

Before

UTTARAKHAND ELECTRICITY REGULATORY COMMISSION

Petition No. 18 of 2019 (Suo-Moto)

Order

In the matter of:

Review of the Benchmark Capital Cost for Solar PV, Solar Thermal and Grid Interactive Rooftop & Small Solar PV Plants to be applicable for FY 2019-20 and onwards till reviewed/revised by the Commission.

CORAM

Shri D.P. Gairola Member (Law)

Shri M.K.Jain Member (Technical)

Date of Order: June 07, 2019

1. The Commission in exercise of the powers vested in it under Section 61(h) and Section 86(1)(e) read with Section 181(2)(zd) of the Electricity Act, 2003, notified the UERC (Tariff and Other Terms for Supply of Electricity from Renewable Energy Sources and non-fossil fuel based Co-generating Stations) Regulations, 2018 (hereinafter referred to as "RE Regulations, 2018") on 06th September, 2018.
2. In accordance with the first proviso of Regulation 11 of the aforesaid Regulations, the Commission issued a draft order dated 7th December, 2018 on Misc. Application No. 97 of 2018 (Suo-Moto) in the matter of review of benchmark capital cost for Solar PV, Solar Thermal and Grid Interactive Rooftop & Small Solar PV Plants to be applicable for the projects commissioned on or after 1st April, 2019 and on or before 31st March, 2020.
3. The draft order was also posted on the Commission's website and comments were sought from the stakeholders on the same latest by 12th January, 2019. In response, total three stakeholders have submitted comments on the draft order as listed in **Annexure-1**. In order to have participation of all the stakeholders by way of direct interaction with the Commission, a public hearing was also held on 22nd February, 2019 and the stakeholders present during the hearing are listed in **Annexure-2**.

4. The Commission through this Order has determined the generic tariff for solar power plants on Suo-Moto basis based on the norms specified in the Regulations duly taking into account the suggestions/comments made by the stakeholders on the draft Order. The present regulatory exercise is limited to the determination of benchmark capital cost and determination of generic tariff for Solar PV Power Plants, Solar Thermal Power Plants and Grid Interactive Rooftop & Small Solar PV Power Plants. The comments/suggestions of the stakeholders on the parameters, such as life of the project & CUF, which have already been specified in the said Regulations, are beyond the scope of the present proceedings as tariff determined herein are based on the Regulations presently in force.
5. Issue-wise submissions/comments of the stakeholders and the Commission's view, analysis & decision on the same have been discussed in the following paragraphs. As far as possible, the Commission has given due consideration to the issues raised by the stakeholders/ developers in deciding the project cost & corresponding tariff.

6. Solar PV Based Projects

6.1 Capital Cost

The Commission, vide its draft Order dated 07th December, 2018 had proposed to revise the capital cost of Solar PV based Projects and while doing so the Commission had considered the average cost of Module at 0.251 USD/Wp and an exchange rate of Rs. 71.126/USD based on the average of July, 2018 to November, 2018. The cost of Solar Modules had been worked out to Rs. 178.47 Lakh/MW and the Commission had also considered a degradation of 0.5% on a yearly basis, which was then applied to the module cost to arrive at yearly degradation cost, followed by discounting the same to arrive at the net present value of the degradation cost at Rs. 9.291 Lakh/MW. Thus, the total cost of module worked out to Rs. 235.65 Lakh/MW. The Commission had considered Rs. 50.00 Lakh/MW as cost of land for arriving at the capital cost of Solar PV projects for FY 2018-19. The Commission had proposed the same land cost, i.e. Rs. 50.00 Lakh/MW for FY 2019-20. The costs of other components had been adopted in the same proportion in which the respective costs were considered at the time of finalization of capital cost for Solar PV power projects for FY 2018-19.

In light of the above discussion, the Commission had proposed the capital cost of

Rs. 400.40 Lakh/MW for Solar PV projects to be commissioned on or after 01.04.2019.

6.1.1 Comments of the Stakeholders

- a) UPCL, the distribution licensee, submitted that during the last decade there has been a tremendous policy push by Govt. of India for promotion of Solar Power Generation which helped Solar PV manufacturing industry to grow and achieve economy of scales. This has further resulted in up-gradation in Solar PV module technology and over a period of time Solar PV module of lesser size has been able to generate same power in comparison to the earlier Solar PV modules. Accordingly, less land would be required per MW for installation of Solar PV Plant. UPCL also submitted that the cost of the mounting structure would also reduce on account of use of less number of Solar PV modules for installation of a particular capacity of a project in comparison to the plants installed during previous years. Therefore, it requested to consider reduce land cost and module cost while determining the Benchmark capital cost for Solar PV, Solar Thermal and Grid Interactive Rooftop & Small Solar PV Plants for FY 2019-20.

With regard to the exchange rate, UPCL submitted that the Commission in its draft Order had considered an average dollar rate of Rs. 71.126 for the period July, 2018 to Nov, 2018 whereas the same should be taken at an average of whole year from Jan, 2018 to Dec. 2018 which comes out to Rs. 68.37 per dollar.

With regard to the other components of the benchmark capital cost, UPCL submitted that it was apparent that substantial cost impact was in the cost of solar PV modules and, therefore, variation in the cost must be considered in the cost of PV modules only and all other cost viz, Land cost, Civil & General Works cost, Mounting structures cost, Power Conditioning Unit cost, Evacuation Cost and Preliminary & Pre-operative expenses cost should not be considered as a fixed percentage. Considering fixed percentages for above mentioned works basically increases these costs with the increase in overall PV panel cost while in actual these costs are unaffected with the increase of any duty on PV panels or variation in dollar rate.

UPCL also submitted that it should be analysed whether safeguard duty has

made indigenous Solar PV module competitive w.r.t. imported Solar PV module or not and if it is found that the indigenous solar PV modules have become cost competitive w.r.t. imported Solar PV modules, there is no use of incorporating provisions of safeguard duty in tariff calculations and tariff may be calculated based on indigenous cost of Solar PV modules otherwise consumers of the State will be unnecessarily burdened for higher tariff. Further, UPCL also suggested that the Commission may determine benchmark tariff under two subcategories one for indigenous solar PV modules and second for imported solar PV modules with the provisions that Generator will explicitly opt tariff of either category based on use of indigenous or imported solar PV module subject to prudence checks. UPCL also submitted that the Commission may think about framing benchmark tariff for solar plants having mix of indigenous and imported solar PV modules because in order to be efficient and cost effective, solar generators may also resort to use of various mix of indigenous and imported solar PV for erection of plant.

- b) UREDA has requested the Commission to allow GST on the other components which are required for installation and commissioning of the Solar Power plant while determining the cost of Solar PV Projects for finalization of tariff for the FY 2019-20.
- c) Akshay Urja Association submitted that the benchmark cost of solar power plants given in the draft Order has not considered the terrain type of the project as the project cost cannot be same for plain and hilly terrains. The stakeholder also submitted that the CUF of 15.67% should be considered on actual basis based on MNRE report on performance analysis of Grid connected solar PV plants commissioned under Phase-I of JNNSM for the period of January, 2014 to December, 2014 instead of 19%. The stakeholder further submitted that the Commission has considered GST of 5% on Solar PV module whereas GST of 5% is applicable on the 70% of the Contract Value and 18% of GST is applicable on the balance 30% of the Contract Value.

6.1.2 Commission's Views and Decision

A) Cost of Solar PV Module

The Commission in its draft Order dated 07th December, 2017 had considered the cost of Solar PV Module as Rs. 235.65 Lakh/MW considering the exchange rate of Rs. 71.126/ USD based on the average rate of July, 2018 to November, 2018 and module cost of 0.251 USD/Wp, and the cost of module worked out to Rs. 226.36 Lakh/ MW. Further, compensation on account of degradation worked out to Rs. 9.291 Lakh/MW. Accordingly, the Commission had proposed the module cost of Rs. 235.65 Lakh/ MW.

UPCL requested the Commission to consider exchange rate at an average rate of whole year from January, 2018 to December, 2018 while determining the module cost. In this regard, the Commission is of the view that it would be appropriate to consider the average exchange rate for the same period for which average module cost has been considered. Further, UPCL also submitted that it should be analysed whether safeguard duty has made indigenous Solar PV module competitive w.r.t. imported Solar PV module or not and if it is found that the indigenous solar PV modules have become cost competitive w.r.t. imported Solar PV modules, there is no use of incorporating provisions of safeguard duty in tariff calculations and tariff may be calculated based on the indigenous cost of Solar PV modules otherwise consumers of the State will be unnecessarily burdened for higher tariff. In this matter, it is to be noted the UPCL has not provided any data w.r.t. cost of indigenous modules. Moreover, the safeguard duty is a type of safety-valve built to protect domestic producers temporarily. The purpose of the safeguard duty is not to make imported goods costlier than the indigenous goods but to make the market competitive. Accordingly, the Commission has considered the cost of imported modules while determining the benchmark capital cost for Solar PV Power Plants.

The Commission has considered the average module cost of 0.241 USD/Wp based on the average rate from July, 2018 to March, 2019. Thus, average exchange rate for the same period has been considered which works out to Rs. 70.735/USD. Accordingly, based on the above discussion and considering GST and safeguard duty applicable for FY 2019-20, module cost works out to Rs. 216.01 Lakh/MW. Further, based on the degradation cost of Rs. 8.84 Lakh/MW, the Commission has considered the solar PV module cost of Rs. 224.85 Lakh/MW for FY 2019-20.

B) Land Cost

The Commission in the draft order had retained the land cost as considered by the Commission while determining the Benchmark Capital Cost for FY 2018-19.

With regard to UPCL's comment to reduce the cost of land, it is to be noted that the Commission while reviewing the Benchmark Capital Cost for solar energy based solar power plants for FY 2017-18 has already reduced the cost of land from Rs. 125 Lakh/MW to Rs. 50 Lakh/MW. Moreover, UPCL has not provided any documentary proof regarding land required for development of Solar PV plant. Accordingly, the Commission is of the view to retain the land cost of Rs. 50 Lakh/MW for the Solar PV power plants for determination of capital cost and fixation of corresponding tariff in accordance with the existing RE Regulations, 2018.

C) Civil & General Works and Mounting Structure Cost, Cable & Transformers, Power Conditioning Units

The Commission had proposed the cost of Rs. 22.05 Lakh/MW each for 'Civil & General Works, Mounting Structure and Power Conditioning Unit' and Rs. 27.72 Lakh/MW towards the evacuation cost upto the interconnection point (Cable and Transformer). Further, Akshay Urja Association submitted that GST of 5% on the 70% of the Contract Value and 18% on the balance 30% of the Contract Value should be allowed for installation of Solar PV Plant. In this regard, it is to be noted that such arrangement of GST is applicable where the entire plant is developed by the Contractor. 70% of the Contract Value is considered as material and balance 30% of the Contract Value is considered as Services. Moreover, the Service tax has already been taken into account by the Commission while fixing the civil and general works. Further, as far as GST on the equipments is concerned, the Commission has already considered 5% GST on the Solar Module cost. Furthermore, UREDA has also requested the Commission to consider GST on the other equipment of Solar PV power plant apart from Solar Module. In the matter, the Commission has observed that with the implementation of GST, a rate of 5% has been levied on all the Solar Power generation based generating system & parts. Accordingly, the Commission is of the view to consider GST of 5% on the Mounting Structure Cost, Cable & Transformers and Power Conditioning Units.

With regard to UPCL request for not considering other components' cost of the Solar PV plant as fixed percentage because considering fixed percentage increases these costs with the increase in overall PV panel cost while in actual these costs are unaffected with the increase of any duty on PV panel or variation in dollar rate, the Commission is of the view that the cost of Civil & General Works, Mounting structures, Power Conditioning Unit and Evacuation works depends on the technology and other market driven parameters such as demand, supply, technology etc. However, it can also not be denied that cost of module depicts the market trend of solar products. Accordingly, in the present matter, the Commission has adopted the same methodology as followed in the past years for determination of the cost of aforesaid works and escalated the same with the average increase of Whole Price Index (WPI) and Consumer Price Index (CPI) for immediately preceding three years by giving equal weightage. However, while applying the indexation and previous year methodology, the Commission has excluded the cost of land and cost pertaining to safeguard duty as the cost of land is market driven while safeguard duty depends on the policies of the government.

Based on the above discussion, the Commission has considered the cost of Rs. 14.22 Lakh/MW for 'Civil & General Works', Rs. 14.93 Lakh/MW each for 'Mounting Structure' and 'Power Conditioning Unit' and Rs. 18.77 Lakh/MW for Evacuation cost upto interconnection point (Cable and Transformer).

D) Preliminary and Pre-operative expenses

The Commission had proposed Rs. 20.87 Lakh/MW, i.e. 5.21% of the total capital cost as the preliminary and pre-operative expenses in its draft Order dated 07th December, 2018. No comments have been received from any of the stakeholder on the Preliminary and Pre-operative expenses. Accordingly, the Commission is of the view to keep the same proportion, i.e. 5.21% of total capital cost for the preliminary and pre-operative expenses.

As discussed earlier, M/s Akshay Urja Association submitted that the benchmark cost of solar power plants given in the draft Order did not consider the terrain type of the project as the project cost cannot be same for plain and hilly terrains. In this regard, as far as cost of civil work is concerned for hilly region, the Commission is of the view

that Land cost has already been considered on higher side as compared to other neighboring states. Furthermore, with the advent of technologies since the panel ratings have increased there will be less requirement of civil works and mounting structures, etc. Moreover, it is pertinent to mention that RE Regulations, 2018 does not provide any separate provision for terrain wise determination of benchmark capital cost and levellised tariff. Accordingly, the Commission does not find it appropriate to determine terrain wise benchmark capital cost for Solar PV power plants.

In view of the above discussions & analysis, the Commission has approved the cost of Solar PV based Plant for FY 2019-20 as follows:

Benchmark Capital Cost of Solar PV Project proposed and Approved for FY 2019-20

S. No.	Particulars	Proposed Capital Cost Norm		Approved Capital Cost Norm	
		Rs. Lakh/MW	%	Rs. Lakh/MW	%
1	PV Modules	235.65	58.85%	224.85	63.11%
2	Land Cost	50.00	12.49%	50.00	14.03%
3	Civil and General Works	22.05	5.51%	14.22	3.99%
4	Mounting Structures	22.05	5.51%	14.93	4.19%
5	Power Conditioning Units	22.05	5.51%	14.93	4.19%
6	Evacuation Cost upto interconnection point (Cables and Transformer)	27.72	6.92%	18.77	5.27%
7	Preliminary and Pre-operative expenses	20.87	5.21%	18.57	5.21%
	Total Capital Cost	400.40	100.00%	356.27	100.00%

6.2 Tariff for Solar PV Plants

Based on the proposed benchmark capital cost for Solar PV Plants, the Commission in its draft Order dated 07th December, 2018 had proposed a gross tariff of Rs. 4.89/kWh and accelerated depreciation of Rs. 0.27/kWh.

With regard to the request of UPCL regarding determination of separate levellised tariff for the projects with indigenous solar module and those with imported modules and a special tariff based on the mixed use of both type of modules, the Commission of the view that as discussed in above paragraphs of this Order, the Commission has determined the benchmark capital cost based on the imported modules. Moreover, UPCL has not provided any information regarding the cost of indigenous modules as well as regarding mixed module usage. Accordingly, its request is not acceptable.

The Commission is of the view that the present exercise has been initiated under

the mandate of RE Regulations, 2018 which requires the Commission to review the benchmark capital cost in each financial year. In compliance to the same, the Commission has approved the benchmark capital cost of Solar PV Plants to be commissioned during FY 2019-20. Based on the revised capital cost, tariff has been strictly worked out in accordance with the tariff principles stipulated in RE Regulations, 2013.

In view of the above discussion, the Commission has determined the gross tariff of Rs. 4.49/kWh for Solar PV sources and accelerated depreciation of Rs. 0.24/ kWh commissioned on or after 1st April, 2019 as depicted in Annexure-I. This tariff shall continue to be the maximum tariff and the distribution licensee shall invite bids from generators/developers for procurement of power from these generators/ developers.

7. Grid Interactive Rooftop & Small Solar PV based Projects

7.1 Capital Cost

The Commission in the draft Order had considered the capital cost for FY 2019-20 as per the methodology adopted by the Commission while finalizing the benchmark capital cost for different slabs based on the installed capacity for FY 2018-19. Further, the Commission had kept the Solar Module cost and land cost for Grid Interactive Rooftop & Small Solar PV plants having capacity above 500 kW & up to 1 MW equivalent to the Solar Module cost determined for Solar PV plants and cost of mounting structure, Power Conditioning Unit & Cable Transformer as 35% higher than the cost considered w.r.t. respective components for Solar PV Plants. Further, the total capital cost determined for Grid Interactive Rooftop & Small Solar PV plant having capacity above 500 kW & upto 1 MW has been proportionately increased for aforementioned slabs on the basis of Office Memorandum dated 15.06.2018 of MNRE which lays down the benchmark costs for off-grid Solar PV systems and grid connected rooftop solar Power plants.

Accordingly, the Commission had proposed a capital cost of Rs. 48,636/kW, Rs. 44,583/kW, Rs. 41,899/kW and Rs. 40,365/kW for Grid interactive Rooftop & small Solar PV plants having installed capacity upto 10 kW, above 10 kW to 100 kW, above 100 kW upto 500 kW and above 500 kW & upto 1 MW respectively in the draft Order.

7.1.1 Comments of Stakeholders

- a) Akshay Urja Association requested the Commission to clarify whether small solar ground mounted solar plants are included in Grid interactive rooftop & small solar PV plants.
- b) UREDA submitted that the Central Government has revised the subsidy provision and now subsidy is available only for grid interactive rooftop solar power plants having capacity upto 10 kW.
- c) Some of the stakeholders requested the Commission to ease the process for development of such plant in the State of Uttarakhand and also requested the Commission to determine the generic tariff taking cognizance of the difficulties faced by individual developers in hilly terrain.

7.1.2 Commission's View and Analysis

A) Solar PV Module Cost

The Commission in its draft Order had proposed the Solar PV module cost of Rs. 28,393/kW, Rs. 26,027/kW, Rs. 24,454/kW and Rs. 23,565/kW for grid interactive Rooftop & small Solar PV projects having installed capacity upto 10 kW, above 10 kW to 100 kW, above 100 kW upto 500 kW and above 500 kW & upto 1 MW respectively based on the methodology adopted by the Commission during FY 2018-19. The Commission has not received any particular objection from the stakeholders in the matter. Accordingly, based on the latest available data and methodology adopted during FY 2018-19, the revised PV module cost of Rs. 27,092/kW, Rs. 24,834/kW, Rs. 23,333/kW and Rs. 22,485/kW has been considered by the Commission for Rooftop and Small Solar PV plants having installed capacity upto 10 kW, above 10 kW to 100 kW, above 100 kW upto 500 kW and above 500 kW & upto 1 MW respectively.

B) Land Cost and Civil & general works

The Commission in the draft order had proposed the Land and Civil & general works cost amounting to Rs. 6,024/kW, Rs. 5,522/kW, Rs. 5,189/kW and Rs. 5,000/kW for projects having installed capacity upto 10 kW, above 10 kW to 100 kW, above 100 kW upto 500 kW and above 500 kW & upto 1 MW respectively. The Commission has not received comments from the stakeholders in the matter. Accordingly, the Commission has considered the cost proposed for such works in draft Order as final.

C) Mounting Structures cost and Power Conditioning Units

The Commission had proposed a cost of Rs. 3,586/kW, Rs. 3,288/kW, Rs. 3,089/kW and Rs. 2,977/kW for grid interactive Rooftop and small Solar PV plants having capacity upto 10 kW, above 10 kW to 100 kW, above 100 kW upto 500 kW and above 500 kW & upto 1 MW respectively in the Draft Order for each Mounting Structure and Power Conditioning Unit. The Commission has not received any comments for mounting structure and power conditioning units w.r.t. grid interactive Rooftop and small Solar PV plants. Accordingly, based on the latest available data and methodology adopted during FY 2018-19, the Commission has approved Rs. 2,428/kW, Rs. 2,226/kW, Rs. 2,092/kW and Rs. 2,015/kW each for grid interactive Rooftop and small Solar PV plants having installed capacity upto 10 kW, above 10 kW to 100 kW, above 100 kW upto 500 kW and above 500 kW & upto 1 MW respectively for each Mounting Structure and Power Conditioning Unit.

D) Evacuation Cost upto interconnection point (Cables and Transformer)

The Commission had proposed a cost of Rs. 4,509/kW, Rs. 4,133/kW, Rs. 3,884/kW and Rs. 3,742/kW for grid interactive Rooftop and small Solar PV plants having capacity upto 10 kW, above 10 kW to 100 kW, above 100 kW upto 500 kW and above 500 kW & upto 1 MW respectively in the Draft Order for Cables & Transformer. The Commission has not received any particular comment regarding cost of cables & transformer for Grid Interactive Rooftop & Small Solar PV Plants. Accordingly, based on the latest available data and methodology adopted during FY 2018-19, the Commission has approved Rs. 3,053/kW, Rs. 2,798/kW, Rs. 2,629/kW and Rs. 2,534/kW each for grid interactive Rooftop and small Solar PV plants having installed capacity upto 10 kW, above 10 kW to 100 kW, above 100 kW upto 500 kW and above 500 kW & upto 1 MW respectively for Evacuation system upto interconnection point (Cables and Transformers).

E) Preliminary & Pre-operative expenses including IDC & contingency etc.

The Commission, in line with the methodology adopted for FY 2018-19, had proposed Rs. 2,536/kW, Rs. 2,324/kW, Rs. 2,184/kW and Rs. 2,104/kW i.e. 5.50% of the Hard cost, as preliminary & Pre-operative expenses for grid interactive Rooftop and small Solar PV plants having installed capacity upto 10 kW, above 10 kW to 100 kW, above 100 kW upto 500 kW and above 500 kW & upto 1 MW respectively. The Commission has not received any

comments from the Stakeholders with regard to preliminary & Pre-operative expenses. Accordingly, adopting the same methodology as followed in draft Order, the Commission has approved Rs. Rs. 2,256/kW, Rs. 2,068/kW, Rs. 1,943/kW and Rs. 1,873/kW as preliminary & Pre-operative expenses for grid interactive Rooftop and small Solar PV plants having installed capacity upto 10 kW, above 10 kW to 100 kW, above 100 kW upto 500 kW and above 500 kW & upto 1 MW respectively.

In view of the above discussions & analysis, the Commission has approved the cost of Roof-top & Small Solar PV based Plant for FY 2019-20 as follows:

Benchmark Capital Cost of Grid Interactive Rooftop & Small Solar PV Plants proposed and Approved for FY 2019-20

S. No.	Particulars	Proposed Capital cost (Rs./kW)				Approved Capital cost (Rs./kW)			
		Upto 10 kW	Above 10 kW to 100 kW	Above 100 kW to 500 kW	Above 500 kW & upto 1 MW	Upto 10 kW	Above 10 kW to 100 kW	Above 100 kW to 500 kW	Above 500 kW & upto 1 MW
1	PV Module inc. degradation	28,393	26,027	24,454	23,565	27,092	24,834	23,333	22,485
2	Land Cost, Civil and General Works	6,024	5,522	5,189	5,000	6,024	5,522	5,189	5,000
3	Mounting Structures	3,587	3,288	3,089	2,977	2,428	2,226	2,092	2,015
4	Power Conditioning Units	3,587	3,288	3,089	2,977	2,428	2,226	2,092	2,015
5	Evacuation cost upto interconnection point (Cables and Transformers)	4,509	4,133	3,884	3,742	3,053	2,798	2,629	2,534
6	Preliminary & Pre-operative expenses including IDC & contingency etc.	2,536	2,324	2,184	2,104	2,256	2,068	1,943	1,873
	Total Capital Cost	48,636	44,583	41,889	40,365	43,282	39,676	37,278	35,922

7.2 Tariff for Roof-top & Small Solar PV Plants

Based on the proposed benchmark capital cost for Solar PV Plants, the Commission in

its draft Order dated 07th December, 2018 had proposed a levellised tariff as follows:

Proposed Generic Tariffs for Grid connected Rooftop & Small Solar PV Plants for FY 2019-20 (Rs./kWh)

Level of Subsidy	0%	30%	70%	90%
Particulars				
For Projects having capacity upto 10 kW				
Gross Tariff	6.16	5.37	4.32	3.88
Less : Acc Dep Benefit	0.32	0.27	0.19	0.14
Net Tariff	5.83	5.10	4.13	3.74
For Projects having capacity above 10 kW and upto 100 kW				
Gross Tariff	5.58	4.79	3.75	3.39
Less : Acc Dep Benefit	0.30	0.24	0.16	0.10
Net Tariff	5.28	4.55	3.59	3.29
For Projects having capacity above 100 kW & upto 500 kW				
Gross Tariff	5.18	4.50	3.60	3.23
Less : Acc Dep Benefit	0.28	0.23	0.16	0.12
Net Tariff	4.91	4.27	3.44	3.11
For Projects having capacity above 500 kW & upto 1 MW				
Gross Tariff	4.92	4.26	3.40	3.03
Less : Acc Dep Benefit	0.27	0.22	0.16	0.11
Net Tariff	4.65	4.04	3.24	2.92

With regard to clarification sought by M/s Akshay Urja Association, it is to be noted that as per RE Regulations, 2018, ground mounted Solar PV plant having installed capacity upto 1 MW in the premises shall be included in Grid interactive rooftop & small solar PV plants where premises means the land, building or infrastructure or part or combination thereof including the rooftops or/and elevated areas owned by the Eligible Consumer.

Further, with regard to the comment of UREDA regarding subsidy for grid connected rooftop solar plants, the Commission observed that the cabinet committee on Economic Affairs has given its approval for the Phase-II of Grid Connected Rooftop Solar Programme for achieving cumulative capacity of 40,000 MW from Rooftop Solar (RTS) Projects by the year 2022. Accordingly, apart from the tariff based on subsidy of 30%, 70% and 90%, the Commission is of the view to incorporate tariff based on the subsidy level of 20% and 40%.

Based on the above discussion, the Commission has determined the gross and net

levellised tariff to be applicable for FY 2019-20 as depicted in Annexure II-A , Annexure II-B, Annexure II-C & Annexure II-D and as follows:

Approved Generic Tariffs for Grid connected Rooftop & Small Solar PV Plants for FY 2019-20 (Rs./kWh)						
Level of Subsidy	0%	20%	30%	40%	70%	90%
Particulars						
For Projects having capacity upto 10 kW						
Gross Tariff	5.50	5.02	4.97	4.55	3.85	3.45
Less : Acc Dep Benefit	0.29	0.26	0.24	0.22	0.17	0.12
Net Tariff	5.21	4.77	4.55	4.32	3.68	3.35
For Projects having capacity above 10 kW and upto 100 kW						
Gross Tariff	4.98	4.55	4.33	4.11	3.47	3.11
Less : Acc Dep Benefit	0.27	0.24	0.22	0.21	0.16	0.11
Net Tariff	4.72	4.31	4.11	3.91	3.32	3.00
For Projects having capacity above 100 kW & upto 500 kW						
Gross Tariff	4.63	4.44	4.02	3.85	3.21	2.87
Less : Acc Dep Benefit	0.25	0.22	0.21	0.19	0.15	0.11
Net Tariff	4.38	4.00	3.81	3.62	3.06	2.77
For Projects having capacity above 500 kW & upto 1 MW						
Gross Tariff	4.52	4.13	3.93	3.73	3.15	2.82
Less : Acc Dep Benefit	0.24	0.21	0.20	0.19	0.14	0.10
Net Tariff	4.28	3.91	3.73	3.55	3.01	2.72

8. Solar Thermal Projects

8.1 Capital Cost

In line with RE Regulations, 2018, the Commission had proposed benchmark cost of Solar Thermal Plants of Rs. 1200.00 Lakh/MW.

The Commission has observed that no comments/objections on the proposed capital cost have been submitted by any of the developers or stakeholders, hence, the same has been considered by the Commission for the FY 2019-20.

8.2 Tariff

The Commission had proposed the tariff in respect of Solar Thermal Plants as Rs. 14.17/kWh in its draft Order dated 07th December, 2018.

Based on the approved capital cost and in accordance with the norms specified

in RE Regulations, 2018, the applicable gross tariff for FY 2019-20 has been determined as Rs. 14.24/kWh as depicted in Annexure-III enclosed.

9. Other Comments

a) M/s Akshya Urja Associates

The stakeholder submitted that the CUF of 15.67% should be considered on actual basis based on the MNRE report on performance analysis of Grid connected solar PV plants commissioned under Phase-I of JNNSM for the period of January, 2014 to December, 2014 instead of 19%. Further, complete net metering process should be in scope of UPCL, including providing meter for which consumers will pay a fixed fee. Furthermore, only one Net meter should be installed in domestic/small power plants instead of two net meters and net metering adjustment period should be annually instead of monthly basis.

The Stakeholder also submitted that individuals should be allowed to install grid tied solar power plant in Uttarakhand without participating in tender or SECI scheme. During the hearing, the Stakeholder, referring to UREDA's Request for Proposal (RfP)/tender document for inviting bids for installation of Solar PV Plants having cumulative capacity of 200 MW submitted that under RfP same ceiling tariff has been considered by UREDA irrespective of size of the Solar PV plant whereas the Commission has provided different rates for rooftop & small solar PV plants having capacity upto 1 MW and different rates for large solar PV plants having capacity more than 1 MW.

With regard to CUF and billing cycle under net metering arrangement, the Commission has already dealt with the matter during the finalization of RE Regulations, 2018. The relevant extract of the Statement of Reasons of RE Regulations, 2018 is as follows:

"1.33.11 With regard to the CUF, it is to be noted that as per the previous regulations, it is the responsibility of the RE based generating companies to submit the information to the Commission in respect to generation, demand met, capacity availability, capacity utilization factor, auxiliary consumption and other parameters on yearly basis. However, no information has been submitted by any of the developer or nodal agency. The MNRE report on

Performance analysis of Grid connected solar power projects commissioned in year 2014 is not relevant as the report pertains to FY 2015-16. No current/latest data has been submitted by any of the agency or developer. Further, CERC has specified the CUF of 19% based on the CUF specified by various SERCs and bidding documents issued by various agencies including SECI for competitive bidding and inviting project Developers and Engineering, Procurement and Construction (EPC) companies to setup and construct solar PV projects. Accordingly, the Commission does not find it prudent to change the CUF.

1.33.12 ... Further, on the request of beneficiaries of SECI scheme that adjustment of generation should be done on yearly basis instead of monthly billing cycle basis, the Commission of the view that this proposal needs to be analysed before taking any decision in this regard and accordingly, the Commission directs UPCL to collect monthly generation as well as consumption data, of such SECI and other schemes' beneficiaries who do not have PPA with UPCL and are supplying excess power to UPCL free of cost, for atleast one complete year and submit the same before the Commission for taking further view in the matter"

Further, with regard to NOC by UPCL to individuals to install grid tied Solar Power Plants in Uttarakhand without participating in tender or SECI Scheme and an online portal be developed by UPCL wherein individuals can get themselves registered for installation of grid interactive rooftop & small solar PV plants under net metering instead of waiting for scheme of UREDA, the Commission vide letter dated 06.12.2018 to UREDA, has already taken a view that providing NOC by UPCL to various Govt. Institution/Organization, Private Installations and Commercial & Industrial users for captive use was a special dispensation not covered under RE Regulations applicable from time to time and such dispensation of providing NOC by UPCL shall be applicable in case of Rooftop Solar Power Plants installed by individual users. Such plants can be installed by the individuals in accordance with the provisions of RE Regulations as applicable from time to time.

Further, the Stakeholder also raised the issue regarding the net metering process. In this regard, it is to be noted that the same shall be done in accordance with the provisions of the applicable Regulations and provision of PPA executed between solar power generator and UPCL.

b) Delayed Payment by UPCL

Shri D. S. Rawat and Shri K.S. Bisht submitted that UPCL is not paying the dues in a time bound manner even after the order of the Commission in the matter and there is revenue loss due to breakdown/unscheduled outage of UPCL system.

With regard to the issue of dues not being paid by UPCL in time bound manner, the Commission advises the stakeholder to approach the Commission separately as the matter does not pertain to the fixation of the benchmark capital cost of the Solar Energy based power Plants for FY 2019-20.

c) Common issues

Some of the stakeholders requested the Commission to reserve the small Solar PV plants' capacity of at least 100 MW for hilly terrain so that migration of the localities can be stopped by developing such plants in hilly terrain. Further, Stakeholders also submitted that UREDA has issued RfP/tender for inviting bids for development of Solar PV plants having cumulative capacity of 200 MW wherein size of single plant ranges from 100 kW and upto 5 MW. However, the range of small Solar PV plant for the hilly terrain should be from 25 kW to 500 kW considering the limited land availability in the hills.

In the matter, the Commission would like to mention that the request and comments made by the Stakeholders regarding RfP issued by UREDA or reservation of particular range of small solar PV plants for the hilly terrain does not come under the purview of the Commission. Therefore, the stakeholders are advised to approach appropriate authorities in the matter.

10. Generic Tariffs

Based on the revised capital cost, as proposed above, the Commission has determined the generic tariff to be applicable for projects to be commissioned in FY 2019-20 which is as follows:

Particulars	Solar PV Plant (Rs./kWh)		Solar Thermal Plant (Rs./kWh)	
	FY 2018-19	FY 2019-20	FY 2018-19	FY 2019-20
Gross Tariff	4.73	4.49	14.04	14.24
Less : Acc Dep Benefit	0.25	0.24	0.79	0.80
Net Tariff	4.48	4.25	13.26	13.44

**Generic Tariffs for Grid Interactive Rooftop & Small Solar PV Plants Approved for FY 2018-19 vis-à-vis
FY 2019-20 (Rs./kWh)**

Level of Subsidy	0%		20%		30%		40%		70%		90%	
Particular	Approved for FY 2018-19	Approved for FY 2019-20	Approved for FY 2018-19	Approved for FY 2019-20	Approved for FY 2018-19	Approved for FY 2019-20	Approved for FY 2018-19	Approved for FY 2019-20	Approved for FY 2018-19	Approved for FY 2019-20	Approved for FY 2018-19	Approved for FY 2019-20
For Projects having capacity upto 10 kW												
Gross Tariff	5.93	5.50	N.A.	5.02	5.18	4.97	N.A.	4.55	4.18	3.85	3.76	3.45
Less: Acc. Dep Benefit	0.31	0.29		0.26	0.26	0.24		0.22	0.18	0.17	0.13	0.12
Net Tariff	5.62	5.21		4.77	4.92	4.55		4.32	4.00	3.68	3.36	3.33
For Projects having capacity above 10 kW and upto 100 kW												
Gross Tariff	5.37	4.98	N.A.	4.55	4.62	4.33	N.A.	4.11	3.64	3.47	3.29	3.11
Less: Acc. Dep Benefit	0.28	0.27		0.24	0.23	0.22		0.21	0.16	0.16	0.10	0.11
Net Tariff	5.09	4.72		4.31	4.39	4.11		3.91	3.48	3.32	3.19	3.00
For Projects having capacity above 100 kW & upto 500 kW												
Gross Tariff	4.99	4.63	N.A.	4.44	4.35	4.02	N.A.	3.85	3.49	3.21	3.13	2.87
Less: Acc. Dep Benefit	0.27	0.25		0.22	0.22	0.21		0.19	0.16	0.15	0.11	0.11
Net Tariff	4.72	4.38		4.00	4.12	3.81		3.62	3.33	3.06	3.01	2.77
For Projects having capacity above 500 kW & upto 1 MW												
Gross Tariff	4.77	4.52	N.A.	4.13	4.15	3.93	N.A.	3.73	3.32	3.15	2.97	2.82
Less: Acc. Dep Benefit	0.26	0.24		0.21	0.22	0.20		0.19	0.15	0.14	0.11	0.10
Net Tariff	4.51	4.28		3.91	3.93	3.73		3.55	3.17	3.01	2.86	2.72

The above ceiling tariff shall be applicable on the projects commissioned or to be commissioned on or after 1st April, 2019 and will remain applicable till further reviewed by the Commission.

(M.K. Jain)
Member (Technical)

(D.P. Gairola)
Member (Law)

List of Stakeholders

Sr. No.	Name	Designation	Organisation	Address
1.	Sh. A.K. Tyagi	Chief Project Officer	Uttarakhand Renewable Energy Development Agency	Urja Park Campus, Industrial Area, Patel Nagar, Dehradun
2.	Sh. S.K. Tamta	Chief Engineer (Commercial)	Uttarakhand Power Corporation Ltd.	Victoria Cross Vijeta Gabar Singh Bhawan, Kanwali Road, Dehradun.
3.	Sh. R.K. Bahuguna	President	M/s Akshay Urja Association	47/1, Chakrata Road, Vasant Vihar, Dehradun-248006

List of Participants

Sr. No.	Name	Designation	Organisation	Address
1.	Sh. Gaurav Sharma	Superintending Engineer (RM)	Uttarakhand Power Corporation Ltd.	Victoria Cross Vijeta Gabar Singh Bhawan, Kanwali Road, Dehradun.
2.	Sh. A.K. Tyagi	Chief Project Officer	Uttarakhand Renewable Energy Development Agency	Urja Park Campus, Industrial Area, Patel Nagar, Dehradun
3.	Sh. Abhishek Pandey	Sr. Project Officer	Uttarakhand Renewable Energy Development Agency	Urja Park Campus, Industrial Area, Patel Nagar, Dehradun
4.	Sh. Sanjeev Singh	Owner	M/s MVC Renewable Energy	622K, Station Chowk, Nazibabad Road, Bijnor, Uttar Pradesh
5.	Sh. Naved	Owner	M/s Riza Renewable	54, Govindpuri, Ranipur Mour, Distt. Haridwar
6.	Sh. Manish Kathait	Member	M/s Akshay Urja Association	47/1, Chakrata Road, Vasant Vihar, Dehradun-248006
7.	Sh. D.S. Rawat	-	-	Village-Odda, Block-Koti, P.O.-Khandyusain, Distt. Pauri Garhwal
8.	Sh. M.S. Negi	-	-	Distt. Pauri Garhwal
9.	Sh. J.P. Barthwal	-	-	Mohkampur, Dehradun
10.	Sh. Kavindra Singh Bisht	-	-	1148, Indira Nagar Colony, Dehradun
11.	Sh. Snehil Pandey	Sr. Manager	UCO Bank	Hathibarkala, Dehradun-248001

TARIFF DETERMINATION FOR SOLAR PV POWER PLANTS OF UTTARAKHAND FOR FY 2019-20

Units Generation	Unit	Year--->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Generation	MU		1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66
Aux Consumption	%		0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Saleable Energy	MU		1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66

Cost of Generation	Unit	Year--->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
O&M Expenses	Rs. Crore		12.30	13.00	13.75	14.53	15.37	16.24	17.17	18.16	19.19	20.29	21.45	22.68	23.98	25.35	26.80	28.33	29.95	31.66	33.48	35.39	37.42	39.56	41.82	44.21	46.74
Depreciation	Rs. Crore		19.18	19.18	19.18	19.18	19.18	19.18	19.18	19.18	19.18	19.18	19.18	19.18	19.18	5.94	5.94	5.94	5.94	5.94	5.94	5.94	5.94	5.94	5.94	5.94	5.94
Interest on term loan	Rs. Crore		27.65	25.44	23.23	21.01	18.80	16.59	14.38	12.17	9.95	7.74	5.53	3.32	1.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Interest on working Capital	Rs. Crore		2.00	1.99	1.98	1.97	1.97	1.97	1.97	1.97	1.98	1.98	2.04	2.06	2.07	1.85	1.92	1.99	2.07	2.16	2.25	2.34	2.44	2.55	2.66	2.77	2.90
Return on Equity	Rs. Crore		21.38	21.38	21.38	21.38	21.38	21.38	21.38	21.38	21.38	21.38	23.51	23.51	23.51	23.51	23.51	23.51	23.51	23.51	23.51	23.51	23.51	23.51	23.51	23.51	23.51
Total Cost of generation	Rs. Crore		82.51	80.99	79.51	78.08	76.70	75.36	74.08	72.85	71.68	70.58	71.72	70.75	69.85	56.65	58.17	59.78	61.48	63.27	65.17	67.18	69.31	71.55	73.93	76.43	79.09
Per unit Cost of generation	Rs. /kWh		4.96	4.87	4.78	4.69	4.61	4.53	4.45	4.38	4.31	4.24	4.31	4.25	4.20	3.40	3.49	3.59	3.69	3.80	3.92	4.04	4.16	4.30	4.44	4.59	4.75

Levelised Tariff	4.49
Accelerated Depreciation	0.24
Net Tariff	4.25

TARIFF DETERMINATION FOR ROOFTOP SOLAR PV PLANTS (INSTALLED CAPACITY UPTO 10 KW WITH NIL SUBSIDY) FOR FY 2019-20

Units Generation	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Generation	kWh		1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40
Aux Consumption	%		0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Saleable Energy	kWh		1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40

Cost of Generation	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
O&M Expenses	Rs.		1537	1677	1677	1677	1677	1677	1677	1677	1677	1677	1677	1677	1677	1677	1677	1677	1677	1677	1677	1677	1677	1677	1677	1677	1677
Depreciation	Rs.		2331	2544	2544	2544	2544	2544	2544	2544	2544	2544	2544	2544	2544	788	788	788	788	788	788	788	788	788	788	788	788
Interest on term loan	Rs.		3359	3374	3080	2787	2494	2200	1907	1614	1320	1027	733	440	147	0	0	0	0	0	0	0	0	0	0	0	0
Interest on working Capital	Rs.		245	266	265	264	264	264	264	265	266	267	275	277	279	250	259	270	281	292	304	317	330	345	360	376	393
Return on Equity	Rs.		2597	2835	2835	2835	2835	2835	2835	2835	2835	2835	3119	3119	3119	3119	3119	3119	3119	3119	3119	3119	3119	3119	3119	3119	3119
Total Cost of generation	Rs.		10068	10697	10402	10108	9814	9521	9228	8935	8642	8350	8348	8057	7766	5833	5843	5853	5864	5875	5887	5900	5914	5928	5943	5959	5976
Per unit Cost of generation	Rs./kWh		6.05	6.43	6.25	6.07	5.90	5.72	5.54	5.37	5.19	5.02	5.02	4.84	4.67	3.50	3.51	3.52	3.52	3.53	3.54	3.55	3.55	3.56	3.57	3.58	3.59

Levelised Tariff	5.50
Accelerated Depreciation	0.29
Net Tariff	5.21

TARIFF DETERMINATION FOR ROOFTOP SOLAR PV PLANTS (INSTALLED CAPACITY UPTO 10 KW WITH 20% SUBSIDY) FOR FY 2019-20

Units Generation	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Generation	kWh		1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	
Aux Consumption	%		0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
Saleable Energy	kWh		1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	

Cost of Generation	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
O&M Expenses	Rs.		1537	1624	1717	1816	1919	2029	2145	2268	2398	2535	2680	2833	2995	3167	3348	3539	3742	3956	4182	4421	4674	4941	5224	5523	5839
Depreciation	Rs.		1981	1981	1981	1981	1981	1981	1981	1981	1981	1981	1981	1981	1981	613	613	613	613	613	613	613	613	613	613	613	613
Interest on term loan	Rs.		2631	2402	2174	1945	1717	1489	1260	1032	803	575	346	118	2	0	0	0	0	0	0	0	0	0	0	0	0
Interest on working Capital	Rs.		223	223	222	223	223	224	225	226	228	230	238	241	246	227	235	245	255	265	276	288	301	314	328	342	358
Return on Equity	Rs.		2597	2597	2597	2597	2597	2597	2597	2597	2597	2597	2857	2857	2857	2857	2857	2857	2857	2857	2857	2857	2857	2857	2857	2857	2857
Total Cost of generation	Rs.		8968	8827	8692	8562	8437	8320	8208	8104	8007	7918	8102	8029	8081	6863	7053	7254	7466	7691	7928	8179	8444	8725	9021	9335	9666
Per unit Cost of generation	Rs./kWh		5.39	5.30	5.22	5.14	5.07	5.00	4.93	4.87	4.81	4.76	4.87	4.82	4.86	4.12	4.24	4.36	4.49	4.62	4.76	4.91	5.07	5.24	5.42	5.61	5.81

Levelised Tariff	5.02
Accelerated Depreciation	0.26
Net Tariff	4.77

TARIFF DETERMINATION FOR ROOFTOP SOLAR PV PLANTS (INSTALLED CAPACITY UPTO 10 KW WITH 30% SUBSIDY) FOR FY 2019-20

Units Generation	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Generation	kWh		1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	
Aux Consumption	%		0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
Saleable Energy	kWh		1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	

Cost of Generation	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
O&M Expenses	Rs.		1537	1624	1717	1816	1919	2029	2145	2268	2398	2535	2680	2833	2995	3167	3348	3539	3742	3956	4182	4421	4674	4941	5224	5523	5839
Depreciation	Rs.		1806	1806	1806	1806	1806	1806	1806	1806	1806	1806	1806	1806	1806	559	559	559	559	559	559	559	559	559	559	559	559
Interest on term loan	Rs.		2267	2058	1850	1642	1433	1225	1017	809	600	392	184	40	0	0	0	0	0	0	0	0	0	0	0	0	0
Interest on working Capital	Rs.		212	212	212	213	214	215	216	218	220	223	231	235	242	225	234	244	254	264	275	287	299	313	326	341	357
Return on Equity	Rs.		2597	2597	2597	2597	2597	2597	2597	2597	2597	2597	2857	2857	2857	2857	2857	2857	2857	2857	2857	2857	2857	2857	2857	2857	2857
Total Cost of generation	Rs.		8418	8298	8183	8073	7970	7872	7782	7698	7621	7553	7757	7771	7901	6808	6998	7199	7411	7635	7873	8124	8389	8670	8966	9280	9611
Per unit Cost of generation	Rs./kWh		5.06	4.99	4.92	4.85	4.79	4.73	4.68	4.62	4.58	4.54	4.66	4.67	4.75	4.09	4.20	4.32	4.45	4.59	4.73	4.88	5.04	5.21	5.39	5.58	5.77

Levelised Tariff	4.79
Accelerated Depreciation	0.24
Net Tariff	4.55

TARIFF DETERMINATION FOR ROOFTOP SOLAR PV PLANTS (INSTALLED CAPACITY UPTO 10 KW WITH 40% SUBSIDY) FOR FY 2019-20

Units Generation	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Generation	kWh		1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	
Aux Consumption	%		0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
Saleable Energy	kWh		1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	

Cost of Generation	Unit	Year--->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
O&M Expenses	Rs.		1230	1300	1375	1453	1537	1624	1717	1816	1919	2029	2145	2268	2398	2535	2680	2833	2995	3166	3348	3539	3742	3956	4182	4421	4674
Depreciation	Rs.		629	629	629	629	629	629	629	629	629	629	629	629	629	195	195	195	195	195	195	195	195	195	195	195	195
Interest on term loan	Rs.		67	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Interest on working Capital	Rs.		119	121	124	128	132	137	141	146	151	157	167	173	179	177	184	192	200	208	217	226	236	247	258	270	282
Return on Equity	Rs.		2155	2155	2155	2155	2155	2155	2155	2155	2155	2155	2371	2371	2371	2371	2371	2371	2371	2371	2371	2371	2371	2371	2371	2371	2371
Total Cost of generation	Rs.		4200	4221	4283	4366	4453	4545	4643	4746	4855	4970	5311	5440	5576	5277	5429	5590	5760	5940	6130	6331	6543	6768	7005	7256	7521
Per unit Cost of generation	Rs./kWh		2.52	2.54	2.57	2.62	2.68	2.73	2.79	2.85	2.92	2.99	3.19	3.27	3.35	3.17	3.26	3.36	3.46	3.57	3.68	3.80	3.93	4.07	4.21	4.36	4.52

Levelised Tariff	2.82
Accelerated Depreciation	0.10
Net Tariff	2.72

TARIFF DETERMINATION FOR ROOFTOP SOLAR PV PLANTS (INSTALLED CAPACITY UPTO 10 KW WITH 70% SUBSIDY) FOR FY 2019-20

Units Generation	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Generation	kWh		1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40
Aux Consumption	%		0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Saleable Energy	kWh		1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40

Cost of Generation	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
O&M Expenses	Rs.		1537	1624	1717	1816	1919	2029	2145	2268	2398	2535	2680	2833	2995	3167	3348	3539	3742	3956	4182	4421	4674	4941	5224	5523	5839
Depreciation	Rs.		1107	1107	1107	1107	1107	1107	1107	1107	1107	1107	1107	1107	1107	343	343	343	343	343	343	343	343	343	343	343	343
Interest on term loan	Rs.		810	682	554	427	299	171	54	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Interest on working Capital	Rs.		168	170	171	174	176	179	182	187	194	200	213	220	228	221	230	239	249	260	271	283	295	308	322	337	352
Return on Equity	Rs.		2597	2597	2597	2597	2597	2597	2597	2597	2597	2597	2857	2857	2857	2857	2857	2857	2857	2857	2857	2857	2857	2857	2857	2857	2857
Total Cost of generation	Rs.		6218	6180	6147	6120	6099	6083	6085	6159	6295	6439	6856	7017	7187	6587	6777	6978	7190	7415	7652	7903	8168	8449	8745	9059	9390
Per unit Cost of generation	Rs./kWh		3.74	3.71	3.69	3.68	3.66	3.66	3.66	3.70	3.78	3.87	4.12	4.22	4.32	3.96	4.07	4.19	4.32	4.45	4.60	4.75	4.91	5.08	5.25	5.44	5.64

Levelised Tariff	3.85
Accelerated Depreciation	0.17
Net Tariff	3.68

TARIFF DETERMINATION FOR ROOFTOP SOLAR PV PLANTS (INSTALLED CAPACITY UPTO 10 KW WITH 90% SUBSIDY) FOR FY 2019-20

Units Generation	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Generation	kWh		1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	
Aux Consumption	%		0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
Saleable Energy	kWh		1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	

Cost of Generation	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
O&M Expenses	Rs.		1537	1624	1717	1816	1919	2029	2145	2268	2398	2535	2680	2833	2995	3167	3348	3539	3742	3956	4182	4421	4674	4941	5224	5523	5839
Depreciation	Rs.		757	757	757	757	757	757	757	757	757	757	757	757	757	234	234	234	234	234	234	234	234	234	234	234	234
Interest on term loan	Rs.		81	19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Interest on working Capital	Rs.		146	149	153	158	163	168	174	180	186	193	206	213	221	219	228	237	247	258	269	280	293	306	320	334	350
Return on Equity	Rs.		2597	2597	2597	2597	2597	2597	2597	2597	2597	2597	2857	2857	2857	2857	2857	2857	2857	2857	2857	2857	2857	2857	2857	2857	2857
Total Cost of generation	Rs.		5118	5146	5225	5328	5437	5552	5674	5802	5938	6082	6499	6660	6830	6476	6666	6867	7080	7304	7542	7792	8058	8338	8635	8948	9280
Per unit Cost of generation	Rs./kWh		3.07	3.09	3.14	3.20	3.27	3.34	3.41	3.49	3.57	3.65	3.91	4.00	4.10	3.89	4.01	4.13	4.25	4.39	4.53	4.68	4.84	5.01	5.19	5.38	5.58

Levelised Tariff	3.45
Accelerated Depreciation	0.12
Net Tariff	3.33

TARIFF DETERMINATION FOR ROOFTOP SOLAR PV PLANTS (INSTALLED CAPACITY ABOVE 10 KW & UPTO 100KW WITH NIL SUBSIDY) FOR FY 2019-20

Units Generation	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Generation	kWh		1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40
Aux Consumption	%		0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Saleable Energy	kWh		1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40

Cost of Generation	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
O&M Expenses	Rs.		1349	1426	1508	1594	1685	1782	1883	1991	2105	2225	2353	2487	2630	2780	2939	3107	3285	3473	3671	3881	4103	4338	4586	4849	5126
Depreciation	Rs.		2136	2136	2136	2136	2136	2136	2136	2136	2136	2136	2136	2136	2136	661	661	661	661	661	661	661	661	661	661	661	661
Interest on term loan	Rs.		3079	2833	2587	2340	2094	1848	1601	1355	1109	862	616	370	123	0	0	0	0	0	0	0	0	0	0	0	0
Interest on working Capital	Rs.		222	220	219	219	218	218	218	218	218	219	225	227	229	204	211	220	228	238	247	258	269	280	292	305	319
Return on Equity	Rs.		2381	2381	2381	2381	2381	2381	2381	2381	2381	2381	2619	2619	2619	2619	2619	2619	2619	2619	2619	2619	2619	2619	2619	2619	2619
Total Cost of generation	Rs.		9167	8996	8831	8670	8514	8364	8219	8081	7949	7824	7949	7839	7737	6263	6430	6607	6793	6990	7199	7419	7652	7898	8158	8434	8725
Per unit Cost of generation	Rs./kWh		5.51	5.41	5.31	5.21	5.12	5.03	4.94	4.86	4.78	4.70	4.78	4.71	4.65	3.76	3.86	3.97	4.08	4.20	4.33	4.46	4.60	4.75	4.90	5.07	5.24

Levelised Tariff	4.98
Accelerated Depreciation	0.27
Net Tariff	4.72

TARIFF DETERMINATION FOR ROOFTOP SOLAR PV PLANTS (INSTALLED CAPACITY ABOVE 10 KW & UPTO 100KW WITH 20% SUBSIDY) FOR FY 2019-20

Units Generation	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Generation	kWh		1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40
Aux Consumption	%		0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Saleable Energy	kWh		1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40

Cost of Generation	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
O&M Expenses	Rs.		1349	1426	1508	1594	1685	1782	1883	1991	2105	2225	2353	2487	2630	2780	2939	3107	3285	3473	3671	3881	4103	4338	4586	4849	5126
Depreciation	Rs.		1816	1816	1816	1816	1816	1816	1816	1816	1816	1816	1816	1816	1816	562	562	562	562	562	562	562	562	562	562	562	562
Interest on term loan	Rs.		2412	2202	1993	1783	1574	1365	1155	946	736	527	318	108	2	0	0	0	0	0	0	0	0	0	0	0	0
Interest on working Capital	Rs.		201	201	201	201	201	201	202	203	204	206	213	215	220	202	209	218	226	236	245	256	267	278	290	303	317
Return on Equity	Rs.		2381	2381	2381	2381	2381	2381	2381	2381	2381	2381	2381	2619	2619	2619	2619	2619	2619	2619	2619	2619	2619	2619	2619	2619	2619
Total Cost of generation	Rs.		8158	8026	7898	7774	7656	7544	7437	7336	7242	7155	7318	7245	7286	6162	6329	6505	6692	6889	7097	7318	7551	7797	8057	8332	8623
Per unit Cost of generation	Rs./kWh		4.90	4.82	4.74	4.67	4.60	4.53	4.47	4.41	4.35	4.30	4.40	4.35	4.38	3.70	3.80	3.91	4.02	4.14	4.26	4.40	4.54	4.68	4.84	5.01	5.18

Levelised Tariff	4.55
Accelerated Depreciation	0.24
Net Tariff	4.31

TARIFF DETERMINATION FOR ROOFTOP SOLAR PV PLANTS (INSTALLED CAPACITY ABOVE 10 KW & UPTO 100KW WITH 30% SUBSIDY) FOR FY 2019-20

Units Generation	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Generation	kWh		1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	
Aux Consumption	%		0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
Saleable Energy	kWh		1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	

Cost of Generation	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
O&M Expenses	Rs.		1349	1426	1508	1594	1685	1782	1883	1991	2105	2225	2353	2487	2630	2780	2939	3107	3285	3473	3671	3881	4103	4338	4586	4849	5126
Depreciation	Rs.		1656	1656	1656	1656	1656	1656	1656	1656	1656	1656	1656	1656	1656	512	512	512	512	512	512	512	512	512	512	512	512
Interest on term loan	Rs.		2078	1887	1696	1505	1314	1123	932	741	550	359	168	37	0	0	0	0	0	0	0	0	0	0	0	0	0
Interest on working Capital	Rs.		191	191	191	192	192	193	194	196	197	199	206	210	217	201	208	217	225	235	244	255	266	277	289	302	316
Return on Equity	Rs.		2381	2381	2381	2381	2381	2381	2381	2381	2381	2381	2381	2619	2619	2619	2619	2619	2619	2619	2619	2619	2619	2619	2619	2619	2619
Total Cost of generation	Rs.		7654	7540	7431	7327	7228	7134	7046	6964	6889	6820	7002	7008	7120	6112	6278	6455	6641	6838	7047	7267	7500	7746	8007	8282	8573
Per unit Cost of generation	Rs./kWh		4.60	4.53	4.46	4.40	4.34	4.29	4.23	4.18	4.14	4.10	4.21	4.21	4.28	3.67	3.77	3.88	3.99	4.11	4.23	4.37	4.51	4.65	4.81	4.98	5.15

Levelised Tariff	4.33
Accelerated Depreciation	0.22
Net Tariff	4.11

TARIFF DETERMINATION FOR ROOFTOP SOLAR PV PLANTS (INSTALLED CAPACITY ABOVE 10 KW & UPTO 100KW WITH 40% SUBSIDY) FOR FY 2019-20

Units Generation	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Generation	kWh		1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	
Aux Consumption	%		0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
Saleable Energy	kWh		1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	

Cost of Generation	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
O&M Expenses	Rs.		1349	1426	1508	1594	1685	1782	1883	1991	2105	2225	2353	2487	2630	2780	2939	3107	3285	3473	3671	3881	4103	4338	4586	4849	5126
Depreciation	Rs.		1495	1495	1495	1495	1495	1495	1495	1495	1495	1495	1495	1495	1495	463	463	463	463	463	463	463	463	463	463	463	463
Interest on term loan	Rs.		1744	1571	1399	1226	1054	882	709	537	364	192	53	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Interest on working Capital	Rs.		181	181	182	183	184	185	186	188	190	193	201	206	213	200	207	216	224	234	243	254	265	276	288	301	315
Return on Equity	Rs.		2381	2381	2381	2381	2381	2381	2381	2381	2381	2381	2381	2619	2619	2619	2619	2619	2619	2619	2619	2619	2619	2619	2619	2619	2619
Total Cost of generation	Rs.		7150	7055	6965	6879	6799	6724	6655	6592	6535	6486	6720	6808	6957	6061	6228	6404	6591	6788	6996	7217	7449	7696	7956	8231	8522
Per unit Cost of generation	Rs./kWh		4.30	4.24	4.18	4.13	4.08	4.04	4.00	3.96	3.93	3.90	4.04	4.09	4.18	3.64	3.74	3.85	3.96	4.08	4.20	4.34	4.48	4.62	4.78	4.95	5.12

Levelised Tariff	4.11
Accelerated Depreciation	0.21
Net Tariff	3.91

TARIFF DETERMINATION FOR ROOFTOP SOLAR PV PLANTS (INSTALLED CAPACITY ABOVE 10 KW & UPTO 100KW WITH 70% SUBSIDY) FOR FY 2019-20

Units Generation	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Generation	kWh		1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	
Aux Consumption	%		0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
Saleable Energy	kWh		1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	

Cost of Generation	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
O&M Expenses	Rs.		1349	1426	1508	1594	1685	1782	1883	1991	2105	2225	2353	2487	2630	2780	2939	3107	3285	3473	3671	3881	4103	4338	4586	4849	5126
Depreciation	Rs.		1015	1015	1015	1015	1015	1015	1015	1015	1015	1015	1015	1015	1015	314	314	314	314	314	314	314	314	314	314	314	314
Interest on term loan	Rs.		742	625	508	391	274	157	49	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Interest on working Capital	Rs.		151	152	154	156	158	160	163	167	173	179	190	196	203	197	204	213	221	231	240	251	262	273	285	298	312
Return on Equity	Rs.		2381	2381	2381	2381	2381	2381	2381	2381	2381	2381	2381	2619	2619	2619	2619	2619	2619	2619	2619	2619	2619	2619	2619	2619	2619
Total Cost of generation	Rs.		5637	5599	5565	5536	5512	5494	5491	5554	5673	5800	6176	6317	6466	5909	6076	6252	6439	6636	6844	7065	7298	7544	7804	8079	8370
Per unit Cost of generation	Rs./kWh		3.39	3.36	3.34	3.33	3.31	3.30	3.30	3.34	3.41	3.48	3.71	3.80	3.89	3.55	3.65	3.76	3.87	3.99	4.11	4.24	4.38	4.53	4.69	4.85	5.03

Levelised Tariff	3.47
Accelerated Depreciation	0.16
Net Tariff	3.32

TARIFF DETERMINATION FOR ROOFTOP SOLAR PV PLANTS (INSTALLED CAPACITY ABOVE 10 KW & UPTO 100KW WITH 90% SUBSIDY) FOR FY 2019-20

Units Generation	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Generation	kWh		1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	
Aux Consumption	%		0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
Saleable Energy	kWh		1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	

Cost of Generation	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
O&M Expenses	Rs.		1349	1426	1508	1594	1685	1782	1883	1991	2105	2225	2353	2487	2630	2780	2939	3107	3285	3473	3671	3881	4103	4338	4586	4849	5126
Depreciation	Rs.		694	694	694	694	694	694	694	694	694	694	694	694	694	215	215	215	215	215	215	215	215	215	215	215	215
Interest on term loan	Rs.		74	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Interest on working Capital	Rs.		131	133	137	141	146	150	155	161	166	172	183	190	197	194	202	211	219	229	238	249	259	271	283	296	310
Return on Equity	Rs.		2381	2381	2381	2381	2381	2381	2381	2381	2381	2381	2381	2619	2619	2619	2619	2619	2619	2619	2619	2619	2619	2619	2619	2619	2619
Total Cost of generation	Rs.		4629	4651	4720	4810	4906	5007	5114	5227	5346	5472	5849	5990	6139	5808	5975	6151	6338	6535	6743	6963	7196	7443	7703	7978	8269
Per unit Cost of generation	Rs./kWh		2.78	2.79	2.84	2.89	2.95	3.01	3.07	3.14	3.21	3.29	3.51	3.60	3.69	3.49	3.59	3.70	3.81	3.93	4.05	4.18	4.32	4.47	4.63	4.79	4.97

Levelised Tariff	3.11
Accelerated Depreciation	0.11
Net Tariff	3.00

TARIFF DETERMINATION FOR ROOFTOP SOLAR PV PLANTS (INSTALLED CAPACITY ABOVE 100 KW & UPTO 500 KW WITH NIL SUBSIDY) FOR FY 2019-20

Units Generation	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Generation	kWh		1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40
Aux Consumption	%		0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Saleable Energy	kWh		1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40

Cost of Generation	Unit	Year--->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
O&M Expenses	Rs.		1212	1281	1354	1432	1513	1600	1692	1788	1891	1999	2113	2234	2362	2497	2640	2791	2950	3119	3297	3486	3685	3896	4119	4355	4604
Depreciation	Rs.		2007	2007	2007	2007	2007	2007	2007	2007	2007	2007	2007	2007	2007	621	621	621	621	621	621	621	621	621	621	621	621
Interest on term loan	Rs.		2893	2662	2430	2199	1967	1736	1504	1273	1042	810	579	347	116	0	0	0	0	0	0	0	0	0	0	0	0
Interest on working Capital	Rs.		206	204	203	202	201	201	201	201	201	202	207	208	210	186	193	200	208	216	225	234	244	254	265	277	289
Return on Equity	Rs.		2237	2237	2237	2237	2237	2237	2237	2237	2237	2237	2460	2460	2460	2460	2460	2460	2460	2460	2460	2460	2460	2460	2460	2460	2460
Total Cost of generation	Rs.		8554	8391	8231	8076	7926	7781	7641	7506	7377	7254	7366	7257	7155	5764	5914	6072	6240	6417	6604	6802	7011	7232	7466	7713	7974
Per unit Cost of generation	Rs./kWh		1027.90	1008.25	989.11	970.49	952.43	934.96	918.12	901.94	886.45	871.70	885.16	872.01	859.74	692.63	710.63	729.66	749.79	771.06	793.55	817.33	842.46	869.04	897.13	926.83	958.23

Levelised Tariff	4.63
Accelerated Depreciation	0.25
Net Tariff	4.38

TARIFF DETERMINATION FOR ROOFTOP SOLAR PV PLANTS (INSTALLED CAPACITY ABOVE 100 KW & UPTO 500 KW WITH 20%SUBSIDY) FOR FY 2019-20

Units Generation	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Generation	kWh		1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	
Aux Consumption	%		0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
Saleable Energy	kWh		1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	

Cost of Generation	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
O&M Expenses	Rs.		1212	1281	1354	1432	1513	1600	1692	1788	1891	1999	2113	2234	2362	2497	2640	2791	2950	3119	3297	3486	3685	3896	4119	4355	4604
Depreciation	Rs.		1706	1706	1706	1706	1706	1706	1706	1706	1706	1706	1706	1706	1706	528	528	528	528	528	528	528	528	528	528	528	528
Interest on term loan	Rs.		2266	2069	1872	1676	1479	1282	1085	889	692	495	298	102	2	0	0	0	0	0	0	0	0	0	0	0	0
Interest on working Capital	Rs.		187	186	185	185	185	185	186	187	188	189	195	197	201	184	191	198	206	214	223	232	242	252	263	275	287
Return on Equity	Rs.		2237	2237	2237	2237	2237	2237	2237	2237	2237	2237	2460	2460	2460	2460	2460	2460	2460	2460	2460	2460	2460	2460	2460	2460	2460
Total Cost of generation	Rs.		7607	7479	7355	7235	7120	7010	6906	6806	6713	6626	6773	6699	6731	5669	5819	5977	6145	6322	6509	6707	6916	7137	7371	7618	7879
Per unit Cost of generation	Rs./kWh		4.57	4.49	4.42	4.35	4.28	4.21	4.15	4.09	4.03	3.98	4.07	4.02	4.04	3.41	3.50	3.59	3.69	3.80	3.91	4.03	4.16	4.29	4.43	4.58	4.73

Levelised Tariff	4.22
Accelerated Depreciation	0.22
Net Tariff	4.00

TARIFF DETERMINATION FOR ROOFTOP SOLAR PV PLANTS (INSTALLED CAPACITY ABOVE 100 KW & UPTO 500 KW WITH 30% SUBSIDY) FOR FY 2019-20

Units Generation	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Generation	kWh		1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	
Aux Consumption	%		0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
Saleable Energy	kWh		1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	

Cost of Generation	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
O&M Expenses	Rs.		1212	1281	1354	1432	1513	1600	1692	1788	1891	1999	2113	2234	2362	2497	2640	2791	2950	3119	3297	3486	3685	3896	4119	4355	4604
Depreciation	Rs.		1556	1556	1556	1556	1556	1556	1556	1556	1556	1556	1556	1556	1556	482	482	482	482	482	482	482	482	482	482	482	482
Interest on term loan	Rs.		1952	1773	1593	1414	1235	1055	876	696	517	338	158	34	0	0	0	0	0	0	0	0	0	0	0	0	0
Interest on working Capital	Rs.		177	177	177	177	177	178	179	180	181	183	189	193	198	183	190	197	205	213	222	231	241	252	262	274	286
Return on Equity	Rs.		2237	2237	2237	2237	2237	2237	2237	2237	2237	2237	2460	2460	2460	2460	2460	2460	2460	2460	2460	2460	2460	2460	2460	2460	2460
Total Cost of generation	Rs.		7133	7023	6916	6815	6717	6625	6538	6457	6381	6311	6476	6477	6576	5621	5771	5930	6097	6274	6461	6659	6868	7089	7323	7570	7832
Per unit Cost of generation	Rs./kWh		4.29	4.22	4.16	4.09	4.04	3.98	3.93	3.88	3.83	3.79	3.89	3.89	3.95	3.38	3.47	3.56	3.66	3.77	3.88	4.00	4.13	4.26	4.40	4.55	4.71

Levelised Tariff	4.02
Accelerated Depreciation	0.21
Net Tariff	3.81

TARIFF DETERMINATION FOR ROOFTOP SOLAR PV PLANTS (INSTALLED CAPACITY ABOVE 100 KW & UPTO 500 KW WITH 40% SUBSIDY) FOR FY 2019-20

Units Generation	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Generation	kWh		1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40
Aux Consumption	%		0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Saleable Energy	kWh		1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40

Cost of Generation	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
O&M Expenses	Rs.		1212	1281	1354	1432	1513	1600	1692	1788	1891	1999	2113	2234	2362	2497	2640	2791	2950	3119	3297	3486	3685	3896	4119	4355	4604
Depreciation	Rs.		1405	1405	1405	1405	1405	1405	1405	1405	1405	1405	1405	1405	1405	435	435	435	435	435	435	435	435	435	435	435	435
Interest on term loan	Rs.		1638	1476	1314	1152	990	828	666	504	342	180	50	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Interest on working Capital	Rs.		168	168	168	168	169	170	171	173	174	176	184	189	195	182	189	196	204	212	221	230	240	251	262	273	285
Return on Equity	Rs.		2237	2237	2237	2237	2237	2237	2237	2237	2237	2237	2460	2460	2460	2460	2460	2460	2460	2460	2460	2460	2460	2460	2460	2460	2460
Total Cost of generation	Rs.		6659	6567	6478	6394	6315	6240	6171	6107	6049	5997	6212	6288	6422	5574	5724	5882	6050	6227	6414	6612	6821	7042	7276	7523	7784
Per unit Cost of generation	Rs./kWh		4.00	3.95	3.89	3.84	3.79	3.75	3.71	3.67	3.63	3.60	3.73	3.78	3.86	3.35	3.44	3.53	3.63	3.74	3.85	3.97	4.10	4.23	4.37	4.52	4.68

Levelised Tariff	3.81
Accelerated Depreciation	0.19
Net Tariff	3.62

TARIFF DETERMINATION FOR ROOFTOP SOLAR PV PLANTS (INSTALLED CAPACITY ABOVE 100 KW & UPTO 500 KW WITH 70% SUBSIDY) FOR FY 2019-20

Units Generation	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Generation	kWh		1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	
Aux Consumption	%		0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
Saleable Energy	kWh		1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	

Cost of Generation	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
O&M Expenses	Rs.		1212	1281	1354	1432	1513	1600	1692	1788	1891	1999	2113	2234	2362	2497	2640	2791	2950	3119	3297	3486	3685	3896	4119	4355	4604
Depreciation	Rs.		953	953	953	953	953	953	953	953	953	953	953	953	953	295	295	295	295	295	295	295	295	295	295	295	295
Interest on term loan	Rs.		697	587	477	367	257	148	46	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Interest on working Capital	Rs.		139	140	142	143	145	147	149	153	158	163	174	180	186	179	186	193	201	210	218	228	237	248	259	270	282
Return on Equity	Rs.		2237	2237	2237	2237	2237	2237	2237	2237	2237	2237	2460	2460	2460	2460	2460	2460	2460	2460	2460	2460	2460	2460	2460	2460	2460
Total Cost of generation	Rs.		5238	5198	5163	5132	5106	5085	5077	5131	5239	5352	5700	5827	5961	5431	5581	5739	5907	6084	6271	6469	6678	6899	7133	7380	7642
Per unit Cost of generation	Rs./kWh		3.15	3.12	3.10	3.08	3.07	3.05	3.05	3.08	3.15	3.22	3.42	3.50	3.58	3.26	3.35	3.45	3.55	3.66	3.77	3.89	4.01	4.15	4.29	4.43	4.59

Levelised Tariff	3.21
Accelerated Depreciation	0.15
Net Tariff	3.06

TARIFF DETERMINATION FOR ROOFTOP SOLAR PV PLANTS (INSTALLED CAPACITY ABOVE 100 KW & UPTO 500 KW WITH 90% SUBSIDY) FOR FY 2019-20

Units Generation	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Generation	kWh		1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40
Aux Consumption	%		0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Saleable Energy	kWh		1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40

Cost of Generation	Unit	Year--->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
O&M Expenses	Rs.		1212	1281	1354	1432	1513	1600	1692	1788	1891	1999	2113	2234	2362	2497	2640	2791	2950	3119	3297	3486	3685	3896	4119	4355	4604
Depreciation	Rs.		652	652	652	652	652	652	652	652	652	652	652	652	652	202	202	202	202	202	202	202	202	202	202	202	202
Interest on term loan	Rs.		70	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Interest on working Capital	Rs.		120	122	126	129	133	138	142	147	152	157	167	173	180	177	184	192	199	208	216	226	235	246	257	268	281
Return on Equity	Rs.		2237	2237	2237	2237	2237	2237	2237	2237	2237	2237	2460	2460	2460	2460	2460	2460	2460	2460	2460	2460	2460	2460	2460	2460	2460
Total Cost of generation	Rs.		4290	4308	4369	4450	4536	4627	4723	4824	4932	5045	5393	5520	5654	5336	5486	5644	5812	5989	6176	6374	6583	6804	7038	7285	7546
Per unit Cost of generation	Rs./kWh		2.58	2.59	2.62	2.67	2.73	2.78	2.84	2.90	2.96	3.03	3.24	3.32	3.40	3.21	3.30	3.39	3.49	3.60	3.71	3.83	3.96	4.09	4.23	4.38	4.53

Levelised Tariff	2.87
Accelerated Depreciation	0.11
Net Tariff	2.77

TARIFF DETERMINATION FOR ROOFTOP SOLAR PV PLANTS (INSTALLED CAPACITY ABOVE 500 KW & UPTO 1MW WITH NIL SUBSIDY) FOR FY 2019-20

Units Generation	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Generation	kWh		1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	
Aux Consumption	%		0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
Saleable Energy	kWh		1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	

Cost of Generation	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
O&M Expenses	Rs.		1230	1300	1375	1453	1537	1624	1717	1816	1919	2029	2145	2268	2398	2535	2680	2833	2995	3166	3348	3539	3742	3956	4182	4421	4674
Depreciation	Rs.		1934	1934	1934	1934	1934	1934	1934	1934	1934	1934	1934	1934	1934	599	599	599	599	599	599	599	599	599	599	599	599
Interest on term loan	Rs.		2788	2565	2342	2119	1896	1673	1450	1227	1004	781	558	335	112	0	0	0	0	0	0	0	0	0	0	0	0
Interest on working Capital	Rs.		201	200	199	198	198	198	198	198	198	199	205	206	208	185	192	200	208	216	225	235	245	255	266	278	290
Return on Equity	Rs.		2155	2155	2155	2155	2155	2155	2155	2155	2155	2155	2371	2371	2371	2371	2371	2371	2371	2371	2371	2371	2371	2371	2371	2371	2371
Total Cost of generation	Rs.		8309	8155	8005	7860	7720	7584	7454	7330	7211	7099	7213	7114	7022	5690	5842	6003	6173	6352	6542	6743	6956	7180	7417	7668	7934
Per unit Cost of generation	Rs./kWh		4.99	4.90	4.81	4.72	4.64	4.56	4.48	4.40	4.33	4.27	4.33	4.27	4.22	3.42	3.51	3.61	3.71	3.82	3.93	4.05	4.18	4.31	4.46	4.61	4.77

Levelised Tariff	4.52
Accelerated Depreciation	0.24
Net Tariff	4.28

TARIFF DETERMINATION FOR ROOFTOP SOLAR PV PLANTS (INSTALLED CAPACITY ABOVE 500 KW & UPTO 1MW WITH 20% SUBSIDY) FOR FY 2019-20

Units Generation	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Generation	kWh		1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	
Aux Consumption	%		0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
Saleable Energy	kWh		1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	

Cost of Generation	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
O&M Expenses	Rs.		1230	1300	1375	1453	1537	1624	1717	1816	1919	2029	2145	2268	2398	2535	2680	2833	2995	3166	3348	3539	3742	3956	4182	4421	4674
Depreciation	Rs.		1644	1644	1644	1644	1644	1644	1644	1644	1644	1644	1644	1644	1644	509	509	509	509	509	509	509	509	509	509	509	509
Interest on term loan	Rs.		2183	1994	1804	1615	1425	1235	1046	856	667	477	288	98	2	0	0	0	0	0	0	0	0	0	0	0	0
Interest on working Capital	Rs.		183	182	182	182	182	183	183	184	186	187	193	196	200	183	191	198	206	214	223	233	243	253	264	276	288
Return on Equity	Rs.		2155	2155	2155	2155	2155	2155	2155	2155	2155	2155	2371	2371	2371	2371	2371	2371	2371	2371	2371	2371	2371	2371	2371	2371	2371
Total Cost of generation	Rs.		7396	7276	7161	7050	6943	6842	6746	6656	6571	6493	6641	6576	6614	5598	5750	5911	6081	6261	6451	6652	6864	7088	7326	7577	7842
Per unit Cost of generation	Rs./kWh		4.44	4.37	4.30	4.24	4.17	4.11	4.05	4.00	3.95	3.90	3.99	3.95	3.97	3.36	3.45	3.55	3.65	3.76	3.88	4.00	4.12	4.26	4.40	4.55	4.71

Levelised Tariff	4.13
Accelerated Depreciation	0.21
Net Tariff	3.91

TARIFF DETERMINATION FOR ROOFTOP SOLAR PV PLANTS (INSTALLED CAPACITY ABOVE 500 KW & UPTO 1MW WITH 30% SUBSIDY) FOR FY 2019-20

Units Generation	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Generation	kWh		1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	
Aux Consumption	%		0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
Saleable Energy	kWh		1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	

Cost of Generation	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
O&M Expenses	Rs.		1230	1300	1375	1453	1537	1624	1717	1816	1919	2029	2145	2268	2398	2535	2680	2833	2995	3166	3348	3539	3742	3956	4182	4421	4674
Depreciation	Rs.		1499	1499	1499	1499	1499	1499	1499	1499	1499	1499	1499	1499	1499	464	464	464	464	464	464	464	464	464	464	464	464
Interest on term loan	Rs.		1881	1708	1535	1363	1190	1017	844	671	498	325	153	33	0	0	0	0	0	0	0	0	0	0	0	0	0
Interest on working Capital	Rs.		174	174	174	174	175	175	176	178	179	181	188	191	197	182	190	197	205	214	222	232	242	252	263	275	288
Return on Equity	Rs.		2155	2155	2155	2155	2155	2155	2155	2155	2155	2155	2371	2371	2371	2371	2371	2371	2371	2371	2371	2371	2371	2371	2371	2371	2371
Total Cost of generation	Rs.		6939	6837	6738	6644	6555	6471	6392	6319	6251	6190	6355	6362	6465	5552	5704	5865	6035	6215	6405	6606	6818	7043	7280	7531	7796
Per unit Cost of generation	Rs./kWh		4.17	4.11	4.05	3.99	3.94	3.89	3.84	3.80	3.76	3.72	3.82	3.82	3.88	3.34	3.43	3.52	3.63	3.73	3.85	3.97	4.10	4.23	4.37	4.52	4.68

Levelised Tariff	3.93
Accelerated Depreciation	0.20
Net Tariff	3.73

TARIFF DETERMINATION FOR ROOFTOP SOLAR PV PLANTS (INSTALLED CAPACITY ABOVE 500 KW & UPTO 1MW WITH 40% SUBSIDY) FOR FY 2019-20

Units Generation	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Generation	kWh		1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	
Aux Consumption	%		0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
Saleable Energy	kWh		1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	

Cost of Generation	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
O&M Expenses	Rs.		1230	1300	1375	1453	1537	1624	1717	1816	1919	2029	2145	2268	2398	2535	2680	2833	2995	3166	3348	3539	3742	3956	4182	4421	4674
Depreciation	Rs.		1354	1354	1354	1354	1354	1354	1354	1354	1354	1354	1354	1354	1354	419	419	419	419	419	419	419	419	419	419	419	419
Interest on term loan	Rs.		1579	1423	1267	1110	954	798	642	486	330	174	48	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Interest on working Capital	Rs.		165	165	165	166	167	168	169	171	173	175	183	188	194	182	189	196	204	213	221	231	241	251	262	274	287
Return on Equity	Rs.		2155	2155	2155	2155	2155	2155	2155	2155	2155	2155	2371	2371	2371	2371	2371	2371	2371	2371	2371	2371	2371	2371	2371	2371	2371
Total Cost of generation	Rs.		6483	6397	6316	6239	6167	6100	6038	5982	5931	5887	6100	6180	6316	5506	5658	5819	5989	6169	6359	6560	6772	6997	7234	7485	7750
Per unit Cost of generation	Rs./kWh		3.89	3.84	3.79	3.75	3.71	3.66	3.63	3.59	3.56	3.54	3.67	3.71	3.80	3.31	3.40	3.50	3.60	3.71	3.82	3.94	4.07	4.20	4.35	4.50	4.66

Levelised Tariff	3.73
Accelerated Depreciation	0.19
Net Tariff	3.55

TARIFF DETERMINATION FOR ROOFTOP SOLAR PV PLANTS (INSTALLED CAPACITY ABOVE 500 KW & UPTO 1MW WITH 70% SUBSIDY) FOR FY 2019-20

Units Generation	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Generation	kWh		1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40
Aux Consumption	%		0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Saleable Energy	kWh		1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40

Cost of Generation	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
O&M Expenses	Rs.		1230	1300	1375	1453	1537	1624	1717	1816	1919	2029	2145	2268	2398	2535	2680	2833	2995	3166	3348	3539	3742	3956	4182	4421	4674
Depreciation	Rs.		919	919	919	919	919	919	919	919	919	919	919	919	919	284	284	284	284	284	284	284	284	284	284	284	284
Interest on term loan	Rs.		672	566	460	354	248	142	45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Interest on working Capital	Rs.		137	138	140	142	143	146	148	152	157	163	173	179	185	179	186	193	201	210	219	228	238	249	260	271	284
Return on Equity	Rs.		2155	2155	2155	2155	2155	2155	2155	2155	2155	2155	2371	2371	2371	2371	2371	2371	2371	2371	2371	2371	2371	2371	2371	2371	2371
Total Cost of generation	Rs.		5113	5079	5049	5023	5002	4986	4984	5042	5151	5266	5608	5736	5872	5369	5521	5682	5852	6032	6222	6422	6635	6859	7097	7348	7613
Per unit Cost of generation	Rs./kWh		3.07	3.05	3.03	3.02	3.01	3.00	2.99	3.03	3.09	3.16	3.37	3.45	3.53	3.23	3.32	3.41	3.52	3.62	3.74	3.86	3.99	4.12	4.26	4.41	4.57

Levelised Tariff	3.15
Accelerated Depreciation	0.14
Net Tariff	3.01

TARIFF DETERMINATION FOR ROOFTOP SOLAR PV PLANTS (INSTALLED CAPACITY ABOVE 500 KW & UPTO 1MW WITH 90% SUBSIDY) FOR FY 2019-20

Units Generation	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Generation	kWh		1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	
Aux Consumption	%		0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
Saleable Energy	kWh		1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	1664.40	

Cost of Generation	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
O&M Expenses	Rs.		1230	1300	1375	1453	1537	1624	1717	1816	1919	2029	2145	2268	2398	2535	2680	2833	2995	3166	3348	3539	3742	3956	4182	4421	4674
Depreciation	Rs.		629	629	629	629	629	629	629	629	629	629	629	629	629	195	195	195	195	195	195	195	195	195	195	195	195
Interest on term loan	Rs.		67	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Interest on working Capital	Rs.		119	121	124	128	132	137	141	146	151	157	167	173	179	177	184	192	200	208	217	226	236	247	258	270	282
Return on Equity	Rs.		2155	2155	2155	2155	2155	2155	2155	2155	2155	2155	2371	2371	2371	2371	2371	2371	2371	2371	2371	2371	2371	2371	2371	2371	2371
Total Cost of generation	Rs.		4200	4221	4283	4366	4453	4545	4643	4746	4855	4970	5311	5440	5576	5277	5429	5590	5760	5940	6130	6331	6543	6768	7005	7256	7521
Per unit Cost of generation	Rs./kWh		2.52	2.54	2.57	2.62	2.68	2.73	2.79	2.85	2.92	2.99	3.19	3.27	3.35	3.17	3.26	3.36	3.46	3.57	3.68	3.80	3.93	4.07	4.21	4.36	4.52

Levelised Tariff	2.82
Accelerated Depreciation	0.10
Net Tariff	2.72

TARIFF DETERMINATION FOR SOLAR THERMAL POWER PLANTS OF UTTARAKHAND FOR FY 2019-20

Units Generation	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Generation	MU		1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66	1.66
Aux Consumption	%		10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%	10.00%
Saleable Energy	MU		1.498	1.498	1.498	1.498	1.498	1.498	1.498	1.498	1.498	1.498	1.498	1.498	1.498	1.498	1.498	1.498	1.498	1.498	1.498	1.498	1.498	1.498	1.498	1.498	1.498

Cost of Generation	Unit	Year-->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
O&M Expenses	Rs. Crore		16.77	17.73	18.74	19.82	20.95	22.15	23.41	24.75	26.17	27.67	29.25	30.92	32.69	34.56	36.54	38.63	40.84	43.17	45.64	48.25	51.01	53.93	57.02	60.28	63.72
Depreciation	Rs. Crore		64.62	64.62	64.62	64.62	64.62	64.62	64.62	64.62	64.62	64.62	64.62	64.62	64.62	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00
Interest on term loan	Rs. Crore		93.13	85.68	78.23	70.78	63.33	55.88	48.43	40.98	33.53	26.08	18.63	11.18	3.73	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Interest on working Capital	Rs. Crore		5.52	5.42	5.32	5.22	5.12	5.03	4.94	4.85	4.77	4.69	4.76	4.69	4.62	3.73	3.82	3.93	4.04	4.15	4.27	4.40	4.53	4.68	4.83	4.99	5.16
Return on Equity	Rs. Crore		72.00	72.00	72.00	72.00	72.00	72.00	72.00	72.00	72.00	72.00	79.20	79.20	79.20	79.20	79.20	79.20	79.20	79.20	79.20	79.20	79.20	79.20	79.20	79.20	79.20
Total Cost of generation	Rs. Crore		252.04	245.45	238.91	232.43	226.02	219.67	213.40	207.20	201.08	195.05	196.45	190.60	184.86	137.49	139.56	141.75	144.07	146.52	149.11	151.85	154.75	157.81	161.04	164.47	168.08
Per unit Cost of generation	Rs./kWh		16.83	16.39	15.95	15.52	15.09	14.66	14.25	13.83	13.42	13.02	13.11	12.72	12.34	9.18	9.32	9.46	9.62	9.78	9.95	10.14	10.33	10.53	10.75	10.98	11.22

Levelised Tariff	14.24
Accelerated Depreciation	0.80
Net Tariff	13.44