THE HIMACHAL PRADESH ELECTRICITY REGULATORY COMMISSION, SHIMLA

IN THE MATTER OF

Determination of generic levellised tariffs for Small Hydro Projects under Regulation13 of the Himachal Pradesh Electricity Regulatory Commission (Promotion of Generation from the Renewable Energy Sources and Terms and Conditions for Tariff Determination) Regulations, 2012.

CORAM
SUBHASH C. NEGI
CHAIRMAN

ORDER

1. The Commission made, after prior publication, the Himachal Pradesh Electricity Regulatory Commission (Promotion of Generation from the Renewable Energy Sources and Terms and Conditions for Tariff Determination) Regulations, 2012, on 17th December, 2012 in the Rajpatra Himachal Pradesh (hereinafter referred to as "RE Tariff Regulations, 2012"), which have come into force from 18th December, 2012.

2. Sub-regulation(1) of Regulation 13, read with Regulations 32, of the RE Tariff Regulations, 2012, provides that the Commission shall determine separate generic levellised tariffs and associated terms and conditions for each category of the Small Hydro Projects (in brevity SHPs) within 90 days from the date of commencement of the said Regulations by taking into account the norms specified thereunder.

3. Accordingly, the Commission worked out the proposed levellised tariffs and associated terms and conditions for various categories of SHPs on 04.02.2013.

4. The Commission invited the public objections and suggestions up to 1-3-2013 on the proposed levellised tariff for SHPs by way of insertions in two Newspapers i.e. "The Tribune" and " Divya Himachal" on 6th February, 2013 and also by way of making the Tariff proposals available on the Commission's website. In response

to the same, written comments/suggestions were received from the following stakeholders:-

(i) M/s GREEN INFRA, 2nd Floor, Tower II, NBCC Plaza, Pushp Vihar, Sector 5, Saket, New Delhi 110017

(ii) M/s Himadri Hydro Power Pvt. Ltd. and M/s Growel Energy Company Ltd., reg. office at 1, Electronic Complex Chambaghat, Solan, HP-173213

(iii) The Himalaya Power Producers Association, Resident of B-7, Sector-1, New Shimla -171009

(iv) M/s Techman Energy Ltd., G-1354, LGF, Chittaranjan Park, New Delhi-110019

(v) M/s Aleo Manali Hydro Power Pvt. Ltd., reg. office Aleo-Manali, Distt Kullu, Himachal Pradesh

(vi) Er. P.N. Bhardwaj, Consumer Representative, Arcadia, Village Ghat-ki-Ber, P.O. Dharmpur, Distt. Solan, Himachal Pradesh

5. Subsequently, a hearing was held on 11th March, 2013 in which the representative(s) of following stakeholders expressed their views/ suggestions/comments:

Sr. NO.	Name of Stakeholder	Represented by
i.	M/s Techman Energy Ltd New Delhi.	i) Sh. R.K. Mehta , Advocate ii) Sh. Ajay Vaidya, Advocate iii) Sh. Antraryami Upadhyay, Advocate iv) Sh. S.N. Kapur
ii.	The Himalaya Power Producers Association	
iii.	M/s K.K.K Hydro Power Ltd. Baragoan.	i) Sh. Pawan Kumar ii) Sh. Y.K. Battra
iv.	M/s GREEN INFRA, New Delhi	Sh. Hem Raj
v.	The Himachal Pradesh State Electricity Board Ltd.	i) Director (Operation) ii) SE (SERC) iii) Sh. R.K. Punshi, Consultant

6. The Himalaya Power Producers Association and M/s Techman Energy Ltd. have subsequently, also confirmed their view points, as expressed by them in hearing, vide their letter dated 13th March, 2013.

7. REQUIREMENT OF PUBLIC HEARING PRIOR TO FINALIZATION OF THE REGULATIONS

7.1 During the hearing on the determination of levellised tariff for various categories of SHPs on 11-3-2013,Sh. R.K. Mehta, Advocate, appearing on behalf of the Himalaya Power Producers Association and M/s Techman Energy Limited raised the objection that since the tariff determination is subject to the regulations framed by the Commission and the Commission is to follow the benchmarks laid down therein, the tariff regulations should have been finalized after holding the public hearing. In the instant case though the Regulations have been framed after inviting the public objections and also considering the objections and suggestions received from the general public on the draft Regulations, yet no public hearing has been conducted. According to him the default of not holding the public hearing at that stage is the contravention of the statutory provisions of sub-section (3) of section 181 of the Electricity Act, 2003 and the benchmarks and norms fixed therein, cannot be made basis for the tariff determination under the Act (ibid). In addition to the aforesaid objections raised during hearing, the following submissions have also been made in writing on behalf of the above two objectors:-

(i) The present Tariff proposal for determination of Generic Levelised Tariff for small Hydro projects has been made under Regulation 13 of the RE Tariff Regulations 2012 .

(ii) Regulation 13 of RE Tariff Regulation 2012, provides that the Commission shall determine the Generic Levelised Tariff by taking in to account the norms specified under the said Regulations.

(iii) The power of State Commission to make Regulations under Section 181(3) of the Electricity Act is subject to previous publication.

(iv) Accordingly, the Commission had published the draft regulations and invited objections/suggestions.

(v) After receipt of objections/suggestions no opportunity of hearing was granted before finalizing the Regulations.

(vi) However, an order dated 12.12.2012 was issued dealing with the suggestions/objections. In the last Para of the said order it is stated as under:-

"The draft Regulations are to be modified/rationalised by incorporating the need based changes including those required in view of above discussion and findings as well as other comments which might have escaped specific reference in this order; and the final Regulations are to be issued accordingly."

(vii) The final Regulations were notified on 17.12.2012.

(viii) It is the submission of the Association that an opportunity of hearing ought to have been given to substantiate the objections/suggestions.

(ix) Opportunity of hearing is an essential requirement of the principles of natural justice. During the hearing so many issues can be clarified. Written objections/suggestions cannot substitute oral hearing**.**

(x) Infact, the procedure followed by the Central Electricity Regulatory Commission (hereinafter reffered as "CERC") and many other State Commissions is that after receipt of objections/suggestions to the Draft Regulations, a Public hearing is held. After the public hearing, the Commission issues the Statement of Objects/Reasons in which the objections/ suggestions are discussed and the Commission's decision is given. Thereafter based on such objections/suggestions the final Regulations are notified.

(xi) Opportunity of hearing becomes more important in the present context since the Tariff is to be determined on the basis of Regulations.

(xii) Moreover, if no hearing is given before framing the Tariff Regulations, hearing before passing the Tariff Order becomes an empty formality since the Tariff is required to be determined in terms of the Regulations.

(xiii) A perusal of the Regulations gives an impression that the Regulations have been framed with the object of keeping the Tariff as low as possible. While the object of keeping the Tariff low is laudable, at the same time the objects of Sections 61 and interest of small hydro generators cannot be ignored. Unless

a fair Tariff is determined, the object of promotion of generation of electricity by renewable energy sources cannot be achieved.

(xiv) Section 61 clearly provides that the Commission shall promote generation of Electricity from renewable sources of generation.

(xv) In order to achieve the object of Section 61, it is imperative that in framing the Regulations and determining the Tariff the Commission should take into account the interest of all stakeholders including the small hydro generators.

7.2 HPSEBL's RESPONSE

On this issue, Sh. J.P. Kalta Director (Operation) of the HPSEBL, responded, during the hearing, that there is no justification of revisiting the parameters already specified in the Regulations and that the plea of the objectors is not tenable as the Commission has followed due process of prior publication. The Commission, before making RE Tariff Regulations of 2012, has published a draft thereof in the Rajpatra, Himachal Pradesh, and the comments/suggestions/objections were invited, from of the persons likely to be affected thereby, with a notice specifying the date on or after which the draft regulations were to be taken into consideration. The stipulated date had also been subsequently extended. The said Regulations were then finalized after considering all the objections or suggestions, which were received, on the draft regulations as is obvious from the detailed order issued by the Commission on dated 12.12.2012 at the time of finalization of the Regulations . The said RE Tariff Regulations,2012 were then published in the Official Gazette and the said publication is the conclusive proof of the fact that the said RE Regulations 2012 have been duly made after previous publication, as is envisaged under sub-section (3) of section 181 of the Electricity Act, 2003 read with the Electricity (Procedure For Previous Publication), Rules, 2005.

7.3 Commission's Views

The Commission has considered the submissions of the Learned Counsel of the objectors and also of the representative of the HPSEBL and has scanned the relevant provisions of the Act, rules and regulations. Sub-section (3) of section 181 of the Electricity Act, 2003, requires previous publication of all the regulations by the

State Commission under the Act. The essentials of the procedure prescribed under sub-section (3) of section 181 (ibid) and the Electricity (Procedure For Previous Publication) Rules, 2005 are the antecedent publicity of the draft regulations with a view to give the persons likely to be affected an opportunity of making objections and consideration of objections, if any, before the regulations are finally made. The said provisions also contain a conclusive evidence clause that the publication in the Official Gazette of the regulations made in exercise of a power to make regulations after previous publication shall be conclusive proof that the regulation have been duly made. This position stands confirmed judicially in **Orissa Consumer's Association and Anr. V/s Orissa Electricity Regulatory Commission AIR 2005 Orissa-11**. Further **the Apex Court in Sunderjas Kanyalal Bhattija V/s Collector, Thanne, AIR 1990 SC 261,** has held that the requirement of previous publication does not give any right to the objectors of being orally heard. Thus the requirement of public hearing is not mandatory for making regulations.

Since the process of regulation making is already over, the tariff determination is to done strictly in conformity with the provisions of the said RE Tariff Regulations 2012. The objections raised at this stage on the Regulations have no relevance at all and hence require to be ignored. The Commission shall also like to mention here that the Himalaya Power Producer Association and M/s. Techman Energy Limited, who have now raised these objections, did not even submit any comments/objections on the draft Regulations which were published prior to the finalization of the said RE Tariff Regulations 2012. The Commission, otherwise, also finds merit in the HPSEBL's plea in this regard and does not find any justification for revisiting the parameters already specified in the RE Tariff Regulations, 2012. In view of the foregoing , the Commission decides to proceed further towards determination of separate generic levellised tariffs and associated terms and conditions for each category of SHPs taking into account the norms specified in the RE Tariff Regulations, 2012. The Commission shall however like to inform the stakeholders that while finalizing the normatives for tariff determination under the regulations, it has duly considered all the suggestions, particularly those relating to higher capital cost for all the three categories, higher O&M charges, adjustment of subsidy at zero level, lower CUF, lower duration of control period, annual escalation of capital cost during control period, higher interest rates, higher rate of return on

equity, adjustment of free power beyond 13% pass through of additional taxes, sharing of CDM benefit etc, all of which impact increase in the per unit tariff. This is also obvious from the detailed order dated 12.12.2012 issued by the Commission before notifying the final RE Tariff Regulations, 2012.

8. The Commission now proceeds to address the other objections and suggestions received by it. In this connection the Commission observes that most of the comments relate to fixation of normative parameters which in fact have already been finanlized as a part of the Regulations and do not form the subject matter which is presently under consideration i.e. determination of separate generic levellised tariffs and associated terms and conditions for each category of SHPs taking into account the norms specified in the RE Tariff Regulations, 2012. Such comments were duly considered at the time of finalization of the Regulations. Even though the comments of this nature may not merit any consideration, the Commission has consolidated the same in the following paras 9 to 17 and has analysed the same in a consolidated manner under para 18. The comments on the tariff calculations have however been considered separately under paras 19 to 24 of this order

9. CONTROL PERIOD OR REVIEW PERIOD

9.1 M/s Techman Energy Ltd. & Himalaya Power Association

It has been stated that in the present economy of the country where the inflation rate is more than 8% every year, the Control Period of 4 years 3 months without providing any mechanism for absorbing the inflation is not justified. It has also been stated that-

i) The average inflation in the last 5 years was more than 10%.

ii) The major components in the construction of small hydro projects are cement, steel and electro mechanical equipments besides fuel labour and wages.

iii) Regulation 29 of the CERC Regulations provides the Capital Cost Indexation Mechanism for adjustment of Capital Cost over the control period with the changes in Wholesale Price Index for Steel, and

Electrical Machinery as well as factor relating to Land & Civil Work, Erection & Commissioning and IDC & Capital Cost.

iv) The provision for review of Tariff in Regulation 19 does not provide for review on any these grounds.

v) In the Uttarakhand ERC Regulations,2010 the Control Period of 3 years was provided.

vi) The Capital Cost of the project should be reviewed every year and should be based on the Construction Cost Index of the country and unit selling prices should be increased accordingly every year. To avoid the administrative works it will be still admirable to announce the tariff rate escalation now itself. Since the tariff is a direct derivative of the capital cost an escalation to the tune of 3% to 4% every year can be defined right now.

vii) Adequate provisions either in line with the CERC mechanism or some other appropriate escalation factor may, therefore, be factored into the Tariff.

9.2 **Consumer Representative's views**

The Consumers representative has stated that whereas the need to review capital cost of the project on annual basis may not be acceptable, the suggestion is reasonable from the view of abnormal inflation in the past five-six years and thus there is a need to review this and lower the control period so as to suitably address the need to encourage investment in small hydro power sector.

10. USEFUL LIFE

M/s Techman Energy Ltd. & Himalaya Power Association have submitted that there is no justification for taking the useful life of the plant as 40 years, in view of the following-

(i) Regulation 2(aa) provides for useful life of 40 years for Small Hydro Projects.

ii) Regulation 1(aa) of CERC Regulations, 2012 provides for the useful life on smalls Hydro Projects as 35 years.

iii) Under Section 61(a) the State Commission is required to be guided by the principles and methodologies specified by the Central Commission.

iv) No reason has been given as to why the norm laid down in the CERC Regulations has not been followed and has been departed from.

v) The life of most of Electro Mechanical components of the Small Hydro Plants is not more than 30 years. Most of the suppliers of such plants also specify plant life of 30 years.

11. CAPITAL COST

11.1 All the objectors have commented that the normative Capital Cost of Small Hydro Projects kept for each category is on very lower side and needs to be increased. Submissions have been made on following lines:-

11.2 **M/s Himadri Hydro Power Pvt. Ltd. and M/s Growel Energy Company Ltd. have stated as under:**

The Capital Cost of SHPs of capacities between 2 to 5 MW has been fixed as Rs. 7.5 crores is too low and needs to be revised upwards to at least Rs. 8.5 crore and we fail to understand as to how the HPERC has accepted this low cost, when there is no way in which the small hydro of this range will get constructed in this cost. With an uncontrollable inflation and the GDP growth rate being dismal, the investment in small hydro is definitely sunk. We shall always be in deficit and it is doubted if we shall be able to even pay back the capital, even if we decide to surrender our RoE.

The HPERC has erred on the matter because it has in the past adopted two yard sticks, one for the IPP and other for the Government hydro projects. While project costs of Larji HEP has been admitted at around Rs. 12 crores/MW, there are many other large hydro projects being constructed by other National agencies such as NHPC, NTPC, SJVNL where the project cost is around Rs. 12 Cr./MW or more. We would request the HPERC to consider that two entities doing the same work/business cannot be treated differently in as far as capital cost is concerned.

If this argument of ours does not hold any ground, we would like to assure that we, who are just a few who belong to the State of HP have dared to venture into this risky business, are definitely doomed; unless the HPERC decides to reconsider the upward revision of capital cost to at least Rs.8.5 crores/MW.

11.3 M/s Techman Energy Ltd. & Himalaya Power Association

(i) At first instance the proposed tariff of Rs. 3.27 per unit seems to be not in consonance with the cost factor and is extremely low and not reflective of present capital costs which are close to Rs. 9 crores to 10 crores/MW.

Determination of capital costs may please be done in consultation with reputed bodies like IREDA, AHEC-IIT Roorkee, UJVNL-Ltd- Uttarakhand, prominent consultants like Indo Canadian Consultancy Ltd Noida, Hutarew – Delhi, SMEC-Gurgaon or other similar agencies. Further Capital cost determination may please be based on actual supported data and justified in more depth before final fixation of tariff.

(ii) In terms of Regulation 20 read with Regulation 33(Chapter 5), the Capital Cost of Rs. 7.50 crores per MW has been proposed above 2 MW upto 5MW capacity.

iii) The Capital Cost should be proportionally increased in line with the inflation index.

iv) In the case of UERC Regulation of 2010 in Regulation 29 the Capital Cost of Rs.6 crores per MW for the projects commissioned during 2007 -08 to 2008-09 was enhanced to Rs. 7 crores per MW for the projects commissioned on or after 01.04.2009. There was thus an increase of 8% per annum during the two year period. If the same principle is applied the Capital Cost in the present case will come to Rs. 9.25 crores per MW.

iv) The reasonable figure of Capital Cost would be Rs. 9.5 crores per MW.

v) The capital cost of SHPs kept for each category is very much low. The Commission has not given any logic for adopting this figure. The cost of project was taken as Rs. 6.5 crores/MW in March 2007 and now this has been

taken as Rs. 7.5 crores/MW in March 2013. The above increase if calculated is only 2.5% every year and by any stretch of imagination it does not commensurate with this existing price rise of the country which is to the tune of 8% every year. The reasonable figure considering the present day price escalation would be nearly 9.5 crores.

11.4 M/s Green Infra

i) The project cost assumed @ Rs.7.5 crores/MW is very low. The completion cost for the projects being done today is not less than Rs. 10 crores per MW. There are a number of examples available today to prove this. In this regard, TECs being granted today by HPSEB may be referred; besides, completion cost data is available with various financial institutions Banks.

ii) The time of construction for IDC may be assumed as 48 months as is mostly the case.

11.5 M/s Aleo Manali Hydropower Pvt. Ltd.:

Of late the cost has increased too much not only due to increase in construction cost, minimum wages, steel, cement diesel etc but also due to additional taxation of labour cess, service tax on labour part of construction & transportation, 5% entry tax imposed by State Govt. etc. and the project cost should be considered as Rs.900 lac/MW.

11.6 Consumer Representative's views

All the stakeholders have emphasized the need for an upward revision of the project capital costs from the level of Rs. 7.5 crores/MW. The project cost in respect of small hydro should be based on inflation rates that have existed over the past five-six years beginning 2007 when the small hydro capital cost was frozen at Rs. 6.5 crores/MW. During the period commencing thereafter, the country has shown an uncontrollable inflation, leading to a steep rise in costs of essential project related components such as cement, steel, labour etc. In addition, the State of HP has imposed an entry tax on all goods, while the Central Government has imposed service tax on project related activities. The Commission cannot overlook the cost

being incurred by the State agencies while executing hydro projects. While a large hydro project, on a per MW base, should cost less than small hydro projects, Commission has, in the recent past allowed capital cost of large hydro projects owned by the State Government/ Corporations, much beyond the normative capital costs fixed for small hydro. He has stated that the generation cost of energy in a State owned hydro project should not be abnormally higher than that of an IPP.

The IPP who decides to invest into this infrastructure development has to start at least four to five years ahead of the actual commencement of construction. At times, due to bureaucratic delays, even this figure has been surpassed. This investment is likely to be sunk in case the capital cost does not consider factors beyond control. The distribution agency has to essentially purchase power from the renewable resources, which include the generation from the State owned agencies as well as the IPP. The State and the Country is witnessing the need for large investment in energy sector. With the State, funding being diverted towards the social sector, investment needed for the energy sector must necessarily come from private sector. This can happen only if the investment in the hydro sector is profitable. Therefore, the capital cost of Rs. 7.5Cr./MW needs a fresh consideration and should be fixed based on actual ground realities.

12. SUBSIDY / INCENTIVE

12.1 All the objectors have suggested that subsidy should not be considered, while fixing the generic tariff. It has been submitted that:-

(i) 90% subsidy amount of Rs. 115 Lacs/MW (for 2MW Projects) has been subtracted from the capital cost for implementation of project. It is submitted that this seems to be illogical as the very purpose of subsidy is to incentivize the renewable energy as per the mandate in the Electricity Act, 2003. The very spirit of the Act gets defeated if subsidy is indirectly passed on to State Electricity Board through decrease in Tariff which will ultimately hamper the financial viability of the Projects and would result in discouraging the renewable power producers to invest in the small hydro projects negating the provisions of the Electricity Act, 2003.

ii) The subsidy is extended to help reduce the burden of capital in the initial years the question of making any profit, whatsoever, does not arise. Besides, it is intended as an incentive to attract investors such as us. We therefore request that the subsidy received by the developer be not considered while reviewing the generic tariff.

(iii) The terms subsidy according to the Webster Dictionary the meaning of subsidy is " *A grant or gift of money or a grant by a government to a private person or company to assist and enterprise deemed advantageous to the public"* The definition of subsidy does not leave any doubt that it is not a loan given by the Central Government and which would be recovered by the State Government. This proposal it appears that the HPERC is considering all the proposals of reducing the tariff rate by following such unethical practices.

(iv) It does not appeal at all that from one hand the Central Government is granting the subsidy and on the other hand the State Government is snatching the same. Therefore this part of the tariff should be completely removed and there should not be any reduction in the Loan amount to be repaid on account of payment of subsidy whether 100% or 90%.

v) There was no such provision for recovery of subsidy in the scheme of the Government of India, Ministry of Renewable Energy. The adjustment of the Subsidy by the Commission is, therefore, against the scheme of the Government of India under which such subsidy was provided.

vi) The purposed adjustment of subsidy, therefore, is without jurisdiction.

vii) Subsidy should not be taken in calculation. MNRE has been changing the subsidy pattern time and again. The present subsidy order may not be valid in next coming years.

12.2 **Consumer representative's views**

The consumer representative has commented that Electricity Act, 2003 highlights the need to encourage non-conventional energy sources and mandates the promotion of electricity generation from non-conventional energy sources. The National Tariff

Policy (2006) also reiterates the importance of renewable energy generation and their subsequent benefits. The concept of extending subsidy was therefore, evolved to attract private investment and incentivize the renewable energy sector. To achieve this objective, the distributors have to purchase a fixed percentage of their total power purchase from renewable sector. The development of renewable energy therefore is a mandated activity. By considering 90% of the subsidy, the advantage is being passed on to the distributing agency, in terms of lower tariff. This is principally incorrect and therefore needs to be reviewed.

13. NORMATIVE NET SALEABLE ENERGY

13.1 All the objectors have stated that the CUF should be retained at 45% basis on the provision in the RE Tariff order of 2007. It has also been mentioned that:-

(i) The Commission has taken the Capacity utilization factor as 55%, whereas in earlier tariff order it has been worked out with 45% CUF. The CUF should be worked out on realistic assessment based on actual values of the ongoing projects including that the HPSEBL.

(ii) The effect of climate change and global warming has already adversely impacted the annual generation from hydro projects and even 45% CUF in some of the projects is not achievable. The Capacity Utilization factor therefore needs to be given a fresh look and kept at the same level as in the previous tariff order as this itself impacts tariff calculation to a great extent.

(iii) By enhancing the CUF from 45% to 55%, HPERC has overlooked the fact that the developers who have ventured into the hydro sector had the assurance that CUF is 45%, until the current levellised tariff fixation. Any developer before investing in the hydro sector always sees the ground conditions. With the revised CUF of 55%, this trust has been annulled.

(iv) IPPs suggested to change the CUF to the old value otherwise this will be the most de-motivating factor to the entrepreneurs.

v) Even CERC Regulations 2012 provide CUF of 45% for Small Hydro Projects located in Himachal Pradesh (Regulation 30).

vi) There is, therefore, no justification for increasing the CUF from 45% to 55%.

13.2 **Consumer representative's views**

Investment in hydro sector and more specifically in small hydro sector is fraught with risks, which are geology and climate. While geological risks can be mitigated by sound engineering, IPPs have no control over climate. It is also a well established fact that in the coming days, precipitation will continue to decline/become erratic and unpredictable. To the best of my knowledge, 45% CUF fixed in 2006 was based on the CUF recorded in the HPSEB has some of the well established catchment areas. If their CUF is 45%, it is incorrect to expect that the projects allotted to IPP will yield a higher CUF. It will be therefore fair to continue with the CUF of 45%.

14. INTEREST RATES

14.1 **M/s Techman Energy Ltd. & Himalaya Power Association (Joint submission)**

i) For the purpose of computation of tariff, the normative interest rate is to be considered as average long Term Prime lending Rate (LTPLR). Base Rate of State Bank of India (SBI) prevalent during the previous year. So, rate of interest @ 13.75% may please be adopted which is in line with the provisions under the CERC Regulations. The interest rate of 12.875% assumed in the tariff order is not realistic at all as all financial institutions including IREDA is charging much higher rates.

ii) The Association does not have any objections to the procedure adopted by the Commission. However, the points to be added over and above the average base rate for 6 months should be 475 points and not 300 points since the difference in the SBI base rate and SBI Lending Rate (SBAR) of the State Bank of India is 4.75%.

iii) Interest on working capital: Similar to the interest on loan for arriving at interest on working capital an addition of 500 points should be made to the average basic rate for six months i.e. the effective interest rate should be 14.875% as compared to 13.375%.

14.2 M/s Aleo Manali Hydropower Pvt. Ltd. have suggested that interest rate should be 14.25% ,as REC/PFC/Banks do not fund power projects at lower interest rates even to good rated companies.

14.3 **Consumer representative's views**

In case the rate of 12.875% adopted for calculating the generic tariff is not the LTPLR, the same needs to be looked into and the appropriate interest rate adopted for fixing the generic tariff.

15. DEPRECIATION AND REPAYMENT PERIOD

15.1 M/s Techman Energy Ltd stated that the repayment period should be 12 years as suggested including 2 years moratorium and for the same reason the depreciation for all the 12 years should be equal to 5.833% recurring. The above procedure (of course the subsidy is not to be deducted) will provide a breath to the IPP after making huge investments in setting up the project.

15.2 M/s Techman Energy Ltd. & Himalaya Power Association (joint submission)

i) In terms of Regulation 24 the depreciation has been provided as 5.83% per annum for meeting the requirement of Loan repayment (after adjusting the subsidy components).

ii) It is submitted that there is no justification for adjustment of the subsidy given by the Government from the loan repayment amount for determining the depreciation.

iii) Without prejudice to our submission that the subsidy should not be deducted from the loan repayment amount, it is submitted that there is no justification for reducing the period of depreciation at 5.83% (Rs.43.73 lakhs) per annum

from 12 years (Appendix-B Sheet 1, Sr. No. 3, last column) to 9 years. For the 10 years the depreciation comes to 3.7%(Rs.27.75 lakhs).

iv) Payment period of loan has been taken as12 years, whereas the last order (2007) provide for a moratorium of 2 years and repayment in 10 years. This aspect required reconsideration by the Commission.

v) Similarly there is no justification for reduction for repayment period from 12 years to 10 years.

vi) Without prejudice, it is submitted that the balance loan amount after deduction of subsidy should be spread equally over 12 years.

15.3 **M/s Aleo Manali Hydropower Pvt. Ltd.**

Repayment period should be 10 years in place of 12 years.

16. AUXILIARY CONSUMPTION

M/s Techman Energy Ltd. & Himalaya Power Association stated that the transmission losses as well as auxiliary consumption assumed are very much on lower side these should be taken as per CERC guidelines for preparation of DPRs. The energy losses of the project line has been taken of 0.7% of the net generation, where as practically it has been found to be not less than 1.5%.

17. O & M EXPENSES

17.1 **The Himalaya Power Association**

The O&M cost are very low and need to be at least 2.5% of Capital Cost and additionally insurance cost of 1% allowed to cover natural disaster. As these SHPs are proposed in Himalayan region which is under high seismic/earthquake zone and prone to natural calamities, due safeguard in form of insurance coverage is required to protect investment and bank exposure. 1% insurance for areas within seismic zone “V” may be considered, with 0.2% reduction for each stage reduction in seismic zone area.

17.2 **M/s Techman Energy Ltd.**

The useful life of the Small Hydro Projects has been kept as 40 years from the date of commencement of operation projects. This target of keeping the project in working condition with full efficiency on basis of the meager amount of 0.44% of cost of project for spares is impossible, that too it is a part of O & M expenses which are even less than 3%. In case a useful efficient 40 years life is conceived by the Commission then at least 3% O & M expenses in addition to minimum 0.75% cost of spares should be allowed in the tariff determination. It should also be judged from the manufacturer's instructions as adopted by the Commission in its earlier regulations which says that the life of the electro mechanical components is not more than 30 years

17.3 **M/s Techman Energy Ltd. & The Himalaya Power Association (joint submission)**

i) In terms of Regulation 38, the normative annual O&M expenses for the first year of Tariff for SHPs 2 MW to 5 MW capacity have been taken as Rs.22 lakhs and escalated @ 5.72% per annum over the Tariff period in accordance with Regulation 27.

ii) In the CERC Regulations, the O&M Expenses are stipulated as Rs.25 lakhs for the first year with an escalation of 5.72% per annum. There is no justification for not following the same norm by the State Commission.

iii) The cost of spares should therefore, be 30% of O&M expenses and in addition to the O&M expenses of Rs.25 lakhs.

iv) O&M should be 3% of project cost escalation of 10% per year/relate to present inflation.

17.4 **Consumer Representative's views**

The O&M expenditure adopted for generic tariff consideration is Rs. 22 Lacs/ MW appears reasonable, with an annual escalation factor of 5.72%.

18. COMMISSION'S VIEWS ON THE ISSUES RAISED UNDER PARAS 9 TO 17

The comments/suggestions made by the objectors/stakeholders as per paras 9 to 17 pertain to finalization of the normative parameters. The Regulations containing the normative parameters have already been finalized after following the due process of prior publication. The matter which is presently under consideration relates to determination of separate generic levellised tariffs and associated terms and conditions for each category of SHPs by taking into account the norms specified in the RE Tariff Regulations, 2012. As a matter of fact, somewhat similar comments were received on the draft regulations also which were duly considered by the Commission while finalizing the Regulations. The order dated 12.12.2012 issued by the Commission before notifying the final Regulations, brings out the Commission's views on such issues. Since the comments given by the various objectors as per preceding paras 9 to 17 do not form a part of matter presently under consideration of the Commission, the comments do not find any merit for its consideration at the present stage.

COMMENTS/SUGGESTIONS ON TARIFF ISSUES

19. WORKING CAPITAL

19.1 M/s Techman Energy Ltd.

Two months revenue has been adopted by taking theoretical expenditure without levellisation. If the payment is to be made according to the levellised rate, the revenue should also be determined on the basis of levellised rates.

19.2 Commission's View

The various components of the tariff have been computed on annual basis in accordance with the specified parameters. The annual expenses so worked out have been levellised for the tariff period by using discount factor. The receivables for two months to be considered for the purpose of computing the working capital and interest thereof is just one of the components and accordingly the same has also to be considered on the basis of expenses for each year and not on levellised basis. In case the receivables for this purpose are worked out on the basis of levellised rate,

as has simply been proposed (without giving any supporting calculations), the same shall amount to repetition of levellisation process at each stage which may not be correct and may also lead to complicated calculations. However, this may otherwise also not have any significant impact. As such, the Commission decides not to revise the calculations on this account.

20. DISCOUNT FACTOR

20.1 M/s Techman Energy Ltd.

The concept of average discount factor has not been defined and it is mathematically incorrect.

20.2 Himalaya Power Association

It seems there is certainly flaw in the Discount Rate. The Commission has used a very low discount rate of 10.58%. Discount rate is the weighted post tax average cost of capital. Calculation is based on:

70% (proportion of debt) *12.875% (cost of debt) *75% (which is 1-levellised tax rate) +30% (proportion of equity)*19% (cost of equity) *75% (which is 1-levellised tax rate) = 10.58%. If higher discount rate is applied, present value of cash flows will be a lot lower and hence the tariff needed to maintain the ROE will be higher. Further cost of debt used is too low at 12.875% as well. It is submitted that the Commission may take into consideration CERC discount rate in this regard.

20.3 M/s Aleo Manali Hydropower Pvt. Ltd.

It has been proposed that discount factor be taken as 11%.

20.4 Consumer Representative's views

In view of the fact that one stakeholder has highlighted the need for a recheck and requested adoption of CERC discount rates, the consumer representative has stated that in his view, estimation of a suitable discount rate is an uncertain part of 'Discount Cash Flow' (DCF) in so far as the final result is very sensitive to the choice of discount rate. Even a small change in the discount rate causes a huge change in the value. The problem of estimating a suitable discount rate is even more problematic in

the case of small hydro where the time span is 40 years. It is well established fact that small hydro investments are prone to risks. Therefore, in the valuation of DCF, a discount rate has to be chosen such that it reflects the risk; the higher the risk, the higher is the discount rate. He has further stated that we live in an uncertain world and to survive, an IPP needs to profit despite the risks and uncertainly that they operate in and there is thus a need to review the 'Discount Rate'.

20.5 **Commission's views**

The Commission has worked out the discount factor in accordance with the provisions of the RE Tariff Regulations, 2012. The contention of the Consumer Representative that even a small change in the discount rate causes a huge change in the value is also not supported by any calculation. The objectors have not intimated any arithmetical error in the calculation of the discount rate. The Commission also does not find any justification of increasing the discount factor to account the risk factor as suggested by the Consumer Representative. As such, the discount factor of 10.58%, which is based on the RE Tariff Regulations, 2012, as well as on the principles followed by the CERC in their calculations, shall remain unchanged.

21. TARIFF STRUCTURE AND ROE

21.1 **M/s Techman Energy Ltd. & the Himalaya Power Association (joint submission)**

i) As per Regulation 11 the proposed Tariff Structure comprises the following fixed cost components:-

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

ii) Income Tax has been excluded from the Tariff Structure in the present proposal.

iii) In 2007 Regulation, 14% Return on Equity (ROE) was excluding Income Tax.

iv) Now Income Tax is included in the ROE. This is evident from the Discount factor in Para 6 which states that ROE has been computed at 14.95% by adjusting the normative of ROE by 19% per annum for first 10 years with MAT.

v) The Income Tax will also be attracted on the difference in the Rate of Depreciation (5.83% per annum) prescribed by the Commission in Regulation 24 and the Rate applied by the Income Tax Department.

vi) The Finance Minister in his budget 2013-14 has levied a surcharge of 10% on income exceeding Rs.1 crore. The above implication would lead to further reduction in the Tax Paid equity of the I.P.P. According to the CERC the proposed return on equity of 19% and 22% should be increased to 20% and 24%.

21.2 **Commission's Views**

The RE Tariff Regulations, 2012, do not envisage pass through of Income Tax as a separate item. For the propose of computing the discount factor, the normative return on equity as per the RE Tariff Regulations, 2012, has been adjusted with MAT and corporate Tax at the rates prevalent at the time of commencement of the said regulations.

22. CALCULATION OF INTEREST ON LOAN

22.1 M/s Techman Energy Ltd. & Himalaya Power Association in their joint submission have suggested that the calculation of interest on loan (In Appendix-B, Sheet-2) has been made on the yearly average of the loan amount whereas in actual practice the loan is paid quarterly and the interest should be calculated accordingly.

22.2 **Commission's Views**

Calculation of interest on loan have been carried out on the basis of yearly averages, for the sake of simplicity. In this connection it is worth mentioning that if the interest is to be workout on quarterly basis, then the other components of tariff may also have to be considered on monthly/quarterly basis. For example, since the revenue at the generic levellised rate shall actually accrue on monthly basis and not on yearly basis, the annual expenses may also need to be discounted on monthly basis. This will only

complicate the calculations. As such, this Commission decides to not be make any changes in this regard.

23. FREE POWER STRUCTURE

23.1 M/s Techman Energy Ltd.

The ratio of levellised value of Free Power proposal to be given to the government is 2.4 times more than the earlier free power levellised royalty. Even otherwise it is a State decision and is a pass through while evaluating the tariff but simultaneously it has to be seen in the context of entrepreneurs adopting the REC Average Power Purchase Cost of the distribution license mechanism. The Honorable commission has to fix up a co-relation between the average power purchase cost of the distribution license and the free power to be given by the entrepreneurs to the government of Himachal Pradesh. There are entrepreneurs which are being paid APPC when the royalty is being charged with the old rate and now if the new IPP is again paid the same APPC and he has to give free power to the new module, both the candidates cannot be equated and therefore the Honorable Commission has to decide the free power royalty rates applicable to average power purchase cost plus REC mechanism.

The concept of 1% additional free power of local area development was also a pass through in the earlier Implementation Agreement and the same problem come while dealing with the module of REC (Renewable Energy Certificate and Average Power Purchase Cost) mechanism.

23.2 M/s Techman Energy Ltd. & The Himalaya Power Association (joint submission)

As per the observation of the CERC, 13% free power has been assumed but as it has been seen in past the State Government has mandated much more free power to be allocated by the Projects which is as much as upto 30% after 30 years. This factor of additional free power as levied by the State is required to be factored by the Commission accordingly.

23.3 **M/s Green Infra**

The Free energy structure as assumed herein is at variance from the projects that are being allotted today. The fee energy that is committed for our projects is as per the H.P. state policy. This is 7%,16%,25% for (2 MW to 5MW) capacity projects and other two projects is 16%,22%,34% and 25.52%, 31.51%, 43.51% for capacity above (5 MW to 25 MW) for the three time bands respectively.

23.4 **M/s Aleo Manali Hydropower Pvt. Ltd.**

It has been stated that free energy structure for 2 MW to 5MW projects is as "for first 12 years -7%, for next 18 years -16% and beyond that -25%".

23.5 **Commission's Views**

The tariff policy/hydro Policy of Central Government stipulates limit of 13% (including LADF @ 1%) for the free power to be allowed as pass through in the tariff. The RE Tariff Regulations, 2012, also specify the maximum limits upto which free power shall be allowed as pass through in the tariff. Moreover, the RE Tariff Regulations, 2012, also incorporate a mechanism for adjustment of the generic tariff within permissible limit in case of any difference between the permissible free power and the free power accounted for in the generic tariff during any part of the tariff period. The Generic levellised tariffs being determined under this order shall also be subject to the adjustment(s) under the specified mechanism. As regards the APPC rate referred to by M/s Techman Energy Ltd., the same is not relevant in present case which relates to determination of generic levellised tariffs for the tariff period.

24. ACCELERATED DEPRECIATION

24.1 **M/s Techman Energy Ltd.**

This part of the tariff order relates to hypothetical conception of Accelerated Depreciation. Such an attempt tantamount to entering into Tax and Corporate strategies of corporate sector. Such situation may arise for a party who is a multidimensional corporate entity and is trying to set off its huge earned profits by adopting such means provided it is permitted in the rules of Income Tax department. Even if it is permissible the IPP has to set up profit generating projects every year or at least alternate years to set off its profits there by increasing the overall productivity of the country.

If such a tax planning is permitted by the Government of India it is with a view to promote the entrepreneurs to come up with more and more production oriented units in the country and an attempt like this will act as a retarder for any party to go for further productive industries. Even otherwise if a project is set up by an IPP in a company solely created for this purpose, this type of concept is beyond imagination. It has also been stated that:-

(i) In the 1st year the depreciation has been taken 50% of allowed.

(ii) The quantum of saleable energy in the 1st year has been reduced to 30% why?

(iii) The depreciation to the tune of 5.83% has been taken and if the Accelerated Depreciation is accounted for the tariff evaluation in the manner it has been proposed, the tariff rate arrived is 4.16 Rs. per unit.

(iv) If the Honorable HPERC wants that the Accelerated Depreciation is allowed in that case this benefit should be deducted from the rate arrived at with this concept i.e. from Rs.4.16 only and not form the tariff calculated otherwise.

(v) We cannot equate two things which are not similar in nature and moreover the procedure for evaluation should be the same not an isolated method as has been adopted.

(vi) The procedure of benefit determination lacks the procedural flow and this should be determined whether it is a loss or gain in the same system in which it has been used for the complete analysis.

(vii) It is without any doubt that if the Accelerated Depreciation is allowed for a singular project its effect of giving advantage or disadvantage should be valued and weighed for that projects only.

(viii) Without prejudice to whatever has been said earlier even otherwise the actual benefit determined is 26 paisa as compared to 29 paisa.

24.2 **M/s Aleo Manali Hydropower Pvt. Ltd.**

Accelerated depreciation is not applicable in case of SHPs. It has been stated that class of assets like “Renewable energy devices” per sub item 8(xiii) of item III-“Machinery and Plant” in PART-A “TANGIBLE ASSESTS” in NEW APPENDIX-I under rule 5 of the Income Tax Rules,1962 does not include accelerated depreciation for small hydro projects. It has ,therefore, been requested that two different tariff rates should not be declared as it will create unwarranted confusion.

24.3 **Commission’s views**

(i) The Regulation 21 of the RE Tariff Regulations, 2012, provides that while determining the generic levellised or the project specific levellised tariff, as the case may be, the Commission shall take into consideration the accelerated depreciation benefit under the Income Tax Act. This concept has been adopted from the CERC’s RE Regulations, 2012. The proposed calculations made by this Commission for generic levellised tariff for small hydro projectrs in respect of these components were based on the calculations and the rates of accelerated depreciation adopted by the CERC for FY 2012-13 and the draft calculations made by the CERC for FY 2013-14,(which have now also been finalized by the CERC) . The Commission finds some merit in the objections raised about the entitlement of SHPs for the benefits of accelerated depreciation. Accordingly, it feels that it shall be appropriate to seek clarification from the CERC in this regard before taking any final decision on this aspect. In the meanwhile, the Commission shall, however, not make any changes in the proposed tariff calculations for this component, which are based on the CERC pattern and shall review the relevant portion of calculations to account for the effect of this component, if necessary in due course of time. In case of such a review of the component of accelerated depreciation benefit, the Commission shall revise the generic levellised tariff with accelerated depreciation benefit and other associated terms and conditions for each category of SHPs, which shall be applicable in all the cases to which the generic levellised tariff (with accelerated depreciation benefit) determined under sub-regulation (1) of Regulation 13 is applicable i.e. from the date from which the RE Tariff Regulations, 2012, came in to force. The Commission shall

also include suitable stipulations in the Power Purchase Agreements which may be approved by it during the interim period under the RE Tariff Regulations, 2012.

(ii) M/s Techman has observed that while working out the benefit of accelerated depreciation, the accelerated depreciation has been taken as 50% during the first year and the quantum of saleable energy in the first year has been taken as 30% of the annual saleable energy. In this connection the Commission would like to invite attention to the clause(3) of sub-regulations (4) of Regulation 21 of the RE Tariff Regulations, 2012, which provides that in case of generic levellised tariff, capitalization of renewable energy projects shall be considered during second half of the financial year. In accordance with the provisions of the Income Tax Act, the depreciation has been restricted to 50% of the annual depreciation. As regards the normative saleable energy, the same has been taken as 30% for the second half of the first year, keeping in view, the fact that the second half of the financial year comprises the lean discharge period during which the energy generation is considerably lower than 50% of the annual generation.

(iii) As regard the contention that the tariff rate would be Rs.4.16 per unit if depreciation is accounted for the tariff evaluation, the Commission does not find any merit in the same as this item relates to quantification of the benefits of the accelerated depreciation as per the Income Tax Law and not for providing additional depreciation in the tariff. Similarly, the contention that the actual benefit determined comes to 26 paise as compared to 29 paise is also not found to be correct. Moreover, the suggested rates of Rs.4.16 per unit and 26 paise per unit as mentioned above have not been supported by any calculations inspite of the fact that the counsel of M/s Techman Energy Ltd. had specifically agreed during the hearing on 11.03.2013 to supply the calculations in support of these rates.

25. DETERMINATION OF GENERIC LEVELLISED TARIFFs

In the light of the discussion made in the preceding paragraphs, the Commission now proceeds further to determine the generic levellised tariffs and associated terms & conditions for the three categories i.e. above 100 kW to 2 MW capacity (category-I), above 2 MW to 5 MW capacity (category-II) and above 5 MW to 25 MW capacity (category-III) of Small Hydro Projects for the control period (18.12.2012 upto

31.03.2017) in accordance with the RE Tariff Regulations, 2012, as detailed in the succeesiding paras 26 to 46.

26. USEFUL LIFE : Clause (aa) of sub-Regulation(1) of Regulation 2 of the RE Tariff Regulations, 2012, specifies that the 'useful life' in relation to a SHP shall mean a duration of 40 years from the date of commencement of operation of the project.

27. CONTROL PERIOD OR REVIEW PERIOD : Regulation 9 of the RE Tariff Regulations, 2012, provides that the control period for determination of tariff for SHPs shall start from 18th day of December,2012 and shall end on the 31st day of the March,2017. In accordance with sub-regulation (2) thereof the tariff(s) determined under the Regulations for the renewable energy generation project(s) or for a category thereof, to which the regulations are applicable, shall, unless amended or revised under Regulation 19, continue to be applicable till the expiry of the tariff period as specified in Regulation 10.

28. TARIFF PERIOD : In terms of Regulation 10 of the RE Tariff Regulations, 2012, the tariff period of 40 years has been considered for working out the generic levellised tariffs for various categories of SHPs.

29. TARIFF STRUCTURE : The Commission has followed the tariff structure as per Regulation 11 of the RE Tariff Regulations, 2012, which stipulates that single part levellised tariff structure comprising of the following fixed cost components shall be followed in case of SHPs.

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

30. LEVELLISED TARIFF: The generic tariff has been determined on levellised basis for the tariff period as per sub-regulation (3) of Regulation 11 of the RE Tariff Regulations, 2012.

31. DEBT EQUITY RATIO: The normative debt equity ratio has been considered as 70:30 in accordance with Regulation 22 of the RE Tariff Regulations, 2012.

32. CAPITAL COST: The per MW capital costs for various categories of SHPs have been considered in accordance with Regulation 33 of the RE Tariff Regulations, 2012, which stipulates that, in case of SHPs, the normative capital cost inclusive of all its components as specified in Regulation 20 of the RE Tariff Regulations, 2012, for the control period shall be as under:-

S.No.	Category No.	Capacity of the project	Rupees in Lac per MW
(i)	**I**	Above 100 kW to 2 MW capacity	780
(ii)	**II**	Above 2 MW to 5 MW capacity	750
(iii)	**III**	Above 5 MW to 25 MW capacity	700

33. RETURN ON EQUITY : Regulation 25 of the RE Tariff Regulations, 2012, provides that the value base for the equity shall be 30% of the normative capital cost as determined under Regulation 20 and that the normative return on equity shall be -

(a) 19% per annum for the first 10 years.

(b) 22% per annum from 11th year onwards.

The return on equity has accordingly been considered at the above rates.

34. INTEREST ON LOAN

34.1 Sub-regulation (2) of Regulation 23 of the RE Tariff Regulation, 2012, provides that the loan tenure of 12 years is to be considered for the purpose of determination of Tariff for RE projects. Sub-regulation (2) of said regulation provides for commutation of rate of interest of loan as under:

"(2) Interest Rate:-

(a) The loan arrived at in the manner indicated in Regulation 22 shall be considered as gross normative loan for calculation for interest on loan. The normative loan outstanding as on April 1st of every financial year shall be worked out by deducting the cumulative repayment, inclusive of the prepayment, upto March 31st of the previous financial year from the gross normative loan on normative basis.

(b) For the purpose of computation of tariff, the Average of State Bank of India Base rate(s) prevalent during a period of 6 months preceding the date of commencement of these Regulations, plus 300 basis points shall be considered as the normative interest rate.

(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".

34.2 In view of above, interest rate of 12.875% per annum has been worked out by the adding 300 basis points to the average State Bank of India(SBI) Base rate for a period of six months preceding the date of commencement of the RE Tariff Regulations,2012, as shown in the table below:

Period from	**Period to**	**Base rate**
13th August,2011	-----	10.00%
20th September,2012	Upto January, 2013	9.75%
Average Base rate for six months preceding the date of commencement of the RE Tariff Regulations,2012.		**9.875%**

Source; State Bank of India (www.statebankofindia.com)

35. DEPRECIATION

35.1 Regulation 24 of the RE Tariff Regulation, 2012, provides as under:

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 @ 5.83 % per annum till such time the requirement for repayment of loan component of the capital cost as per Regulations 20, 22 and 23 after adjusting the amount of subsidy as per Regulation 21, 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.

35.2. In accordance with the above, the rate of depreciation has been considered as 5.83% per annum for meeting the requirements of loan repayment (after adjusting the subsidy component) and balance amount of depreciation has been equally spread over the remaining tariff period. For the year in which the loan gets totally repaid, the depreciation has been provided to the extent of the actual requirement for loan repayment or the average value of balance period whichever is higher.

36. INTEREST ON WORKING CAPITAL

36.1 In accordance with the Regulation 26 of the RE Tariff Regulation, 2012, the following components have been included for computing the working capital requirement of the SHPs-

(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.

36.2 The interest on working capital has been considered at average interest rate equivalent of SBI Base Rate(s) prevalent during the period of 6 months preceding

the date of commencement of the RE Tariff Regulations, 2012, plus 350 basis points. The annual rate of interest has been computed as 13.375%.

37. COMPUTATION OF INTEREST: As explained in para 22.2 also the interest has been computed on the basis of yearly average for the sake of simplicity.

38. OPERATION AND MAINTENANCE EXPENSES

38.1 In accordance with Regulation 38 of RE Tariff Regulations, 2012, the normative annual O&M expenses for the first year of the tariff period have been considered as under:-

S.No.	Category No.	Capacity of the project	Annual O&M expenses Rupees in Lac per MW
(i)	**I**	Above 100 kW to 2 MW capacity	25
(ii)	**II**	Above 2 MW to 5 MW capacity	22
(iii)	**III**	Above 5 MW to 25 MW capacity	18

38.2 These normative O&M expenses have been escalated at the rate of 5.72% per annum over the tariff period in accordance with the Regulation 27 of the RE Tariff Regulations, 2012.

39. SUBSIDY OR INCENTIVE OR GRANT/ BUDGETARY SUPPORT BY THE CENTRAL / STATE GOVERNMENTS

39.1 The sub-regulation(1) of Regulation 21 of the RE Tariff Regulations, 2012, provides as under:

> *"(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, including accelerated depreciation benefit under the Income Tax Act:*
>
> *Provided that for tariff determination, 90% 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:

……..xxx…….xxx……...xxx……...xxx……..

39.2 Sub-regulation(3) of Regulation 21 of RE Tariff Regulations, 2012, provides that 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 19 of RE Tariff Regulations, 2012.

39.3 In accordance with the prevalent scheme of the MNRE, the SHPs in private sector are entitled to capital subsidy at the following rates.

Areas	**Upto 1000kW**	**Above 1MW & upto 25MW**
N.E. States, J & K H.P. & Utrakhand (Special Category States)	Rs. 20,000 per kW	Rs. 2.00 crores for 1st MW + Rs. 30 Lacs for each additional MW.

The per MW capital subsidy for SHPs of various capacities have been worked out on this basis and is attached at **Appendix-D**. It is observed that the per MW rate of capital subsidy for various capacities of SHPs reduces progressively as the capacity increases but this reduction is not in a linear ratio. The per MW capital subsidy, as computed for 1MW, 2MW and 5MW SHPs, have been considered for working out the generic levellised tariffs for the SHPs under the three categories i.e. above 100 kW to 2 MW capacity (category-I), above 2 MW to 5 MW capacity (category-II) and above 5 MW to 25 MW capacity (category-III) respectively. However, since this methodology may deprive the SHPs of higher capacities in each category of full

benefit of 10% of subsidy intended to be allowed to be retained by them, suitable formulae have been evolved for increasing the generic levellised tariff so as to compensate such SHPs suitably to a reasonable degree of approximation. These formulae have been evolved by evaluating the difference between the generic levellised tariff corresponding to the lowest & highest MW capacities under each category of SHPs and the corresponding difference in 90% of the capital subsidy per MW in accordance with Col-4 of Appendix-D. The relevant formulae have been given in sheet-VI of the respective appendices relating to tariff computation for various categories of SHPs **(i.e. Appendix-A, B and C)** as well as in para-45.3 (a). These formulae shall, however, not be applicable in cases where the adjustments on account of grant of budgetary support or generation based incentive, if any, or the additional MNRE subsidy to Govt. sector projects are **i**nvolved. In such cases the adjustment shall be made on case to case basis in accordance with Regulation 21 of the RE Tariff Regulations, 2012.

40. NORMATIVE NET SALEABLE ENERGY: The annual normative net saleable energy at the interconnection point has been computed in line with the provisions of Regulation 34 of the RE Tariff Regulations, 2012, which specify that the normative annual capacity utilization factor (CUF) for all the SHPs upto 25MW shall be 55% and also stipulates the procedure for computing the normative year wise net saleable energy. The normative auxiliary consumption and transformation losses has been taken as 0.5% each of the gross generation as per Regulation 36 and the energy losses in the project line have been taken as 0.7% of the net generation as per Regulation 37. The free power structures as discussed in para-41.3 have been taken into account. Every fourth year has been considered as a leap year.

41. FREE POWER (ENERGY) STRUCTURE AND ADJUSTMENT IN TARIFF FOR VARIATIONS:

41.1 The sub-regulation(1) of Regulation 35 of the RE Tariff Regulations, 2012, stipulates that the Commission shall consider appropriate structure(s) of free power for determination of generic levellised tariffs for various categories of SHPs, duly keeping in view the provisions of the State Hydro Policy for allotment of sites for

SHPs, National Hydro Policy, Tariff Policy and the limits specified under sub-regulation(3) of Regulation 35

41.2 In accordance with clause (iii) of sub-regulation(1) of Regulation 34 and sub regulation(3) of Regulation 35 of the RE Tariff Regulations, 2012, the free power energy to be taken into account for any part of the tariff period shall not exceed 13% free power energy, which includes 12% free power to the Home State and 1% additional free power for local area development fund as stipulated in National Hydro Policy/Tariff Policy.

41.3 Based on above and the free power structure presently being followed by the State Government, the generic levellised tariffs for various categories of SHPs have been computed by accounting for free energy, as per following structures.

S. No.	Category	Capacity of Small Hydro Project	Free Power Structure
(i)	I	Above 100 kW to 2 MW capacity	7% for first 12 years and 13% for the remaining 28 years.
(ii)	II	Above 2 MW to 5 MW capacity	7% for first 12 years and 13% for the remaining 28 years.
(iii)	III	Above 5 MW to 25 MW capacity	13% for the entire tariff period of 40 years.

41.4 In case where the free power structure applicable for a SHPs, for which power purchase agreement (PPA) is to be approved by the Commission, is different from that considered in the tariff, the generic levellised tariff for such a project shall be computed by adjusting the generic levellised tariff determined by the Commission in inverse proportion to the levellised values of net saleable energy under two structures i.e. by multiplying the generic levellised tariff of that category by the corresponding levellised net saleable energy (per annum per MW) as per the sheet-II of respective Appendix A, B & C of the tariff calculations for respective categories and dividing the same with the levellised net saleable energy (per annum per MW) worked out at discount rate of 10.58% per annum, corresponding to the permissible free power structure for which the levellised tariff is to be computed for inclusion in the PPA to be approved by the Commission. It shall, however, be ensured that free power (energy) to be accounted for in the tariff for PPA or otherwise does not exceed

the permissible limits, as specified in the sub-regulation (2) and (3) of Regulation 35 of the RE Tariff Regulations, 2012, during any part of the tariff period. For any variations in the structure of free power energy after execution of PPA, the adjustments shall be suitably computed in accordance with other relevant provisions of the RE Tariff Regulations, 2012.

42. DISCOUNT FACTOR: In accordance with sub-Regulation (4) of Regulation 11 of the RE Tariff Regulations, 2012, the discount factor equivalent to the post tax weighted average cost of capital is to be considered for the purpose of levellised tariff computation. The discount factor has been calculated on this basis by following the normative debt: equity ratio (70:30). For this purposes, the interest rate for the loan component (i.e. 70%) of Capital Cost has been considered as 12.875% (as explained in para 34.2) which has been adjusted for the corporate tax. For equity component (i.e. 30% of the capital cost) the post tax ROE has been computed 14.95% by adjusting the normative ROE of 19% per annum for first 10 years with MAT and 22% per annum for the remaining period with corporate tax. The rates for MAT & Corporate tax have been taken as 18.5% and 30% respectively. The surcharge and education cess have also been considered @ 5% and 3% respectively for such computations. Based on above, the annual discount rate has been calculated as 10.58%.

43. ACCELERATED DEPRECIATION BENEFIT

43.1 The sub-regulations (4) and (5) of Regulation 21 of the RE Tariff Regulations, 2012, provide as under:-

"(4)*The Commission shall determine two generic levellised tariffs or project specific levellised tariffs, as the case may be, one by considering accelerated depreciation and the other without it, and the tariff to any renewable energy generator shall be applicable as provided in succeeding sub-regulation(5):*

Provided that for ascertaining income tax benefits on account of accelerated depreciation for the purpose of tariff determination-

(a) assessment of benefit shall be based on normative capital cost or the cost admitted, as the case may be, accelerated depreciation

rate, as per relevant provisions under the Income Tax Act and the Corporate Tax rate;

(b) in case of generic levellised tariff, capitalisation of renewable energy projects shall be considered during second half of the financial year and in case of project specific levellised tariff, the expected date of commencement of operation of the project shall be considered;

(c) per unit benefit shall be derived on levellised basis at the discount factor equivalent to the post tax weighted average cost of capital.

(5) It shall be assumed that the renewable energy generator shall avail the benefit of accelerated depreciation and accordingly the tariff, which accounts for the accelerated depreciation, shall be applicable unless the renewable energy generator establishes, to the satisfaction of the distribution licensee, that he has not availed or is not entitled to such a benefit."

43.2 For the purpose of determining net depreciation benefits, depreciation @ 5.28% as per straight line method (Book depreciation as per Companies Act,1956) has been compared with depreciation as per Income Tax rate i.e. 80% of the written down value method. Moreover, additional 20% depreciation in the initial year is extended to new assets acquired by power generation companies vide amendment in section 32, sub-section(1) clause (ii a) of the Income Tax Act. The tax benefit on this account has been computed at applicable Income Tax rate @32.445%(30% IT rate +5% surcharge +3% education cess). Since the capitalisation is to be considered in the second half of year, only 50% of these depreciation values have been considered in the first year. The energy for the second half of the year which mainly comprises of winter months with lean discharges has been taken as 30% of the annual generation. The discount factor has also been averaged out by considering blocks of 6 months. Moreover since only 50% values of depreciation have been considered in the first year, the shortfall has been considered in the last (41st) year.

43.3 The Commission finds some merit in the objections raised about the entitlement of SHPs for the benefits of accelerated depreciations. Accordingly, as already discussed in sub para (i) of para 24.3 of this order, the Commission feels that it shall

be appropriate to seek clarification from the CERC in this regard before taking any final decision on this aspect. In the meanwhile Commission has however, not made any changes in the proposed tariff calculation and shall, review the relevant part of calculations to account for the effect of accelerated depreciation benefit available to SHPs in due course at time. In case calculations for the accelerated depreciation component are reviewed, the Commission shall determine the generic levellised tariff with accelerated depreciation benefit and other associated terms & conditions based on the revised calculations of the component of accelerated depreciation for each category of SHPs, which shall be applicable to all the cases to which the generic levellised tariff (with accelerated depreciation benefit) determined under sub-regulation (1) of Regulation 13 are applicable i.e. from the date from which the RE Tariff Regulation, 2012, came in to force. The Commission shall also include suitable stipulations in the Power Purchase Agreements which may be approved by it during this interim period.

44. ROUNDING: The two tariffs (with and without accelerated depreciation) worked out for various categories of SHPs have been rounded to nearest paisa/kWh. The fraction of 0.5 and above has been rounded to next higher and fraction of less than 0.5 has been ignored.

45. GENERIC LEVELLISED TARIFFS AND ASSOCIATED TERMS & CONDITIONS

45.1 In light of the discussion made in the preceding paragraphs, the Commission hereby determines the generic levellised tariffs and the associated terms and conditions for various categories of SHPs under sub-regulation (1) of Regulation 13 of the Himachal Pradesh Electricity Regulatory Commission (Promotion of Generation from the Renewable Energy Sources and Terms and Conditions for Tariff Determination) Regulations, 2012, as per the succeeding paras 45.2 to 45.4.

45.2 The generic levellised tariffs for various categories of SHPs shall be as under:

Category	**Capacity**	**Generic Levellised Tariff in Rs./kWh of net saleable energy.**	
		Without Accelerated Depreciation	With Accelerated Depreciation(#)
Col.1	**Col. 2.**	**Col. 3.**	**Col. 4**
I	Above 100 kW to 2 MW	3.34	3.04(#)
II	Above 2 MW to 5 MW	3.27	2.98(#)
III	Above 5 MW to 25 MW	3.17	2.89(#)

(#)The tariff with Accelerated Depreciation (Col.4) shall be applicable for the respective categories unless the renewable energy generator establishes, to the satisfaction of the distribution licensee, that he has not availed or is not entitled to such a benefit. However, the tariffs with accelerated depreciation (col. 4) are otherwise subject to review in view of the position explained in **sub-para (i) of para 24.3 and para 43.3** of this order.

45.3 The tariff applicable as per para 45.2 above shall be subject to adjustments as applicable for relevant category of SHPs in accordance with the following sub-paragraphs (a) to (c):-

(a) Adjustment on account of differential rate of capital subsidy and grants, budgetary support and Generation based Incentives:

Category-I (Above 100 kW to 2 MW Capacity)

Sr. No.	Description	Increase in Paise/kWh on account of differential rate of capital subsidy
(i)	If the capacity is more than 100kW but does not exceed 1000kW.	No Increase
(ii)	If the capacity is more than 1000 KW but does not exceed 2000kW.	=16/76.50*(180-"**Y**")Paise/Kwh

Category-II(Above 2 MW to 5 MW Capacity)

Sr. No.	Description	Increase in Paise/kWh on account of differential rate of capital subsidy
(i)	If the capacity is more than 2000kW but does not exceed 5000kW.	=10/45.90*(103.5-**Y**")Paise/kWh

Category-III (Above 5 MW to 25 MW Capacity)

Sr. No.	Description	Increase in Paise/kWh on account of differential rate of capital subsidy
(i)	If the capacity is more than 5000kW but does not exceed 25000kW.	=6/24.48*(57.60-"**Y**")Paise/kWh

In all above cases, **"Y"=** 90% of the capital subsidy/MW(in lac Rs.) as per Col-4 of Appendix-D for the project for which Generic Levellised Tariff is to be computed.

Note: The adjustments on account of grant or budgetary support and the generation based incentive if any, shall be made separately on case to case basis in-accordance with the Regulation 21 of the RE Tariff Regulations, 2012. Similarly, the adjustments on account of additional MNRE subsidy to Government Sector Projects shall also be made separately on case to case basis. The formulae given above in this sub-para 45.3(a) shall not be applicable in any of such cases.

(**b) Variation in free power structure:** The above tariffs account for free energy at the following rates.

Sr. No.	Category of Small Hydro Project	Free Power Structure
(i)	Above 100 kW to 2 MW capacity	7% for first 12 years and 13% for the remaining 28 years.
(ii)	Above 2 MW to 5 MW capacity	7% for first 12 years and 13% for the remaining 28 years.
(iii)	Above 5 MW to 25 MW capacity	13% of the entire tariff period of 40 years.

In case the structure of free power applicable for a SHPs, for which the PPA is to be approved by the Commission, is different from that considered in the tariff for that category of SHPs, the adjustment shall be carried out in-accordance with the sub-para 41.4 of this order. However, it shall be ensured that free power(energy) to be accounted for in the tariff does not exceed the permissible limits, as specified in sub-regulation (2) and (3) of Regulation 35 of the RE Tariff Regulations, 2012, during any part of the tariff period. The adjustment if required, on this account shall, be carried out after carrying out the adjustment(s), if any, under preceding sub-para 45.3(a).

(c) Rounding: The tariff worked out after carrying out the adjustments on the above lines shall be rounded to the nearest Paisa/kWh. The fraction of 0.5

and above shall be rounded to the next higher value and the fraction of less than 0.5 shall be ignored.

45.4 The tariffs as per preceding paras 45.2 and 45.3 shall be subject to the RE Tariff Regulations, 2012, and the orders as may be issued by the Commission thereunder.

46. The detailed computations for generic levellised tariff for the SHPs under the three categories (I,II and III) as well as illustrations thereof are enclosed as per Appendices A,B and C respectively.

Place: Shimla **sd/-**
Dated:20.05.2013 **(Subhash C.Negi)**
Chairman