

KERALA STATE ELECTRICITY REGULATORY COMMISSION
THIRUVANANTHAPURAM

Present: **Shri. PremanDinaraj, Chairman**
Shri. S. Venugopal, Member
Shri. K. Vikraman Nair, Member

Petition No. OP 8/2017

In the matter of : Petition filed by INOX Renewables Limited for approval of Power Purchase Agreement (PPA) for 16 MW wind power project established at KINFRA Textile Park, Palakkad– reg.

Petitioner : INOX Renewables Limited
Plot No. 17 Sector 16A
Noida-201301

Respondent : Kerala State Electricity Board Limited

Order dated 03.10.2018

1. M/s INOX Renewables Limited (hereinafter referred to as INOX or the petitioner) has filed a petition on 12.07.2017 before the Commission with the following prayer regarding the 16 MW Wind Power Plant established at KINFRA land at Palakkad.

“Approve the draft power purchase agreement and direct the Respondent herein to execute the same with the Petitioner herein at the provisional tariff of Rs. 5.98 /Kwh applicable from the date of commissioning of the 8 no of WTGs commissioned by petitioner on 28.03.17, as determined by this Hon’ble Commission for financial year 2015-16 subject to adjustments subsequently as and when the preferential tariff for financial year 2016-17 is determined by this Hon’ble Commission for wind energy projects as applicable in the case of Petitioner herein.”

2. The Commission admitted the petition as OP 8/2017 and conducted the hearing on 29.8.2017 at the Court Hall of the Commission.
3. Shri. Viswal Gupta, Advocate, presented the petition on behalf of INOX Renewables Limited. The issues raised by the petitioner are summarized below.

- (i) The idea of establishing the 22 MW Wind farm at KINFRA, at Palakkad was conceived during the year 2009.
 - (ii) KSEB vide its letter No. CP/IPC-147/wind/204 dated 24.09.2010 had directed the petitioner to approach KSEB with the application for executing the PPA with the following documents.
 - Technical clearance certificate from ANERT
 - Certificate of Tariff approval issued by KSERC
 - Grid connection certificate issued by KSEB Ltd
 - (iii) Commission has the authority under Section-62 and 86 of the Electricity Act-2003 to issue direction to the distribution licensee to procure power from the wind power project at the tariff approved by the Commission.
 - (iv) The preferential tariff is not a ceiling norm and negotiated tariff is not envisaged under Electricity Act 2003.
 - (v) As per the Regulations 4 and 8 of the KSERC (Renewable Energy) Regulations, 2015, KSEB Ltd as the obligated entity has to purchase renewable energy from the RE projects established in the State for meeting its 'renewable purchase obligation (RPO). Meeting the RPO by purchasing 'renewable energy certificate (REC) cannot be an alternative to purchase of power from RE Generation.
 - (vi) As per the KSERC (Renewable Energy) Regulations, 2015, the Commission had approved the generic tariff for the wind power plants in zone-2 at Rs 5.98/unit for the FY 2015-16. Till the Commission approve the generic tariff for wind plants for the FY 2016-17, the generic tariff of Rs 5.98/unit applicable for the FY 2015-16 may be provisionally approved for the 16 MW wind plant established at INOX at Palakkad.
 - (vii) The petitioner prayed before the Commission to direct the respondent KSEB Ltd to execute the PPA with INOX for the 16 MW wind plants at the generic tariff of Rs 5.98/unit provisionally.
4. Sri V K Joseph, Chief Engineer (Commercial & Tariff), presented the following on behalf of the KSEB Ltd.
- (i) KSEB Ltd had not signed any MOU or commitment to the petitioner that, it shall procure power from the project without looking into the financials.
 - (ii) The petitioner had made investment in wind power in the State as per the policies of the State Government notified in 2004 and 2007. As per the policies of the State Government,
 - KSEB will have the first right to purchase energy
 - Purchase of power shall be subject to financial viability of the offer, requirement, and approval of such purchase by SERC.
 - Alternatively the Developer can sell power to other parties (consumer(s)/ licensee), at a rate approved by SERC.

- (iii) The rate proposed by INOX is very high compared to market rate. In a recent bid, INOX itself had offered wind power at the rate of Rs 3.47/unit.
 - (iv) The generic tariff approved by Hon'ble Commission, based on the norms is the ceiling tariff. The petitioner can have relaxed norms than the norms fixed by the Commission and can offer a tariff less than the generic tariff approved by the Commission.
 - (v) KSEB Ltd is agreeable to execute PPA at a tariff of Rs 3.26 per unit, i.e, APPC for 2017-18 approved by the Commission.
 - (vi) K S E B Ltd. had written to Government for a policy decision on this matter
5. The Commission notes that the State Government in a meeting held on 01.07.2017 chaired by the Hon'ble Chief Minister and convened to discuss the issues in the power sector of the State has decided as follows:
' Tariff for renewable power developed till date by private IPPs shall be got fixed for PPAs through KSERC. If necessary a 108 Govt policy directive to KSERC to fix project specific tariffs for such renewable IPP shall be issued to KSERC' .
- The minutes was communicated to the Commission under covering letter dated 18.08.2017.
6. During the hearing, the Commission pointed out that the draft power purchase agreement submitted by the petitioner for approval is not initialed by KSEB Ltd. Further, under Section 86 (1) (e), while the Commission is empowered to specify the percentage of purchase from various renewable energy sources, it cannot direct the respondent i.e. KSEB Ltd to purchase power from any particular generator. The Commission, on a petition has the authority to determine the tariff for the 16 MW wind plant established by the petitioner. The Commission also notes that as per the wind policy issued by the State Government, KSEB Ltd has the option to purchase the wind power after considering the financial and other aspects. Hence, the Commission asked KSEB Ltd to clarify the requirement for getting a policy directive from the State Government in this matter. The Commission also directed KSEB Ltd to submit the status of its RPO compliance.
7. In compliance of the directions of the Commission, the petitioner M/s INOX submitted the additional details on 11.09.2017 and the respondent KSEB Ltd submitted the details on 18.09.2017.
8. The Commission scheduled the second hearing on the petition on 07.11.2017. Sri. Vishal Gupta, Advocate, represented the petitioner and Sri. Bipin Sankar P, Dy.CE represented KSEB Ltd for the proceedings before the Commission.
9. During the hearing KSEB Ltd submitted that, the signed draft power purchase agreement submitted by the petitioner is placed before the Board of Directors of KSEB Ltd for approval. KSEB Ltd requested before the Commission to

determine the project specific tariff and, approve the tariff applicable for the electricity generated from the project as the lower of the project specific tariff or generic tariff.

10. M/s INOX prayed before the Commission to approve tariff for the electricity generated from the project at the generic tariff applicable for the wind projects for the financial year 2016-17. The petitioner further submitted that, the determination of project specific tariff is a time consuming process. The project has already declared commercial operation and KSEB Ltd has been procuring the power from the project. KSEB Ltd provisionally agreed for making payments at Rs 3.26/unit, the average pooled power purchase cost approved for the FY 2017-18. M/s INOX also submitted that, in the event the Commission decides to determine the project specific tariff for the project, a provisional tariff may be approved in the interim till the Commission approve the project specific tariff.
11. Based on the deliberations during the hearing, the Commission directed the KSEB Ltd to submit, latest by 16.11.2017, its firm decision on entering in to power purchase agreement with the petitioner INOX.
12. In compliance of the direction of the Commission, KSEB Ltd vide its letter dated 29-11-2017 submitted as follows;
'KSEBL has decided to procure power from INOX at project specific tariff or generic tariff whichever is lower as approved by KSERC and as per terms and conditions of the PPA'.

KSEB Ltd also submitted that, they had forwarded the initialed PPA to M/s INOX on 24.11.2017 for their consent on the terms and conditions of the PPA initialed by KSEB Ltd.

13. M/s INOX, vide letter dated 28.11.2017, submitted their comments on the draft initialed PPA by KSEB Ltd, which is extracted below.
 - (i) *Clause 2.0 Effective date and Term of Agreement :*
Effective date of PPA shall be the date of COD and agreement should remain valid for the useful life of the Project which is 25 years.
 - (ii) *Clause 3.0 Contracted capacity:*
The contracted capacity shall be mentioned as 16 MW (8x2MW with the COD date of 28th March 2017)
 - (iii) *Clause 6.9 tariff should be suitably revised as the generic tariff has already been determined by Honorable Commission vide order No.442/CT/2015/KSERC dated 2nd November 2017. Further, we would like to submit here that we have filed petition with the Honorable Commission for generic tariff and as the same has already been determined by Honorable Commission, we request the same to be allowed.*
14. Duly considering all these aspects, the Commission, vide interim order dated 29.12.2017, has ordered the following:
“
 - (i) *It is decided to determine the project specific tariff for the 16 MW wind plant established by M/s INOX Renewables Ltd, at Kanjikode, Palakkad.*

- (ii) *M/s INOX shall submit the necessary details for determining the project specific tariff including the Capital cost, loans availed, and all other relevant details of the project with documentary evidence. The details shall be submitted on or before 31.01.2018 with a copy to the respondent KSEB Ltd with due acknowledgments.*
 - (iii) *KSEB Ltd shall pay to INOX, as an interim measure, a tariff at the rate of Rs.3.90 per unit for the energy injected by INOX from the date of commercial operation of the project till a firm tariff is determined by the Commission.*
 - (iv) *KSEB Ltd shall also submit its comments on the details filed by INOX for determination of the project specific tariff, within 30 days from the date of receipt of the details from INOX.”*
15. In compliance of the directions of the Commission, the petitioner M/s INOX vide the letter dated 16.01.2018 has submitted the copies of the following agreements signed between them with their strategic investor M/s D.J Malpani.
- (i) Copy of the Lol dated 20.02.2017 issued by M/s INOX Wind Ltd to M/s D.J Malpani for Rs 99.20 crore the 16 MW WEG.
 - (ii) Supply agreement dated 23.02.2017 between M/s INOX Wind Ltd and M/s D. J. Malpani for supplying the Wind Turbine Generator (WTG) to M/s D.J. malpani.
 - (iii) Supply agreement dated 23.02.2017 between M/s INOX Wind Infrastructure Services Ltd and M/s D.J. Malpani for supply of equipments/ components in respect of Switchyard/ DP Yard and Power Evacuation Transmission lines.
 - (iv) Erection and Commissioning (E&C contract) dated 23.02.2017, signed between M/s INOX Wind Infrastructure Services Ltd and M/s D.J Malpani.
 - (v) Land Acquisition and Development contract dated 23.02.2017, signed between M/s INOX Wind Infrastructure Services Ltd and M/s D.J Malpani.
16. The Commission notes that the strategic investor as stated by M/s INOX of the Wind Project, M/s D.J Malpani is neither a petitioner nor a respondent in the subject petition filed by M/s INOX before the Commission and therefore does not have any locus standi in this petition. Further the Commission has already decided to determine the capital cost of this Wind project to arrive at the tariff applicable to this project. Hence the Commission cannot adopt the sale price of the project to M/s D.J. Malpani by M/s INOX as the capital cost of the project. It is also a fact that while the project cost is the actual costs

including a predetermined equity, incurred in establishing a project, the sale price normally includes an element of profit in addition to the above.

17. Since the petitioner M/s INOX has not submitted the details of the cost expended by them, duly certified by the statutory auditors as demanded by the Commission for establishing the project cost, the Commission vide the letter dated 05.02.2018 directed M/s INOX to submit the following documents.
- (i) Land cost/ lease rent paid.
 - (ii) Cost of all major equipments with documentary evidence along with duty paid and excise challans.
 - (iii) Details of the Capital Civil Works and along with cost thereof, and the cost of erection and commissioning, along with work contract tax paid with supporting documents.
 - (iv) Cost incurred for erection and commissioning.
 - (v) Cost incurred for constructing the evacuation facilities if any, with details.
 - (vi) Details of loan availed and its terms of reference.
18. In response to this direction, M/s INOX vide letters dated 03.03.2018 and 17.04.2017, produced copies of invoices raised by them on M/s DJ Malpani, and copies of invoices raised by the subcontractors on M/s INOX as developer. Based on the documents submitted before the Commission, capital cost claimed by the petitioner is given below.

SI No	Description	Amount		Remarks
		(Rs.Cr)	Rs. Cr/ MW	
1	Land Cost / Lease rent paid	6.61	0.41	Letter from Kinfra
2	Cost of Wind Turbine Generator	76.8	4.80	Copy of invoice raised on M/s DJ Malpani attached
3	Infrastructure Development Charges (IDC) paid to K S E B Ltd.	1.29	0.08	Copy of acknowledgement from KSEB Ltd
4	Cost of Balance of Plant (BOP)	7.44	0.47	Invoices/ work orders
5	Miscellaneous (Site Office Expenses, Salary / overhead +Travel expenses + consultancy etc)	1.5	0.09	A breakup statement
6	Interest of receivable / outstanding from DJ Malpani (customer) on 42 Cr @9.5% p.a for 12 months	3.99	0.25	No documents attached
	Total	97.63	6.10	

19. Again, the Commission notes that the invoices for the wind turbine generator submitted by M/s INOX to the Commission is the sale invoice raised by them on M/s D J Malpani. As mentioned above, since the sale price of the WEG to

M/s D J Malpani includes the profit over and above the cost expended by the petitioner M/s INOX, the Commission cannot accept this cost while determining the project specific tariff.

20. Hence the Commission vide the letter dated 11.06.2018 again directed Ms INOX to submit the following documents / information for appraisal by the Commission, with the following directions.

“
(1) *M/s INOX shall submit the following documents/ information:*

- (i) A copy of lease agreement entered into by M/s INOX with KINFRA*
- (ii) Reason for claiming interest and penalty on the leases charges by KINFRA*
- (iii) Lease rent paid by M/s INOX with schedule of payment*

(2) The Commission has repeatedly directing the petitioner to provide actual cost incurred by INOX for development of the wind farm, as developer, with all supporting documents including excise duty paid vouchers in case of equipment and receipts/vouchers showing payment of service tax for services.

(3) INOX shall submit the time schedule for implementing the project as originally envisaged, the actual date of completion, and reason for delay in beginning of the project and in commissioning of the project.

(4) The details of interest liability on account of loan to finance the capital expenditure incurred by INOX shall also be provided, separately showing the loan and rate of interest with schedule of release of funds and repayment and yearly payment / accrual of interest during the construction period.

(5) Auditors certificate for the expenditure actually incurred by INOX.

(6) The details of Rs 55 Lakh included under sub head “other miscellaneous expenses” in the head miscellaneous expenses.”

21. In response of the direction of the Commission, M/s INOX vide its letter dated 20.06.2018 submitted the following:

(1) Item No.1: Copies of the lease agreement entered into by M/s INOX with KINFRA.

(2) Item No. 2. M/s INOX submitted that, “They had provided the actual cost of all the inputs along with the invoices. However, there are certain expenses such as salary and wages, travelling expenses etc collectively covered as ‘miscellaneous expenses for which invoices/challans are not separately available. Excise duty is exempted for wind turbines. Service tax is fully discharged on all services rendered by the Company, however as service tax is a central levy, the same has been paid along with the liability of all other States and it cannot be distinguished for the project of Kerala alone’.

- (3) Item No.3: M/s INOX did not submit any convincing reason for the delay in implementing the project.
- (4) Item No.4: M/s INOX produced a copy of the loan availed by M/s D.J Malpani (the investor) from M/s Sarawswat Bank @10.5% rate of interest. M/s INOX stated that, during the construction period, M/s INOX raises loans from different banks for funding its projects, these funds are arranged at organisational level and there is no separate loan details available for this project. Hence the Commission notes that M/s INOX did not produce any documentary evidence to establish its loan borrowings for this particular project, the amount or its rate of interest.
- (5) Item No.5 & 6: Auditors certificate dated 16.06.2018 giving a Summary of Costs per WTG. However, there is no certification/indication regarding the project for which this certificate was issued.

22. Subsequently, as instructed by the Commission, the petitioner M/s INOX on 07.08.2018 submitted the following:

“ The WTGs of the project have been sourced from Inox Wind Limited (IWL). Each WTGs is of 2 MW and 8 nos WTGs have been supplied during 2016-17 from IWLs plant located at Himachal Pradesh, Gujarat and Madhya Pradesh.

The project had a timeline of March 2017 and there was no margin of delay in it. It was therefore decided to start the activities as soon as all approvals/ permissions for the project had been received. The project therefore got commenced during Q3 of FY 2016-17. In order to expedite the project activities WTGs are dispatched from IWL plants. The end customer/ investor had not been identified at the time of dispatch. All WTG material was transferred by IWL as stock transfer in the name of INOX Wind Limited itself. SoIWL has transferred components to Kerala in its own name and after signing of sale contract with DJ Malpani (customer/ investor), these turbines were invoiced to him (DJ Malpani)”

Further, M/s INOX has produced the details of stock transfer of WEG to KINFRA park at Kanjikode, Palakkad, including the invoices along with the transit records of the components of WEGs including ‘Nacelle and Hub’, ‘Blade’ and ‘Tower’ were submitted by the petitioner. The summary of the cost claimed for each components as per the invoices are given below.

(i)	Nacelle and Hub	=	Rs 54.3019 crore
(ii)	Blade	=	Rs 10.40 crore
(iii)	<u>Tower</u>	=	<u>Rs 12.10 crore</u>
	Total	=	Rs 76.8019 crore

23. Subsequently, in compliance of the directions of the Commission, the petitioner M/s INOX has submitted the following documents before the Commission on 01.09.2018.

- (i) A copy of the decision taken during the 58th Board meeting of KINFRA held on 23.05.2012, for the extension of the license agreement and transfer of the allotment of setting up the Wind Energy Project to M/s INOX Renewables Ltd, a subsidiary of M/s Gujarat Fluoro Chemicals Limited as per the KINFRA land disposal regulation.
- (ii) Copies of the invoices raised by M/s INOX Wind Limited for supplying WTG to NTPC Ltd, M/s PTC Energy Limited and M/s Sakthi Masala Private Ltd and its summary is given below.

Sl No.	Details of Item	Cost for one WTG (2MW) (Rs. Cr)			
		NTPC Ltd (Jan-17 to Feb-17)	PTC Energy Ltd (Dec-17)	Sakthi Masala Pvt Ltd (Feb-17 to Mar-17)	16 MW wind plant at Kanjikode, Palakkad (Oct-2016 to March-17)
1	Rotor Blade Set	1.50	1.60	1.80	1.50
2	Tubular Tower set	1.90	2.00	1.90	1.50
3	Nacelle and Hub	6.40	6.00	6.00	6.60
4	Total for one WTG	9.80	9.60	9.70	9.60
5	Cost/ MW (Rs Cr/MW)	4.90	4.80	4.85	4.80

24. KSEB Ltd vide letter dated 07.09.2018 has submitted the following specific objections to the claims raised by M/s INOX.

- (i) **Ownership of the project:** KSEB Ltd submitted that there is ambiguity regarding the ownership of the project. While M/s INOX is the developer of the project, the connectivity has been taken in the name of M/s DJ Malpani and invoices are also raised in their name. KSEB Ltd therefore requested M/s DJ Malpani to clarify the ownership of the project, person authorised on behalf of the owner, role of M/s INOX in the project and the details of the person proposing to enter into PPA with KSEB Ltd. However the reply was provided by M/s INOX, who vide their letter dated 12.02.2018 stated that M/s INOX is the developer of the project and M/s DJ Malpani is the strategic investor. KSEB Ltd also submitted that though they had requested M/s INOX to execute a tripartite agreement for releasing payment, no such agreement was executed till date. The PPA was also not mutually agreed upon and there was no clarity regarding with whom the PPA was to be entered into. Hence they prayed that the petition was not maintainable.
- (ii) **Commercial Operation Date:** KSEB Ltd submitted that though M/s INOX had claimed CoD on 28.03.2017, the plant operation till 15.06.2018 was only for testing purpose and KSEB Ltd started

purchasing power from M/s INOX only from 16.08.2017. Hence CoD of this project may be taken as 16.08.2018.

- (iii) **Capital Cost:** KSEB Ltd pointed out that there was discrepancy in the capital cost submitted by M/d INOX. In the LOI given to M/s DJ Malpani, the cost claimed is Rs. 6.20Cr/MW whereas in their submission to the Commission, they have given this figure as Rs.6.10 Cr/MW. KSEB Ltd submitted that this capital cost was on the high side considering the cost reduction in wind technology on account of economies of scale, improvement in technology leading to increase in efficiency and capacity of the generator and the costs of wind projects have declined significantly. Hence prudence check may be carried out for approving the capital cost of the project.
- (iv) **Land cost/lease rent paid:** M/s KSEB Ltd pointed that while M/s INOX has claimed Rs. 6.61 Cr as lease rent, the lease rent payable was Rs. 2.08 Cr. Interest on delayed payments, penalty, refundable EMD, service tax for re-instating etc. may be excluded from the estimation of capital cost. The proportionate charges for 16 MW under this head comes to Rs. 1.51 Cr.
- (v) **Infrastructure development charges:** Of the amount claimed of Rs. 1.29 Cr for 22 MW, only Rs. 0.94 Cr may be admitted for 16 MW.
- (vi) **Cost of balance of plant:** Though M/s INOX has claimed Rs. 7.44 Cr, since they did not submit invoices for Rs. 1.78 Cr this amount may be rejected from this claim.
- (vii) **Miscellaneous expenses:** Since M/s INOX has not submitted any documentary evidence for their claim of Rs. 1.50 Cr under this head, the same may be rejected.
- (viii) **Interest on receivable/outstanding from M/s DJ Malpani:** M/s INOX claim of Rs. 3.99 Cr on this account may be rejected since there is no such provision in the Regulations.
- (ix) KSEB Ltd also pointed out M/s INOX has not provided any document to prove any loan liability for this project. They have also not provided any details of other fiscal benefits availed for the project and to adopt the financial parameters applicable to projects having CoD during 2017-18.

Analysis and Decision

- 25. The Commission has examined in detail the petition filed by M/s INOX, the additional details submitted by M/s INOX for determining the project specific tariff, the counter affidavit submitted by the respondent KSEB Ltd, the policies of the State Government in developing wind power in the State, with reference to the provisions of the Electricity Act-2003, KSERC (Renewable Energy) Regulations, 2015 (herein after referred as RE Regulations, 2015).
- 26. The Commission vide the interim order dated 29.12.2017 has decided to determine the project specific tariff for the electricity generated from the

project as per the provisions of the EA-2003 and KSERC (RE) Regulations, 2015.

27. The Commission notes that M/s INOX Renewables Limited (M/s INOX) had developed 16 MW WEGs at the KINFRA land at Kanjikode, Palakkad and based on letter dated 21.04.2017 of Chief Engineer (Transmission)North, Kozhikode, wherein he has stated that “on 28.03.2017, 8 x 2MW WTGs was tied to the KSEBL grid through the 22 kV feeders INOX I and INOX II from 220 kV substation Palakkad” claimed the CoD as 28.03.2017. However, KSEB Ltd vide their letter dated 07.09.2018 had submitted documentary evidence before the Commission indicating that the project was under testing till 15.06.2017 and the grid connectivity granted to the wind generator was only for testing purpose and there was no commercial obligation on the part of KSEB Ltd for the power injected into the grid during the testing period. The summary of the various correspondence in this regard is given below.

<u>Details of the request for permission for testing</u>	<u>Details of the permission granted of SLDC, Kerala</u>
On 28.03.2017, sought permission from SLDC for testing of 2 Nos of 2 MW WTG at Kanjikode	On 31.03.2017, granted permission to test the WTG from 28.03.2017 to 10.04.2017, with a specific condition that, there is no commercial obligation from KSEBL for the power injected into the grid during testing period.
On 11.04.2017, sought permission to continue the testing of 8 Nos WTG till 29.04.2017	On 11.04.2017, granted permission for testing from 11.04.2017 to 29.04.2017, with a specific condition that, there is no commercial obligation from KSEBL for the power injected into the grid during testing period.
On 27.04.2017, sought permission to continue the testing upto 31.05.2017	On 29.04.2017, granted permission granted upto 31.05.2017, with the specific condition that, there is no commercial obligation from KSEBL for the power injected into the grid during testing period. SLDC also requested to submit the exact details of the testing to be carried out and manufactures recommendation on tests required to carried out and duration of such tests
On 25.05.2017 reported to the SLDC that, testing is only at the preliminary stage and hence requested to continue the testing till 30.06.2017	On 30.05.2017, granted permission to conduct test upto 15.06.2017 and requested to complete the testing within the sanctioned period. The permission was granted on the condition that there is no commercial obligation from KSEBL for the power injected into the grid during testing period.
On 30.05.2017, written a detailed letter to SLDC regarding the details of testing to be carried out and manufacturer's recommendations on test required to carried out and duration of test were submitted to SLDC and requested for permission for testing till 30.06.2017	
On 12.06.2017, sought permission to continue the testing till 15.07.2017	Vide the letter dated 14.06.2017, SLDC rejected the request citing the clause-15 and 16 under Regulation-6 of the KSERC (Connectivity and intra state open access) Regulations, 2013

28. It is a recognized fact that the date of commercial operation (COD) of any generating plant will be a date on or after the successful completion of the statutory tests. The developer is thereafter required to formally declare the CoD as per the procedures in force. However, the project developer is yet to formally declare the CoD of the project.
29. The COD has a significant role while determining the project specific tariff of a RE project. The details are given below.

- (i) As per the Regulation 20(2), of the RE Regulations, 2015, the useful life in relation to a unit of a generating station including evacuation system is considered from the date of declaration of commercial operation. The relevant Regulation is extracted below for ready reference.

“ 20

.....

(2) The generic tariff shall be determined on levelised basis for the useful life of the renewable energy project.

Explanation : ‘Useful life’ in relation to a unit of a generating station including evacuation system means the following duration from the date of declaration of commercial operation (COD) of such generating unit, namely:-

.....

(iii) 25 years in the case of wind energy power projects;

..”

- (ii) As per the Regulation 20(5), the tariff period shall be computed from the date of commercial operation of the renewable energy generating unit. The relevant Regulation is extracted below.

Regulation 20 (5) of the RE Regulations, 2015 specify as follows.

‘tariff period shall be computed from the date of commercial operation of the renewable energy generating unit’.

- (iii) Further, as per the prudent practices, the Commission shall adopt the norms and parameters specified for the year in which the wind project achieves the COD, for the determination of tariff.

30. Since the project was under testing till 15.06.2017 and electricity was continuously injected into the grid only from 16.08.2018, the Commission has decided that Financial year 2017-18 shall be the year in which the project achieved its commercial operation, though the project developer is yet to formally declare and communicate the commercial operation date (COD).

31. The Commission has not specified the technical and financial norms and parameters for determining the project specific tariff for the financial year 2017-18. However, as per the Regulation-17 (4) of the KSERC (Renewable Energy) Regulations, 2015, till the Commission notify separate norms and parameters for determining the tariff for electricity generated from RE projects, the norms and parameters notified by the CERC for the purpose of determination of tariff for the electricity generated from RE projects may be adopted for determining the tariff of electricity generated from RE projects. The relevant Regulation is extracted below.

“17(4) Until separate principles, norms and parameters are specified by the Commission as above, the principles, norms and parameters specified by the Central Commission for the purpose of determination of tariff for the electricity generated from various categories of renewable sources of energy, as specified in the Central Electricity Regulatory Commission (Terms and Conditions for Tariff Determination from Renewable Energy Sources) Regulations, 2012, as amended from time to time, may be adopted by the Commission for the purpose of determination of tariff under these regulations.”

CERC vide the notification No.:1/21/2017-Reg.Aff./(RE-Tariff -2017-20)/CERC Dated: 17thApril 2017 has notified the CERC (Terms and Conditions for Tariff determination from Renewable Energy Sources) Regulations,2017, applicable for three years from 01.04.2017. The Commission hereby adopts the norms and parameters specified by the CERC for the financial year 2017-18 for determining the project specific tariff for the electricity generated from the 16MW WEG established at KINFRA land at Palakkad.

Determination of the project specific tariff of the 16 MW WEG installed at Kanjikode

32. The following technical and financial parameters have been considered for determination of the tariff for the electricity generated from the proposed MSW project.
1. Capital cost
 2. Useful life of the plant
 3. Plant load factor
 4. Auxiliary consumption
 5. Debt: Equity ratio
 6. Term of loan and interest
 7. Return on Equity
 8. Interest on working capital
 9. Depreciation
 10. Operation and Maintenance expenses
 11. Discount rate

Capital cost

33. The capital cost incurred by the developer for establishing the project is the basis for determining the project specific tariff. As directed by the Commission, the petitioner had submitted the cost expended by them in the project, as detailed below.

Sl No	Description	Amount		Remarks
		(Rs.Cr)	Rs. Cr/ MW	
1	Land Cost / Lease rent paid	6.61	0.41	Letter from Kinfra attached
2	Cost of Wind Turbine Generator	76.8	4.80	Copy of invoice raised to M/s DJ Malpani attached
3	Infrastructure Development Charges (IDC) paid to K S E B Ltd.	1.29	0.08	Copy of acknowledgement from KSEB Ltd is enclosed
4	Cost of Balance of Plant (BOP)	7.44	0.47	Invoices/ work orders attached
5	Miscellaneous (Site Office Expenses, Salary / overhead +Travel expenses + consultancy etc)	1.5	0.09	A breakup statement attached
6	Interest of receivable / outstanding from DJ Malpani (customer) on 42 Cr @9.5% p.a for 12 months	3.99	0.25	No documents attached
	Total	97.63	6.10	

34. The Commission hereby gives the following comments and decision on the capital cost claimed by the petitioner:

(1) Land cost/ lease rent

- (a) The project is established at the land owned by KINFRA at Palakkad. In support of the claim of the land cost/ lease rent paid, M/s INOX has produced a copy of the letter dated 23.02.2018 from KINFRA regarding the amount received from INOX, dues payable and other details. As per the details submitted, the total claim from KINFRA including the amount and dues payable is Rs 6.6147 crore. However, on detailed examination, the following are noted.
- (i) So far, M/s INOX has remitted Rs 3.75 crore to KINFRA as part of lease rent and other related claims. Out of the same, Rs 1.07 crore is paid as penalty for reinstatement and Rs 0.4394 crore as interest since the project did not adhere to the project completion schedule. Since this expense was incurred due to the inability of the developer in adhering to the project schedule, a total Rs 1.5094 crore remitted as penalty and interest cannot be loaded to the project cost and is deducted from the claim.

- (ii) As per the details submitted, M/s KINFRA has claimed balance penalty payable as Rs 0.4021 crore. This amount is also not allowed in the calculation of the project capital cost.
 - (iii) Service tax due on re-instating 27.50 acre after cancellation of allotment - Rs 0.2009 crore is also not allowed in the project cost, since it was due to the delay on the part of M/s INOX that this amount became payable.
- (b) Thus, as stated above, the penalty for reinstatement, interest charges and service charges for the re-instatement, payable to KINFRA stands disallowed from the calculation of the project capital cost and hence cannot be considered for calculating the project tariff.

Land cost/lease rent approved for determination of tariff

- (c) As per the land lease agreement signed between M/s INOX and KINFRA dated 19.04.2010, 27.5 acres of land was allocated to M/s INOX for establishing 22 MW WEG in the lease land, for a period of 90 years. The total lease premium payable to KINFRA in two installments is Rs 2.07625 crore. The Commission considered the amount as part of land cost/ lease rent for tariff determination.
- (d) As per the claim of the KINFRA dated 23.02.2018, the common facilities charges payable is Rs 1,07,246/- month upto March 2018 at an increment of 10% on every year. As per the details submitted before the Commission, the period of construction of the wind plant is less than 12 months. Hence, the Commission decided to include common facility charges for '12' months as part of land cost for determining the tariff.
- (e) Further as per the details submitted before the Commission, M/s INOX has reimbursed Rs 15,60,010/- towards road development expenses. The Commission has decided to include the same also under land cost as part of capital cost.
- (f) Further, as claimed by KINFRA, the Commission has considered the service tax @15% of the land cost under capital cost.
- (g) Accordingly, the cost approved under land cost/lease rent as part of capital cost is given below.

SI No	Particulars	Amount (Rs. Cr)
1	Total lease premium as per the lease agreement dated 19.04.2010	2.08
2	CFC charges for 12 months @ Rs 107246/month as per the claim raised by KINFRA dated 23.02.2018	0.13
3	Road development exp reimbursed as per the claim of KINFRA dated 23.02.2018	0.16
4	Total	2.36
5	Service tax @15%	0.31
6	Total land cost/ lease rent for 90 years	2.67

- (h) The Commission has noted that, as per the lease agreement dated 19.04.2010, the land lease period to INOX is for 90 years. However, as per the petition filed by the petitioner INOX, the useful life of the project is only 25 years as against the lease period of 90 years. After the useful life of 25 years, with the consent of KINFRA, the petitioner can use the same land for other business opportunities. Hence, the Commission has determined the land cost/least for 25 years at a discount rate of 11.17% (detailed working of the discount rate is given under paragraph 47 below) at Rs 2.48 crore.
- (i) The lease premium payable as determined above is for the 27.5 acres of land allotted for 22 MW wind plants. However, M/s INOX so far developed only 16 MW capacity in the land allotted to them. Hence the Commission has considered the proportional cost of Rs 1.80 crore only, while determining the project specific tariff of the project.

(2) Cost of wind turbine generator.

M/s INOX has claimed Rs 76.80 crore (Rs 4.80 crore/MW) as the cost of wind turbine generator. In support of the claim, the petitioner has submitted the details of the stock transfer of WEG to KINFRA park at Kanjikode, Palakkad and the invoices along with the transit records of the components of WEGs including 'Nacelle and Hub', 'Blade' and 'Tower'

Subsequently, on 01.09.2018, the petitioner had also produced copies of the invoices raised by INOX Wind Limited for wind turbines supplied to M/s NTPC Ltd, M/s PTC Ltd and M/s Sakthi Masala Private Ltd during the year 2016-17, which is in the range of Rs 4.80 crore/MW to Rs 4.90 crore/MW, as against the Rs 4.80 crore/MW claimed by the petitioner for the 16 MW wind project.

Considering these facts, the Commission decided to adopt the cost of the wind turbine generator as claimed by the petitioner.

(3) Infrastructure development charges.

M/s INOX has remitted Rs 1.29 crore to KSEB Ltd as infrastructure development charges and produced a copy of the receipt from KSEB Ltd.

KSEB Ltd submitted that, the infrastructure development charges are for the evacuating power from the 22 MW WTG proposed by INOX as against the 16 MW WTG installed and commissioned. Hence KSEB Ltd proposed to apportion the infrastructure development charges on pro-rata basis.

The Commission examined the proposal of KSEB Ltd. It is noted that, the infrastructure created for evacuation facilities are already put in use. Hence there is no rational to defer the recovery of the part of the infrastructure created merely on the reason that, the part capacity of the WTG only commissioned so far. Hence the Commission has considered the cost of the infrastructure amounting to Rs 1.29 crore, remitted by the petitioner M/s INOX to KSEB Ltd for determining the project specific tariff. Since the full cost incurred for infrastructure development charges has been factored into cost determination now, while determining the project specific tariff of the balance capacity, if any, installed by the petitioner subsequently, the Commission may exclude the cost of this part of infrastructure charges from the capital cost of the plant.

(4) Cost of balance of plant

INOX has claimed Rs 7.44 crore as balance of plant. Out of the same, M/s INOX produced copies of the invoices and work orders for an amount of Rs 5.6656 crore. For the balance amount of Rs 1.7798 crore, M/s INOX submitted that the invoices are not readily traceable, and instead provided the tax invoice number and date of the invoices.

Since M/s INOX is unable to substantiate their claim for Rs 1.7798 crore with credible documents, the Commission reject the claim and approve the cost of balance of plant at Rs 5.6602 crore.

(5) Miscellaneous (site office expenses, salary over heads etc)

M/s INOX has claimed Rs 1.50 crore (Rs 9.375 lakh/MW) as miscellaneous expenses. The miscellaneous expenses claimed is about 1.6% of the total capital.

The Commission accepts the miscellaneous expenses as claimed for Rs 1.50 crore, for determining the project specific tariff.

(6) Interest on receivables/ outstanding from DJ Malpani.

M/s INOX submitted that, till date M/s DJ Malpani has remitted only Rs 57.20 crore. The balance payment will be paid only after the Commission

determines the tariff. INOX has suffered an interest loss nearly Rs 4.00 crore on receivable. Hence INOX has claimed Rs 3.99 crore as interest on receivable/outstanding from DJ Malpani.

The Commission notes that, M/s D J Malpani is neither a petitioner or a respondent in the subject petition before the Commission. Hence, any amount pending between M/sINOX and DJ Malpani cannot be loaded in the Capital cost and in the tariff for electricity generated from the plant. The Commission rejects the interest claim on receivables/ outstanding.

35. As discussed above, the capital cost adopted by the Commission for determining the project specific tariff is given below.

Sl No	Description	Amount claimed by INOX		Amount considered for tariff determination	
		(Rs.Cr)	Rs. Cr/ MW	(Rs.Cr)	Rs. Cr/ MW
1	Land Cost / Lease rent paid	6.61	0.41	1.80	0.11
2	Cost of Wind Turbine Generator	76.80	4.80	76.80	4.80
3	Infrastructure Development Charges (IDC) paid to K S E B Ltd.	1.29	0.08	1.29	0.08
4	Cost of Balance of Plant (BOP)	7.44	0.47	5.66	0.35
5	Miscellaneous (Site Office Expenses, Salary / overhead +Travel expenses + consultancy etc)	1.50	0.09	1.50	0.09
6	Interest of receivable / outstanding from DJ Malpani (customer) on 42 Cr @6.5% p.a for 12 months	3.99	0.25	0.00	0.00
	Total	97.63	6.1	87.05	5.44

Useful life of the project

36. The useful life of the wind energy power projects as per the Regulation 20 of the KSERC (Renewable Energy) Regulations, 2015 is '25 years'. Further as per the Regulation 2(1)(cc) of the CERC RE Regulations, 2017, also, the useful life of the wind energy power projects is specified as '25' years. Hence the Commission has adopted the useful life of the project as 25 years for determining the tariff.

Capacity Utilisation Factor (CUF)

37. As per the Regulation 26 of the CERC RE Regulations, 2017, the capacity utilization factor (CUF) of wind energy power plants at annual mean wind power density (W/m²) upto 220 is specified as 22%. The relevant Regulation is extracted below.

“ 26. Capacity Utilisation Factor (CUF)

(1) CUF norms for this control period shall be as follows:

Annual Mean Wind Power Density (W/m ²)	CUF
Upto 220	22%
221-275	24%
276-330	28%
331-440	33%
>440	35%

(2) The annual mean wind power density specified in sub-regulation (1) above shall be measured at 100 meter hub-height.

(3) For the purpose of classification of wind energy project into particular wind zone class, as per MNRE guidelines for wind measurement, wind mast either put-up by NIWE or a private developer and validated by NIWE, would be normally extended 10 km from the mast point in all directions for uniform terrain and limited to appropriate distance in complex terrain with regard to complexity of the site. Based on such validation by NIWE, state nodal agency should certify zoning of the proposed wind farm complex”.

As above, the minimum CUF specified by CERC for WEG is 22%. The petitioner has also claimed the tariff with a CUF of 22%. The Commission while determining the tariff for the WEG in Palakkad region during the past had adopted the CUF @ 22%, and where as the actual CUF of these plants is in the range of 23 to 24%. Considering all these factors, the Commission adopt the CUF of the plant at 22% for determining the project specific tariff of the 16 MW WEG installed by M/s INOX at KINFRA land at Kanjikode, Palakkad.

Debt: Equity Ratio

38. The petitioner has not submitted the details of the loan availed by them for the project. The Commission has also examined the loan sanction letter issued by the Saraswat bank to the investor M/s D.J.Malpani, however M/s D.J. Malpani is not a party to the petition filed before the Commission and hence the loan availed by them cannot be considered for determining the project specific tariff of the project.

Hence the Commission decided to adopt the normative debt:equity ratio of 70:30 as specified in the Regulation 13 of the CERC RE Regulations, 2017.

Loan repayment period

39. As specified in the Regulation 14(1) of the CERC RE Regulations, 2017, the normative loan payment period for tariff determination is adopted as 13 years for the purpose of determination of tariff, and the Commission has adopted the same for tariff determination.

Interest of loan

40. As per the CERC RE Regulations, 2017, the interest rate to be adopted for tariff determination is 'two hundred (200) basis points above the average SBI Marginal Cost of Funds based Lending Rate (MCLR) prevalent during the last available six months'. The average SBI MCLR rate for past six months from August 2017 is 7.95%. Accordingly, based on the CERC RE Regulations, 2017, the Commission decides to adopt the normative interest rate for the determination of tariff at 9.95%.

Depreciation

41. As per the Regulation 15 of the CERC RE Regulations 2017, the depreciation rate for RE projects for the first '13' years of the useful life is 5.28% and the depreciation for the remaining period at 1.78%. The Commission adopts the same for tariff determination.

Components of working capital

42. As per the Regulation 17(1) of the CERC RE Regulations, 2017, the components of the working capital consists of the following:
1. O&M cost for one month.
 2. Maintenance of spares at 15% of the O&M cost
 3. Receivable for two months.

Hence the Commission decides to adopt the same for tariff determination.

Interest on working capital

43. As per the Regulation 17(3) of the CERC RE Regulations, 2017, the interest on Working Capital shall be at interest rate equivalent to the normative interest rate of three hundred (300) basis points above the average State Bank of India MCLR (One Year Tenor) prevalent during the last available six months for the determination of tariff.

The average SBI MCLR rate for past six months since August 2017 is 7.95%. Accordingly, based on the CERC RE Regulations, 2017, the Commission decides to adopt the interest rate for computing interest on working capital at 10.95% for determination of tariff.

Operation and Maintenance Expenses

44. CERC has not specified O&M cost for wind energy power projects vide the CERC RE Regulations, 2017. KSERC vide the KSERC RE (Amendment) Regulations, 2017 has specified O&M expenses @Rs 11.24 lakh/MW for the year 2016-17 with an escalation of 5.72%. Duly considering the approved O&M expenses of WEG @Rs 11.24 lakh/MW with an escalation of 5.72%, the

Commission adopts the O&M expenses for the 16 MW project for the year 2017-18 at 11.88 lakh/MW with an escalation of 5.72%.

Return on equity

- 45. The RoE specified in the CERC RE Regulations, 2017 is 14%, to be grossed up by prevailing Minimum Alternative Tax (MAT) as on 1st April of previous year for the entire useful life of the project.
- 46. The Commission decides to provide RoE @14% on 30% of the capital cost adopted for tariff determination. Any tax paid on the RoE shall be allowed as a pass through, limited to the amount of equity considered in this Order, which shall be claimed separately from KSEB Ltd, duly furnishing proof of payment of such tax.

Discount factor for computing levelised tariff

- 47. As per the Regulation 10 of the CERC RE Regulation, 2017, for the purpose of levelised tariff computation, the discount factor equivalent to Post Tax Weighted Average Cost of Capital(WACC) shall be considered.

The WACC has been computed as under:

WACC = Cost of Debt + Cost of Equity

Where

Cost of Debt = 70% x market rate of interest

Cost of equity = 30% x return on equity

Accordingly, the Commission, arrive the discount factor for determining the levelised tariff as follows.

Particulars	WACC
Cost of debt	
0.7 * 9.95%	6.97%
Cost of Equity	
0.3 * 14%	4.20%
Weighted Average cost of capital	11.17%

Summary of the technical and financial parameters

- 48. The summary of the technical and financial parameters adopted for determining the tariff of the 16 MW Wind project developed by M/sINOX at KINFRA land at Kanjikode, Palakkad.

Sl No	Particulars			Remarks
1	Installed capacity	16	MW	As per the petition
2	Life of the plant	25	Years	CERC norms 2017
3	Capacity utilisation factor	22	%	CERC norms 2017
4	Capital cost of the project	5.44	Rs .Cr/MW	Approved after prudence check
5	Debt: Equity	70:30		CERC norms 2017
6	Loan tenure	13	Years	CERC norms 2017
7	Interest rate (MCLR rate+ 2%) (MCLR- last six months- 7.95%)	9.95	%	CERC norms 2017
8	RoE (post-tax)	14	%	CERC norms 2017
9	MAT/ Income tax	Pass through at actual		
10	Working capital			CERC norms 2017
	(i) O&M cost for one month			
	(ii) Receivable equivalent to two month			
	(iii) Maintenance of spares @15% of the O&M expenses			
11	Interest on WC (MCLR+3%)	10.95	%	
12	O&M cost (first year)	11.88	(as per RE amendment Regulations, 2015)	
13	O&M cost (second year onwards)	5.72% escalation on base year O&M		
14	Depreciation	5.28%	for first 13 years	CERC norms 2017
		1.78%	For remaining useful life	CERC norms 2017
15	Discount rate = weighted average cost of capital	11.17	%	

Based on the above norms and parameters, the levelised tariff determined for the 16MW Wind Energy Project for the useful life of the project at Rs 4.54/unit.

Subsidy or incentive by the Central / State Government

49. The Regulation 23 of the CERC RE Regulations, 2017 specifies that, the Commission shall take into consideration any incentive or subsidy offered by the Central / State Government including accelerated depreciation. The relevant regulation is extracted below.

“ 23. Subsidy or incentive by the Central / State Government The Commission shall take into consideration any incentive or subsidy offered by the Central or State Government, including accelerated depreciation benefit if availed by the generating company, for the renewable energy power plants while determining the tariff under these Regulations.

Provided that the following principles shall be considered for ascertaining income tax benefit on account of accelerated depreciation, if availed, for the purpose of tariff determination:

i) Assessment of benefit shall be based on normative capital cost, accelerated depreciation rate as per relevant provisions under Income Tax Act and corporate income tax rate.

ii) Capitalization of RE projects during second half of the fiscal year. Per unit benefit shall be derived on levelled basis at discount factor equivalent to weighted average cost of capital.”

50. As specified in the CERC RE Regulation, 2017, the Commission had estimated the benefit of accelerated depreciation. Accordingly, for determining the benefit of accelerated depreciation, the applicable Corporate Income Tax rate of 34.61% (30% Income Tax rate + 12% surcharge + 3% Education Cess) has been considered. As per the Circular dated 7 November, 2016 of the Income Tax Department, the accelerated depreciation rates have been revised to 40% for FY 2017-18. For determining the net depreciation benefits, depreciation @ 5.28% as per the Straight Line Method (book depreciation as per the Companies Act, 2013) has been compared with depreciation as per the Income Tax Act, i.e., 40% under the Written Down Value method. Moreover, additional 20% depreciation in the initial year is proposed to be extended to new assets acquired by Generation Companies vide the amendment to Section 32 (1) (ii a) of the Income Tax Act. Depreciation for the first year has been computed at the rate of 40% and the accelerated depreciation at 20%, assuming the Project to be capitalized for the full financial year. The tax benefit has been worked out as per the Corporate Income Tax rate on the net depreciation benefit. The 'per unit levelised accelerated depreciation benefit' has been computed considering the weighted average cost of capital as the discounting factor.

The benefit of accelerated depreciation for the project is Rs 0.45/unit. The net levelised tariff of the project after accounting the accelerated depreciation is Rs 4.09/unit.

Tariff

51. Considering the above parameters, the Commission hereby approve the levelised tariff for the electricity generated from the 16 MW WEG installed by M/s INOX at the KINFRA land at Kanjikode, Palakkad @Rs 4.09/unit, duly considering the benefit of accelerated depreciation. The detailed tariff computation is given as Annexure.
52. The Commission has noted that, KSEB Ltd had given formal concurrence for purchase of power from the project on 14.08.2017, though the project was

synchronized with the grid on 28.03.2017. The plant is under testing till 15.06.2017, and during the testing period the power was injected into the grid with the permission of the SLDC of Kerala, where in SLDC has specifically communicated to them that, there is no commercial obligation from the part of the KSEB Ltd for the power injected to the grid during the testing period. However, considering the 'infirm nature' of wind energy and the fact that KSEB Ltd is much short of RPO and also considering the communication given by KSEB to the petitioner vide its letter No. CP/IPC-147/wind/ 2014 dated 24.09.2010 regarding purchase of power from the project, and also the provisions in the Wind policy notified by the State Government, the Commission decided that, the levelised tariff approved by the Commission is applicable for the entire electricity injected into the grid from the date of synchronization.

Order of the Commission

53. After the detailed examination of the petition filed by M/s INOX Renewable Ltd, and comments of the respondent KSEB Ltd and also duly considering the provisions of the Electricity Act-2003, Tariff Policy 2016, and the Regulations notified by the KSERC and Central Commission, and other relevant documents wherever necessary, the Commission here by orders the following:

- (1) The levelised tariff for the electricity generated from the 16 MW WEG installed by M/s INOX at the KINFRA land at Kanjikode, Palakkad is approved @Rs 4.09/unit, duly considering the benefit of accelerated depreciation.
- (2) The levelised tariff approved by the Commission is applicable for the entire electricity injected into the grid from the date of synchronization.
- (3) KSEB Ltd shall reimburse, any tax paid on the RoE, limited to the amount of equity specified in this Order. For claiming the tax, developer shall furnish the proof of payment of such tax to KSEB Ltd.

Petition disposed off.

Sd/-

K. Vikraman Nair
Member

Sd/-

S. Venugopal
Member

Sd/-

PremanDinaraj
Chairman

Approved for issue

K B Santhosh Kumar
Secretary

Wind Energy Generation Projects located in wind zone-1 (CUF 22%)					
SI No	Head	Sub Head	Detailed Head	Unit	Norm
1	Power Generation	Capacity	(i) Installed Power Generation Capacity	MW	1
			(ii) Capacity Utilisation factor	%	22
			(iii) Auxiliary consumption	%	0
			(iv) Useful life	years	25
2	Project cost	Capital cost /MW	Power plant cost	Rs .Cr	5.44
3	Source of Fund		Tariff period	Years	25
		<u>Debt- equity</u>	Debt	%	70
			Equiy	%	30
		Debt component	Loan amount/MW	Rs.Cr	3.81
			Moratorium	Years	0
			Replacement period (include moratorium)	Years	13
			Interest rate	(MCLR+2)%	9.95
		Equity component	Equity amount/ MW	Rs.Cr	1.63
			Normative RoE	%	14.00
4	Financial Assumptions				
		Depreciation	Depreciation rate for first 13 years		5.28
					1.78
5	Working capital	For Fixed charges	O&M charges	Months	1
			Maintenance spare	% of O&M expenses	15
			Receivable for debtors	Months	2
			Interest on working capital	(MCLR+3)%	10.95
6	Operation and Maintenance	O&M expenses (2017-18)	O&M 2016-17	Rs. Lakh/MW	11.24
			O&M expense escalation	%	5.72
			O&M expense for 2017-18	Rs. Lakh/MW	11.88
Generic Tariff - for 25 years without the benefit of accelerated depreciation			4.54	Rs/unit	
Accelerated depreciation			0.45	Rs/unit	
Generic Tariff for 35 years with the benefit of accelerated depreciation			4.09	Rs/unit	

INOX WIND- Project Specific Tariff																											
Sl No	Years		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
1	Gross Generation	(MU)	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93
2	Auxiliary consumption	(MU)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	Net Generation	(MU)	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93
Fixed cost																											
4	Interest on loan																										
	Loan at the beginng of the year	(Rs.Cr)	3.81	3.52	3.22	2.93	2.64	2.34	2.05	1.76	1.46	1.17	0.88	0.59	0.29												
	Interest on loan	(Rs.Cr)	0.36	0.34	0.31	0.28	0.25	0.22	0.19	0.16	0.13	0.10	0.07	0.04	0.01												
5	RoE	(Rs.Cr)	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23
6	Depreciation	(Rs.Cr)	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
7	O&M cost	(Rs.Cr)	0.12	0.13	0.13	0.14	0.15	0.16	0.17	0.18	0.19	0.20	0.21	0.22	0.23	0.24	0.26	0.27	0.29	0.31	0.32	0.34	0.36	0.38	0.40	0.43	0.45
8	Working capital	(Rs.Cr)	0.22	0.21	0.21	0.21	0.21	0.21	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.17	0.18	0.18	0.19	0.20	0.20	0.21	0.22	0.23	0.24	0.25	0.26
	Interest on WC	(Rs.Cr)	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.03	0.03	0.03	0.03
9	Total annual fixed cost	(Rs.Cr)	1.02	1.00	0.98	0.96	0.93	0.91	0.89	0.87	0.85	0.84	0.82	0.80	0.78	0.59	0.60	0.62	0.64	0.65	0.67	0.69	0.71	0.73	0.76	0.78	0.81
10	Fixed cost/unit	(Rs/kWh)	5.31	5.19	5.07	4.96	4.85	4.74	4.64	4.53	4.43	4.34	4.24	4.15	4.07	3.05	3.13	3.21	3.30	3.39	3.48	3.58	3.69	3.80	3.92	4.05	4.18
11	Discount factor		1.00	0.90	0.81	0.73	0.65	0.59	0.53	0.48	0.43	0.39	0.35	0.31	0.28	0.25	0.23	0.20	0.18	0.17	0.15	0.13	0.12	0.11	0.10	0.09	0.08
12	Levelised tariff	(Rs/kWh)	4.54																								

INOX WIND- Determination of the benefit of 'Accelerated Depreciation'

Depreciation	90%	of the Capital cost																								
Book depreciation rate	5.28%	first 13 years																								
	1.78%	Remaining 13 years																								
Tax depreciation rate	40.00%																									
Income tax	34.608%																									
Years		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
Book depreciaton	(Rs. Cr)	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Accelerated depreciation																										
Opening	(%)	100%	40.0%	24.0%	14.4%	8.6%	5.2%	3.1%	1.9%	1.1%	0.7%	0.4%	0.2%	0.1%	0.09%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Allowed during the year	(%)	60.0%	16.0%	9.6%	5.8%	3.5%	2.1%	1.2%	0.7%	0.4%	0.3%	0.2%	0.1%	0.1%	0.03%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Closing	(%)	40.0%	24.0%	14.4%	8.6%	5.2%	3.1%	1.9%	1.1%	0.7%	0.4%	0.2%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Accelerated depreciation	(Rs.Cr)	2.94	0.78	0.47	0.28	0.17	0.10	0.06	0.04	0.02	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Net depreciation benefit	(Rs. Cr)	2.65	0.50	0.18	-0.01	-0.12	-0.19	-0.23	-0.25	-0.27	-0.27	-0.28	-0.28	-0.28	-0.10	-0.10	-0.10	-0.10	-0.10	-0.10	-0.10	-0.10	-0.10	-0.10	-0.10	-0.10
Tax benefit	(Rs.Cr)	0.92	0.17	0.06	0.00	-0.04	-0.06	-0.08	-0.09	-0.09	-0.09	-0.10	-0.10	-0.10	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03	-0.03
Net generation	(MU)	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93	1.93
Per unit accelerated depreciation	(Rs/kWh)	4.76	0.89	0.33	-0.01	-0.21	-0.33	-0.41	-0.45	-0.48	-0.49	-0.50	-0.51	-0.51	-0.17	-0.17	-0.17	-0.17	-0.17	-0.17	-0.17	-0.17	-0.17	-0.17	-0.17	-0.17
Discount factor		1.00	0.90	0.81	0.73	0.65	0.59	0.53	0.48	0.43	0.39	0.35	0.31	0.28	0.25	0.23	0.20	0.18	0.17	0.15	0.13	0.12	0.11	0.10	0.09	0.08
Levelised benefit	(Rs/kWh)	0.452																								