.1 While providing for adequate measures to promote renewable energy, the Electricity Act 2003, and the National Electricity Policy and Tariff Policy framed thereunder, stipulates principles for tariff determination and, therefore, the regulations and the terms and conditions for tariff determination should be in harmony with the

principles of promotion of renewables and tariff determination. The extract of provisions of the Act and the said Policies are reported in the succeeding paragraph.

2.2 Sections 61 and 66 of the Act provides that :-

"61 The Appropriate Commission shall, subject to the provisions of this Act, specify the terms and conditions for the determination of tariff, and in doing so, shall be guided by the following, namely:-

(a) the principles and methodologies specified by the Central Commission for determination of the tariff applicable to generating companies and transmission licensees;

(c) the factors which would encourage competition, efficiency, economical use of the resources, good performance and optimum investments;

(d) safeguarding of consumers' interest and at the same time, recovery of the cost of electricity in a reasonable manner;

(h) the promotion of co-generation and generation of electricity from renewable sources of energy;

(i) the National Electricity Policy and tariff policy"

66. The appropriate Commission shall endeavour to promote the development of a market (including trading) in power in such manner, as may be specified and shall be guided by the National Electricity Policy referred to in section 3 in this regard."

2.3 Para 6.4 (2) of the Tariff Policy, 2016 states that:

"(2) States shall endeavour to procure power from renewable energy sources through competitive bidding to keep the tariff low, except from the waste to energy plants. Procurement of power by Distribution Licensee from renewable energy sources from projects above the notified capacity, shall be done through competitive bidding process, from the date to be notified by the Central Government.

However, till such notification, any such procurement of power from renewable energy sources projects, may be done under Section 62 of the Electricity Act, 2003. While determining the tariff from such sources, the Appropriate Commission shall take into account the solar radiation and wind intensity which may differ from area to area to ensure that the benefits are passed on to the consumers."

2.4 Para 5.12.1 of National Electricity Policy states that :

" ……..For this purpose, efforts need to be made to reduce the capital cost of projects based on non-conventional and renewable sources of energy. Cost of energy can also be reduced by promoting competition within such projects. ……".

2.6 State Govt. Policy on renewables:-

2.6.1 (a) The Govt. of HP vide notification No. MPP-F(1)-2/2005-III dated 11.12.2006, notified the Hydro Power Policy, 2006. The main objective of the Hydro Power Policy, 2006 envisage Development of Himachal Pradesh as a "Hydro Power State of the Country". The principal objectives of the Hydro Power Policy are :-

- ……. to make available reliable, regular and quality power on demand at affordable rates in the immediate near future.
- to promote and provide continued support for development of renewable energy sources like SHPs, Solar, Bio Mass, Water Mills etc.

(b) The Government of Himachal Pradesh also issued its Solar Power Policy, 2016, which has the following aims and objectives:-

(i) Promote generation of electricity from solar energy for energy security for sustainable development, which is the core Development Policy of the State.

(ii) Contribute to the National objective of increasing the share of Renewable Energy in total energy consumption, in accordance with climate, environment and macro economic considerations.

(iii) Strengthen and sustain the Policy of 100% clean electricity consumption in the State, by providing a suitable alternative to coal and gas based power and to provide firm base load power during the sunshine time of the day, so that water in the hydro projects are impounded during day time for peaking power.

(iv) Empower people in the remote and rural areas with 24x7 powers by way of decentralised solar power supply, especially in the unreliable grid systems in the mountains, to meet their basic needs, enable access to social and commercial services, and technologies.

(v) Contribute to macro policies and strategies on climate change, environment protection and sustainable development.

(vi) Promote investment, mainly private, so as to derive benefits of jobs, incomes, revenues and growth.

(vii) Facilitate achieving RPPO by capacity creations in the State.

(viii) Create awareness about potentials of renewable energy, especially solar, as a source of reliable, affordable and accessible energy in a decentralised manner, so that efficient use of electricity becomes a way of life, eventually even for cooking needs and transportation needs to power automobiles.

2.6.2 **Policy for Power Purchase by HPSEBL/Licensee**

The provision at Sr. No. 13 of the amendment in the Hydro Power Policy, 2006, notified on 4th March, 2014, provides that:-

> "2006 Policy may be followed partially, wherein HPSEBL will buy power from SHPs up to 2 MW if developer so choose, provided that free power to State is also as per 2006 Policy as recommended by Committee, which will reduce tariff by about 10 paise per unit. For SHP above 2 MW to 5 MW, HPSEBL will formulate an objective, prudent and transparent power purchase policy keeping in view load center, evacuation cost, line losses, hydrology etc".

Further the Hydro Power Policy, 2006 provides that "IPPs will be free to generate for captive use or negotiate third party sale within the State or evacuate power for captive use or sale outside the State. Accordingly, IPP now has choice for disposal of power to any person and HPERC is already providing Open Access to all the generators in the intra-State transmission system/distribution system.

In accordance with the aforesaid HP Hydro Power Policy, 2006 as amended on 04.03.2014, the HPSEBL has submitted a Renewable Power Purchase Policy-2015 for approval of the Commission and the same was finalized with necessary changes in accordance with provisions of Section-61 and Section-86 (1) (b) & (e) of the Electricity Act, 2003; para 5.1 and 6.4 of National Tariff Policy; Govt. of HP Hydro Power Policy, 2006 (as amended on 04.03.2014) and Regulatory Provisions. Apart from emphasis on solar PV generation in the State, this Policy inter-alia provides that:

(a) "**3.Purchase from SHPs:**

The fundamental principle guiding the purchase policy is that the source and location of supply be such that the landed cost of power at the consumer meter is the most efficient. Therefore, HPSEBL shall buy power from SHPs taking into consideration the loads and load growth in the respective areas, proximity to load

centres and HT/EHT Sub-stations, least evacuation cost, reliable grid etc. Keeping in view these factors, HPSEBL shall purchase power in the following manner:-

(1) HPSEBL shall purchase entire power generated from all the SHPs up to 25 MW capacity where Implementation Agreement (IA) are already signed or shall be signed before 31.03.2017.

(2) With respect to SHPs of the capacities up to 2 MW, where the projects have been allotted by the State Govt., but Implementation Agreement have not been signed till 31.03.2017, HPSEBL shall enter into the PPA subject to signing of Implementation Agreement by the IPP subsequent to 31.03.2017, within this Policy, including tariff and terms and conditions as laid down in this Policy.

(3) With respect to projects of above 2 MW capacity, where projects have been allotted but Implementation Agreement have not been signed till 31.03.2017, HPSEBL may enter into PPA on the merit of each case, keeping in view the fundamental principles for power purchase as laid down above in this Policy, subject to signing of I.A. subsequently.

(4) to (7) ----------

(8) In order to ensure that inefficiencies are not rewarded and there is fairness, equity and justice among the similarly situate IPPs, if IPPs, who have signed IA by 31.03.2017 or those who are allotted projects by the State Govt. up to 30.09.2016, do not sign PPA with the HPSEBL by 31.03.2017 or such date extended by the HPERC, HPSEBL may not sign PPA with such IPPs subsequently after the close of the Policy or under any subsequent Policy.

(9) to (11)----------."

(b) **"5.Purchase Energy from waste:**

Entire energy generated in the State from the municipal waste shall be purchased by the HPSEBL, provided that such energy is generated by use of clean technology. Tariff shall be determined by the Commission on project specific basis."

2.7 Central Electricity Regulatory Commission RE Regulation, 2017

2.7.1 The Central Electricity Regulatory Commission (CERC) has, vide Notification dated 17.04.2017, notified its Central Electricity Regulatory Commission (Terms & Conditions for Tariff determination from Renewable Energy Sources) Regulations, 2017. These Regulations are applicable for Central Sector Generating Stations or Generating Stations with composite scheme, for sale of electricity to more than one State. Accordingly, CERC RE Tariff Regulations, 2017 shall be applicable where tariff for a Central Sector Generating Station or the Generating Station with composite scheme is based on renewable sources of energy, and are covered under section 79(1)(a) & (b) read with Section 62 of the Electricity Act, 2003. These CERC RE

Regulations shall remain in-force for a period of three years from the date of commencement i.e. 01.04.2017. These Regulations provide for generic levellised tariff for the following categories of Renewable Energy (RE) generating stations to be set-up on inter-state sale basis:

(i) Small Hydro Projects;
(ii) Biomass Power Projects with Rankine Cycle technology;
(iii) Non-fossil fuel-based co-generation Plants;
(iv) Biomass Gasifier based projects;
(v) Biogas based projects

In relation to other RE technologies, the CERC Regulations provides for project specific tariff approach for the below mentioned renewable energy based projects to be set-up on inter-state sale basis for the next Control Period (2017-2020) and has not determined annual generic tariff for such RE technologies. However, the Financial and certain Operational norms (other than capital cost and O&M charges) have been specified which shall be considered as ceiling norms while determining the project specific tariff:

(i) Solar PV and Solar Thermal;
(ii) Wind Energy (including on-shore and off-shore);
(iii) Biomass Gasifier based projects;
(iv) Biogas based projects;
(v) Municipal Solid Waste and Refuse Derived Fuel based projects with Rankine cycle technology;
(vi) Hybrid Solar Thermal Power Projects;
(vii) Other Hybrid projects including renewable-renewable sources, for which renewable technology is approved by MNRE;
(viii) Biomass project other than that based on Rankine Cycle technology application with water cooled condenser;
(ix) Any other new renewable energy technologies approved by MNRE;

2.7.2 The CERC RE Regulations, 2017 also stipulate that any incentive or subsidy offered by the Central or State Govt., including accelerated

depreciation benefit, if availed, by the generating company/project developer, is to be taken into consideration fully while determining the tariffs. In case of RE Technologies other than SHPs the CERC has also quantified the impact of accelerated depreciation to be adjusted in case the developer avails the benefit of accelerated depreciation. However, no such quantification has been done in case of the tariff for SHPs. The other incentives/benefits like capital subsidy available to the particular RE technology have also not been taken into account while arriving at the normative tariff and are to be adjusted on the basis of scheme provisions for such subsidies.

2.8 Existing Regulatory Framework of HPERC

2.8.1 The existing Himachal Pradesh Electricity Regulatory Commission (Promotion of Generation from the Renewable Energy Sources and Terms and Conditions for Tariff Determination) Regulations, 2012, specify that the tariff period for SHPs is subject to review after 30.09.2017.

2.8.2 As per the provisions contained in RE Regulations, 2012, the Commission has determined the normative generic levellised tariff for small hydro projects, solar PV power generation and waste to energy projects with and without accelerated depreciation benefit.

2.8.3 Keeping in view the abundance of hydro and solar renewable sources, the significance of regulatory and policy framework and the need of rationalising the existing regulatory provisions, the Commission is issuing this Explanatory Memorandum broadly spelling out the background and context in which draft Himachal Pradesh Electricity Regulatory Commission (Promotion of Generation from the Renewable Energy Sources and Terms and Conditions for Tariff Determination) Regulations, 2017 have been developed. The objective is to evolve new framework e.g. tariff structure, benchmark norms for various cost parameters, which shall be relevant/applicable for determination of tariff for generation of electricity from renewable sources of energy in Himachal Pradesh for the next control period.

3. Approach for development of new regulatory framework

3.1 This memorandum discusses the regulatory framework evolved by the Central Electricity Regulatory Commission, which are also considered as the guidelines for formulating State specific regulations. The memorandum while arriving at the new terms and conditions, tends to briefly highlight State specific conditions prevalent in Himachal Pradesh and the provisions prevalent in existing regulatory framework. While the CERC guidelines mostly provide for uniform financial norms for the entire country. The operational and technological specific norms specified on technology specific and area specific. In case of SHPs separate technology specific and operational have been specified for North East/ Hill States. However, within the North East/Hill States also, specific conditions, policies, environment etc. are different. Himachal Pradesh had been a pioneer in development of SHPs and due to the progressive policies and strategies of the State Government, it has emerged as a leader in development of SHPs among the hill States. Therefore, in comparison to other States, Himachal Pradesh has better capacities accessibility, evacuation arrangements and conducive investment environment.

3.2 Proposed RE regulations take into account the multiple objectives of efficient and economic development of Renewable Energy, fairness to investors, choice of developer for disposal of power, interest of consumers, utility interests, operational and implementation simplicity, competition, continuity etc in a harmonious manner. The Commission felt it necessary to carefully balance all such aspects while preparing these draft regulations. With the advent of various mechanisms for sale of power from the Small Hydro Projects in HP, the developers do not have to necessarily depend upon the distribution licensee for long term sale of power from their projects. Similarly the licensee also does not have to necessarily purchase power from all the projects. The Commission is aware that norms proposed in these Regulations may not fully meet the expectations of some of the SHPs which may be having unduly higher capital costs or lower CUF. The Commission feels that developers of such SHPs should work out the

economics of their projects by economising costs or exploring the markets like Open Access, REC mechanism etc. which may yield higher returns to them. Since it is not binding for the utility to purchase power from all SHPs, any liberal norms leading to higher tariff could discourage the licensee to purchase power from SHPs. However, depending upon the market conditions and the energy requirements from renewable sources, the licensee can also resort to competitive bidding for purchase of power from such projects, after following due process and with the prior approval of the Commission.

3.3 Evacuation system is very significant in context of hilly areas as most of the projects are scattered and located in far-flung areas. Therefore, this memorandum, apart from tariff structure and benchmark norms for tariff determination, also discusses and proposes an approach for evacuation of power from small hydel projects.

3.4 While developing the new regulatory framework four principles have been discussed, which are as follows:-

- General Principles (Paragraph – 4)
- Principles of Tariff Determination (Paragraph -5)
  - General Principles
  - Financial Principles
- Technical and operational Parameters (Paragraph -6)
- Other issues (Paragraph -7)

4. GENERAL PRINCIPLES

Under this paragraph, the general principles for Renewable Energy(RE) tariff determination such as scope, control period, tariff period, categories of small hydro projects, tariff review mechanism etc. have been discussed. Provisions followed by the CERC have also been brought out. Based on the overall analysis, including the provisions under existing HPERC RE Regulations and state specific considerations, reasonable provisions have been proposed in the draft regulations.

4.1 Scope and applicability of Regulations

4.1.1 In Himachal Pradesh even though the SHPs form a major part of the renewable energy sources but initiatives for other renewable sources like

solar PV, solar & wind generation in hybrid mode and biomass have also just started. The Commission in its Renewable Power Purchase Obligations Regulations has also specified RPOs separately for both solar and non-solar energy.

4.1.2 Therefore, in order to give impetus to the renewable sources, an appropriate regulatory framework for all the renewable sources is required to be in place. In view of above, the HPERC proposes to cover all major renewable sources such as SHP, Solar, Wind, Biomass and Waste to Energy in the proposed regulations also. Whereas, the Financial Norms are being proposed for all RE Technologies, the technology specified and operational norms are proposed to be specified for SHPs only. Suitable enabling provisions for fixing such norms, by order for such other technologies are however, proposed to be incorporated in the proposed regulations, broadly on the pattern of RE Regulations, 2012.

For SHPs, the Commission proposes to specify technological specific and operational norms keeping in view the State specific situations, experiences gained and future strategies of State Government and distribution licensees regarding power purchase etc.

4.1.3 The Commission also observes that the issue of applicability of new regulatory framework and tariff to be determined therein is complex owing to the Government policy changes, dynamic nature of power market, REC mechanism in the renewable sector, delayed the commissioning of allotted small hydro projects, flexibility in power procurement for the licensee etc. As a result, there are possibilities of distortions and discrepancies.

4.2 Promotion of renewable energy sources

4.2.1 In order to promote generation and co-generation from renewable energy sources, the basic options available to the generators have been outlined in the proposed Regulations to provide an overview. The generator can mutually agree with the licensee for sale/purchase of power on long term basis or under REC mechanism in accordance with the provisions of relevant regulations. The renewable energy generator can also avail Open

Access as per Himachal Pradesh Electricity Regulatory Commission (Grant of Connectivity, Long-term and Medium-term Intra State Open Access and Relates Matters) Regulations, 2010. The Commission, in fact, in order to promote SHPs follows a general practice for recovery of wheeling charges from the SHPs availing open access at rates applicable for EHV system even though most of the SHPs inject power into this system and HT level.

4.2.2 Connectivity-

In order to give sufficient time to the licensee for providing smooth connectivity, well in time, it has been proposed to retain the provisions of the existing Regulations to the effect that the renewable generator shall apply to the licensee for connectivity at least 24 months prior to intended date of connectivity or within such time period estimated by licensee or mutually agreed whichever is less. Further it has been proposed that renewable energy generator shall give prior intimation to the licensee about his intention to inject the power and also about the arrangements finalized by him for disposal of power beyond the interconnection point, at least 4 months before the expected date of commencement of operation of the project so that the licensee gears up administratively and otherwise, to a state of readiness for the interconnection. The Commission also proposes to retain the basic principles of other related aspects as under:-

(i) the licensee shall provide, operate and maintain the interconnection facilities at the cost of renewable energy generator. The terminal equipment on the other end (i.e. the switchyard of the generating station) shall however be provided, operated and maintained by the generator at his cost,

(ii) the renewable energy generator shall construct, operate and maintain the Project line(s) at his cost.

4.2.3 **Evacuation system-**

State has, in place, a comprehensive river basin wise master plan, in co-ordination with the CEA, for evacuation of power from all the projects based on total hydro power potential in the State. The three agencies in the sector i.e. CTU, STU and the distribution utility, have also been assigned appropriate roles. The STU has already tied up

investment from the ADB and the State Government. The distribution utility also has major role in making evacuation arrangements at HT/EHT level for SHPs. Such issues are now monitored and coordinated by the STU Co-ordination Committee under the chairmanship of the Additional Chief Secretary (Power) to the Govt. of HP. However, an enabling provision for constituting a separate Coordination Committee is also being retained in the proposed regulations so that the same can be invoked, if the Commission finds it necessary to do so at any stage. It has been also proposed to retain the provisions of existing Regulations that the Transmission licensee or the distribution licensee shall bear the cost for augmentation/ establishment of network beyond the inter-connection point under the CAPAX PLAN. The new or the augmented network under the CAPAX PLAN shall form part of the assets of the transmission or the distribution licensee, as applicable.

4.2.4 **Infrastructure beyond Interconnection point on Build and Transfer basis-**

The Commission proposes to retain the existing provision concerning the construction of evacuation system by the generator on Build and Transfer basis, after due consultation and approval of the licensee. As per this provision, the renewable energy generators may, in consultation and with the prior approval of the licensee, augment or establish, on behalf of the licensee, the transmission/distribution system beyond interconnection point, on Build and Transfer basis as per best industry practices, and the expenditure so incurred with the approval of licensee by the renewable energy generators shall be repaid by the licensee alongwith interest in five equal installments, spread over a period not exceeding 5 years commencing from one year after the date of commissioning of such works, and such expenditure shall be allowed as a pass through to the licensee. However, if such works are not a part of the Capital Expenditure Plan approved by the Commission, then the necessary approval of CAPAX PLAN for the same shall be obtained from the Commission before according approval to any such arrangement(s).

5. Principles of Tariff Determination

General Principles

5.1 Applicability of tariff:

5.1.1 The previous CERC RE regulations, 2012 were applicable upto 31.03.2017 and the tariffs calculated under the CERC RE Regulations, 2012 were applicable for the projects commissioned during the control period. The CERC in its new RE Regulations, 2017 have continued with the similar approach i.e. tariff applicability is from COD and control period is of three years.

5.1.2 The Himachal Pradesh Electricity Regulatory Commission framed its existing Renewable Regulations in 2012 and made effective from 18.12.2012 to 30.09.2017. The existing regulations provide that tariff as on the date of signing of the PPA, will be applicable for entire useful life of the RE project. The linkage of the applicability of generic tariff with the commercial operation date of the project implies that all the expenses upto commercial operation date are being allowed in the tariff on normative basis. In case of delayed completion of the project, this does not capture the realistic cost that should have been incurred in case of completion of the project as per the normal time schedule. As such, this can amount to rewarding delays in certain cases. Moreover, since it is now not binding for the generator and the licensee to sell/purchase power from any project(s), the licensee may find it difficult to decide, in anticipation of the determination of tariff, about purchase of power from a particular project. Such situations may deprive the generator as well licensee from the opportunity to sell and purchase power at pre-determined rates. The normative capital cost includes all expenditure including escalations and IDC etc. and, therefore, if the project is implemented diligently and faithfully, IPP is able to recover its cost through tariff as envisaged and also the utility gets power as per its power procurement planning. Inefficiencies, if any, shall have to be at IPPs own cost even though in such a case, the utility also suffers due to non availability of power as per standard date planned. The Commission proposes the similar approach in its draft

Regulations in case of the RE Technologies other than the SHPs. However, in case of SHPs the Commission feels that in order to avoid any reward for the inefficiencies in shape of making delays in initiating the process for entering into PPAs within the milestones agreed to by them in Implementation Agreements (IAs) signed by them with the HP Govt., it is proposed to link the applicability of tariff with the date of signing the Implementation Agreement. As such special provision for SHPs is also warranted keeping in view the fact that the HPSEBL policy for procurement of power from SHPs clearly provides that "In order to ensure that inefficiencies are not rewarded and there is fairness, equity and justice among the similarly situated IPPs, if IPPs, who have signed IA by 31.03.2017 or those who are allotted projects by the State Govt. up to 30.09.2016, do not sign PPA with HPSEBL by 31.03.2017 or such date extended by the HPERC. HPSEBL may not sign PPA with such IPPs subsequently after the close of the Policy or under any subsequent Policy."

The Commission feels that even if the condition for purchasing power in this regard is to be relaxed the tariff as would have been applicable to them in case of signing of PPAs before 01.04.2017 should only be allowed as otherwise it shall amount to allowing higher tariff for their having delayed process of entering into the PPA. No such specific provisions have been made for the other RE technologies as there are practically not many situations in the present stage.

In view of the above, the following special provisions are incorporated in the proposed regulations:

<u>Special Provisions for Small Hydro Projects:</u>

> Where the first Implementation Agreement of a small hydro project has been executed on or before 31st March, 2017 and no power purchase agreement, whether under REC Mechanism or otherwise, has been approved by the Commission for such project before the date of commencement of these Regulations, the norms, tariffs and other associated terms and conditions as per Himachal Pradesh Electricity Regulatory Commission (Promotion of Generation from the Renewable Energy Sources and Terms and Conditions for Tariff Determination) Regulations, 2012, shall be applicable in the same manner as applicable to the small hydro projects covered in the said Regulations:
>
> Provided that for the purpose of this Regulation, the date of signing the first Implementation Agreement of the small hydro projects shall only be taken into

account and the Supplementary Agreement(s), if any, executed thereafter due to any reason, but other than due to enhancement of capacity, whatsoever, viz for extension of the scheduled completion date, shall not be considered:

Provided further that in cases where the Power Purchase Agreements have already been approved by the Commission, before the date of commencement of these Regulations, the tariffs for such small hydro projects shall be governed as per provisions of power purchase agreements and relevant Regulations:

Provided further that if a Supplementary Implementation Agreement is executed on or after 1st April, 2017 to provide for enhancement of capacity, the tariff and other terms and conditions as per regulation 14 and regulations 20 to 41 shall be applicable only for the incremental energy generation as per the provisions under regulations 17.

5.1.3 The CERC Regulations provide for indexation of normative capital cost as well as O&M charges on yearly basis within the control period. The existing regulations of HPERC also envisage review of the generic levellised tariff for the SHPs after a control period. Accordingly the generic levellised tariff determined for the SHPs is applicable for the entire tariff period of 40 years to all the PPAs signed for such projects. For the sake of continuity and to avoid distortions and also in view of the position explained in preceding paragraph 5.1.3, the Commission proposes to keep these norms unchanged during the control period.

5.2 Power Purchase Agreement

The Commission would like to bring out, in line with the Government policies and in order to impart clarity of applicability of tariff to all the stakeholders, that the determination of generic tariff by the Commission neither binds the HPSEBL to procure power from the IPPs nor compels IPPs to sell power to the HPSEBL. As per the Government Policy, it is now not binding for the HPSEBL to purchase power from the IPP. However, as per the State Hydro Policy, 2006 (amended on 04.03.2014) the HPSEBL will buy power from SHPs upto 2.00 MW if developer so choose. Accordingly, the generator and the licensee shall need to arrive at mutual understanding about sale/purchase power and also about the PPA related issues including the tariff option (Generic Levellised or Project Specific Levellised) before filing joint petition with the Commission for approval of the PPA.

5.3 Control Period or Review Period

5.3.1 The control period refers to the duration for which the norms and various benchmarked cost parameters shall remain valid. The

control/review period varies from State to State and for better appreciation, the three years control period has been specified by the CERC in its RE Regulations, 2017.

5.3.2 The existing HPERC RE Regulations have a control period of more than 5 years (i.e. w.e.f 18.12.2012 to 30.09.2017) for SHPs. The Commission proposes to adopt a control period for next RE framework upto 31.03.2020, to coincide with the control period adopted by the CERC.

5.4 Tariff Period/Useful life

5.4.1 The tariff period as per the CERC RE Regulations, 2017 is as under:-

S. No.	Renewable Energy projects	Tariff Period (Years)	Useful Life (Years)
1	Biomass	20	20
2	Non-fossil fuel Co-generation	20	20
3	Small Hydro (Below 5 MW)	35	35
4	Small Hydro (5 to 25 MW)	35	35
5	Solar PV and Solar Thermal	25	25
6	Wind Energy	25	25
7	Biomass gasifier	20	20
8	Biogas	20	20
9	Municipal Solid waste	20	20

5.4.2 The Tariff Period as well as the Useful Life for SHPs in Himachal Pradesh as per existing regulatory framework is 40 years. The period of 40 years has been considered primarily on account of Policy of GoHP, wherein the Implementation Agreements with the IPPs are signed for 40 years. Moreover, the experience in the Hydro Sector in H.P. also corroborates the fact that the Useful Life of the Hydro Project goes beyond a span of 40 years. Therefore, the Commission proposes to retain the Tariff Period/Useful Life of small hydro projects as 40 years in order to be consistent with the GoHP Policy. For other renewable energy technologies sources technologies, to the extent these are relevant to the State in present scenario the Commission proposes to adopt the useful life as per the CERC's RE Regulations, 2017, as sufficient State specific data is not available for other renewable technologies and the Commission finds no reason to deviate. However, as stated above also the tariff period for such other renewable technologies is not being specified and only enabling

provision is being incorporated to the effect that the Commission may fix the same by order as per the provisions under Regulation 17.

5.5 Tariff design

5.5.1 The CERC has provided for two types of tariff under RE Regulations, 2017. A single part tariff has been followed for RE sources without any fuel cost component. In cases where fuel cost component is also involved, single part tariff with two components, (i.e. a fixed cost component and the second component linked to fuel cost) has been followed. Also the CERC has followed the levellised tariff approach.

5.5.2 In the existing regulations, the Commission has followed the single part levellised tariff approach for SHPs. The Commission also proposes to retain the current approach as it feels that this is most appropriate and balanced, particularly when this has also been followed by the CERC.

5.5.3 The proposed Regulations, therefore, envisage that -

(i) Renewable energy technologies with single part tariff shall consist of the following fixed cost components:-
   (a) Return on equity;
   (b) Interest on loan capital
   (c) Depreciation
   (d) Interest on working capital;
   (e) Operation and maintenance expenses;

(ii) In case of the renewable energy technologies having fuel cost component, like biomass power projects and non-fossil fuel based cogeneration etc., single part tariff with two components i.e. fixed cost component and fuel cost component, shall be determined.

(iii) For the purpose of levellised tariff computation, the discount factor equivalent to Post Tax weighted average cost of capital shall be considered.

5.6 Tariff options – generic or project specific

5.6.1 The options for tariff is one of the crucial aspect wherein interest of the project developers as well as utility needs to be protected. Both the project developers as well the utility need to have certainty in respect of adequate cash flows and reasonable cost liability respectively. Different SERCs have adopted different approaches for tariff design.

5.6.2 The CERC RE Regulations, 2017 have specified generic levellised tariff for period of 35 years for SHPs.

5.6.3 The Commission proposes to retain the option for project specific tariff on the pattern of RE Regulations, 2012. However, such option with regard to project specific tariff shall not be available to the SHPs covered under the special provisions for SHPs as mentioned in para-5.

5.7 Generic levellised tariff

The Commission proposes that generic levellised tariff shall be determined by the Commission for each category of SHPs at the beginning of the control period based on the norms specified in these regulations, so as to provide regulatory certainty and clarity to the developers. The generic levellised tariff opted by the parties shall not be trued up for any cost parameters except for the specific provision proposed for review of tariff. Therefore, any shortfall or gain due to the performance shall have to be borne/retained by the generator.

5.8 Review of Tariff

In order to have certainty about the tariff for both the parties to the PPA, it has been proposed in the Regulations that the generic levellised or the project specific levellised tariff, as the case may be and determined in accordance with the Regulations shall be firm and shall not be subject to any review except on limited accounts enlisted in Regulation 19 of the proposed Regulations. Mechanism for automatic adjustment of tariff on account of the changes in the rate of free energy within certain prescribed limits has also been given in draft regulation. The tariff shall however not be subject to review on any other account excepting those specifically provided in the proposed Regulations.

B. Financial Principles

5.9 The financial parameters such as capital cost, subsidy or incentive or grant/budgetary support by the Central/State government, debt equity ratio, loan and finance charges, depreciation, return on equity,

interest on working capital, operation & maintenance expenses, taxes and duties, rebate on timely payment and late payment surcharge have been considered and the benchmarks have been proposed in light of the State specific conditions, norms as fixed by the CERC in its RE Regulations, 2017 and also keeping in view the norms set by the Commission in its tariff RE Regulations, 2012.

5.10 Capital Cost

The norms for the capital cost shall be inclusive of all the expenses required to be incurred as per prudent practices upto the commissioning of the project, including, but not limited to, the cost of capital works, land, preparation of Detailed Project Report, Survey and Investigation, plant and machinery, civil works, erection and commissioning, financing and interest during construction, land acquisition, resettlement and rehabilitation, contribution towards local area development fund, statutory and non-statutory clearances and evacuation infrastructure up to inter-connection point (also including interconnection facilities), insurance charges against the risks during construction stage etc and also all taxes, levies and duties on all such components/works capital works. It is also proposed to retain the existing provisions to the effect that any cost pertaining to allotment of project including upfront premium or the penalty or fee imposed by the H.P. Government while granting extension and any penalty or fee or charges imposed in accordance with the Power Purchase Agreement executed with Licensee, shall not be part of the capital cost.

5.11 **Capital Subsidy or Incentive or grant/budgetary support by Central/ State Government**

5.11.1 The CERC has made a provision in its RE Regulations, 2017 that it shall take into consideration any incentive or subsidy offered by the Central or State Government, including accelerated depreciation benefit if availed by the generating company, for the renewable energy power plants while determining the tariff.

5.11.2 **Capital subsidies for Small Hydro Projects:-**

The Commission also retains its view that the Capital Subsidy should be taken into consideration for the tariff determination if the policy continues. However, Commission finds it appropriate to adjust 80% of the available subsidy instead of 90% provision of the existing Regulations. In view of the above, it is proposed that 80% of the capital subsidy available to project as per the applicable scheme of MNRE/State Government shall be considered for tariff determination. The other provisions relating to subsidy under the existing Regulations are however proposed to be retained. However, for determination of generic levellised tariff for a category of projects particularly SHPs, since it may not be feasible to adopt a uniform percentage for all the capacities, the Commission may consider such value(s) of the subsidy available for that category of projects, as it may be deemed fit. Moreover, any project specific grant or budgetary support through Government will be considered fully. The capital Subsidy under the schemes of the Central or State Government or its agencies, shall be ordinarily adjusted against the principal component of the loan amount as additional reduction, apart from the normal payment. Where the Central or State Government has notified any interest subsidy for any renewable based generating station, such interest subsidy shall be adjusted against the interest component of the debt. Grant or budgetary support, if availed, shall also be adjusted in the similar manner.

5.11.3 The CERC RE Regulations, 2017 provide that the accelerated depreciation benefit, if availed by the generator shall be taken into consideration while fixing the tariff. Accordingly, the CERC has also worked out the impact of accelerated depreciation on the levellised tariff for RE technologies other than SHPs vide its RE Tariff Order dated 31.05.2017. The Commission, based on the feedback received during the tenure of existing Regulations about the difficulties faced by the stakeholders in implementing such a provisions, find it

appropriate to delink the tariff from the Accelerated Depreciation benefit. As such the Commission proposes to determine only one tariff which shall be applicable irrespective of whether any AD benefit is available to the developer and if available whether he avails the same. This shall remove the tariff uncertainties and shall also provide clarity to the stakeholders.

5.11.4 The following provisions of existing Regulations are also proposed to be retained:

(a) Where the Central Government or the State Government has notified any Generation Based Incentive (GBI) Scheme for a particular kind of renewable technology, such technology based generating station shall be assumed to have availed the benefit of such a scheme and their tariffs shall automatically be treated as reduced by the amount of generation based incentive (GBI) per unit for the period during which such incentive remains applicable.

(b) The amount of subsidy shall be considered for each renewable source as per the applicable policy of the MNRE/ State Govt. If the amount of subsidy is changed by the MNRE/State Government, then the Commission may carry out necessary corrections in tariffs in accordance with regulation 20 of the proposed Regulations provided that reduction in subsidy amount is not due to the inefficiency of the generator.

5.12 Debt Equity Ratio

5.12.1 The Tariff Policy notified by the Central Government on 28.01.2016 stipulates the debt equity ratio of 70:30 for financing all future projects.

5.12.2 **Equity Norms**

The Commission has followed similar principles in the existing Regulations and proposes to retain the same. Further, on the pattern of existing Regulations, for RE projects where equity employed is more than 30% (in case of project specific tariff determination), the amount of equity for the purpose for determining the tariff shall be limited to 30% only, whereas, in case the equity employed is less than 30%, the actual equity employed shall be considered. Any resources available to generator from its share premium account or from its internal revenues that are used to fund the equity component of the project shall also be treated as equity. The Debt Equity Ratio of 70:30 will be taken for generic levellised tariff and for project specific levellised tariff, if the equity actually

deployed is in excess of 30% of the capital cost, equity in excess or 30% shall be treated as normative loan and if it is less than 30% actual equity contribution will be considered. The equity invested in foreign currency shall be designated in Indian rupees on the date of each investment. Any incentive or subsidy and/or grant/budgetary support available from the MNRE/State Government shall be considered to have been utilized towards pre-payment of debt leaving balance loan to be considered for determination of tariff.

5.13 Loan and Finance Charges

5.13.1 **Loan Tenure**

HPERC in the existing regulatory framework has adopted a loan repayment period of 12 years, inclusive of moratorium period and capital subsidy admissible to the renewable energy generator shall normally be considered for reduction of loan period.

5.13.2 The CERC in its RE Regulations, 2017 has now changed the loan tenure from 12 years to 13 years on the premise that RE technologies have achieved the maturity level and are able to arrange loans for longer duration of 13 years.

5.13.3 Keeping in view the above, the Commission proposes to provide for 13 years loan tenure. The provision appearing in the existing regulations to the effect that the Capital subsidy received by the renewable energy generator shall normally be considered for the reduction of Loan period and such reduced Loan tenure shall be taken for the purpose of tariff determination, is however, proposed to be retained.

5.14 Interest rate

The Commission proposes to follow the provisions made by CERC in this regard in their Regulations. However, in order to provide more clarity it has been proposed that the average SBI MCLR (one year tenor) prevailing during the last available six months (6), prior to respective date(s) from which such tariff(s) are to be made applicable shall be considered. Further, it is also proposed that in case where the project specific tariff is to be determined, such average rate of

SBI, as prevalent during the respective periods in which the loan has been availed, shall be taken into account on weighted average basis and the rate so worked out on this basis or the weighted average rate at which the loan has been availed, whichever is lower, shall be considered.

5.15 Depreciation

5.15.1 The Central Commission holds the view that since most of the RE technologies have achieved maturity level, it would be possible for the developers to secure loan from lenders/financial institution for longer duration of say 12 years or more. Following the 'Differential Depreciation Approach over the loan tenure and beyond loan tenure over useful life computed on 'Straight Line Method', the Central Commission adopted a depreciation rate of 5.28% per annum for first 13 years and remaining depreciation to be spread during remaining useful life of the RE projects considering the salvage value of the project as 10% of project cost.

5.15.2 The Commission finds it prudent to follow the CERC methodology in principle and accordingly proposes to provide for annual depreciation @ 5.28 % of the capital cost till such time the requirement for repayment of loan component of the capital cost, after adjusting the amount of subsidy, is fully provided and the remaining depreciation shall be spread over the residual useful life of the project. Depreciation shall be chargeable from the first year in which the first synchronization of first unit takes place. In case of operation of the asset for part of the year, depreciation shall be charged on pro rata basis for the purpose of project specific tariff determination.

5.16 Return on Equity

5.16.1 The Central Commission while fixing the RoE for control period (FY 2017-2020) held the view that Minimum Alternate Tax/Corporate Tax are expected to be lowered and the effective tax rate is lower than the Corporate Tax rate. CERC has accordingly made a provision that return on equity shall be grossed up by Minimum Alternate Tax

prevailing as on 1st April of the previous financial year for the entire useful life of the project.

5.16.2 The RoE specified by CERC in its RE Regulations, 2017 as 14% normative RoE on post tax basis and same has been worked out as 17.56% as pre tax RoE by grossing up with prevailing Minimum Alternative Tax as on 1st April to previous year for entire useful life of the project as per RE Tariff Order dated 31.05.2017.

5.16.3 The CERC and this Commission, under thier respective RE Regulations, 2012, considered the normative return on equity 20% per annum for first 10 years & 24% per annum from 11th years onwards and 19% per annum for first 10 years & 22% per annum from 11th years onwards. The weighted average basis RoE provided by the Commission was thus lower then that provided by the CERC by about 1.75% in case of SHPs. The Commission, however, now proposes to reduce this gap substantially and proposes to provide return of equity on pre tax basis as 17%. The proposed rate of return shall in fact effectively, on average basis, may be higher than that provided by CERC in view of the fact that the Commission also proposes to do away with the provision with regard to adjustment of benefit on account of accelerated depreciation.

5.17 Interest on Working Capital

The Commission proposes to follow the provisions relating to working capital requirement, as specified by CERC in their RE Regulations, 2017. However, in order to provide more clarity, it is also proposes that in case where the project specific tariff is to be determined, such average rate for the last available six months prior to the date from which the project specific tariff is to be made applicable, shall be considered. The formulation relating to quantification of the working capital are also provided to be retained. Accordingly, the provision as incorporated in the aforesaid Regulations is reproduced as below:

(1) The working capital requirement in respect of wind energy projects, small hydro power, solar PV and solar thermal projects shall be computed in accordance with the following: -

(a) operation and maintenance expenses for one month;

(b) receivables equivalent to 2 (two) months of energy charges for sale of electricity calculated on the net saleable energy corresponding to the CUF considered for tariff determination on normative basis;

(c) maintenance spare @ 15% of operation and maintenance expenses.

(2) The working capital in respect of biomass power projects with Rankin Cycle technologies, biomass gasifier based power projects, non-fossil fuel based cogeneration projects, Municipal Solid Waste projects and Refused Derived Fuel project shall be computed in accordance with the following.-

(a) fuel cost for four months equivalent to normative PLF.

(b) operation and maintenance expenses for one month;

(c) receivables equivalent to 2 (two) months of energy charges (fixed and variable charges) for sale of electricity calculated on the net saleable design energy on normative basis;

(d) maintenance spare @ 15% of operation and maintenance expenses.

(3) In case of the renewable technologies not covered in sub-para (1) and (2) above, the Commission may adopt such norms, as it may consider appropriate, at the time of determination of tariff.

(4) Interest on Working Capital shall be at interest rate equivalent to the normative interest rate of three hundred (300) basis points above the average State Bank of India MCLR (One Year Tenor) prevalent during the last available six months, prior to the respective date(s) from which the generic tariff(s) are to be made applicable.

5.18 Operation and maintenance expenses

5.18.1 Operation and Maintenance expenses, as per the existing Regulations as well as that proposed in the draft regulations means the expenditure incurred on operation and maintenance of the project, or part thereof, and includes, without limitation, the expenditure on manpower, establishment (including employees expense, administrative and general expenses), repairs, spares, consumables, insurance and overheads as well as the taxes, duties and other levies on any or all such activities.

5.18.2 Normative O&M expenses proposed in respect of SHPs for the control period have been depicted in para 6.7. The normative O&M expenses shall be escalated at the rate of 5.72% per annum over the Tariff Period. This rate of annual escalation over the tariff period is in line with the provision made by the CERC in its RE Regulations, 2017.

5.19 Rebate

The rebate on payment has been proposed in line with the CERC RE Regulations, 2017 which is as under:-

(1) For payment of bills of the generating company through letter of credit, a rebate of 2% shall be allowed.

(2) Where payments are made other than through letter of credit within a period of one month of presentation of bills by the generating company, a rebate of 1% shall be allowed.

5.20 Late payment surcharge

The late payment surcharge has also been proposed in line with CERC RE Regulations, 2017 which provide that in case the payment of any bill for charges payable under these regulations is delayed beyond a period of 60 days from the date of billing, a late payment surcharge at the simple interest rate of 1.25% per month shall be levied by the generating company.

6. Technology Specific Parameters of Small Hydro Project

Keeping in view the incentive extended to the Himachali entrepreneurs in the GoHP policy, the MNRE incentives to Micro Hydro developers, the cost difference between the projects of various categories and categorization of projects done by the GoHP, the Commission proposes to retain the categorization made under RE Regulations, 2012, as under:-

Category	Capacity
(i)	Above 100 kW to 2 MW
(ii)	Above 2 MW to 5 MW
(iii)	Above 5 MW to 25 MW

6.2 Capital Cost:

6.2.1 The normative capital cost for small hydro projects specified in the RE Regulations, 2012 is given in the table below:-

Sr. No.	Category of small hydro project	Rupees in Lac per MW
(i)	Above 100 kW to 2 MW capacity	780
(ii)	Above 2 MW to 5 MW capacity	750
(iii)	Above 5 MW to 25 MW capacity	700

6.2.2 The CERC in its RE Regulations, 2017, fixed the capital cost for SHPs (of hilly States) as under:-

Sr. No.	**Category of small hydro project**	**Rupees in lacs per MW as per draft Regulations**	**Rupees in Lac per MW as per final Regulations.**
(i)	Less than 5 MW	830	1000
(ii)	5 MW and upto 25 MW	755	900

6.2.3 The Directorate of Energy has submitted the following data as per the TEC accorded for different categories of SHPs:-

Sr. No.	Name of Project	Capacity in MW	Capital Cost in lac.	Price level	Cost per MW in Cr.
	Upto 2 MW				
1	Bhardwaj	1	896.00	Nov-14	8.96
2	Dhawas	1	787.36	Mar-14	7.87
3	Rallah	1.5	1214.37	Mar-13	8.09
4	Thung	1	937.00	Nov-12	9.37
5	Joli	1.4	1155.00	Mar-15	8.25
6	Bithri	0.4	364.00	Feb-17	9.1
				Average Cost	**8.61**
	Above 2 MW and upto 5 MW capacity				
1	Ursu	4	2805.00	Aug-12	7.01
2	Joiner	5	4435.00	Apr-17	8.87
3	Gaj-III	5	3746.00	Apr-14	7.49
4	Dukrund (R)	3	2922.00	Jun -15	9.74
5	Nogli Last	3	2582.00	Apr-16	8.60
6	Dera	5	4944.00	Jan-16	9.88
				Average cost	**8.60**
	Above 5 MW and upto 25 MW				
1	Bharmour –II	21	16750.00	Aug-14	7.97
2	Raura	12	9491.00	Mar-15	7.90
3	Salun	9	7865.00	Jun-15	8.78
4	Upper Nanti	13.5	11448.14	Feb-15	8.40
5	Umli	10	9962.00	Dec-16	9.96
6	Melan	9.6	8061.02	Mar-17	8.39
				Average cost	**8.57**

6.2.4. The Commission feels that the capital cost may vary from State to State even within the hilly States. The Commission feels that the normative cost adopted by the CERC in their final Regulation may not truly reflect the realistic cost in relation to the SHPs located in Himachal Pradesh which has been a pioneer in the development of the SHPs and has better accessibility and infrastructure as compare to other hilly states. In fact, the normative cost considered in existing Regulations was also lower than that followed by CERC in their RE Regulations, 2012. Accordingly, the

capital cost as approved in TEC of various categories of SHPs was analyzed alongwith the benchmarks capital cost considered by the CERC in its draft and final RE Regulations, 2017, to arrive at the benchmarks. However, the Commission also feels that capital cost norm should be reasonable to encourage investment in the renewables in the State. The Commission, after taking into account the various relevant factors, including the normative cost incorporated in RE Regulations, 2012, data provided by the Directorate of Energy, normal differentiation in the category-wise cost due to economy of scale considerations and added advantages in Himachal Pradesh as compared to other hilly States, proposes the normative capital cost for SHPs not covered under special provisions as follows:

Sr. No.	Category of small hydro project	Rupees in Lac per MW
(i)	Above 100 kW to 2 MW capacity	860
(ii)	Above 2 MW to 5 MW capacity	830
(iii)	Above 5 MW to 25 MW capacity	780

The above normative capital cost shall remain fixed during the control period. The proposed capital cost of each SHPs categories is higher as Rs. 80 Lacs/MW compared to the capital cost fixed in the RE Regulations, 2012.

6.3 Capacity Utilisation Factor (CUF)

6.3.1 The CERC has specified that for the SHPs located in H.P. Uttarakhand and North Eastern States, the CUF shall be 45% and the same is net of free power, if any, to the Home State. Tariff has also been worked out without any deduction on account of free energy from the energy quantum corresponding to CUF of 45%.

6.3.2 In case of H.P., different rates of free power are applicable for the projects of different capacities and also for the projects allotted in various time frames. The Commission therefore proposes to adopt CUF inclusive of the free power on the pattern of existing Regulations and shall adjust the free power for various categories of projects based on the free power structure actually applicable to such

projects. The Commission has also proposed a mechanism in Regulation 36 of the draft Regulations for the adjustment of tariff in case the permissible free power varies from that factored into the levellised tariff. The CUF to be made applicable on the proposed pattern shall, therefore, essentially have to be higher than the CUF, net of free power, as adopted by the CERC. The energy quantum worked out at the proposed CUF shall however also be reduced to account for the auxiliary consumption, transformation losses and the electrical losses in project line(s).

6.3.3 The Commission has also taken note of the fact the SHPs in the State are purely run-of-river projects and there is hardly any pondage available in these projects. As such, the sensitivity studies based on incremental energy benefits and the incremental costs should be the main criteria for deciding the capacity of such projects where peaking benefits are not available. The projects with unduly low CUF are likely to not only enhance the per unit cost of generation beyond acceptable economical limits but also burden the infrastructure for evacuation of power in an uneven manner which can lead to criticalities in certain cases and may require additional investments on evacuation system.

6.3.4 In view of above, the Commission feels that for the purposes of determination of levellised tariff for sale of energy to the licensee on long term basis, the CUF of such projects, which have hardly any peaking benefits, should be reasonably high and should not be less than 55% so that the tariff remains within such limits as are considered reasonable by the licensee to purchase power from such projects. The Commission also feels that adoption of a lower CUF, which would tend to increase the tariff, may discourage the licensee to purchase power from such projects as now it is not binding for either of parties to sell/purchase power from any category of such projects. The Commission feels that quite a few generators find it more convenient to sell power to the licensee for various reasons. The Commission does not want to deprive such generators of the

market presently available to them in shape of long term sales to the licensee, by increasing the tariff to such limits which may be unattractive for the licensee. In case of the SHPs having lower CUF, the developer has to study the overall economics and viability on case specific basis. For example, a project with a lower CUF may still be viable for developer in case developer can economise on the capital costs due to project specific features or if he can find a market (like Open Access and REC mechanism etc.) which may fetch him higher returns.

6.3.5 In view of above, the Commission proposes a CUF of 55% for SHPs. This normative CUF is inclusive of free power, if any, to the State subject to maximum of 13% in accordance with National Hydro Policy and energy losses in the project lines and also duly takes into account mandatory release of water prescribed by Government and also rights of the people for drinking and irrigation needs. The free power(in percentage) actually provided, but limited to 13% for any part of the tariff period and also subject to the stipulations proposed under Regulation 35, shall be allowed as a pass-through component and shown separately in the energy bills. The proposed CUF takes into account the impact of mandatory release of water/ discharge and any change(s) in such mandatory release of water discharge shall not be considered for the review of tariff.

6.4 Free Power

6.4.1 In accordance with the National Hydro Policy and Tariff Policy, the free power to be provided to the home State is upto 13% which includes 12% the free power to the home State and 1% additional free power is earmarked for local area development fund. Any free power over and above 13% would be met by the developers from their own sources and would not be a pass through in tariff.

6.4.2 Keeping in view the above, including the provisions of National Hydro Policy, the Commission proposes to retain the existing provisions

relating to the limits upto which free power shall be allowed as a pass through in the tariff and also provide for a mechanism for automatic adjustment of tariff in case of variation in the permissible free power within the limits prescribed under National Hydro/Tariff Policy. An enabling provision has also been made under Regulation 20 to provide for review of tariff in case of any revision of the said limit of 13% as per the National Hydro/Tariff Policy. The details of provisions are given in Regulations 20 and 36 of the proposed Regulations.

6.5 Capacity enhancement:

The Capacity enhancement is an issue which is typical to Himachal Pradesh, where the IPPs, after the allotment of project seek approval of Government for upward revision of allotted capacity which are granted at different stages i.e. either before signing the PPA or after signing the PPA. This issue has not been discussed by any SERC/ CERC. Therefore, the Commission in order to address the different scenarios so created on account of capacity enhancement, proposes following framework in the Regulation 17 of the draft Regulations:-

> (1) Where, after the allotment of the original project, the capacity of a small hydro project is enhanced, with the approval of the State Government, the tariff for sale of net saleable energy from such projects, shall be governed by the relevant provisions of sub-regulations (2) to (7), as applicable.
>
> (2) Where the Implementation Agreement for the original capacity as well as the Supplementary Implementation Agreement for the enhanced capacity have been signed by the concerned developer with the State Government on or before 31st March, 2017, the relevant provisions of Himachal Pradesh Electricity Regulatory Commission (Promotion of Generation from the Renewable Energy Sources and Terms and Conditions for Tariff Determination) Regulations, 2012 and of the power purchase agreements if signed shall be applicable irrespective of the dates of signing the power purchase agreements for the original capacity and the enhanced capacity.
>
> (3) Where the Implementation Agreement for the original capacity has been signed by the concerned developer with the State Government on or before 31st March, 2017, but the Supplementary Implementation Agreement for the enhancement of the capacity is signed on or after 1st April, 2017, and no power purchase agreement for the enhanced capacity has been approved by the Commission before the commencement of these Regulations, a composite rate shall be worked out, on normative basis lines irrespective of the dates of singing the power purchase agreements for the original capacity and enhanced capacity, as follows:-

(i) the tariff applicable for the original capacity as per the provisions of Himachal Pradesh Electricity Regulatory Commission (Promotion of Generation from the Renewable Energy Sources and Terms and Conditions for Tariff Determination) Regulations, 2012 shall be considered for the energy generation corresponding to 75% dependable year as per the Detailed Project Report for the original capacity, irrespective of the date of signing of the power purchase agreement for the original capacity:

Provided that if the power purchase agreement for the original capacity has already been approved by the Commission, or executed by the parties, before the commencement of these Regulations, the tariff and associated terms and conditions, as per such power purchase agreement shall be considered.

(ii) for the incremental energy generation due to enhancement of capacity i.e. the energy generation which is expected to take place in the 75% dependable year as per the detail project report for the enhanced capacity, the generic levellised tariff determined as per the provision under regulation 12 to 14 and regulations 20 to 41 of these Regulations for the category of small hydro projects in which the enhanced capacity falls, shall be considered:

Provided further that the tariffs considered for the respective quantums energy of as per clauses (i) and (ii) of this sub-regulation shall be governed by the associated terms and conditions as per the respective power purchase agreements and relevant Regulations and in case of any adjustment in any of these tariffs, the adjustment(s) shall be applicable only for the respective energy quantums as per clauses (i) and (ii) of this sub-regulation under this sub-regulation;

Provided further that the composite rate for the entire saleable energy shall, in no case, be higher than the rate applicable to the small hydro project category under which the enhanced capacity falls:

Provided further that in cases where the incremental capacity is commissioned in phases, the tariff(s) during such interim stages shall be computed based on such incremental energy generation corresponding to the additional capacity actually installed from time to time.

(4) Where the Implementation Agreement for the original capacity as well as the Supplementary Agreement for the enhanced capacity are signed on or after 1st April, 2017 and the project has not commenced its operation before commencement of these Regulations, the following provisions shall be applicable:

(i) Where neither the Commission has approved, nor the parties have executed, the power purchase agreement for the original capacity, the enhanced capacity shall be taken into consideration while approving or executing the power purchase agreement, as the case may be.

(ii) Where the power purchase agreement for the original capacity of a small hydro project, covered in these Regulations, has already been approved after the commencement of these Regulations, and executed thereafter and such power purchase agreement provides for generic levellised tariff in accordance with provisions under regulation 14 and regulations 20 to 41

the generic levellised tariff as well as other associated terms and conditions as per the provision under regulation 14 and regulations 20 to 41 applicable for the relevant category of small hydro projects under which the enhanced capacity of the small hydro projects falls shall be applicable for the entire capacity:

Provided that if such power purchase agreement for the original capacity contains provision for determination of project specific levellised tariff, the Commission may, on application from both the parties, determine the project specific levellised tariff by taking into account the norms applicable for the category of small hydro projects in which the enhanced capacity of the project falls.

(5) Where the power purchase agreement has been executed for the original capacity and the renewable energy generator sells energy from the additional capacity, under the relevant Regulations governing REC mechanism, to the distribution licensee with a provision to sell such energy to the licensee for the balance part of the tariff period after exit from the REC mechanism, the following provisions shall apply :-

(i) the tariff for the entire net saleable energy for the residual part of the tariff period shall be fixed/determined in accordance with sub-regulation (2), (3) or (4), as the case may be;

(ii) during the interim period when the energy is sold partly under the power purchase agreement for the original capacity and partly through the REC mechanism-

(a) unless provided otherwise in the power purchase agreement for the original capacity, the tariff applicable for the original capacity shall not be subject to any adjustment, on account of variation in free power, under sub-regulation (6),

(b) the total net saleable energy shall be apportioned in a firm ratio on the basis of original capacity and the enhanced capacity.

(6) In the cases covered by sub-regulations (3), (4) and clause (i) of sub-regulation (5), the tariff shall be adjusted on account of variation in the free power in accordance with sub- regulations (2) and (3) of regulation 36:

Provided that in case capacity enhancement is approved by the State Government, the percentage rate of free power undergoes change due to-

(i) any change in general policy during the intervening period between the dates of execution of Implementation Agreement for the original capacity and the Supplementary Implementation Agreement for the enhanced capacity, e.g. on account of Local Area Development, change in basic rates, change in the category of the project based on the capacity etc; or

(ii) additional free power specifically for enhancement of capacity;

the variations in free power on account of item (i) shall only be considered for adjustment in tariff as per sub-regulations (2) and (3) of regulation 36, but additional free power for capacity enhancement as per item (ii) shall not be considered for tariff adjustment.

(7) Where the parties fail to arrive at an understanding for sale/ purchase of energy in the manner specified in sub-regulations (3) to (6), the right of the distribution licensee for the net saleable energy as per the original power purchase agreement, duly taking into account the data contained in the Detailed Project Report for the original capacity and power generation on real time basis, shall remain protected and the renewable energy

generator shall be eligible to dispose off only the net incremental saleable energy (i.e. after duly adjusting the licensee's first right as aforesaid and the total quantum of free energy for the enhanced capacity of the project):

Provided that in such a case, the renewable energy generator shall also arrive at an understanding with the distribution licensee about the modalities for energy accounting on real time basis as well as on monthly and annual basis and based on the same, the renewable energy generator shall also make the distribution licensee a party to any such agreement for disposal of such incremental energy:

Provided further that in case the licensee and the renewable energy generator mutually agree to purchase/sell the net incremental saleable energy at a specific rate and jointly make an application to the Commission for determination of such rate, the Commission may determine the specific levellised rate for such net incremental saleable energy as per the provisions of this sub-regulation and by taking into account the provisions of the regulations/practices prevalent in the time frame during which the capacity enhancement was permitted by the State Government.

(8) Where, after the Commission has approved the power purchase agreement for sale of power from a project based on a renewable technology other than small hydro project, the capacity of the project is enhanced, the tariff for sale of net saleable energy from such project shall be governed by such terms and conditions as may be included by the Commission, to address such situations, in the terms and conditions fixed by it under regulation 18.

6.6 Auxiliary Consumption

The norms for auxiliary consumption in SHPs has been more or less standardized. The CERC as well as this Commission have followed the similar norms. The Commission proposes to retain the normative aggregated level of auxiliary consumption and transformation loss as 1% of gross generation.

6.7 Operation and Maintenance (O&M)

6.7.1 The following normative O&M expenses for different categories of SHPs has been fixed under RE Regulations, 2012:-

Sr. No.	Category of Project	Annual O&M expenses Rupees in Lac per MW
(i)	Above 100 kW to 2 MW capacity	25
(ii)	Above 2 MW to 5 MW capacity	22
(iii)	Above 5 MW to 25 MW capacity	18

6.7.2 The CERC in its RE Regulations, 2017, fixed the normative O&M expenses for SHPs (of hilly States) as under:-

Sr. No.	Category of small hydro project	Rupees in lacs per MW as per draft Regulations	Rupees in Lac per MW as per final Regulations.
(i)	Less than 5 MW	33.02	36
(ii)	5 MW and upto 25 MW	23.78	27

6.7.3 The Commission finds it appropriate to fix normative O&M expenses at a level equivalent the same arrived at by escalating the norms specified by it in the RE Regulations, 2012 @ 5.72 % per annum over a period of five years (2012-2017). The Commission after taking into account the various relevant factors proposes to specify the normative O&M cost as under:-

Sr. No.	Category of Project	Annual O&M expenses Rupees in Lac per MW
(i)	Above 100 kW to 2 MW capacity	33
(ii)	Above 2 MW to 5 MW capacity	29
(iii)	Above 5 MW to 25 MW capacity	24

However, the normative O&M expenses shall be accelerated @ 5.72 per annum

6.8 Energy losses

The following provisions for energy losses on the project lines of SHPs, as already appearing in the existing Regulations of 2012, are proposed to be retained:-

(1) The normative energy losses in the project line(s) shall be 0.7% of the net generation (i.e. after deducting auxiliary consumption and transformation losses, on normative basis, from the gross generation).

(2) For the project specific levellised tariff, the percentage losses worked out on the basis of actual length of the project line(s), conductor size and expected power flow shall be taken into consideration.

7. Other Parameters

7.1 Sharing of CDM benefit –

CERC has in their RE Regulations of 2017 provided that in case of renewable energy technologies, the CDM benefit shall be shared in the following manner, namely.-

a) 100% of the gross proceeds on account of CDM benefit to be retained by the project developer in the first year after the date of commercial operation of the generating station;

b) In the second year, the share of the beneficiaries shall be 10% which shall be progressively increased by 10% every year till it reaches 50%, where

after the proceeds shall be shared in equal proportion, by the generating company and the beneficiaries.

The Commission, however, proposes to retain the provisions of the existing Regulations to the extent of their applicability to SHPs according to which the proceeds of carbon credit if any, shall be retained by the SHP developer. However, in case of the RE technologies other than then SHPs the Commission proposes to follow the provisions of CERC Regulations in this regard, keeping in view the fact that the Commission has not proposed any technological specific norms in this Regulations.

7.2 Incentive for generation beyond CUF

The existing framework provides that the tariff for excess generation beyond the normative CUF shall be same as applicable to generation within the normative CUF. In order to incentivise the developers to optimise the generation and also to enable the licensee to avail the purchase of extra generation, the existing provision is proposed to be retained.

.--..-...-.

THE HIMACHAL PRADESH ELECTRICITY REGULATORY COMMISSION, SHIMLA

Notification

Shimla, the 11th August, 2017

No. HPERC/428- WHEREAS an adequate updated regulatory framework sensitive to the requirements of various stakeholders is required to be in place to optimally harness the potential of renewable sources, especially the small hydro, in Himachal Pradesh;

AND WHEREAS the existing Himachal Pradesh Electricity Regulatory Commission (Promotion of Generation from the Renewable Energy Sources and Terms and Conditions for Tariff Determination) Regulations, 2012, specify that the tariff period for small hydro projects is subject to review after 30.09.2017;

NOW, THEREFORE, in exercise of the powers conferred by Sub-section (1) of Section 61, Sub-section(1) of Section 62, clause(a), (b) and (e) of Sub-section (1) of Section 86 and Clause (zd) of Sub-section (2) of Section 181, of the Electricity Act, 2003 (36 of 2003), read with Section 21 of the General Clauses Act,1897 (10 of 1897), and all other powers enabling it in this behalf, the Commission proposes the draft Himachal Pradesh Electricity Regulatory Commission (Promotion of Generation from the Renewable Energy Sources and Terms and Conditions for Tariff Determination) Regulations, 2017 and as required by sub-section (3) of Section 181 of the said Act and rule 3 of the Electricity (Procedure for Previous Publication) Rules, 2005, the draft regulations are hereby published for the information of all the persons likely to be affected thereby; and notice is hereby given that the said draft amendment regulations will be taken into consideration after the expiry of twenty one (21) days from the date of publication of this notification in the Rajpatra, Himachal Pradesh, together with any objections or suggestions which may within the aforesaid period be received in respect thereto.

The texts of the aforesaid draft regulations alongwith explanatory memorandum are also available on the website of the Commission i.e. http.//www.hperc.org.

The objections or suggestions in this behalf should be addressed to the Secretary, Himachal Pradesh Electricity Regulatory Commission, Vidyut Aayog Bhawan, Block No.-37, SDA Complex, Kasumpti-171009 (HP).

DRAFT REGULATIONS

CHAPTER-I

PRELIMINARY

1.Short title and commencement. - (1) These regulations may be called the Himachal Pradesh Electricity Regulatory (Promotion of Generation from the Renewable Energy Sources and Terms and Conditions for Tariff Determination) Regulations, 2017.

(2) These Regulations shall come into force on 1st October, 2017 and unless reviewed earlier or extended by the Commission, shall remain in force till 31st March, 2020.

2. Definitions and Interpretation.-

(1) In these Regulations, unless the context otherwise requires.-

(a) **'Act'** means the Electricity Act, 2003 (36 of 2003);

(b) **'Auxiliary energy consumption'** or 'AUX' in relation to a period in case of a project means the quantum of energy consumed by auxiliary equipment of the generating station, and transformer losses within the generating station and/or switchyard thereof, expressed as a percentage of the sum of gross energy generated at the renewable energy generator terminals of all the units of the generating station;

(c) **'Capital cost'** means the capital cost as defined in regulation 21;

(d) **'Commission'** means the Himachal Pradesh Electricity Regulatory Commission referred to in sub-section (1) of section 82 of the Act;

(e) **'Conduct of Business Regulations'** means the Conduct of Business Regulations specified by the Commission under sub-section (1) of section 92 of the Act;

(f) **'Control period or review period'** means the period during which the norms for determination of tariff specified in these Regulations shall remain valid;

(g) **'Date of commencement of operation of the project'** means the date on which the first unit of the project is synchronized with the grid for the first time;

(h) **'Renewable energy generator'** means the person(s) generating or intending to generate energy, including cogeneration, from renewable energy sources;

(i) **'HIMURJA'** means the Himachal Pradesh Energy Development Agency set up by the State Government for the development of the renewables;

(j) **'Installed capacity'** or **'IC'**, for the purpose of tariff determination, means the summation of the name plate capacities of all the units of the generating station, (reckoned at the renewable energy generator terminals), *o*r the capacity for which the renewable energy generator has executed implementation agreement with the State Government, whichever is higher;

(k) **'Interconnection facilities'** means all the facilities and works which shall include, without limitation, switching equipment, protection control and metering devices etc. and all the associated works (also including civil and electrical works), for the incoming bay(s) for the project line(s) at the interconnecting sub-station of the licensee and shall also include any other works like re-organisation of bays at the interconnecting sub-station and associated civil works as may be required for facilitating the said incoming bays;

(l) **'Inter-connection point'** means the physical touch point where the project line(s) and the allied equipments of the interconnection facilities, forming part of the renewable energy project, are connected, or are to be connected, with the transmission system or

distribution system, in accordance with the interconnection agreement/connectivity agreement or power purchase agreement or the power system master plan/sub-plan of the State Transmission Utility/distribution licensee, as may be relevant;

(m) **'Licensee'** means a person to whom a licence has been granted or deemed to have been granted by the Commission under Section 14 of the Act;

(n) '**MNRE**' means the Ministry of New and Renewable Energy of the Government of India;

(o) **'Municipal Solid Waste**' means and includes commercial and residential waste generated in a municipal area or its adjoining areas in either solid or semi-solid form excluding industrial hazardous wastes but including treated bio-medical wastes;

(p) **'Net saleable energy'** in relation to a period and in respect of a project, means the quantum of energy available for sale from that project at the interconnection point in that period, after allowing auxiliary consumption, transformation losses in the transformers at the generating station and its switchyard, the losses in project line(s) upto the interconnection point and free power, if any, to the State Government**;**

(q) **'Non fossil fuel based co-generation'** means the process in which more than one form of energy (such as steam and electricity) are produced in a sequential manner by use of biomass provided the project may qualify to be a co-generation project if it fulfils the eligibility criteria as specified in clause (d) of regulation 4;

(r) '**Operation and maintenance expenses**' or '**O&M expenses**' means the expenditure incurred on operation and maintenance of the project, or part thereof, and includes, without limitation, the expenditure on manpower, establishment (including employees expense, administrative and general expenses), repairs, spares, consumables, insurance and overheads as well as the taxes, duties and other levies on any or all such activities;

(s) '**Project**' means a RE technology based generating station alongwith generator/step up transformers at power house switchyard, the evacuation system upto the interconnection point, including interconnection facilities, and in the case of a small hydro generating station includes, without limitation, all components of generating facility such as dam, intake water conductor system, power generating station and generating units of the scheme, as apportioned to power generation in addition to the project line(s) and the interconnection facilities;

(t) **'Project line'** means the evacuation infrastructure from the generating station to the interconnecting sub-station of the licensee, to be provided, operated and maintained as a part of the project by the renewable energy generator(s) for the purpose of evacuation of power from the project;

(u) **'Refuse Derived Fuel**' means segregated combustible fraction of solid waste other than chlorinated plastics in the form of pellets or fluff produced by drying, shredding, dehydrating and compacting combustible components of solid waste that can be used as fuel;

(v) '**Renewable energy'** means the grid quality electricity generated from renewable energy sources;

(w) **'Renewable Energy Certificate mechanism' or 'REC mechanism'** means the mechanism devised for the development of market in power from non-conventional energy sources by issuance of transferable and saleable credit certificates under the Central Electricity Regulatory Commission (Terms and Conditions for recognition and issuance of Renewable Energy Certificate for Renewable Energy Generation) Regulations, 2010, and the Himachal Pradesh Electricity Regulatory Commission (Renewable Power Purchase Obligation and its Compliance) Regulations, 2010;

(x) **'Renewable energy sources'** mean renewable sources of energy such as small hydro, wind, solar including its integration with combined cycle, biomass, bio fuel cogeneration, urban or municipal waste including Municipal Solid Waste (MSW) based power projects and Refuse Derived Fuel (RDF) based power projects and other such sources as approved by the MNRE;

(y) '**Small Hydro Project' or 'SHP'** means a hydro power project with a station capacity up to and including 25 MW and shall also include the project line(s) and the Interconnection Facilities.;

(z) '**Solar PV power'** means the Solar Photo Voltaic power project that uses sunlight for direct conversion into electricity through Photo Voltaic technology;

(aa) '**Solar thermal power'** means the solar thermal power project that uses sunlight for direct conversion into electricity through concentrated solar power technology based on either line focus or point focus principle;

(ab) '**Tariff period**' means the period for which tariff is to be determined by the Commission on the basis of norms specified under these Regulations;

(ac) '**Useful Life**' in relation to a project shall mean the useful life of the following duration from the date of commencement of operation of the project, namely:-

(a) Wind energy power project	25 years
(b) Biomas power project, non-fossil fuel based cogeneration	20 years
(c) SHPs	40 years
(d) Municipal Solid Waste (MSW)/ Refuse Derived Fuel (RDF) based power project	20 years
(e) Solar PV/Solar thermal power plant	25 years

(f) any other renewable energy technology approved by the MNRE; as may be fixed under regulation 18

(ad) '**Year**' means a financial year.

(2) The words and expressions used in these Regulations and not defined herein, but defined in the Act or the regulations issued by the Commission, shall have the meanings assigned to them in the Act or in such regulations issued by the Commission; the words and expressions used herein but not specifically defined in these Regulations or in the Act, but defined under any law, passed by a competent Legislature and applicable to the electricity industry in the State, shall have the meanings assigned to them in such law; the words and expressions used herein, but not specifically defined in the Regulations or in the Act or any law passed by a competent Legislature, shall have the meanings as are generally assigned to them in the electricity industry.

3. Scope and extent of application.- (1) Save as provided in sub-regulations (2) and (3), these Regulations shall apply in all cases where tariff, for a project based on renewable sources of energy, is to be determined by the Commission under section 62, read with section 86, of the Act:

Provided that in cases of wind, small hydro projects, biomass power based on Rankine cycle, non-fossil fuel based cogeneration projects, solar PV based power projects, solar thermal based power projects, biomass gasifier based power projects, biogas based power projects, municipal solid waste based power projects and Refuse Derived Fuel based power projects, these regulations shall apply subject to the fulfilment of eligibility criteria specified in regulation 4 of these regulations.

(2) These Regulations shall not apply in the following cases:-

(i) where long term agreement for disposal/use of energy have either already been signed by the renewable energy generator or have been approved by the Commission and the capacity of the project has not been enhanced subsequent to signing/approval of such agreement;

(ii) projects upto 100 kW, for which the Commission may determine tariff through a separate order;

(iii) where the tariff has been determined through transparent process of bidding in accordance with the guidelines issued by the Central Government.

(3)Notwithstanding anything contained in sub-regulations (1) and (2)-

(a) where long term agreements have been executed between the renewable energy generators and the licensee, before the setting up of the Commission, the provisions of such agreements shall continue to be applicable;

b) where, after the setting up of the Commission, the power purchase agreement has been approved by the Commission prior to the

commencement of these regulations, the tariff shall be in accordance with the terms and conditions of such approved power purchase agreement read with the Himachal Pradesh Electricity Regulatory Commission (Power Procurement from Renewable Sources and Cogeneration by Distribution Licensee), Regulations, 2007 and the Himachal Pradesh Electricity Regulatory Commission (Promotion of Generation from the Renewable Energy Sources and Terms and Conditions for Tariff Determination) Regulations, 2012, as may be relevant, irrespective of the date on which such agreement is actually executed.

4. Eligibility Criteria.- A project shall be eligible for being considered to be based on renewable sources of energy on the fulfilment of the following criteria:-

(a) **Wind power project.–** using new wind turbine renewable energy generators.

(b) **Small hydro project.–** located at the sites approved by the State Government or its agency; using new plant and machinery; and the installed power plant capacity to be lower than or equal to 25 MW at single location.

(c) **Biomass power project based on Rankine cycle technology** .- Biomass power projects using new plant and machinery based on Rankine cycle technology and using biomass fuel sources, provided use of fossil fuel is restricted only up to 15% of total fuel consumption on annual basis.

(d) **Non-fossil fuel based co-generation project**.- The project shall qualify to be termed as a non-fossil fuel based co-generation project, if it is using new plant and machinery and is in accordance with the definition and also meets the qualifying requirement outlined below:-

Topping cycle mode of co-generation – Any facility that uses non-fossil fuel input for the power generation and also utilises the thermal energy generated for useful heat application in other industrial activities simultaneously:

Provided that for the co-generation facility to qualify under topping cycle mode, the sum of useful power output and one half the useful thermal output be greater than 45% of the facility's energy consumption, during season.

Explanation. - For the purposes of this clause-

(i) 'Useful power output' is the gross electrical output from the renewable energy generator. There will be an auxiliary consumption in the cogeneration plant itself (e.g. the boiler feed pump and the FD/ID fans). In order to compute the net power output it would be necessary to subtract the auxiliary consumption from the gross output. For simplicity of calculation, the useful power output is defined as the gross electricity (kWh) output from the renewable energy generator.

(ii) 'Useful thermal output' is the useful heat (steam) that is provided to the process by the cogeneration facility.

(iii) 'Energy consumption' of the facility is the useful energy input that is supplied by the fuel (normally biogases or other such biomass fuel).

(iv) 'topping cycle' means a cogeneration process in which thermal energy produces electricity followed by useful heat application in industrial activities**.**

(e) **Solar PV and Solar Thermal based Power Project. –** Based on Technologies approved by the MNRE.

(f) **Biomass Gasifier based Power Project.–** The project shall qualify to be termed as a biomass gasifier based power project, if it is using new plant and machinery and having a grid connected system that uses 100% producer gas engine, coupled with gasifier technologies approved by the MNRE.

(g) **Biogas based Power Project.–** The project shall qualify to be termed as a biogas based power project, if it is using new plant and machinery and having grid connected system that uses 100% biogas fired engine, coupled with biogas technology for co-digesting agriculture residues, manure and other bio-waste as may be approved by the MNRE.

(h) **'Municipal Solid Waste (MSW) based power projects.'**- the project shall qualify to be termed as a Municipal Solid Waste (MSW) based power project, if it is using new plant and machinery based on Rankine cycle technology and using Municipal Solid Waste (MSW) as fuel sources; and

(i) **'Refuse Derived Fuel (RDF) based power projects.'**- the project shall qualify to be termed as a Refuse Derived Fuel (RDF) based power project, if it is using new plant and machinery based on Rankine cycle technology and using Refuse Derived Fuel (RDF) as fuel sources.

CHAPTER-II
PROMOTION OF GENERATION FROM RENEWABLE ENERGY SOURCES

5. Promotion of renewable energy sources. – (1) Any renewable energy generator who does not have an arrangement for disposal/use of energy from his project may, with prior consent of the licensee and approval of the Commission, enter into a power purchase agreement, on long term basis or under the REC mechanism, with the distribution licensee as per the provisions of the relevant applicable regulations, read with regulation 3, or the renewable energy generator may have open access to transmission system and/or distribution system of the licensees, as the case may be, in accordance with the Himachal Pradesh Electricity Regulatory Commission (Grant of Connectivity, Long-term and Medium-term Intra-State Open Access and Related Matters) Regulations, 2010.

(2) The renewable energy generator, to whom connectivity with the transmission or distribution system of the concerned licensee has not already been granted, shall apply for connectivity to the licensee at least 24

months prior to intended date of such connectivity or within such time frame as may be mutually agreed:

Provided that in case of renewable technologies other than small hydro projects, such application may be made at least 12 months prior to the intended date of such connectivity or within such time frame as may be mutually agreed.

(3) The licensee may, on receipt of the application, grant its approval to provide interconnection point as per the power system master plan/sub-plan, as devised by the State Transmission Utility (STU)/distribution licensee for various capacities of projects, duly keeping in view the provisions in the agreements already executed or the mutual acceptance between the licensee and the renewable energy generator.

(4) The renewable energy generator shall, soon after finalisation of the interconnection point or immediately in cases where the same has already been finalised, execute an interconnection agreement with the State Transmission Utility and/or the intra-State transmission licensee and /or distribution licensee owning the system where connectivity is to be provided.

(5) The licensee shall, after receipt of the estimated cost of the interconnection facilities, provide appropriate facilities consistent with the grid connectivity standards laid down by the Authority or as specified in the relevant Code/Regulations-

(i) in case where such facilities are to be provided at an existing sub-station, within a period of 12 months or as may be agreed otherwise; and

(ii) in case of the new sub-station, within such period as may be mutually agreed keeping in view the time frame in which such new sub-station is to be commissioned:

Provided that the renewable energy generator shall give prior intimation, at least 4 months before the expected date of commencement of operation of the project, to the licensee about his intention and readiness to inject power and also regarding the arrangements finalised by him for disposal of power beyond the interconnection point:

Provided further that the renewable energy generator will have to comply with the connectivity standards and the conditions as specified in the State Grid Code/Indian Electricity Grid Code (IEGC) –Regulation 2010, the Electricity Distribution Code and/or any other Standards/ Codes/Regulations as may be relevant.

(6) In order to optimize the use of limited transmission/sub-transmission corridors or the limited space at the sub-stations of the licensee, the renewable energy generators may, with the approval of the licensee, enter into a suitable arrangement for joint project line(s) for two or more projects and inject power into the grid through the joint evacuation system in accordance with the principles laid down, from time to time, by the Commission.

(7) Notwithstanding anything in the preceding sub-regulation (6)_where there are right of way problems or there are space limitations at the sub-station of the concerned licensee, the licensee may require the renewable energy generators to enter into suitable arrangement for joint project line(s) for two or more projects and inject power into the grid through the joint evacuation system.

(8) The renewable energy generators may, in consultation with and also with the prior approval of the licensee, augment or establish, on behalf of the licensee, the transmission/distribution system beyond the interconnection point, on build and transfer basis, as per best industry practices and the expenditure so incurred by the renewable energy generators and approved by the licensee shall be repaid by the licensee, alongwith interest, in five equal installments, spread over a period not exceeding 5 years commencing from one year after the date of commissioning of such works, and such expenditure shall be allowed as a pass through to the licensee:

Provided that if such works are not a part of the Capital Expenditure Plan (CAPEX PLAN) approved by the Commission, then the necessary approval for the CAPEX PLAN for the same shall be obtained by the licensee from the Commission before according approval to any such arrangement.

6. Grid Connectivity. – Mechanism for grid connectivity shall be as under-

(a) the renewable energy generator shall construct, operate and maintain the project line(s) at his cost;

(b) the licensee shall, at the cost of renewable energy generator, provide, operate and maintain the interconnection facilities;

(c) the transmission licensee and/or the distribution licensee shall bear the cost of augmentation/establishment of network beyond the inter-connection point under the CAPEX PLAN and the new or the augmented network shall form part of the assets of the transmission or the distribution licensee, as the case may be.

7. Coordination Committee.- The Commission may constitute a coordination committee to facilitate coordination among the State Transmission Utility, transmission licensee, distribution licensee, HIMURJA and Directorate of Energy of the State Government for evacuating power from renewable energy projects.

CHAPTER-III

TARIFF DETERMINATION
GENERAL PRINCIPLES

8. Power Purchase Agreement.- (1) In case of the projects covered under these Regulations, the renewable energy generator or the distribution licensee may offer to sell/purchase power in any of the following manner:-

(i) for the entire tariff period starting from the date of commencement of operation of the project, or for the balance tariff period in case of enhancement of the capacity of the project at the later stage by availing any of the available tariff option under regulation 13;

(ii) for the mutually agreed period(s) under the REC mechanism;

(iii) for the balance part of the tariff period, after having sold power initially under the REC mechanism, in accordance with the provisions of regulation 16;

(iv) in any other manner as may be mutually agreed in accordance with provisions of these Regulations:

Provided that the distribution licensee shall endeavour to procure power through competitive bidding, which, to start with, may be done separately for each type of renewable technology.

(2) In the event of their arriving at a mutual understanding on various issues of the power purchase agreement, including the tariff option under regulation 13, the parties shall file a joint petition before the Commission for approval of the proposed power purchase agreement and shall execute the requisite power purchase agreement after approval of the Commission:

Provided that if the parties have arrived at a mutual understanding on the various issues of the power purchase agreement, as aforesaid, and the renewable energy generator requires a power purchase agreement to achieve the financial closure of the project, the parties may file joint petition for approval of the proposed power purchase agreement before the financial closure.

Provided further that in accordance with the Tariff Policy notified on 28.01.2016 by Ministry of Power, Government of India, the distribution licensee has to procure the entire net saleable power from the waste to energy plants in the State and such plants have also been excluded from the competitive bidding process for tariff determination.

9. Control period or review period.- (1) The control period for the small hydro projects under these Regulations shall start from the 1st October, 2017 and shall end on the 31st day of March, 2020:

Provided that the technology specific parameters for the renewable energy sources, other than small hydro projects, may be fixed for such durations and reviewed at such intervals, as the Commission may find appropriate in accordance with regulation 18.

(2) The tariff(s) determined under these Regulations for the renewable energy generation project(s) or for a category thereof, to which these Regulations are applicable, shall, unless amended or revised under

regulation 20, continue to be applicable till the expiry of the tariff period as specified in regulation 10.

(3) The revision of the Regulations for the next control period shall be undertaken six months prior to the end of the control period and in case the revised Regulations are not notified before the end of the control period, the tariff norms laid down under these Regulations shall, subject to adjustments under the revised Regulations, continue to remain applicable until the notification of the revised Regulations.

10. Tariff period.- The duration of tariff period in case of small hydro projects shall be 40 years and for other renewable technologies the Commission may fix the same under regulation 18.

11. Special provisions for Small Hydro Projects.-

(1) Where the first Implementation Agreement of a small hydro project has been executed on or before 31st March, 2017 and no power purchase agreement, whether under REC Mechanism or otherwise, has been approved by the Commission for such project before the date of commencement of these Regulations, the norms, tariffs and other associated terms and conditions as per Himachal Pradesh Electricity Regulatory Commission (Promotion of Generation from the Renewable Energy Sources and Terms and Conditions for Tariff Determination) Regulations, 2012, shall be applicable in the same manner as applicable to the small hydro projects covered in the said Regulations:

Provided that for the purpose of this regulation, the date of signing the first Implementation Agreement of the small hydro projects shall only be taken into account and the Supplementary Agreement(s), if any, executed thereafter due to any reason, but other than due to enhancement of capacity, whatsoever, viz for extension of the scheduled completion date, shall not be considered:

Provided further that in cases where the power purchase agreements have already been approved by the Commission, before the date of commencement of these Regulations, the tariffs for such small hydro projects shall be governed as per provisions of power purchase agreements and relevant Regulations:

Provided further that if a Supplementary Implementation Agreement is executed on or after 1st April, 2017 to provide for enhancement of capacity, the tariff and other terms and conditions as per regulation 14 and regulations 20 to 41 shall be applicable only for the incremental energy generation as per the provisions under regulations 17.

2. Save as provided in sub-regulation(1), the tariff determined under the regulation 14 and regulations 20 to 41 shall be applicable only for such small hydro projects where-

(i) Implementation Agreement has been signed on or after 1st April, 2017; and

(ii) no power purchase agreement, whether under REC Mechanism or otherwise has been approved by the Commission before the date of commencement of these Regulations; and

(iii) the small hydro project has not commenced its operation before the date of commencement of these Regulations.

12. Tariff design.- (1) The single part levellised tariff structure shall be followed for the renewable energy technologies:

Provided that for renewable energy technologies having fuel cost component, like biomass power projects and non-fossil fuel based cogeneration, single part tariff with two components, i.e. fixed cost component and fuel cost component, shall be determined.

(2) The following fixed cost components shall be included for determining the tariff:-

(a) Return on equity;
(b) Interest on loan capital;
(c) Depreciation;
(d) Interest on working capital; and
(e) Operation and maintenance expenses.

(3) The generic or project specific tariff shall be determined on levellised basis for the tariff period:

Provided that tariff for renewable energy technologies, having single part tariff with two components, referred to in the proviso to sub-regulation (1), shall be determined on levellised basis for the tariff period in respect of the fixed cost component and the fuel cost component shall be specified on year of operation basis.

(4) For the purpose of levellised tariff computation, the discount factor equivalent to the post tax weighted average cost of capital shall be considered.

13. Tariff options/applicability.- (1) The following tariff options, subject to mutual acceptance of both the parties, shall be available to the renewable energy generator and the distribution licensee, intending to sell/purchase power from small hydro projects for the entire useful life of the project ,-

(i) for the small hydro projects covered under sub-regulation (1) of regulation 11, to be governed by the generic levellised tariff and associated terms and conditions in accordance with the provisions of Himachal Pradesh Electricity Regulatory Commission (Promotion of Generation from the Renewable Energy Sources and Terms and Conditions for Tariff Determination) Regulations, 2012, in the same manner in which such tariff would have been applicable if the power purchase agreement would have been signed before the commencement of these Regulations.

(ii) for the small hydro projects not covered in (i) above for and other RE technology based project(s):-

(a) to be governed by the generic levellised tariff to be determined by the Commission, in accordance with the regulation 14, in relation to the control period in which the power purchase agreement for the project is approved.

(b) to be governed by project specific levellised tariff to be determined by the Commission in accordance with the regulations 15 and 19, including the exit options available thereunder to the parties,

(c) to be governed by any other tariff, as may be mutually agreed by them with the prior approval of the Commission, in accordance with the regulation 42;

(d) to be governed by the process of competitive bidding in cases where the licensee resorts to competitive bidding.

(2) Where, after sale of net saleable energy to the licensee as per the power purchase agreement(s) approved by the Commission under REC mechanism in the initial periods, the net saleable energy is to be sold to the distribution licensee for the residual period of the useful life of the project, the tariff for such sale for such residual period shall be regulated in accordance with the regulation 16.

(3) Where, after execution of a long term power purchase agreement, the capacity of the project is enhanced with the approval of the State Government, the tariff shall be regulated under regulation 17.

(4) In case of the renewable energy sources, other than small hydro projects, the tariff options, as provided in regulation 18, shall be available to the parties intending to enter into power purchase agreement for sale/ purchase of power.

(5) The parties shall, while arriving at a mutual understanding about sale/purchase of power, also mutually decide the tariff option to be adopted, and shall, before submitting the joint petition for approval of the proposed power purchase agreement under regulation 8, also reflect the same in the proposed power purchase agreement:

Provided that the tariff option adopted in the power purchase agreement shall be irrevocable and binding.

14. Generic levellised tariff.- (1) The Commission shall for each category, mentioned in regulation 33 of small hydro projects, other than those covered in sub-regulation (1) of regulation 11, determine separate generic levellised tariffs and associated terms and conditions, within 90 days from the date of commencement of these Regulations by taking into account the norms specified under these Regulations:

Provided that in case of renewable energy technologies, other than small hydro projects, the Commission may fix the generic levellised tariffs in accordance with the regulation 18.

(2) The tariff being normative, any shortfall or gain due to performance or any other reasons is to be borne/retained, as the case may be, by the renewable energy generator and no true up of any parameter, including additional capitalisation for whatsoever reasons, shall be taken up during the validity of the tariff except for the specific provisions in these Regulations.

(3) Save as provided under sub-regulations (1) of regulation 11, where the parties have, as per the power purchase agreements executed by them, opted for generic levellised tariff or the same is otherwise applicable under regulation 16, the generic levellised tariff determined in relation to the control period under sub-regulations (1) shall be applicable for all the projects of that category for which the power purchase agreements are approved by the Commission in that control period.

15. Project specific levellised tariff.-(1) Where the parties to a power purchase agreement, for a project, other than the small hydro projects covered in sub-regulation (1) of regulation 11 have mutually agreed, in such power purchase agreement approved by the Commission after commencement of these Regulations, and executed thereafter by the parties, opted for a project specific levellised tariff, the Commission shall determine such tariff taking into consideration-

(i) prudent capital cost as may be admitted by the Commission duly keeping in view normative capital cost under these Regulations, the cost approved in the Detailed Project Report, the actual expenditure incurred as per auditor's certificate, the information furnished under regulation 19:

Provided that in case of delay in execution of the project, the Commission shall consider the time over run cost as follows-

(a) where the delay is due to factors entirely attributable to the renewable energy generator, the entire cost shall be borne by the renewable energy generator;

(b) where the delay is due to force majeure, the Commission may allow the net additional cost incurred on this account to the renewable energy generator: and

(c) in a situation not covered under clauses (a) and (b), the Commission may allow the additional cost, not exceeding 50% of the net additional cost incurred due to time overrun:

Provided further that the renewable energy generator shall be deemed to have subscribed to the requisite insurance policies covering the risks during construction stage and also to have stipulated provisions for the liquidated damages in the contracts relating to the construction of the project, awarded by him, as per the prudent practices, and accordingly, in case of any time and cost over runs, the Commission shall not allow any amount which is or would have been recoverable by him on account of such deemed provisions for Insurance and liquidated damages:

Provided further that any cost pertaining to allotment of the project, including upfront premium and any other amount charged by the State Government while granting extension or capacity enhancement or/and any liquidated damages/penalty imposed in accordance with the power purchase agreement executed with the licensee, will not form part of the capital cost;

(ii) the normative annual capacity utilisation factor specified under Chapter-V of these Regulations for the small hydro projects or the annual capacity utilisation factor worked out on the basis of data for 75% dependable year as per the approved Detailed Project Report, whichever is higher;

(iii) the technology specific parameters as specified for the small hydro projects in Chapter V of these Regulations and as may be laid down by the Commission for the other renewable technologies as per regulation 18; and

(iv) financial norms/principles, in relation to the renewable energy technologies based power projects, as specified in Chapter-IV of these Regulations, which shall except for capital cost, be considered as ceiling norms.

(v) the ceiling tariff (s), if any fixed by the Commission for the respective categories of the renewable energy technologies based power projects.

Provided that if the licensee and renewable energy generator have, in accordance with regulations 32 and 42, agreed in the power purchase agreement executed by them after prior approval of the Commission to any improved norms, also including operation and maintenance norms, which may lead to overall reduction in the levellised tariff, such improved norms shall apply for determination of the project specific levellised tariff.

(2) Where the project specific levellised tariff, as determined under sub-regulations (1)–

(i) exceeds the corresponding generic levellised tariff, duly adjusted for permissible rate of free power if any, determined by the Commission in relation to the control period in which the power purchase agreement was approved by the Commission, the distribution licensee shall have the option to exit from the power purchase agreement, provided that this option shall not be available to the distribution licensee if the renewable energy generator agrees to a tariff corresponding to the generic levellised tariff;

(ii) is less than 95% of the corresponding generic levellised tariff, duly adjusted for permissible rate of free power if any, determined by the Commission in relation to the control period in which the power purchase agreement was approved by the Commission, the renewable energy generator shall have the option to exit from the power purchase agreement, provided that this option shall not be available to the renewable energy generator if the distribution licensee agrees to keep the tariff within the aforesaid limit.

(3) Where the exit option is exercised by any party under sub-regulation (2) and the interconnection point for that project falls under the control of the distribution licensee, it shall, on request from the renewable energy generator, provide open access through its system to the renewable energy generator as per the open access regulations.

16. Tariff for residual period after sale/purchase under REC mechanism.- (1) In cases where, after sale/purchase of net saleable

energy to/by the licensee as per the power purchase agreement approved by the Commission, or the project had commenced its operation, under REC mechanism in the mutually agreed initial period(s), the net saleable energy for the residual period of the useful life of the project is to be sold to the distribution licensee under long term power purchase agreement, the tariff for sale/purchase of net saleable energy during such residual period shall, save as provided in sub- regulations (2) and (3), be regulated as under:-

(a) If the first power purchase agreement for sale/purchase of power under REC mechanism from a small hydro projects was executed by the parties and/or approved by the Commission before the commencement of these Regulations, the provisions of Himachal Pradesh Electricity Regulatory Commission (Promotion of Generation from the Renewable Energy Sources and Terms and Conditions for Tariff Determination) Regulations, 2012, shall be applicable in the same manner as if the power purchase agreement for the residual life of the project would have been approved prior to commencement of these Regulations.

(b) If the first power purchase agreement for sale/purchase of power to/ by the licensee under REC mechanism from a small hydro projects, other than the small hydro projects covered in sub-regulation (1) of regulation 11, is approved by the Commission on or after the commencement of these Regulations and is signed thereafter, the generic levellised tariff, as determined by the Commission for the relevant category of small hydro projects under these Regulations, as per regulation 14 and regulations 20 to 41 shall be applicable.

(c) In case of small hydro projects covered under sub-regulation (1) of regulation 11, or where the project had commenced its operation before the commencement of these Regulations, the provisions of Himachal Pradesh Electricity Regulatory Commission (Promotion of Generation from the Renewable Energy Sources and Terms and Conditions for Tariff Determination) Regulations, 2012 shall be applicable even if the first power purchase agreement for sale/purchase of power under REC mechanism from such small hydro projects is approved by the Commission after the commencement of these Regulations.

(d) In case of projects based on renewable energy technologies, other than small hydro projects, the terms and conditions as may be incorporated by the Commission, to address such situations, in the terms and conditions to be fixed in accordance with regulation 18 shall be applicable.

(2) Save as provided in sub-regulation (3), in cases where any specific conditions in relation to the rate/tariff applicable for the residual period, referred to in sub-regulation(1), have been stipulated while approving the power purchase agreement under REC mechanism, such conditions shall also be applicable.

(3) If the circumstances so warrant, the Commission may, on the merit of a case, approve the rate/tariff prevailing in any of the earlier time frames prior to the commencement of Himachal Pradesh Electricity Regulatory Commission (Power Procurement from Renewable Sources and Cogeneration by Distribution Licensee), Regulations, 2007 or the commencement of Himachal Pradesh Electricity Regulatory Commission (Promotion of Generation from the Renewable Energy Sources and Terms and Conditions for Tariff Determination) Regulations, 2012 or these Regulations, as the case may be, for sale/purchase of the net saleable energy during the residual period referred to in sub- regulation(1).

17. Capacity enhancement. - (1) Where, after the allotment of the original project, the capacity of a small hydro project is enhanced, with the approval of the State Government, the tariff for sale of net saleable energy from such projects, shall be governed by the relevant provisions of sub-regulations (2) to (7), as applicable.

(2) Where the Implementation Agreement for the original capacity as well as the Supplementary Implementation Agreement for the enhanced capacity have been signed by the concerned developer with the State Government on or before 31st March, 2017, the relevant provisions of Himachal Pradesh Electricity Regulatory Commission (Promotion of Generation from the Renewable Energy Sources and Terms and Conditions for Tariff Determination) Regulations, 2012 and of the power purchase agreements if signed shall be applicable irrespective of the dates of signing the power purchase agreements for the original capacity and the enhanced capacity.

(3) Where the Implementation Agreement for the original capacity has been signed by the concerned developer with the State Government on or before 31st March, 2017, but the Supplementary Implementation Agreement for the enhancement of the capacity is signed on or after 1st April, 2017, and no power purchase agreement for the enhanced capacity has been approved by the Commission before the commencement of these Regulations, a composite rate shall be worked out, on normative basis lines irrespective of the dates of singing the power purchase agreements for the original capacity and enhanced capacity, as follows:-

(i) the tariff applicable for the original capacity as per the provisions of Himachal Pradesh Electricity Regulatory Commission (Promotion of Generation from the Renewable Energy Sources and Terms and Conditions for Tariff Determination) Regulations, 2012 shall be considered for the energy generation corresponding to 75% dependable year as per the Detailed Project Report for the original capacity, irrespective of the date of signing of the power purchase agreement for the original capacity:

Provided that if the power purchase agreement for the original capacity has already been approved by the Commission, or executed by the parties, before the commencement of these Regulations, the tariff and associated terms and conditions, as per such power purchase agreement shall be considered.

(ii) for the incremental energy generation due to enhancement of capacity i.e. the energy generation which is expected to take place in the 75% dependable year as per the detail project report for the enhanced

capacity, the generic levellised tariff determined as per the provision under regulation 12 to 14 and regulations 20 to 41 of these Regulations for the category of small hydro projects in which the enhanced capacity falls, shall be considered:

Provided further that the tariffs considered for the respective quantums energy of as per clauses (i) and (ii) of this sub-regulation shall be governed by the associated terms and conditions as per the respective power purchase agreements and relevant Regulations and in case of any adjustment in any of these tariffs, the adjustment(s) shall be applicable only for the respective energy quantums as per clauses (i) and (ii) of this sub-regulation under this sub-regulation;

Provided further that the composite rate for the entire saleable energy shall, in no case, be higher than the rate applicable to the small hydro project category under which the enhanced capacity falls:

Provided further that in cases where the incremental capacity is commissioned in phases, the tariff(s) during such interim stages shall be computed based on such incremental energy generation corresponding to the additional capacity actually installed from time to time.

(4) Where the Implementation Agreement for the original capacity as well as the Supplementary Agreement for the enhanced capacity are signed on or after 1st April, 2017 and the project has not commenced its operation before commencement of these Regulations, the following provisions shall be applicable:

(i) Where neither the Commission has approved, nor the parties have executed, the power purchase agreement for the original capacity, the enhanced capacity shall be taken into consideration while approving or executing the power purchase agreement, as the case may be.

(ii) Where the power purchase agreement for the original capacity of a small hydro project, covered in these Regulations, has already been approved after the commencement of these Regulations, and executed thereafter and such power purchase agreement provides for generic levellised tariff in accordance with provisions under regulation 14 and regulations 20 to 41 the generic levellised tariff as well as other associated terms and conditions as per the provision under regulation 14 and regulations 20 to 41 applicable for the relevant category of small hydro projects under which the enhanced capacity of the small hydro projects falls shall be applicable for the entire capacity:

Provided that if such power purchase agreement for the original capacity contains provision for determination of project specific levellised tariff, the Commission may, on application from both the parties, determine the project specific levellised tariff by taking into account the norms applicable for the category of small hydro projects in which the enhanced capacity of the project falls.

(5) Where the power purchase agreement has been executed for the original capacity and the renewable energy generator sells energy from the

additional capacity, under the relevant Regulations governing REC mechanism, to the distribution licensee with a provision to sell such energy to the licensee for the balance part of the tariff period after exit from the REC mechanism, the following provisions shall apply :-

(i) the tariff for the entire net saleable energy for the residual part of the tariff period shall be fixed/determined in accordance with sub-regulation (2), (3) or (4), as the case may be;

(ii) during the interim period when the energy is sold partly under the power purchase agreement for the original capacity and partly through the REC mechanism-

(a) unless provided otherwise in the power purchase agreement for the original capacity, the tariff applicable for the original capacity shall not be subject to any adjustment, on account of variation in free power, under sub-regulation (6),

(b) the total net saleable energy shall be apportioned in a firm ratio on the basis of original capacity and the enhanced capacity.

(6) In the cases covered by sub-regulations (3), (4) and clause (i) of sub-regulation (5), the tariff shall be adjusted on account of variation in the free power in accordance with sub- regulations (2) and (3) of regulation 36:

Provided that in case capacity enhancement is approved by the State Government, the percentage rate of free power undergoes change due to-

(i) any change in general policy during the intervening period between the dates of execution of Implementation Agreement for the original capacity and the Supplementary Implementation Agreement for the enhanced capacity, e.g. on account of Local Area Development, change in basic rates, change in the category of the project based on the capacity etc; or

(ii) additional free power specifically for enhancement of capacity;

the variations in free power on account of item (i) shall only be considered for adjustment in tariff as per sub-regulations (2) and (3) of regulation 36, but additional free power for capacity enhancement as per item (ii) shall not be considered for tariff adjustment.

(7) Where the parties fail to arrive at an understanding for sale/ purchase of energy in the manner specified in sub-regulations (3) to (6), the right of the distribution licensee for the net saleable energy as per the original power purchase agreement, duly taking into account the data contained in the Detailed Project Report for the original capacity and power generation on real time basis, shall remain protected and the renewable energy generator shall be eligible to dispose off only the net incremental saleable energy (i.e. after duly adjusting the licensee's first right as aforesaid and the total quantum of free energy for the enhanced capacity of the project):

Provided that in such a case, the renewable energy generator shall also arrive at an understanding with the distribution licensee about the modalities for energy accounting on real time basis as well as on monthly and annual basis and based on the same, the renewable

energy generator shall also make the distribution licensee a party to any such agreement for disposal of such incremental energy:

Provided further that in case the licensee and the renewable energy generator mutually agree to purchase/sell the net incremental saleable energy at a specific rate and jointly make an application to the Commission for determination of such rate, the Commission may determine the specific levellised rate for such net incremental saleable energy as per the provisions of this sub-regulation and by taking into account the provisions of the regulations/practices prevalent in the time frame during which the capacity enhancement was permitted by the State Government.

(8) Where, after the Commission has approved the power purchase agreement for sale of power from a project based on a renewable technology other than small hydro project, the capacity of the project is enhanced, the tariff for sale of net saleable energy from such project shall be governed by such terms and conditions as may be included by the Commission, to address such situations, in the terms and conditions fixed by it under regulation 18.

18. Tariff for renewable energy projects, other than small hydro projects.-

(1) The renewable energy projects, other than small hydro projects, may include the following:-

(i) Wind power project;

(ii) Biomass based power project based on Rankine cycle technology;

(iii) Non-fossil fuel based co-generation project;

(iv) Biomass gasifier based power project;

(v) the Municipal Solid Waste (MSW) based power projects and Refuse Derived Fuel (RDF) based power projects;

(vi) Solar PV and solar thermal power projects;

(vii) Hybrid projects other than Hybrid solar thermal power plants including renewable–renewable or renewable– conventional sources, for which renewable technology is approved by the MNRE;

(viii) Biomass project other than that based on Rankine cycle technology application with water cooled condenser;

(ix) any other renewable energy technology which may be approved by the MNRE.

(2) Where the technological specific parameters and other terms and conditions, including the tariff period and useful life of the project, have not

been specified, the Commission may, by an order, at any time and at such intervals as it considers appropriate to do so, fix the same:

Provided that in case of renewable technologies other than small hydro projects such parameters and terms conditions may also include other suitable provisions as the Commission may feel necessary to address the situations covered under regulations 16 and 17:

Provided further that the Commission may, by order, categorise the renewable energy projects, other than small hydro projects, under the respective renewable energy technologies specified in sub–regulation (1), based on the capacity of projects, the available subsidy schemes and such other factors as may be considered appropriate by it:

Provided further that the Commission may, in order to promote such technologies for smaller capacities, follow, mutatis mutandis, upto the limits as it may consider necessary separately for each such technology but not exceeding 5 MW for any such technology, any or all of the technological specific parameters, including capital cost, and other terms and conditions or the tariff, in respect of the relevant financial years of the control period for the relevant renewable energy technology, as it may deem fit -

(a) as specified or adopted by the Central Commission for determining project specific tariff for any project(s) or generic levellised tariff for any category of project(s); or

(b) the rate discovered though competitive bidding undertaken by any Government agency; or

(c) the inputs available from any other sources, as the Commission may find appropriate:

Provided further that the financial norms, except for capital cost, as specified under Chapter-IV of these Regulations shall also be considered as ceiling norms.

(3) The Commission may, after having fixed the norms/parameters and other related terms and conditions as per sub-regulation (2), determine, or otherwise fix, by order, either generic levellised tariff(s) for any or all categories of such renewable energy technology(ies):

Provided that the Commission may, by order, fix, at such time intervals as it may consider appropriate, the ceiling rates and associated terms and conditions to be used by the licensee for reverse bidding for procurement of power from the projects based on such technologies.

(4) The renewable energy generator and the distribution licensee intending to sell/purchase power from the projects based on the renewable energy sources, other than the small hydro projects, for the entire useful life of the project, may, at the time of filing joint petition for the approval of the power purchase agreement, mutually agree to be governed by the generic levellised tariff, if the Commission has already determined or expressed its intention, by order, to determine such a rate for that technology, or in absence of Commission having expressed any such intention, for determination of project specific tariff by the Commission.

(5) In order to facilitate execution of the power purchase agreements by the distribution licensee with the renewable energy generator, within the framework of sub-regulation (4), the Commission may, subject to mutual agreement between the parties, allow, or otherwise direct, the parties to incorporate in the power purchase agreement-

(i) a provisional tariff based on the generic levellised tariff, if any, notified by the Central Commission for that technology(ies), for the relevant timeframe, or any other rate as may be considered appropriate by the Commission;

(ii) other related terms and conditions including the maximum permissible variations in the provisional tariff;

(iii) any deviations from norms, as may be mutually agreed by the parties under regulations 32 and 42; and

(iv) any other conditions as may be considered appropriate by the Commission.

18. Petition and proceedings for determination of project specific levellised tariff.- (1) Where the renewable energy generator and the licensee have mutually agreed, in the power purchase agreement signed by them with the approval of the Commission, for the determination of project specific levellised tariff, the renewable energy generator may file, on any date falling between ninety (90) days to one hundred and eighty (180) days before the expected date of commencement of operation of the project, the petition for determination of the project specific levellised tariff in accordance with the Conduct of Business Regulations which shall, apart from such fee as specified by the Commission, be accompanied by-

(a) a copy of the mutual agreement between the parties for project specific determination of tariff and the conditions, if any;

(b) the detailed breakup of capital expenditure incurred and to be incurred for completing the works covered in the original scope of works or for discharging the outstanding liabilities in respect of the completed works and tariff calculations etc. as per the formats as may be laid down by the Commission from time to time;

(c) the detailed project report outlining technical, operational data, capacity utilisation factor, site specific aspects, premise for capital cost and financing plan and in case of small hydro projects hydrological data for 75% dependable year;

(d) a statement of all applicable terms and conditions and annual expenses as per these Regulations;

(e) a statement containing full details of calculation of any subsidy, incentives and grant or budgetary support received, due or assumed to be due, from the Central Government and/or State Government. This statement shall also include the proposed tariff calculated with and without the benefit of accelerated depreciation in accordance with regulation 22 ; and

(f) electronic formats and soft copy of other details submitted;

(g) requirements of additional data relevant to the agreement in pursuance of which the project specific determination is sought;

(h) any other information as the Commission may require the petitioner(s) to submit at the time of undertaking, or during the course of, determination of project specific tariff..

(2) The Commission may, during the pendency of the petition filed under sub-regulation (1), allow, on such terms and conditions as it may consider necessary, a provisional tariff not exceeding the generic levellised tariff, if any, applicable to the relevant category

20. Review of tariff- (1) Save as provided in sub-regulations (2) and (3), the generic levellised tariff or project specific levellised tariff, as the case may be, determined in accordance with the provisions of these Regulations shall be firm and shall not to subject to any review.

(2) Impact of any change(s) in the rate of free power under the general policy for allotment of sites, but only to the extent permitted under regulation 36 and further within the limit of 13% as per the National Tariff Policy and/or National Hydro Policy, shall be payable/adjustable as per the provisions of regulations 36.

(3) If, after the determination of the generic levellised tariff for the control period or the project specific levellised tariff for a project,-

(i) a water cess or tax on generation is levied which impacts all or any of the projects; and/or

(ii) the limit of 13% for the pass through of free power in the tariff, as per the National Hydro Policy/ Tariff Policy is revised; and/or

(iii) the mechanism or quantum of the capital subsidy or budgetary grant mentioned in regulation 22 is changed as a matter of policy; and/or

(iv) the State Government revises its instructions with regard to the minimum flow of water downstream of diversion structure of the small hydro projects and implements the same;

the Commission may, suo-motu or on an application made to it, by generic or specific order, review the tariff for the residual tariff period or such other part as it may deem fit, for the projects or group of projects actually impacted, to account for the impact of such changes:

Provided that while revising the tariff, the Commission may incorporate such terms and conditions, including the period for which such revised tariff shall be applicable, as it may deem fit.

CHAPTER-IV

FINANCIAL PRINCIPLES

21. Capital Cost.- (1) The norms for the capital cost in case of small hydro projects shall be as specified in Chapter-V of these Regulations and in case of other renewable technologies, shall be as stipulated under relevant orders of the Commission under regulation 18.

(2) The norms for the capital cost shall be inclusive of all the expenses required to be incurred as per prudent practices upto the commissioning of the project, including, but not limited to, the cost of capital works, land, preparation of the Detailed Project Report, Survey and Investigation, plant and machinery, civil works, erection and commissioning, financing and interest during construction, land acquisition, resettlement and rehabilitation, contribution towards Local Area Development Fund (LADF), statutory and non-statutory clearances and evacuation infrastructure up to inter-connection point (also including interconnection facilities), insurance charges against the risks during construction stage etc and also all taxes, levies and duties on all such components/works capital works:

Provided that any cost pertaining to allotment of the project, including upfront premium and any other amount charged by the State Government while granting extension or capacity enhancement or/and any liquidated damages/penalty imposed in accordance with the power purchase agreement executed with the licensee, will not form part of the capital cost:

Provided further that for project specific tariff determination, the renewable energy generator shall submit the itemwise break-up of capital cost along with its petition in the manner specified under regulation 19 and the capital cost admitted by the Commission shall be taken into consideration.

22. Subsidy or incentive or grant/budgetary support by the Central/ State Government.- (1) While determining the generic levellised or project specific levellised tariff, as the case may be, for the renewable energy project(s) under these Regulations, the Commission shall take into consideration any incentive and/or subsidy and/or grant available under the schemes of the Central or State Government or its agencies, but excluding accelerated depreciation benefit under the Income Tax Act:

Provided that for tariff determination, 80% of the capital subsidy available to the project as per applicable scheme of the MNRE/ State Government shall be considered:

Provided further that the Commission may evolve suitable mechanisms for incorporating impact of the subsidy component for determination or adjustment of generic levellised tariffs for various categories of projects:

Provided further that the capital subsidy under the schemes of the Central or State Government or its agencies, shall, unless the circumstances otherwise warrant, be ordinarily adjusted against the principal component of the loan amount as additional reduction apart from the normal payment:

Provided further that where the Central Government or the State Government notifies or has notified any generation based incentive (GBI) scheme for a particular kind of renewable technology, such technology based generating station shall be assumed to have availed the benefit of such a scheme and their tariffs shall automatically be treated as reduced by the amount of generation based incentive (GBI) per unit for the period during which such incentive remains applicable.

(2) Where any additional grant or budgetary support is available to any project, apart from the incentive and/or subsidy and/or grant available under sub-regulation (1) of this regulation, the Commission shall account for 100% of such budgetary support, while determining project specific levellised tariff.

(3) The amount of subsidy shall be considered for each renewable source as per the applicable policy of the MNRE/State Government and if the amount and/or mechanism of subsidy is changed by the MNRE/State Government, consequent corrections in tariffs may be carried out by the Commission in accordance with regulation 20.

23. Debt-Equity Ratio.- (1) The normative debt equity ratio shall be 70:30.

(2) For generic levellised tariff, the Commission shall adopt debt equity ratio of 70:30.

(3) For project specific levellised tariff, the following provisions shall apply -

(i) if the equity actually deployed is more than 30% of the capital cost admitted by the Commission under regulation 15, the equity deployed in excess of 30% limit shall be treated as normative loan in accordance with the National Tariff Policy and shall be deemed as advanced at the weighted average rate of interest and for a weighted average tenor of the long term debt component of the project after ascertaining the reasonableness of the interest rates and taking into account the effect of debt restructuring, if any;

(ii) in case the equity deployed is equal to or below the normative level of 30%, the actual equity would be used for determination of Return on Equity in tariff computations.

(iii) the equity invested in foreign currency, if any, shall be designated in Indian rupees on the date of each investment.

Explanation.- For the purposes of return on equity, any resources available to the renewable energy generator from its share premium account or from its internal resources that are used to fund the equity commitments of the project under consideration shall be treated as equity subject to the limitations contained in this regulation and regulation 26.

(4) The Commission shall treat any incentive or subsidy and/or grant/ budgetary support available from the MNRE/State Government, to the extent specified under regulation 22, to have been utilized towards pre-payment of debt in such phases as it may deem fit, leaving balance loan to be considered for determination of tariff.

24. Loan and Finance Charges.- (1) For the purpose of determination of tariff, loan tenure of 13 years, inclusive of moratorium period, if any, shall be considered:

Provided that the capital subsidy admissible to the renewable energy generator shall normally be considered for the reduction of loan period and such reduced loan tenure shall be considered for the purpose of tariff determination.

(2) Interest Rate

(a) The loans arrived at in the manner indicated in the regulation 23 shall be considered as gross normative loan for calculation for interest on loan.

The normative loan outstanding as on April 1st of every year shall be worked out by deducting the cumulative repayment up to March 31st of previous year from the gross normative loan.

(b) For the purpose of computation of tariff(s) under these Regulations, normative interest rate of two hundred (200) basis points above the average State Bank of India MCLR (one year tenor) prevalent during the last available six months, prior to the respective date(s) from which such tariff(s) the respective generic levellised tariff are to be made applicable, shall be considered:

Provided that in case where the project specific tariff is to be determined, such average rate of SBI, as prevalent during the respective periods in which the loan has been availed, shall be taken into account on weighted average basis and the rate so worked out on this basis or the weighted average rate at which the loan has been availed, whichever is lower, shall be considered.

(c) Notwithstanding any moratorium period availed by the renewable energy generator, the repayment of loan shall be considered from the first year of the tariff period and shall be equal to the annual depreciation allowed.

(d) The loan repayment for a financial year or the relevant part period thereof shall be considered to have been done in the middle of that financial year or the relevant part period thereof, as the case may be.

25. Depreciation.- For the purpose of tariff determination, depreciation shall be computed in the following manner, namely:-

(a) the value base for the purpose of depreciation shall be the normative capital cost (for generic tariff) or the capital cost of the project as admitted by the Commission (for project specific tariff), as the case may be;

(b) the salvage value of the asset shall be considered as 10% and depreciation shall be allowed up to maximum of 90% of the capital cost of the asset;

(c) depreciation per annum shall be based on 'Differential Depreciation Approach'. For tariff purposes, the depreciation shall be allowed @ 5.28% per annum till such time the requirement for repayment of loan component of the capital cost as per regulations 21, 23 and 24 after adjusting the amount of subsidy as per regulation 22, is fully provided and the remaining depreciation shall be spread over the residual useful life of the project on straight line method;

(d) depreciation shall be chargeable from the first year of commencement of operation of the project:

Provided that in case of operation of the asset for part of the year, depreciation shall be charged on pro rata basis for the purposes of project specific determination of tariff.

26. Return on Equity.-(1) The value base for the equity shall be 30% of the normative capital cost as determined under regulation 21:

Provided that in case of project specific determination, the value base of equity shall be restricted to the actual amount of equity or

30% of the capital cost admitted by the Commission, whichever is lower, in accordance with the provisions of regulation 23.

(2) The normative return on Equity shall be 17% per annum on pre tax basis and shall not be subject to any adjustment on account of any changes in the tax rates under the Income Tax Act.

27. Interest on working capital: (1) The working capital requirement in respect of wind energy projects, small hydro power, solar PV and solar thermal projects shall be computed in accordance with the following: -

(a) operation and maintenance expenses for one month;

(b)receivables equivalent to 2 (two) months of energy charges for sale of electricity calculated on the net saleable energy corresponding to the CUF considered for tariff determination on normative basis;

(c) maintenance spare @ 15% of operation and maintenance expenses.

(2) The working capital in respect of biomass power projects with Rankin Cycle technologies, biomass gasifier based power projects, non-fossil fuel based cogeneration projects, Municipal Solid Waste power projects and Refused Derived Fuel project shall be computed in accordance with the following.-

(a) fuel cost for four months equivalent to normative Plant Load Factor (PLF).
(b) operation and maintenance expenses for one month;
(c) receivables equivalent to 2 (two) months of energy charges (fixed and variable charges) for sale of electricity calculated on the net saleable design energy on normative basis;
(d) maintenance spare @ 15% of operation and maintenance expenses.

(3) In case of the renewable technologies not covered in sub-regulations (1) and (2), the Commission may adopt such norms, as it may consider appropriate, at the time of determination of tariff.

(4) Interest on Working Capital shall be at interest rate equivalent to the normative interest rate of three hundred (300) basis points above the average State Bank of India MCLR (One Year Tenor) prevalent during the last available six months, prior to the respective date(s) from which the generic tariff(s) are to be made applicable:

Provided that in case where the project specific tariff is to be determined, such average rate for the last available six months prior to the date from which the project specific tariff is to be made applicable, shall be considered.

28. Operation and maintenance expenses.- (1) Operation and maintenance expenses mean the expenditure incurred on operation and maintenance of the project, or part thereof, and includes, without limitation, the expenditure on manpower, establishment (including employees expense, administrative and general expenses), repairs, spares, consumables, insurance and overheads as well as the taxes, duties and other levies on any or all such activities.

(2) Operation and maintenance expenses shall be determined for the tariff period based on normative operation and maintenance expenses specified in Chapter-V of these Regulations for the small hydro projects and as stipulated in relevant orders of the Commission for other renewable technologies.

(3) Normative O&M expenses allowed under these Regulations shall be escalated at the rate of 5.72% per annum over the tariff period.

29. Taxes and duties.- Tariff determined under these Regulations shall be inclusive of all taxes and duties and shall not be subject to any change except for the provisions specified under regulation 20.

30. Rebate.- (1) The due date for payment of bills shall be 60 days from the date of billing.

(2) For payment of bills of the renewable energy generator through letter of credit, a rebate of 2% shall be allowed.

(3) Where payments are made other than through letter of credit within a period of one month of presentation of bills by the renewable energy generator, a rebate of 1% shall be allowed.

31. Late payment surcharge.-In case the payment of any bill for charges payable under these Regulations is delayed beyond a period of 60 days from the date of billing, a late payment surcharge at the simple interest rate of 1.25% per month shall be levied by the renewable energy generator for the actual number of days by which the payment is delayed.

32. Ceiling norms.- The financial norms, except for capital cost, as specified in this Chapter of these Regulations, shall be considered as ceiling norms and the same shall not preclude the licensee or renewable energy generator from agreeing to improved norms, including operation and maintenance norms, which may lead to overall reduction in the levellised tariff and in case the improved norms are agreed to, such improved norms shall be applicable for determination of the project specific levellised tariff.

CHAPTER –V

TECHNOLOGY SPECIFIC PARAMETERS FOR SMALL HYDRO PROJECTS

33. Categorisation.- For the purpose of tariff determination, the small hydro projects shall be categorized as under:-

(i)	Above 100 kW to 2 MW capacity
(ii)	Above 2 MW to 5 MW capacity
(iii)	Above 5 MW to 25 MW capacity

34. Normative Capital cost.- (1) In case of small hydro projects, the normative capital cost inclusive of all its components as specified in regulation 21 of these Regulations, for the control period shall be as under:-

Sr. No.	**Category of small hydro project**	**Rupees in Lac per MW**
(i)	Above 100 kW to 2 MW capacity	860
(ii)	Above 2 MW to 5 MW capacity	830

(iii)	Above 5 MW to 25 MW capacity	780

(2) The subsidy/grant/budgetary support or incentives provided by the Central/State Government shall be adjusted in accordance with the regulation 22 of these Regulations.

35. Normative saleable energy.- (1) The normative saleable energy at the interconnection point for the purpose of generic levellised tariff shall be computed on the following lines namely :-

(i) the normative annual capacity utilisation factor (CUF) for all the small hydro projects upto 25 MW shall be 55%. The number of hours in a year for calculations of CUF shall be 8766;

(ii) the normative annual energy worked out at the normative CUF under preceding clause (i) for the installed capacity shall be adjusted for the auxiliary consumption, transformation losses and the losses in the project line(s) at the normative rates as per regulations 37 and 38;

(iii) the energy worked out under preceding clause (ii) shall be further reduced by the permissible rate of the free power subject to a maximum of 13%, for any year or part thereof, consistent with the National Hydro Policy, Tariff Policy and the policy of the State Government for allotment of sites of small hydro projects in the manner as laid down in regulation 36, so as to arrive at the year wise normative net saleable energy at the interconnection point which shall be taken into account for working out the generic levellised tariff.

(2) The normative capacity utilization factor (CUF) under clause (i) of sub- regulation (1) takes into account the impact of mandatory release of water discharge immediately downstream of diversion structure of the project based on the existing instructions of the State Government which provide that for the purpose of determination of minimum discharge, the threshold value not less than 15% of the minimum inflow observed in the lean season shall be considered.

(3) The normative year wise net saleable energy for the purpose of project specific tariff determination shall also be worked out on similar lines given in sub-regulations (1) and (2) but by taking into account the annual Capacity Utilisation Factor (CUF) in accordance with clause (ii) of sub-regulation (1) of regulation 15, the normative auxiliary consumption and transformation losses under regulation 37 and the energy losses in the project line under regulation 38.

36. Free Power.- (1) The Commission shall consider appropriate structure(s) of free power for determination of generic levellised tariffs for various categories of small hydro projects, as mentioned in regulation 33, duly keeping in view of the provisions of the State Hydro Policy for allotment of sites for small hydro projects, National Hydro Policy, Tariff Policy and the limits specified under sub-regulation(3):

Provided that in cases requiring determination of the project specific tariff, the Commission shall consider the structure of free power actually applicable to that project subject to the above and the limits

specified in sub-regulation(3).

(2) In case of any change in the structure of free power for a small hydro project from that considered for the determination of generic levellised tariff or project specific levellised tariff in accordance with sub-regulation (1) or in cases where the adjustment in tariff on account of variation in free power has to be allowed as per the specific provisions contained in these Regulations, including those covered in regulation 17 and sub-regulation (2) of regulation 20, the distribution licensee shall adjust the tariff as per the following formula:-

Rate payable for the month for the net saleable Energy (Rs/kWh)	= a x (100-b)/(100-c)

Where, -

"a" is the levellised tariff (in Rs/kWh) which is required to be adjusted under this regulation

"b" is the free power (in percentage) taken into account or deemed as taken into account for the month, in "a" in the corresponding month of the tariff period by reckoning the date of commencement of operation of the project as the starting date of the tariff period.

"c" is the free power (in percentage) to be allowed in the tariff for the month subject to maximum limit of 13% free power(energy) and the provisions of sub- regulation (3)

Where free power is applicable at different rates for different parts of a month, the permissible free power (i.e "c") shall be determined under this sub-regulation separately for each such part and weighted average rate for the month as a whole shall be worked out by considering the total quantum of energy for each day of the month.

(3) The free power (in percentage) to be taken into consideration for the purpose of determination of tariff under sub-regulation (1) and/or any adjustment under sub-regulation (2) shall be subject to the following: -

(i) The free energy to be taken into account for any part of the tariff period for the purposes of sub-regulation (1), or to be allowed for any part of the tariff period for the purposes of sub-regulation (2), shall not exceed 13% free power(energy) which includes 12% free power to home State and 1% additional free power for Local Area Development Fund, as stipulated in the National Hydro Policy/ Tariff Policy.

(ii) Any quantum of free energy, if committed by the renewable energy generator over and above the 13% free power(energy) for any period shall not be factored into the tariff.

(iii) Additional free energy, if any, to be provided by the renewable energy generator to the State Government, on account of curtailment of waiver period due to delay in commissioning of project as per provisions of Implementation Agreement and/or for enhancement of capacity and/or for any reason attributed to the renewable energy generator shall not be taken into account even if the total free power for any period, including such additional free power, does not exceed 13% free power(energy).

(iv) The quantification and adjustment of free energy as well the energy accounting shall be made with reference to the energy projected/received at the interconnection point.

(v) The free energy to be allowed for any period for the purpose of sub-regulation (2) shall in no case be more than that actually deducted for that period in the energy accounts, out of the total energy received at the interconnection point.

37. Auxiliary consumption and transformation losses.- Normative auxiliary consumption and transformation losses for the small hydro projects shall be 0.5% of the gross generation and the same for transformation losses at the switchyard linked to the generating station of the projects shall also be 0.5%:

Provided that for the sake of simplicity, these two factors shall be clubbed together and accounted for as 1% of the gross generation.

38. Energy losses.- (1) The normative energy losses in the project line(s) shall be 0.7% of the net generation (i.e. after deducting auxiliary consumption and transformation losses, on normative basis, from the gross generation).

(2) For the project specific levellised tariff, the percentage losses worked out on the basis of actual length of the project line(s), conductor size and expected power flow shall be taken into consideration.

39. Operation and maintenance expenses.- (1) Normative annual O&M expenses for the control period shall be as follows:-

Sr. No.	Category of Project	Annual O&M expenses Rupees in Lac per MW
(i)	Above 100 kW to 2 MW capacity	33
(ii)	Above 2 MW to 5 MW capacity	29
(iii)	Above 5 MW to 25 MW capacity	24

CHAPTERV-VI
OTHER PARAMETERS

40. CDM benefits.- (1) *In case of small hydro projects, the proceeds of carbon credit from approved CDM project shall be retained by the Small Hydro Project generator and shall not be adjusted in the tariff.*

(2) In case of renewable energy technologies, other than the small hydro projects, the CDM benefit shall be shared in the following manner, namely.-

a) 100% of the gross proceeds on account of CDM benefit to be retained by the project developer in the first year after the date of commercial operation of the generating station;

b) In the second year, the share of the beneficiaries shall be 10% which shall be progressively increased by 10% every year till it reaches 50%, where after the proceeds shall be shared in equal proportion, by the generating company and the beneficiaries.

41. Tariff for lower or higher generation.-The tariff based on normative quantum of net saleable energy corresponding to the normative CUF, or any other higher CUF taken into consideration for the project specific determination of tariff as per the provisions of regulation 15, as the case may be, shall be applicable for the entire quantum of net saleable energy actually achieved irrespective of whether such quantum is higher or lesser than the normative quantum of net saleable energy taken into consideration for determination of the tariff.

CHAPTER-VII
MISCELLANEOUS

42. Deviation from norms.*-Tariff for sale of electricity by the renewable energy generator may also be agreed between the renewable energy generator and the licensee in deviation from the norms specified in these regulations subject to the condition that the levellised tariff over the useful life of the project on the basis of the norms in deviation does not exceed the levellised tariff determined on the basis of the norms specified in these Regulations:*

Provided that the reasons for deviation from the norms specified under these Regulations shall be recorded in writing.

43. Overriding effect.-The provisions of these Regulations shall have effect notwithstanding anything inconsistent therewith contained in any other regulations, framed by the Commission, relating to the determination of tariff and/or making provisions for open access under the Act.

44. Power to remove difficulties .- *If any difficulty arises in giving effect to these Regulations, the Commission may, of its own motion or otherwise, by an order, and after giving a reasonable opportunity to those likely to be affected by such order, make such provisions, not inconsistent with these Regulations, as may appear to be necessary for removing the difficulty.*

45. Power to relax.*-The Commission may, by general or special order, for reasons to be recorded in writing and after giving an opportunity of hearing to the parties likely to be affected, may relax any of the provisions of these Regulations on its own motion or on an application made before it by an interested person.*

By order of the Commission
Sd/-
Secretary