

**APPROVAL OF CAPITAL COST
&
AGGREGATE REVENUE REQUIREMENT FOR
FY 2022-23 TO FY 2024-25
&
DETERMINATION OF TARIFF FOR FY 2022-23
FOR NAMRUP REPLACEMENT POWER PROJECT
To
ASSAM ELECTRICITY REGULATORY COMMISSION**



Prepared by
ASSAM POWER GENERATION CORPORATION LTD
Bijulee Bhawan, Paltanbazar
Guwahati – 781 001

AFFIDAVIT – NRPP

BEFORE THE ASSAM STATE ELECTRICITY REGULATORY
COMMISSION, GUWAHATI.

Petition No. –

Case No.
(to be filed by the Office)

IN THE MATTER OF

Filing of Annual Performance Review of the FY 2021-22.

AND

IN THE MATTER OF
Assam Power Generation Corporation Limited
Bijulee Bhawan, Paltanbazar,
Guwahati-781 001.

Petitioner

I, Sri Mokshada Prasad Sarma, Son of Sri Sarada Prasad Sarma, aged 59 years, residing at Flat No. 1/A1, Puberun Apartment, Ghoramara, P.O. Beltola, Guwahati-781028, do solemnly affirm and say as follows:

I am the General Manager (HQ) of Assam Power Generation Corporation Limited, the petitioner in the above matter and am duly authorized by the said Petitioner to make this affidavit for and on behalf of the Assam Power Generation Corporation Limited.

The Statement made in the Petition based on information received from official records and I believe them to reflect truly and no material has been concealed from the statements so made or documents or supporting data etc. attached.

Solemnly affirm at Guwahati on 29th November' 2021 that the contents of this affidavit are true to my knowledge, no part of it is false or no material has been concealed therefore and misleading material included therein.

Deponent


(Mokshada Prasad Sarma)
General Manager (HQ),
Assam Power Generation Corporation Ltd.

Place: Guwahati

Date: 29th November' 2021

By order of the Commission

Secretary of the Commission

PRAYER – NRPP PETITION

BEFORE THE HON'BLE ASSAM ELECTRICITY REGULATORY COMMISSION

FILINGNO

CASENO.....

IN THE MATTER OF:

Petition for Annual Performance Review of the FY 2021-22

AND IN THE MATTER OF:

Assam Power Generation Corporation Limited incorporated under the provisions of the Companies Act, 1956 and having its registered office in the State of Assam

THE HUMBLE APPLICANT ABOVE NAMED MOST RESPECTFULLY SHEWETH:

- i. That the Assam Power Generation Corporation Limited, hereinafter named as APGCL, is a successor corporate entity, formed in pursuant to the notification of the Government of Assam, notified under sub-sections (1), (2), (5), (6) and (7) of Section 131 and Section 133 of the Electricity Act 2003(Central Act 36 of 2003), for the purpose of transfer and vesting of functions, properties, interests, rights, obligations and liabilities, along with the transfer of Personnel of the Board to the successor corporate entities.
- ii. That the APGCL is a company incorporated with the main object of generation of electricity in the state of Assam.
- iii. That the APGCL is a generating company under the provisions laid down in Section 14 Proviso 5, read with Section 131 (2) of the Electricity Act 2003.
- iv. That the AERC directed APGCL on 01/03/2019 to submit the final tariff petition for NRPP after commissioning of the project.
- v. That the licensee is now filing the Petition for Annual Performance Review for FY 2021-22 as per relevant regulation.

Place: Guwahati

Date: 29th November' 2021

Deponent


(Mckshada Prasad Sarma)
General Manager (HQ),
Assam Power Generation Corporation Ltd.

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1.	COD declaration Certificate as on 16 th July 2021	Annexure 1
2.	Auditor Certificate for the capital expenditure undertaken up to 16 th July 2021 (COD)	Annexure 2
3.	EPC Contract Copy	Annexure 3
4.	Copy of relevant excerpts from CERC order no. 15 of 2014 dated 05.02.2016	Annexure 4
5.	Ministry of Power document of 'Normalization Document and Monitoring & Verification Guidelines' for Thermal power plants	Annexure 5
6.	Performance Guarantee Test Report of NRPP	Annexure 6
7.	PFC Loan Details for FY2021-22 (April to September)	Annexure 7
8.	State Govt. of Assam Interest Rate Certificate for FY2021-22	Annexure 8
9.	Regulatory Formats	Annexure 9



1 Background of APGCL

1.1 Profile of APGCL

- 1.1.1 Under the provisions of Electricity Act 2003 (hereinafter referred to as "Electricity Act") the Assam Electricity Reforms First Transfer Scheme, 2004 (hereinafter referred to as "Transfer Scheme") was notified by Government of Assam on 10th December 2004. Under Section 5 (2) of the transfer scheme the functions and undertakings as set out in Schedule-A of the transfer scheme stands transferred to Assam Power Generation Corporation Limited (APGCL). The final transfer scheme was notified by Govt. of Assam vide notification No: PEL/151/2003/Pt.349 dated 16th Aug' 2005 w.e.f. 1st April'05.
- 1.1.2 Section 131 (2) of the Electricity Act provides "...Any property, interest in property, rights and liabilities vested in the State Government under sub-section (1) shall be re-vested by the State Government in a Government company or in a company or companies, in accordance with the transfer scheme so published along with such other property, interest in property, rights and liabilities of the State Government as may be stipulated in such scheme, on such terms and conditions as may be agreed between the State Government and such company or companies being State Transmission Utility or generating company or transmission licensee or distribution licensee,..."
- 1.1.3 Section 62 of the Electricity Act 2003 requires the generating company to furnish details as may be specified by the Commission for determination of tariff.
- 1.1.4 As per AERC Tariff Regulation, 2021, the licensee is now filing the Petition for Capital cost approval for the Namrup Replacement Power Plant.
- 1.1.5 As per AERC Tariff Regulation, 2021 the licensee is now filing the Petition for Multiyear tariff petition for FY 2022-23 to FY 2024-25 for the Namrup Replacement Power Plant.
- 1.1.6 The various data formats and forms, as required by the Hon'ble Commission, are furnished in Annexure -9.



1.2 NRPP Project Summary

- 1.2.1 The Namrup Thermal power Station of Assam Power Generation Corporation Ltd is one of the oldest base load thermal power stations in India with gas turbines using natural gas as fuel. It was first built and commissioned in 1965. Subsequently, capacity addition by a 30 MW gas fired boiler steam turbine in the Year 1976 and a 22.5 MW waste heat recovery unit in March 1985 was made. The total installed capacity of NTPS was 134 MW. Later, the plant was derated to 119.5 MW. The gas turbine units (1, 2, 3 & 4) had outlived their designed lives of one lakh running hours in mid-eighties and early nineties.
- 1.2.2 In view of the above, it was decided to replace the first four Units with a modern plant with better heat rate and thus, the Namrup Replacement Power Project of 98.4 MW (100 MW nominal) was conceived.

1.3 Commissioning of NRPP

- 1.3.1 Namrup Replacement Power Project was commissioned on 16th July 2021. The copy of the Commissioning date of NRPP are attached as Annexure No. 1.

1.4 Approval of provisional tariff by AERC

- 1.4.1 APGCL had filed a Petition for approval of ARR and determination of provisional tariff for FY 2018-19 for NRPP under Regulation 41.4 of the Tariff Regulations, 2015.
- 1.4.2 The Hon'ble Commission vide its order dated 31st March 2017 approved the provisional tariff for NRPP.
- 1.4.3 In the same order, the Hon'ble Commission directed APGCL to submit the final Tariff Petition for NRPP with the audited Capital Cost till COD.



2 Capital cost approval of NRPP

2.1 Capital Expenditure

2.1.1 The Capital expenditure as on COD (16th July 2021) and addition for FY 2021-22 is as shown in the table below.

Table 1: Capital expenditure of NRPP for FY 2021-22

Particulars	Expenditure as on COD (16th July 2021)	Addition during year	Total project cost for FY 2021-22
Civil works	114.50	0.00	114.50
P&M	692.57	93.93	786.50
Total	807.07	93.93	901.00

2.1.2 We submit that the auditor certificate for the capital expenditure undertaken upto 16th July 2021 (COD) is attached as Annexure No. 2.

2.1.3 The Hon'ble Commission had considered 80% of DPR Cost for determination of provisional tariff for FY 2018-19 in the order of 31st March, 2017.

2.2 Financial progress

2.2.1 The funding pattern for the above capital expenditure as on 16th July 2021 (COD) and for FY 2021-22 is as shown in the table below.

Table 2: Financial progress of NRPP

Fund Source	Amount as per DPR	Amount received as on COD	Expenditure as on COD 16.07.2021	Addition during Year	Closing Balance for FY 2021-22
	Rs. Cr.	Rs. Cr.	Rs. Cr.	Rs. Cr.	Rs. Cr.
Equity (From APGCL)	0	0	286.5	-79.33	207.14
GOA Equity	208.86	208.86	208.86	0.0	208.86
PFC loan	485.00	311.74	311.74	173.3	485.00
Total	693.93	520.60	807.07	93.93	901.00

2.2.2 As per DPR, 208.86 crores was sanctioned by GOA. Out of which, 208.86 crores has been received in form of equity from GOA.

2.2.3 As per agreement, Total 485 crores was supposed to be received from PFCL. But, as on COD, only 311.74 crores has been received from PFCL and rest 173.3 crores is supposed to be received during FY 2021-22. APGCL has paid 79.30 crores against the balanced loan receivable from PFCL for vendor payment and the same will be recovered from loan drawal of FY 2021-22 from PFCL.

2.2.4 As per DPR, Net approved project cost for NRPP was 693.93 crores. But due to delay in actual COD of the plant, additional expenditure of 207.1 crores was incurred by the APGCL in the form of equity. Hence, revised project cost of NRPP as on COD (16th July 2021) is 807.07 Crore and 901 crores as on 31st March 2022 (Till FY 2021-22).

2.3 Interest during construction and incidental expenditure during construction

2.3.1 We submit that as per Regulation 30.7 of the Tariff Regulations, 2021 IDC is allowed is allowed as part of the capital cost of the project. Total interest during construction is as shown below.

Table 3: Interest during construction for NRPP

IDC	As per DPR Cost	Actual as on COD 16.07.2021
IDC Payment	79.34	262.84

2.3.2 APGCL submits that the increase in Interest During Construction (IDC) has occurred due to time overrun which is beyond the control of APGCL. The details of reason of delay of commissioning of plant along with day wise delay has been shown below:

From	To	No of Days	Work Type	Justification
Dec-11	Mar-13	434	Civil Work Fronts	Delay in commencement of Civil work because of lack of planning, coordination, Supervisor, and non-deployment of adequate manpower at site by BHEL
Mar-13	Jan-15	666	Termination and Reinstatement	<ul style="list-style-type: none"> Due to poor performance, BHEL-PSER terminate NBPPL for both civil works. M/S Power Mechanical project limited awarded contract for balance civil and structural work.

From	To	No of Days	Work Type	Justification
				<ul style="list-style-type: none"> Delay in delivery of BOP package at site on time schedule by M/S Arun Construction limited engaged by NBPL
Jan-12	Aug-15	1325	Mechanical, Electrical, C&I Work Fronts	<ul style="list-style-type: none"> The work in HRSG area is stopped from 18-07-13 due to payment related issues between Arun and their Sub Contractor, next restarting of HRSG work on 08.06.2015 Work in GT and GTG area is slow due to adequate manpower is not placed by M/S Arun
Aug-15	Sep-17	746	Open Cycle Commissioning	<ul style="list-style-type: none"> 220 KV Switchyard was charged on 22.08.2015 100 MW Transformer charged on 05.07.2016. Synchronization of GT in Open cycle mode was done on 02.01.2017 at 70 MW Load. GT commissioning done in contingency manner as all the auxiliary system were not ready. Hence, GT was put shutdown upto 16.09.2017
Jul-17	Mar-20	962	Combined Cycle Work Progress	<ul style="list-style-type: none"> HRSG wok flushing; completed on 16.07.2017. Dm water tank filing: 10.08.2017. 1st, 2nd & 3rd stage Alkali Boil out (ABO); completed: 21.08.2017. Stream Blowing Stage 1 completed: 06.09.2017. Stream Turbine put on barring gear for 1st time: 19.10.2017 Stream blowing 2nd stage completed on 31.08.2019 HRSG Safety valve floating was done on 04.03.2020



From	To	No of Days	Work Type	Justification
Sep-17	Mar-20	906	Mishap and Restoration – Force Majeure	<ul style="list-style-type: none"> GTG DAVR fire incident was occurred on 07.09.2017 DAVR restored and GT start again on 30.10.2017 Gas Turbine stalling incident occurred on 06.11.2017 due to failure of DC power, thereby causing damage to Gas Turbine unit. BHEL placed work order to BHEL-GE Gas Turbine Service Pvt Ltd for dismantling and installation of GT. Dismantling work started on 03.12.2017 and completed on 15.12.2017. Reinstallation of GT started from 22.06.2018 and completed on 09.07.2018. But, STG and Control room building roof collapsed on 09.07.2018 and GTG building sagging was noticed on 21.11.2018. GT Building renovation started from 18.09.2018 and completed on 12.04.2019. Gas Turbine unit was run and synchronized in open cycle mode on 26.04.2019. Full load on GT was done on 29.04.2019. Test run of Stream Turbine Unit was started on 01.10.2019 and synchronized with National Grid with load of around 5 MW. But Rotor Earth Fault had occurred in Stream Turbine Generator rotor (cause suspected as moisture ingress) and therefore, dismantling of rotor of STG by engaging M/S P Erectors was done and the rotor of Generator was sent for cleaning/refurbishment at



From	To	No of Days	Work Type	Justification
				<p>BHEL-Hyderabad on 06.11.2019. The rotor was ready for dispatch at BHEL-Hyderabad workshop on 11.12.2019, but due to CAA agitation, the dispatch plan was postponed upto 04.01.2020. The STG rotor was arrived at site on 20.01.2020 and thereafter installed by M/S P Erector.</p> <ul style="list-style-type: none"> In the month of Feb-2020, Metallic valve of Gas Booster compressor was replaced with non-metallic valves inorder to resolve the problem of valve failure of Gas Booster Compressor. Due to COVID- 19, further activities were postponed. After the partial lifting of lockdown
Mar-21	Jul-21	118	New Generator Installation and Commissioning of Plant	<ul style="list-style-type: none"> Reliability Run of NRPP unit in combined cycle mode was carried out for the period of 14 days and completed on 22.05.2020 with 72 hours full load operation of observed. During 14 days period, STG tripped due to earth fault and low control oil header pressure respectively. For commercial operation declaration, another slot of uninterrupted full load operation of the plant was observed in presence of SLDC, AEGCL and APDCL representatives in parallel to reliability run from 00:00 hrs of 20.05.2020 and had successfully concluded on 2.00 hrs of 23.05.2020. In between STG tripped due to axil displacement instrument error on 22.05.2020 at 9.52 hrs. STG again re-synced by 11:40 hrs within time frame of 1 hrs 48 min.



From	To	No of Days	Work Type	Justification
				<ul style="list-style-type: none"> • Gas Turbine again tripped on 28.05.2020 due to differential protection relay operation due to failure of Stator insulation of R&Y phase of Generator. • Inspection of Generator was conducted by BHEL- Hyderabad from 07.06.2020 to 10.06.2020. After Inspection, damage of stator winding was observed. • BHEL vide mail dated 16.06.2020 proposed three option for rectification of faulty part of stator <ol style="list-style-type: none"> a) Repair of Stator at Site: Time duration (11/12 months) b) Transportation of Stator at BHEL Hyderabad for rectification: Time Duration (10 months) c) Manufacturing and Supply of new GTG Stator: Time Duration (8 Months) • APGCL vide letter dated 26.06.2020 informed BHEL that APGCL has adopted the option 3 of the offer and requested to initiate manufacturing process of the new stator. • APGCL has deputed two team (2 officers per team) for inspection of New Generator Construction at BHEL Hyderabad workshop as per order dated 27.11.2020. The team was resided at Hyderabad alternately for duration of 1 week to 10 days on swap arrangement w.e.f first week of Dec-2020 till the construction of Generator gets completed.



From	To	No of Days	Work Type	Justification
				<ul style="list-style-type: none"> Installation of Generator and commissioning of plant is completed on 16-07-2021 Finally, COD was declared on 16-07-2021.

2.3.3 APGCL submits that in a similar case of OTPC Palatana, where CERC vide order in Petition 199/GT/2013 and Petition No. 129/GT/2015 had approved the IDC cost incurred due to time overrun.

Unit I of OTPC Palatana : The Commission in order dated 31.8.2015 in Petition No.199/GT/2013 had approved the tariff of Block-I (Unit-I) from COD (4.1.2014) to 31.3.2014 and had examined in detail the time overrun of 744 days and had condoned the time overrun of 675 days in the COD of Block-I/Unit-I, on the ground that the same was beyond the control of the petitioner and had accordingly disallowed the time overrun of 69 days for the said unit/block.

The factors which had led to the total delay of 776 days (effective delay of 744 days=total delay of 776 days minus 32 days saved in erection of ODC)] in the completion of the project are:

- I. *delay of 399 days on account of delay in transportation of ODC materials and receipt at site.*
- II. *delay of 70 days due to inability of NERLDC to provide full load for trial run and commissioning tests.*
- III. *delay of 69 days due to hot spots detected in Heat Recovery Steam Generator (HRSG) and*
- IV. *delay of 238 days due to contamination in fuel gas.*

Unit II of OTPC Palatana : The Commission in order dated 30.03.2017 in Petition No. 129/GT/2015 had examined in detail the time overrun of 1097 from scheduled COD to actual COD of Block-II/Unit-II i.e. from 22.3.2012 to 24.3.2015 and had condoned the time overrun of 675 days in the COD of Block-II/Unit-II, on the ground that the same was beyond the control of the petitioner and had accordingly disallowed the time overrun of (69+444) days for the said unit/block. The factors which had led to the total delay of 1097 days in the completion of the project are:

From	To	No of Days	Justification	Agency Responsible
Mar-12	Oct-12	214	Logistic Constraint	Logistic Challenges in foreign country under change in law
Oct-12	Mar-13	130	Unavailability of full load for testing	Evacuation constraint in system
Mar-13	May-13	69	Defects in HRSG	EPC contractor



May-13	Jan-14	240	Gas contamination	Force Majeure of fuel supplier
Jan-14	Mar-15	444	Non-availability of Fuel Gas	Force Majeure of fuel supplier

2.3.4 Further, APGCL submits that in a similar case of NTPC Bongaigaon Thermal Power Station, where CERC vide order in Petition 45/GT/2016 of dated 22.05.2017 had approved the IDC cost incurred due to time overrun.

The Commission in order dated 22.05.2017 in Petition No. 45/GT/2016 had examined in detail the time overrun of 1886 from scheduled COD to actual COD i.e. from 04.02.2011 to 01.04.2016 and had condoned the time overrun of 1303 days in the COD, on the ground that the same was beyond the control of the petitioner and had accordingly disallowed the time overrun of 583 days for the said unit. The factors which had led to the total delay of 1097 days in the completion of the project are:

- I. Violence, Bandhs & Curfew in 2008, 2012 & 2013
- II. Rainfall in 2008, 2009, 2010, 2012, 2013, 2014 & 2015
- III. Non availability of RCC bridge
- IV. Koro Syndrome
- V. Aggregate availability
- VI. Storm causing failure of structure
- VII. Change of course of Champamati river

Date of Investment Approval (IA)	Date of Main plant award	Scheduled COD as per IA i.e. 36 months from date of main plant award	Actual COD	Time overrun considering SCOD (days)	Time overrun allowed (days)	SCOD for IDC/IEDC computation
30.1.2008	5.2.2008	4.2.2011	1.4.2016	1886	1303	27.8.2014

2.3.5 Thus, APGCL humbly prays to the Hon'ble Commission to condone the delay for Commissioning of NRPP and approve the claimed IDC till COD.

2.4 Additional capital expenditure or de-capitalization determined under Regulation 30

2.4.1 As per Regulation 30 of the Tariff regulations, 2021, the additional expenditure post COD is allowed by the Hon'ble Commission as per following regulations.

2.4.2 APGCL has undertaken the following expenditure post COD for NRPP.



Table 4: Expenditure proposed post COD for NRPP

Particulars	As per DPR	Actual Expenditure on COD 16.07.2021	Addition during Year	Closing Balance for FY 2021-22
Project Cost Ex. IDC	614.59	544.23	93.93	638.16
IDC	79.34	262.84	0	262.84
Total	693.93	807.07	93.93	901.00

2.4.3 We submit that the expenditure to be undertaken post COD of NRPP is within the original scope of work and these were either works deferred for execution or undischarged liabilities recognized to be payable at a future date. Hence, APGCL prays to the Hon'ble Commission to approve the additional capitalization planned in FY 2021-22.

2.4.4 We also submit that total expenditure except IDC is 638.16 crores (closing balance of FY 2021-22) against 614.59 crores which was approved as per DPR. Additional claim of 23.57 crores is due to employees and other expenses incurred during construction period of the project.

2.5 Fuel cost consumed before COD.

2.5.1 We submit that for NRPP a fuel cost of Rs. 6.97 crore was billed as infirm power to APDCL for fuel consumed before COD. The details of the same are shown below.

Table 5: Gas Consumption Statement Of NRPP

Month	Gas Consumption (MMSCM)	Rate (Rs/1000 SCM)	Total (Crore)
May'21	3.31	3537	1.17
Jun'21	9.85	3537	3.48
Jul'21	5.48	3537	1.94
Total	18.64	3537	6.59

2.5.2 We pray to the Hon'ble Commission to approve the capital cost of NRPP

3 Performance Estimate of NRPP for FY 2021-22

3.1.1 The performance estimate of NRPP for FY 2021-22 is discussed below.

4 Norms of operations

4.1 Regulatory provisions

4.1.1 The Hon'ble Commission had set norms of operations under Tariff Regulations 2021. The regulation is reproduced below for ready reference

"47 Norms of operation for Thermal Generating Stations

48.1 Recovery of capacity charge, energy charge and incentive by the generating company shall be based on the achievement of the operational norms specified in the regulations 48.1 to 50.

48.2 The Commission may on its own revise the norms of Station Heat Rate In respect of any of the generating stations for which relaxed norms have been specified.

4.1.2 The 6 months actual and 6 months estimated performance vis-a-vis norms of operations set is discussed below:

4.2 Snapshot of plant wise performance for FY 2021-22

4.2.1 The following table shows the operating performance parameters of NRPP for FY 2021-22.

Table 6: Operating Performance for FY 2021-22 of NRPP

NRPP	Approved FY 2018-19	April - Sept (actual)	Oct - March (estimated)	Estimated total FY 2021-22
Gross Energy in MU	744.6	115.0	366.34	481.3
Aux. Power Cons. (%)	5.00%	5.07%	5.00%	5.02%
Net Energy in MU	707.4	109.2	348.03	457.2
Availability (%)	85%	66%	85.00%	76%
PLF (%) for incentive	85%	63%	90.00%	77%
Gross Station Heat Rate on GCV (kcal/ kWh)	1791.0	2044.2	1988	2016.1

4.3 Normative Annual Plant Availability Factor (NAPAF)

4.3.1 As per Regulation 47.1 of the Tariff Regulations, 2018 the Normative Plant Availability factor for recovery of full fixed charges, is 85% for new plants commissioned on or after 1st April 2019. The Hon'ble Commission had approved the same. The approved and estimated numbers are shown in the table below.



Table 7: Availability for 2021-22 of NRPP

NRPP	Approved 2018-19	April - Sept (actual)	Oct - March (estimated)	Estimated total 2021-22
Plant Availability Factor (%)	85%	66%	85%	76%

- 4.3.2 APGCL humbly submits that in April – September period, the Availability of NRPP is low as it is facing teething problems under stabilization period. APGCL has projected the availability for October-March as per Normative parameters.
- 4.3.3 APGCL requests the Hon’ble Commission to provide stabilisation period of 90 days for Gas turbine / combined cycle generating stations as per regulation 47.6 of tariff Regulation 2018 for NRPP.
- 4.3.4 Again, APGCL requests the Hon’ble Commission to invoke “Power to remove difficulties” under Regulation 113 of Tariff Regulations 2018 while providing treatment for the same.
- 4.3.5 For NRPP, the weighted average estimated Normative Annual Plant Availability Factor for FY 2021-22 is at 76%.

4.4 Normative Annual Plant Load Factor (NAPLF)

- 4.4.1 As per Regulation 47.2 of the Tariff Regulations, 2018 the Normative Plant Load factor, is 90% for new plants commissioned on or after 1st April 2019. The Hon’ble Commission had approved the same. The approved and estimated numbers are shown in the table below.

Table 8: Plant Load Factor for 2021-22 of NRPP

NRPP	Approved 2018-19	April - Sept (actual)	Oct - March (estimated)	Estimated total 2021-22
Plant Load Factor (%)	85.00%	63.00%	90.00%	77.00%

- 4.4.2 As NRPP is newly commissioned plant, it is facing teething problems for initial months. Hence, the Normative Plant Load Factor may not be achieved in FY 2021-22.

4.5 Gross Station Heat Rate (SHR)

- 4.5.1 The approved and estimated numbers are shown in the table below for NRPP.

Table 9: SHR for 2021-22 of NRPP

NRPP	Approved 2018-19	April - Sept (actual)	Oct - March (estimated)	Estimated total
Station Heat Rate (kCal/kWh)	1791	2044	1988	2016

- 4.5.2 APGCL prays that the Hon’ble Commission to approve the norms for NRPP as per



its Regulation 114 of 'Power to Relax' and also as per Regulation 47.4, where the Commission may decide to amend and notify the revised norms on case-to-case basis under the Tariff Regulations, 2018.

- 4.5.3 As per the technical proposal of the EPC documents with Bharat Heavy Electricals Limited for development of NRPP, the guaranteed engine wise Gross Heat Rate was 1705.8 kCal/kWh on NCV basis (lower heating value). The Contract Copy of EPC is attached as Annexure 3. The Guaranteed Values as per Contract is available in the PG Test Report which is attached as Annexure 6 (refer Page 6).
- 4.5.4 We submit that there is a difference between considering of Gross SHR on GCV basis and NCV basis. We submit that conversion of Gross station heat rate (GSHR) from NCV basis to GCV basis was also referred in CERC order no. 15 of 2014 dated 05.02.2016. The relevant excerpts from the order are shown below and also the relevant excerpts from the order are attached as Annexure No. 4.

"5. Subsequently, based on the petition filed by the petitioner to revise the heat rate norms specified in 2009 Tariff Regulations, the Commission vide order dated 7.6.2012 in Petition No. 133/MP/2011 revised the Heat Rate norms with observation that GSHR specified in 2009 Tariff Regulations for generating stations were based on Net Calorific Value of fuel furnished by the petitioner inadvertently during the finalisation of 2009 Tariff Regulations and same is required to be recomputed and reviewed on the Gross Calorific Value of fuel. Relevant portion of said order dated 7.6.2012 is extracted as under:

"19..On analysis, it is noticed that the actual energy rate recovered during the period 2004-05 to 2007-08 was lower than the energy rate recoverable based on actual consumption of fuel and the actual price of fuel. Thus, it is evident that the petitioner had suffered due to higher actual Heat Rate in comparison to the Heat Rate norms specified under the 2004 Tariff Regulations, on account of mistake attributable to it. Based on the above discussions, and facts on record, we are of the view that the mistake in the data pertaining to Gross Station Heat Rate in respect of this generating station submitted by the petitioner during the finalization of operational norms for 2009-14 which had resulted in the notification of the 2009 Tariff Regulations, appears to be genuine for which necessary correction is required to be undertaken, in the interest of justice. Accordingly, in exercise of 'Power to relax' under Regulation 44 of the 2009 Tariff Regulations, we relax the normative Gross Station Heat Rate in respect of AGBPP (combined cycle mode) specified under Regulation 26(e)(ii) of the 2009 tariff Regulations. The actual average Heat Rate on NCV of fuel for the period 2003-04 to 2007-08 for the generating station is 2369 kCal/kWh, based on which the normative Heat Rate of 2400 kCal/kWh has been specified under Regulation 26(e)(ii) of the 2009 Tariff Regulations. After conversion of the Heat Rate based on NCV of fuel to GCV of fuel, the said Heat Rate (combined cycle) for the generating station would be 2511 kCal/kWh (2369x1.06). It is noticed that the actual gross Heat Rate of GT machines of similar frame size, of Indraprashtha Power Generation Company Limited (IPGCL), New Delhi is found to



be in the range of 2504 kCal/kWh and 2557 kCal/kWh during 2007-08 to 2010-11. In terms of the above discussions, the normative Gross Heat Rate of 2400 kCal/kWh specified in respect of AGBPP (combined cycle mode) under Regulation 26(e)(ii) of the 2009 Tariff Regulations, is revised to 2500 kCal/kWh.”

- 4.5.5 We submit that it is clear from the above CERC order that there is a difference in GSHR on GCV basis and GSHR on NCV basis.
- 4.5.6 We would also like to state that difference between calculation of Gross station heat rate and Net station rate is clearly illustrated at page 5 of the Ministry of Power document of ‘Normalization Document and Monitoring & Verification Guidelines’ for Thermal power plants. The formulas given in this document are used as the base document for setting and verification of targets under the PAT scheme of Ministry of Power. The relevant pages of the document are attached as Annexure No. 5.
- 4.5.7 In summary, we clearly want to state that there is a difference between Gross station heat rate of GCV basis, Gross station heat rate on NCV basis, Net station heat rate of GCV basis and Net station heat rate on NCV basis. The parameters considered for calculation of each is shown in the table below.

Particulars	Gross station heat rate on GCV basis	Gross station heat rate on NCV basis	Net station heat rate of GCV basis	Net station heat rate on NCV basis
Parameters considered for calculation	Gross generation with fuel values on GCV basis	Gross generation with fuel values on NCV basis	Net generation with fuel values on GCV basis	Net generation with fuel values on NCV basis

- 4.5.8 We submit that the Hon’ble Commission via its order dated 31st March 2017 against the tariff petition of APGCL had order APGCL to submit the PG test report and also stated that the SHR issues will be considered at the time to determination of final tariff of NRPP.
- 4.5.9 We further submit that as the above difference between GSHR on GCV and NCV is clearly established, the values obtained during PG test report for NRPP are discussed.
- 4.5.10 The actual values obtained during PG test for generating station wise weighted Gross Heat Rate was around 1674 Kcal/KWh on NCV basis (lower heating value) and guaranteed value as per contract is 1705.8 Kcal/KWh. The summary of the PG test report for NRPP is attached as Annexure No. 6.
- 4.5.11 For conversion of heat rate from NCV basis to GCV basis, we have used a conversion factor of 1.11. The conversion factor of 1.11 for conversion of heat



rate from NCV basis to GCV basis has been considered as the average ratio of GCV and NCV of fuel received for NTPS in the last 2.5 years. The calculation is shown below.

Table 10: Average ratio of GCV and NCV of fuel received for NTPS for FY 2018-19

Month	FY 2018-19		
	Gas NCV	Gas GCV	GCV: NCV
April	7935	8810	1.11
May	7938	8814	1.11
June	7998	8880	1.11
July	8017	8899	1.11
August	8020	8901	1.11
September	8037	8920	1.11
October	7925	8797	1.11
November	8256	9149	1.11
December	8020	8900	1.11
January	7993	8870	1.11
February	8042	8925	1.11
March	8210	9111	1.11
Total	8033	8915	1.11

Table 11: Average ratio of GCV and NCV of fuel received for NTPS for FY 2019-20

Month	FY 2019 – 20		
	Gas NCV	Gas GCV	GCV: NCV
April	8162	9061	1.11
May	8314	9224	1.11
June	8333	9245	1.11
July	8210	9115	1.11
August	8214	9119	1.11
September	8244	9152	1.11
October	8189	9093	1.11
November	8264	9173	1.11
December	8244	9151	1.11
January	8292	9203	1.11
February	8269	9178	1.11
March	8286	9196	1.11
Total	8252	9159	1.11

Table 12: Average ratio of GCV and NCV of fuel received for NTPS for FY 2020-21

Month	FY 2020-21		
	Gas NCV	Gas GCV	GCV: NCV
April	8197	9102	1.11
May	8250	9158	1.11
June	8279	9189	1.11
July	8215	9120	1.11
August	8164	9066	1.11
September	8161	9063	1.11
Total	8211	9116	1.11

4.5.12 The values obtained after conversion of values obtained in PG test are shown below:

Table 13: SHR values after conversion to gross heat rate on GCV basis

Particulars	Guaranteed values as per contract		As per PG test report	
	Gross Heat Rate on NCV basis	Gross Heat Rate on GCV basis	Gross Heat Rate on NCV basis	Gross Heat Rate on GCV basis
	1	$2=1*1.05*1.11$	3	$4=3*1.05*1.11$
SHR in Kcal/kWh	1705.8	1988	1674	1951

4.5.13 We submit that the Guaranteed SHR values (Gross SHR on GCV basis) obtained in FY 2021-22 is slightly higher than the values obtained through conversion of PG test values to Gross heat rate on GCV basis. The same is as shown below.

Table 14: Comparison of converted PG test values and actual SHR values of FY 2021-22

Particulars	Gross Heat Rate on GCV basis for Guaranteed value as per contract	Gross Heat Rate on GCV basis as per PG test report	Actual Values obtained for FY 2021-22
SHR in kCal/kWh	1988	1951	2044.2

4.5.14 We also submit that the actual Gross SHR on GCV basis is higher than the PG test report values, as during PG test report ideal conditions were made for completion of the test. The ideal conditions that were prepared for PG test was - NRPP load was decreased to facilitate PG test report because the gas pressure keeps changing frequently and corrections were applied to arrive at PG test numbers due to low load and knock state.

4.5.15 We further submit, that and a SHR norm of 1998 KCal/kWh on GCV basis will provide the requisite margin for NRPP to compensate for partial loading, start-

stop etc. which are practically required during running of power plant.

4.5.16 **APGCL humbly submits that NRPP is designed to run on Open Cycle and Combined Cycle modes. The Design SHR under Open Cycle Mode as per the Contract with EPC player is 2,635 kcal/kwh at on NCV basis (lower heating value). The Design SHR under Open Cycle Mode is expected to be ~ 2,927 kcal / kwh on GCV Basis. APGCL humbly prays to the Hon'ble Commission to define the normative GSHR for NRPP under Open Cycle Mode at 2,927 kcal / kwh.**

4.5.17 It is also submitted that similar margin is provided over and above the Design heat rate (PG heat rate) to coal and gas / liquid-based plants under the Tariff regulations 2018.

4.5.18 In view of the above, APGCL prays to the Hon'ble Commission to approve the SHR norms for NRPP to 1998 KCal/kWh on GCV basis as per guaranteed value of contract and define the normative GSHR for NRPP under Open Cycle Mode at 2,927 kcal / kwh.

4.6 Auxiliary Energy Consumption

4.6.1 As per Regulation 47.3(ii) of the Tariff Regulations, 2018, the Normative Auxiliary energy consumption, is 5 % for gas based generating station in combined cycle mode of operation with gas booster compressor.

4.6.2 The approved and estimated numbers are shown in the table below.

Table 15: Auxiliary energy consumption for 2021-22 of NRPP

NRPP	Approved 2018-19	April - Sept (actual)	Oct - March (estimated)	Estimated Total 2021-22
Auxiliary energy consumption (%)	5%	5.07%	5%	5%

4.6.3 APGCL prays to the Hon'ble Commission to approve the estimated numbers.

5 Fixed Cost of the Plant

5.1 Annual fixed cost for FY 2021-22

5.1.1 As per regulation 42.1 of the AERC Tariff regulations, 2018, the following components of fixed cost have been considered for Performance estimate of the tariff for the power plant:

- (a) Return on Equity
- (b) Interest on Long Term Loan
- (c) Depreciation
- (d) Operation and Maintenance Expenses



(e) Interest on Working Capital

(f) Less: Non-Tariff Income

5.1.2 For the computation of the fixed components, the Petitioner has considered the principles provided in the Tariff Regulations, 2018. These components have been discussed in detail in the following sections of the petition.

5.2 Debt Equity Ratio

5.2.1 As Regulation 31 of the Tariff Regulations, 2018 states that a project declared under commercial operation on or after April 1, 2019, if the equity actually deployed is more than 30% of the capital cost, equity in excess of 30% shall be treated as normative loan for the Generating Company, Transmission Licensee and Distribution Licensee.

5.2.2 As per the regulation shown above, APGCL has computed equity : debt ratio as shown below.

Table 16: Computation of Equity Debt Ratio for FY 2021-22

Particulars	Expenditure as on COD 16.07.2021	Closing Balance for FY 2021-22
Actual Equity	495.3	416.0
Normative Equity	242.12	270.3
Excess of Equity	253.2	145.7
Actual Loan	311.7	485.0
Addition of excess of equity consider as normative loan	253.2	145.7
Normative Loan Consider for calculation	564.9	630.7
Total Project Cost	807.1	901.0
% Normative Equity	30%	30%
% Normative Loan	70%	70%

5.1 Return on Equity (ROE)

5.1.1 The Petitioner has determined the Return on Equity (RoE) at a rate of 15.5% as per the regulation 33 of the AERC Tarff regulations, 2018. The Petitioner submits that no addition in Equity is envisaged in FY 2021-22.

Table 17: Computation of Plant wise Return in Equity for 2021-22

Station	Particulars	Approved for FY 2018-19	Performance estimate for FY 2021-22
NRPP	Opening Equity	159.02	0.00
	Closing Equity	159.02	270.30
	Rate of Return	15.50%	15.50%
	Return on Equity	24.65	20.95

5.1.2 APGCL prays to the Hon'ble Commission to approve the plant wise Return on



Equity as shown above.

5.2 Interest on Loan Capital

- 5.2.1 As per Regulation 34 of the Tariff Regulations, 2018, the Commission will consider interest on Loan capital on normative basis with repayment equal to depreciation allowed for that year and rate of interest will be the weighted average rate of interest calculated on the basis of the actual loan portfolio at the beginning of each year.
- 5.2.2 In view of the above, the Petitioner has computed the Interest on long term Loan on normative basis for FY 2021-22. The Petitioner has considered normative loan portfolio and the repayment shown is considered equal to the depreciation for FY 2021-22. The interest rate has been considered as the expected weighted average rate of interest for FY 2021-22 for APGCL as a whole.
- 5.2.3 The table below summarizes the interest on loan and finance charges considered for Performance estimate of NRPP for FY 2021-22.

Table 18: Computation of Plant wise Interest and finance charges for 2021-22

Station	Particulars	Approved for FY 2018-19	Performance estimate for FY 2021-22
NRPP	Net Normative Opening Loan	412.65	564.95
	Addition of normative loan during the year	0.00	65.75**
	Normative Repayment during the year	24.79	22.68
	Net Normative Closing Loan	387.86	608.02
	Avg. Normative Loan	400.26	586.49
	Interest Rate	14.12%	10.90%
	Interest on Loan Capital	51.81	63.95
	<u>Add: Bank Charges</u>	0.00	0.00
	Net Interest on Loan Capital	51.81	63.95

** 65.75 is normative addition during FY 2021-22.

- 5.2.4 APGCL submits that the loan details and interest rates applicable for the first 6 months on PFC loans is submitted as part of Annexure 7 of this document.
- 5.2.5 APGCL further submits that the document specifying the interest rates applicable on Assam govt. loans @ 10% is attached as Annexure 8 of this document
- 5.2.6 APGCL prays to the Hon'ble Commission to approve the total interest and finance charges as shown above.

5.3 Depreciation

- 5.3.1 Petitioner has computed the Depreciation as per Regulation 32 of Tariff Regulation, 2018 considering Capital Cost of the asset with 10% salvage value.



Also, depreciation of grants has not been considered. The table below summarizes the Depreciation considered for Performance estimate of NRPP for FY 2021-22.

Table 19: Depreciation for 2021-22 of NRPP

Particulars	FY 2021-22
Opening GFA	0.00
Addition during the year	901.00
Closing	901.00
Average GFA	450.50
Rate of Depreciation	5.03%
Total Depreciation	22.68
Grant	0.00
Additions during the year	0.00
Closing grant	0.00
Average grant	0.00
Rate of Depreciation	5.03%
Depreciation on grants	0.00
Net Depreciation	22.68

Table 20: Summary of Depreciation claimed for FY 2021-22

Station	Particulars	Approved FY 2018-19	Performance estimate for FY 2021-22
NRPP	Depreciation	24.79	22.68
	Less: Depreciation on assets funded by Grants	0	0.00
	Net Depreciation	24.79	22.68

5.3.2 APGCL prays to the Hon'ble Commission to approve the Depreciation for FY 2021-22 as shown above.

5.4 Interest on Working Capital

5.4.1 Petitioner has claimed normative interest on working capital as per Regulation 36 of the Tariff Regulations, 2018. However, as APGCL does not have liquid fuel stock facility, it has not considered working capital on storage of liquid fuel. The rate of interest 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, which $7.0\% + 3.0\% = 10\%$. The plant wise interest on working capital considered is shown in the table below:

Table 21: Summary of Interest on working capital claimed for FY 2021-22

Station	Particulars	Approved FY 2018-19	Performance estimate for FY 2021-22
NRPP	Fuel Cost for one month	5.94	4.50
	O&M Expenses for one month	1.6	2.4
	Maintenance Spares-30% of O&M	5.6	8.7
	Receivables for two months	32.87	32.56
	Total Working Capital Requirement	45.99	48.16
	Rate of interest	12.8%	10%
	Interest on Working capital	5.89	4.82

5.4.2 APGCL prays to the Hon'ble Commission to approve the interest on Working Capital for FY 2021-22 as shown above.

5.5 Operation and Maintenance Expenses (O&M Expenses)

5.5.1.1 As per Regulation 50.2(b) of Tariff Regulation, 2018, Operation and Maintenance expenses for advanced F class Gas combined cycle generating station is Rs. 41.51 Lakhs/MW .

5.5.1.2 Further APGCL submits that NRPP was commissioned on dated 16th July 2021. Hence, APGCL has claimed O&M expenses for working days for only 259 days in FY 2021-22 as per Tariff Regulation,2018 are as shown in below table

Table 22: Operation and Maintenance claimed for FY 2021-22

Station	Approved for FY 2018-19	Performance estimate for FY 2021-22
NRPP	18.72	28.98

5.5.2 As per Regulation 2.1(50) of the Tariff Regulations, 2018, Operation and maintenance expense include manpower, repairs, spares, consumables, insurance and overheads but excludes fuel expenses and water charges.

5.5.3 The Petitioner submits that Special R&M and increase in Terminal liabilities will be claimed separately as per the Tariff Regulations 2018 during True-up. APGCL prays to the Hon'ble Commission to approve the O&M expenses for FY 2021-22 as shown above.

5.6 Non-Tariff Income

5.6.1 As per Regulation 45 of the Tariff Regulations, 2018, the non-tariff income shall be deducted from the Annual Fixed Cost in determining the Annual Fixed Cost of the Generation Company.

5.6.2 In view of the above regulations, the details of non-tariff income for FY 2021-22



are shown in the table below

Table 23: Non-Tariff income for FY 2021-22

Station	Approved for FY 2018-19	Performance estimate for FY 2021-22
NRPP	0.00	0.00

5.6.3 APGCL prays to the Hon'ble Commission to approve the Non-Tariff income for FY 2021-22 as shown above.

6 Energy Charges

6.1 Fuel Price and Calorific Value

6.1.1 As per Regulation 10 of the Tariff Regulations 2018, 'Fuel Price' and 'Calorific Value of Fuel' are uncontrollable items. The actual values of 'Fuel Price' and 'Calorific Value of Fuel' are shown in the table below:

Table 24: Actual Plant wise GCV and Price for FY 2021-22

Station	Wt. Avg. Gross Calorific Value of Gas (kcal/SCM)	Wt. Avg. Price of Gas (Rs./1000 SCM)
NRPP	9205	4667

6.1.2 The Petitioner submits that the Gas prices has been revised to USD 2.90 / MMBTU from October 2021. Hence, the weighted average price of gas has been considered for FY 2021-22.

6.1.3 The Petitioner prays to the Hon'ble Commission to approve the Price of Gas and GCV of gas for LRPP for FY 2021-22 as shown in the table above.

6.2 Fuel cost

6.2.1 The table below shows the approved fuel cost and the actual total fuel cost incurred for FY 2021-22

Table 25: Fuel cost for NRPP for FY 2021-22

Particulars	Derivation	Unit	FY 2018-19 Approved	FY 2021-22 Estimated
Gross Generation	A	MU	745	481
Heat Rate	B	kcal/kWh	1791	2016
GCV of gas	C	kcal/SCM	9063	9205
Overall Heat	D= A x B	G. cal.	1333579	970447
Gas consumption	E= D/C	M. SCM	147	105
Price of Gas	F	Rs./ 1000 SCM	4848	4667
Total cost of Gas	G= E x F /10000	Rs. Crore	71.33	53.96



6.2.2 The Petitioner prays to the Hon'ble Commission to approve the estimated Fuel cost Price for NRPP for FY 2021-22 as shown in the table above.

6.3 Incentives

6.3.1 Incentives for FY 2021-22 will be claimed during True-up of FY 2021-22.

7 Summary of submissions of Performance estimate for FY 2021-22

7.1 Net Annual Revenue Requirement

7.1.1 The plant wise Net Annual Revenue Requirements for FY 2021-22 are as shown in the tables below.

Particulars	FY 2018-19	FY 2021-22
	Approved	Estimation
Power Generation (MU)		
Gross Generation	744.6	481.34
Net Generation	707.37	457.20
Auxiliary Consumption Loss %	5.00%	5.02%
Fixed Charges		
Operation & Maintenance Expenditure	18.72	28.98
Interest & Finance Charges	51.81	63.95
Interest on working Capital	5.89	4.82
Depreciation	24.79	22.68
Return on Equity	24.65	20.95
Less: Other Income	0.00	0.00
Total Fixed Charges	125.85	141.37
Fuel Cost	71.33	53.96
Total Revenue Requirement	197.19	195.34

Table 26: Net Annual Revenue Requirements for NRPP for FY 2021-22

Particulars	Approved in Tariff Order for FY 2018-19	Amount estimated Performance estimate
Total Fixed Charges	125.85	141.37
Fuel Cost	71.33	53.96
Total Revenue Requirement	197.19	195.34

7.1.2 The Petitioner prays to the Hon'ble Commission to approve the plant wise Net Annual Revenue Requirement for FY 2021-22 as discussed in the tables above.



8 Multi Year Tariff framework and Capital Investment plan for FY 2022-23 to FY 2024-25

8.1 Regulatory provisions for Multi-Year Tariff framework

8.1.1 The Hon'ble Commission in its Tariff regulations,2021 has stated the following on Multi-year Tariff framework for the control period from FY 2022-23 to FY 2024-25. The same is reproduced below for ready reference:

"4 Multi-Year Tariff Framework

4.1 The Commission shall determine the tariff for matters covered under Regulation 3.3 above under a Multi-Year Tariff framework with effect from 1stApril 2022.

.....



Affidavit – NRPP

BEFORE THE ASSAM STATE ELECTRICITY REGULATORY
COMMISSION, GUWAHATI.

Petition No. –

Case No.
(to be filed by the Office)

IN THE MATTER OF

Filing of Petition for Aggregate Revenue Requirement for the FYs 2022-23, 2023-24 and 2024-25.

AND

Petition for Determination of Tariff for the FY 2022-23

AND

IN THE MATTER OF

Namrup Replacement Power Plant,
Assam Power Generation Corporation Limited,
Namrup-786622

Petitioner


I, Sri Mokshada Prasad Sarma, Son of Sri Sarada Prasad Sarma, aged 59 years, residing at Flat No. 1/A1, Puberun Apartment, Ghoramara, P.O. Beltola, Guwahati-781028, do solemnly affirm and say as follows:

I am the General Manager (HQ) of Assam Power Generation Corporation Limited, the petitioner in the above matter and am duly authorized by the said Petitioner to make this affidavit for and on behalf of the Assam Power Generation Corporation Limited.

The Statement made in the Petition based on information received from official records and I believe them to reflect truly and no material has been concealed from the statements so made or documents or supporting data etc. attached.

Solemnly affirm at Guwahati on 29th November' 2021 that the contents of this affidavit are true to my knowledge, no part of it is false or no material has been concealed therefore and misleading material included therein.

Deponent


(Mokshada Prasad Sarma)
General Manager (HQ),
Assam Power Generation Corporation Ltd.

Place: Guwahati

Date: 29th November' 2021

By order of the Commission

Secretary of the Commission



Prayer - NRPP

BEFORE THE HON'BLE ASSAM ELECTRICITY REGULATORY COMMISSION

FILINGNO

CASENO.....

IN THE MATTER OF:

Petition for Submission of Aggregate Revenue Requirement for the MYT Period from FY 2022-23 to FY 2024-25 and Determination of Tariff for the FY 2022-23

AND IN THE MATTER OF:

Namrup Replacement Power Plant (hereinafter referred to as "NRPP") of Assam Power Generation Corporation Limited (hereinafter referred to as "APGCL") incorporated under the provisions of the Companies Act, 1956 and having its registered office in the State of Assam

THE HUMBLE APPLICANT ABOVE NAMED MOST RESPECTFULLY SHEWETH:

- 1 That the APGCL is a successor corporate entity of former ASEB, formed in pursuant to the notification of the Government of Assam, notified under sub-sections (1), (2), (5), (6) and (7) of Section 131 and Section 133 of the Electricity Act 2003(Central Act 36 of 2003), for the purpose of transfer and vesting of functions, properties, interests, rights, obligations and liabilities, along with the transfer of Personnel of the Board to the successor corporate entities.
- 2 That the APGCL is a company incorporated with the main object of generation of electricity in the state of Assam.
- 3 That the APGCL is a generating company under the provisions laid down in Section 14 Proviso 5, read with Section 131 (2) of the Electricity Act 2003.
- 4 That the NRPP, commissioned on 16-07-2021, is an operating gas based thermal power station under the APGCL in the district of Dibrugarh, Assam.
- 5 That the Hon'ble Commission notified the AERC (Terms and Conditions for determination of Multi Year Tariff) Regulations, 2021 on 18th September, 2021.
- 6 That as per the Hon'ble Commission's this new MYT Regulations of 2021 the licensee is filing for approval of the for Aggregate Revenue Requirement of NRPP for the MYT Period from FY 2022-23 to FY 2024-25 and Determination of Tariff for the FY 2022-23.

Place: Guwahati

Date: 29th November' 2021

Deponent



(Mokshada Prasad Sarma)
General Manager (HQ),
Assam Power Generation Corporation Ltd.



9 Norms of operations

9.1 Regulatory provisions

9.1.1 The Hon'ble Commission had set norms of operations under Tariff Regulations 2021. The regulation is reproduced below for ready reference

8 Specific trajectory for certain variables

8.1 The Commission shall stipulate a trajectory while approving the MYT Petition for certain variables having regard to the reorganization, restructuring and development of the electricity industry in the State.

.....

47 Norms of operation for Thermal Generating Stations

47.1 Recovery of capacity charge, energy charge and incentive by the generating company shall be based on the achievement of the operational norms specified in the regulations 48.1 to 50.

.....

9.1.2 The future year projections have been based on Normative basis as set out in Tariff Regulations 2021.

9.1.3 The projected performance vis-a-vis norms of operations set is discussed below:

9.2 Snapshot of plant wise performance projection for FY 2022-23 to FY 2024-25

9.2.1 The following table shows the projection of performance parameters of gas based NRPP for FY 2022-23 to FY 2024-25.

Table 27: Projected Operating Performance for FY 2022-23 to FY 2024-25 of NRPP

NRPP	2021-22 Estimated	2022-23 Projected	2023-24 Projected	2024-25 Projected
Gross Energy in MU	481.34	732.69	732.69	732.69
Aux. Power Cons. (%)	5.02%	5.00%	5.00%	5.00%
Net Energy in MU	457.20	696.05	696.05	696.05
Plant Availability Factor (%)	76%	85%	85%	85%
Plant Load Factor (%)	77%	90%	90%	90%
Gross Station Heat Rate on GCV (kcal/ kWh)	2016	1988	1988	1988

9.3 Normative Annual Plant Availability Factor (NAPAF)



9.3.1 As per the Regulation 47.1(ii) in Tariff Regulation,2018, the NAPAF of new plant commissioned on or after 1st April 2019 is 85%. This same has been projected for control period as shown in the table below.

Table 30: Projected Availability for FY 2022-23 to FY 2024-25 of NRPP

NRPP	2021-22 Estimated	2022-23 Projected	2023-24 Projected	2024-25 Projected
Plant Availability Factor (%)	76%	85%	85%	85%

9.4 Normative Annual Plant Load Factor (NAPLF)

9.4.1 As per the Regulation 47.2 (ii) in Tariff Regulation,2018, the NAPLF of new plant commissioned on or after 1st April 2019 is 90%. This same has been projected for control period as shown in the table below.

Table 28: Projected plant load factor for FY 2022-23 to FY 2023-24 of NRPP

NRPP	2021-22 Estimated	2022-23 Projected	2023-24 Projected	2024-25 Projected
Plant Load Factor (%)	77%	90%	90%	90%

9.5 Gross Station Heat Rate (SHR)

9.5.1 As stated in the petition earlier, APGCL has requested commission to kindly approve SHR on GCV basis as per contract agreement. The same has been approved by commission in tariff order of FY 2017-18 dated 31st March 2017 for NRPP. Hence, Petitioner has requested commission to kindly approve Gross SHR of 1988 Kcal/KWh at GCV basis under Combined Cycle Mode and define GSHR of 2,927 kcal / kwh at GCV basis under Open Cycle Mode for Control period.

9.5.2 The projected numbers are shown in the table below.

Table 29: Projected SHR for FY 2022-23 to FY 2024-25

NRPP	2021-22 Estimated	2022-23 Projected	2023-24 Projected	2024-25 Projected
Gross Station Heat Rate on GCV (kCal/ kWh) – Combined Cycle Mode	2016	1998	1998	1998

9.6 Auxiliary Energy Consumption

9.6.1 As per the Regulation 47.3 (ii) in Tariff Regulation,2018, the auxiliary consumption of new gas based plant with gas booster compressor which is commissioned on or after 1st April 2019 is 5%. This same has been projected for control period as shown in the table below.

Table 30: Projected Auxiliary energy consumption for FY 2022-23 to FY 2024-25

NRPP	2021-22 Estimated	2022-23 Projected	2023-24 Projected	2024-25 Projected
Aux. Power Cons. (%)	5.02%	5%	5%	5%

10 R&M Plan of NRPP

10.1 Capital Investment

10.1.1 The following R&M Plan is proposed for Namrup Replacement Power Plant for the Period FY 2022-23 to FY 2024-25.

Table 31: R&M plan proposed for NRPP for FY 2022-23 to FY 2024-25

SL NO	Description of Works	Proposed amount (In Lakhs)			Need of Justification
		FY 2022- 23	FY 2023- 24	FY 2024- 25	
B	Civil Work for NRPP				
1	Repairing of Residential quarter of Type C (5 Nos), Type III (5 Nos), Type IV (10 Nos) at Namrup (Total =20 Nos)	50.0			The existing quarters at Namrup compound are old and in dilapidated condition. Some of the quarters need essential repairing of the building components to maintain a suitable habitable condition and also to check further deterioration of the building. Considering these factors and after thorough inspection & assessment, probable cost needed for repairing and renovation and the amount is placed accordingly.
2	Repairing and Maintenance of Main road (Borluit Path) of Namrup	44.8			The existing main road of Namrup i.e Borluit path is in damaged condition at certain locations. To make it fit for smooth movement of vehicles and easy movement of pedestrians, the need of the road is required. The estimated value of work is placed accordingly.
3	Repairing of Residential quarter of Type B (3 Nos), Type C (5 Nos), Type III (4 Nos), Type IV (10 Nos) at Namrup (Total =22 Nos)		55.0		The existing quarters at Namrup are old and in dilapidated condition. Some of the quarters need essential repairing of the building components to maintain a suitable habitable condition and also to check further deterioration of the building. Considering these factors and after thorough inspection & assessment, probable cost needed for repairing and renovation and the amount is placed accordingly.
4	Construction of road in front of residential qtr no B-01 to Type III-17 at Namrup		27.4		There is a proposal for construction of new boundary wall along pahar line, Namrup which will also be along residential qtr. No B-01 to Type III-17 at Namrup and the proposed wall will be In front of the residential qtrs. Hence, a new route for the movement of vehicles and



SL NO	Description of Works	Proposed amount (In Lakhs)			Need of Justification
		FY 2022- 23	FY 2023- 24	FY 2024- 25	
					pedestrians along these quarters are needed. Considering these factors and after necessary inspection & assessment, estimated amount of the same is been placed accordingly.
5	Construction of road side drain Infront of residential qtr no B-01 to Type III-17 at Namrup		11.6		There is a need of drainage system along the proposed road Infront of residential quarter type B-01 to Type III-17 (Pahar line) at Namrup to prevent accumulation of runoff water from the road and its surroundings. The estimated value of work is placed accordingly.
6	Dismantling and construction of chain link fencing of residential qtr B-01 to B-09 and Type III-17 at Namrup		12.9		The existing chain link fencing along residential qtr Type B-01 to B-09 and Type III-17 of Namrup is deteriorated condition which needs renewal works. The estimated value of work is placed accordingly.
7	Construction of new three storey Type IV - R.C.C Building quarters at Namrup			325.6	The construction of three storeyed RCC building has been proposed as part of upgradation of residential accommodation for housing more occupants at singular juncture.
8	Repairing of colony roads at Namrup			84.8	The roads at Namrup are not good condition. For some roads, no repairing works have been done since several years. To make it fit for smooth movement of vehicles and easy movement of pedestrians, the need of repairing of the road is required. The estimated value of work is placed accordingly.
9	Providing chain link fencing at various locations as and where required around residential quarters of Namrup			94.5	The existing chain link fencing of residential qtrs at Namrup is in a deteriorated condition which need renewable works. The estimated value for the same is placed accordingly.
Total		94.83	106.95	504.90	

11 Fixed Cost of Plant

11.1 Annual fixed cost for FY 2019-20 TO FY 2021-22

11.1.1 As per regulation 43.1 of the AERC Tarff regulations, 2021 the following components have been considered for projecting of fixed cost under the Multi Year Tariff framework for the power plants:

- (a) Return on Equity Capital
- (b) Interest on Loan capital



- (c) Depreciation
- (d) Operation and Maintenance Expenses
- (e) Interest on Working Capital
- (f) Less: Non-Tariff Income

11.1.2 For the computation of the fixed components, the Petitioner has considered the principles provided in the Tariff Regulations, 2021. These components have been discussed in detail in the following sections of the petition.

11.2 Return on Equity (ROE)

11.2.1 APGCL has projected the Return on Equity (RoE) at a rate of 15.5% in accordance with the Regulation 34.2 (I) in the Tariff Regulations, 2021. It is submitted that the actual tax paid would be claimed separately during True-up of respective years.

11.2.2 The future year projections have been based on Normative basis as set out in Tariff Regulations 2021.

Table 32: Projected Return on Equity capital for FY 2022-23 to FY 2024-25

Station	Particulars	2021-22 Estimated	2022-23 Projected	2023-24 Projected	2024-25 Projected
NRPP	Opening Equity	0.00	270.30	270.30	270.30
	Closing Equity	270.30	270.30	270.30	270.30
	Rate of Return	15.50%	15.50%	15.50%	15.50%
	Return on Equity	20.95	41.90	41.90	41.90

11.2.3 APGCL prays to the Hon'ble Commission to approve the projected Return on Equity as shown above.

11.3 Interest on Loan Capital

11.3.1 The Petitioner has projected the Interest on long term Loan on normative basis for MYT control period FY 2022-23 to FY 2024-25 as per Regulation 35 of Tariff Regulation, 2021. The Petitioner has considered normative loan portfolio and the repayment shown is considered equal to the depreciation for FY 2022-23 to FY 2024-25. The interest rate has been considered as the weighted average rate of interest considered for FY 2021-22.

11.3.2 The table below summarizes the interest on loan and finance charges considered for Performance estimate of FY 2022-23 to FY 2024-25.

Table 33: Projected Interest and Finance charges for FY 2022-23 to FY 2024-25

Station	Particulars	2021-22 Estimated	2022-23 Projected	2023-24 Projected	2024-25 Projected
NRPP	Net Normative Opening Loan	564.95	608.02	563.61	519.29



Station	Particulars	2021-22 Estimated	2022-23 Projected	2023-24 Projected	2024-25 Projected
	Addition of normative loan during the year	65.75	0.95	1.07	5.05
	Normative Repayment during the year	22.68	45.37	45.39	45.47
	Net Normative Closing Loan	608.02	563.61	519.29	478.87
	Avg. Normative Loan	586.49	585.81	541.45	499.08
	Interest Rate	10.90%	10.93%	10.85%	10.79%
	Interest on Loan Capital	63.95	64.04	58.75	53.84
	Add: Bank Charges	0.00	0.00	0.00	0.00
	Net Interest on Loan Capital	63.95	64.04	58.75	53.84

11.3.3 APGCL prays to the Hon'ble Commission to approve the projected total interest and finance charges as shown above.

11.4 Depreciation

11.4.1 The Petitioner has computed the Depreciation as per Regulation 33 of Tariff Regulation, 2021, considering the Capital Cost of the asset admitted by the Commission and projected asset addition with 10% salvage value. Also, depreciation on grants has been subtracted. The table below summarizes the Depreciation projected for FY 2022-23 to FY 2024-25.

Table 34: *Projected Depreciation for FY 2022-23 to FY 2024-25 of NRPP*

(Rs. Crore)

Particulars	2021-22	2022-23	2023-24	2024-25
Opening GFA	0.00	901.00	901.95	903.02
Addition during the year	901.00	0.95	1.07	5.05
Closing GFA	901.00	901.95	903.02	908.07
Average GFA	450.50	901.47	902.48	905.54
Rate of Depreciation	5.03%	5.03%	5.03%	5.02%
Total Depreciation	22.68	45.37	45.39	45.47
Grant	0	0	0	0
Additions during the year	0	0	0	0
Closing grant	0	0	0	0
Average grant	0	0	0	0
Rate of Depreciation	5.03%	5.03%	5.03%	5.02%
Depreciation on grants	0	0	0	0
Net Depreciation	22.68	45.37	45.39	45.47

11.4.2 APGCL prays to the Hon'ble Commission to approve the projected Depreciation for FY 2022-23 to FY 2024-25 as shown above.



11.5 Interest on Working Capital

11.5.1 The Petitioner has projected normative interest on working capital as per Regulation 37.1 (a) of Tariff Regulation, 2021. However, as APGCL does not have liquid fuel stock facility, it has not considered working capital on storage of liquid fuel. The rate of interest has been considered equal 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, which $7\% + 3.00\% = 10\%$.

11.5.2 The interest on working capital considered is shown in the table below:

Table 35: Summary of Interest on working capital projected for FY 2022-23 to FY 2024-25
(Rs. Crore)

Station	Particulars	2022-23 Projected	2023-24 Projected	2024-25 Projected
NRPP	Fuel Cost for one month	7.32	7.32	7.32
	O&M Expenses for one month	1.9	2.0	2.1
	Maintenance Spares-30% of O&M	6.9	7.2	7.5
	Receivables for two months	44.69	43.98	43.36
	Total Working Capital Requirement	60.79	60.48	60.28
	Rate of interest	10%	10%	10%
	interest on Working capital	6.08	6.05	6.03

11.5.4. APGCL prays to the Hon'ble Commission to approve the interest on Working capital for FY 2022-23 to FY 2024-25 as shown above.

11.6 Operation and Maintenance Expenses (O&M Expenses)

11.6.1 As per Regulation 50.2(b) of Tariff Regulation, 2021, approved normative O&M cost Rs. 23.73 Lakhs/MW/Year for NRPP plant for FY 2022-23.

11.6.2 Whereas the Approved Normative as per Regulation 50.2(b) of Tariff Regulation, 2018, Operation and Maintenance expenses for advanced F class Gas combined cycle generating station is Rs. 41.51 Lakhs/MW .

11.6.3 However, APGCL has claimed O&M expenses as per the Tariff Regulation, 2021 shown in the table below:

Table 36: Summary of O&M expenses projected for FY 2022-23 to FY 2024-25
(Rs. Crore)

Station	2022-23 Projected	2023-24 Projected	2024-25 Projected
NRPP	22.90	23.94	25.04



11.6.4 Further, APGCL submits actual O&M cost estimated may reach Rs. ~37 Crores annually in FY2022-23 in which employee cost along with administrative and general expenses may reach Rs. ~19.5 Crores and repair & maintenance expense of Rs. ~16.30 crores (considering Advanced F class gas machines require higher maintenance cost).

11.6.5 Hence, APGCL humbly submits that though the O&M cost is claimed as per MYT Regulations, 2021, the Hon'ble commission may kindly revise the norms to accommodate our estimated O&M expenditure in future year.

11.7 Non-Tariff Income

11.7.1 As per Regulation 46 of the Tariff Regulations, 2021, the non-tariff income shall be deducted from the Annual Fixed Cost in determining the Annual Fixed Cost of the Generation Company.

11.7.2 The non-tariff income for FY 2022-23 to FY 2024-25 are projected same as estimated for FY 2021-22, the same is as shown in the table below

Table 37: Station-wise Non-tariff income projected for FY 2022-23 to FY 2024-25
(Rs. Crore)

Station	2021-22 Estimated	2022-23 Projected	2023-24 Projected	2024-25 Projected
NRPP	-	-	-	-

11.7.3 APGCL submits that Non-Tariff Income for FY 2022-23 to FY 2024-25 will be claimed during True-up of the same.

11.7.4 APGCL prays to the Hon'ble Commission to approve the Non-tariff income for FY 2022-23 to FY 2024-25 as shown above.

12 Energy Charges

12.1 Fuel Price and Calorific Value

12.1.1 As per Regulation 10 of the Tariff Regulations 2021, 'Fuel Price' and 'Calorific Value of Fuel' are uncontrollable items. The values of 'Calorific Value of Fuel' are considered same as considered in FY 2021-22. The projected values of 'Fuel Price' and 'Calorific Value of Fuel' are shown in the table below:

Table 38: Projected GCV and Price for FY 2022-23 to FY 2024-25
(Rs. Crore)

Station	Wt. Avg. Gross Calorific Value of Gas (kcal/SCM)	Wt. Avg. Price of Gas (Rs./1000 SCM)
2022-23	9205	5552
2023-24	9205	5552
2024-25	9205	5553



12.1.2 The Petitioner submits that the Gas prices has been revised to USD 2.90 / MMBTU from October 2021. Hence, the same price of gas has been considered for FY 2022-23 to FY 2024-25.

12.1.3 The Petitioner prays to the Hon'ble Commission to approve the projected Price of Gas and GCV for NRPP for FY 2022-23 to 2024-25 as shown in the table above.

12.2 Fuel cost

12.2.1 The table below shows the projected fuel cost for FY 2022-23 to FY 2024-25.

Table 39: Fuel cost for NRPP for FY 2022-23 to FY 2024-25

Particulars	Derivation	Unit	2022-23 Projected	2023-24 Projected	2024-25 Projected
Gross Generation	A	MU	733	733	733
Heat Rate	B	kcal/kWh	1988	1988	1988
GCV of gas	C	kcal/SCM	9205	9205	9205
Overall Heat	D=AxB	G. cal.	1456581	1456581	1456581
Gas consumption	E=D/C	M. SCM	158	158	158
Price of Gas	F	Rs./1000 SCM	5552	5553	5553
Total cost of Gas	G=ExF/10000	Rs. Crore	87.86	87.86	87.86

12.2.2 The parameters considered for calculating the landed gas price of gas for the MYT Control period are as follows:

- Basic Non-APM Gas price = \$ 2.90 / MMBTU
- Basic APM Gas price = \$ 1.74 / MMBTU (60% of Non-APM gas price)
- USD exchange rate = ₹ 73.56 (USD exchange rate for the month of Oct'21 in Rs as obtained from RBI website)
- MMBTU to 1000 SCM conversion factor = 39.68254
- As per agreement, the transportation cost has been escalated by 3%.

12.2.3 The petitioner submits the gas price projections in table below

Table 40: Gas Price Projection

Namrup Replacement Power Station		2021-22 (from Oct 2021 onwards)	2022-23	2023-24	2024-25
A.	Gas supplied by OIL, Duliajan (APM)				
1.00	Basic Price (for G.C.V. 10000)/ 1000 SCM	5079.38	5079.38	5079.38	5079.38
2.00	Basic Price after adjustment with CV	4675.47	4675.47	4675.47	4675.47
3.00	Marketing Margin (for NCV 10000) /1000 SCM	200.00	200.00	200.00	200.00
4.00	Marketing Margin after adjustment with CV	165.88	165.88	165.88	165.88
	Total	4841.35	4841.35	4841.35	4841.35
5.00	VAT @ 14.5% on above	702.00	702.00	702.00	702.00

Namrup Replacement Power Station		2021-22 (from Oct 2021 onwards)	2022-23	2023-24	2024-25
	Total (A)	5543.34	5543.34	5543.34	5543.34
B. T.C. for Transportation of the OIL Gas by AGCL					
1.00	T.C./ 1000 SCM @ Rs. 1.81 / MMBTU	70.14	72.24	74.41	76.64
2.00	GST @ 12%	8.42	8.67	8.93	9.20
	Total (B)	78.56	8.67	8.93	9.20
C.	Landed price of gas supplied to NTPS (A+B)/ 1000 SCM	5621.90	5552.01	5552.27	5552.54

12.2.4 The Petitioner prays to the Hon'ble Commission to approve the projected Fuel cost Price for LRPP for FY 2019-20 to FY 2021-22 as shown in the table above.

12.3 Incentives

12.3.1 APGCL submits that the Incentives for FY 2019-20 to FY 2021-22 will be claimed in True-up as per Regulations.

13 Summary of submissions for MYT period of FY 2022-23 to FY 2024-25

13.1 Summary

13.1.1 The Summary of the MYT for FY 2022-23 to FY 2024-25 for NRPP is shown below.

Table 41: MYT for FY 2022-23 to FY 2024-25 for NRPP

Sl. No	Particulars	(Rs. Crore)		
		2022-23 Projected	2023-24 Projected	2024-25 Projected
	POWER GENERATION (MU)			
	Gross Generation	732.69	732.69	732.69
	Net Generation	696.05	696.05	696.05
	Auxiliary Consumption Loss %	5.00%	5.00%	5.00%
I	Fixed Charges			
	Operation & Maintenance Expenditure	22.90	23.94	25.04
	Interest & Finance Charges	64.04	58.75	53.84
	Interest on working Capital	6.08	6.05	6.03
	Depreciation	45.37	45.39	45.47
	Return on Equity	41.90	41.90	41.90
	Less: Other Income	0.00	0.00	0.00
	Total Fixed Charges	180.28	176.02	172.27
II	Fuel Cost	87.86	87.86	87.86
IV	Total Revenue Requirement	268.14	263.88	260.14



Sl. No	Particulars	2022-23 Projected	2023-24 Projected	2024-25 Projected
	Fixed charges (Rs. / kWh)	2.59	2.53	2.48
	Energy charges (Rs. / kWh)	1.26	1.26	1.26
V	Proposed tariff (Rs. / kWh)	3.85	3.79	3.74

13.2 Net Annual Revenue Requirement

13.2.1 The Net Annual Revenue Requirements for FY 2022-23 to FY 2024-25 are as shown in the tables below.

Table 42: Net Annual Revenue Requirements for NRPP for FY 2022-23 to FY 2024-25
(Rs. Crore)

Particulars	2022-23 Projected	2023-24 Projected	2024-25 Projected
Total Fixed Charges	180.28	176.02	172.27
Fuel Cost	87.86	87.86	87.86
Total Revenue Requirement	268.14	263.88	260.14

13.1 Tariff for NRPP for FY 2022-23

13.1.1 The tariff proposed for NRPP for FY 2022-23 is as shown below

Table 43: Tariff proposed for NRPP for FY 2022-23
(Rs. Crore)

Particulars	
Annual fixed charges (Rs crore)	180.28
Monthly fixed charges (Rs crore)	15.02
Energy charge rate (Rs. / kWh)	1.26

13.1.2 The Petitioner prays to the Hon'ble Commission to approve the Net Annual Revenue Requirement for FY 2022-23 to FY 2024-25 as discussed in the tables above.

Annexures

Sl. No.	Particulars	Annexure(s)
1.	COD declaration Certificate as on 16 th July 2021	Annexure 1
2.	Auditor Certificate for the capital expenditure undertaken up to 16 th July 2021 (COD)	Annexure 2
3.	EPC Contract Copy	Annexure 3
4.	Copy of relevant excerpts from CERC order no. 15 of 2014 dated 05.02.2016	Annexure 4
5.	Ministry of Power document of 'Normalization Document and Monitoring & Verification Guidelines' for Thermal power plants	Annexure 5
6.	Performance Guarantee Test Report of NRPP	Annexure 6
7.	PFC Loan Details for FY2021-22 (April to September)	Annexure 7
8.	State Govt. of Assam Interest Rate Certificate for FY2021-22	Annexure 8
9.	Regulatory Formats	Annexure 9

**Annexure 1 - COD declaration Certificate as on
16th July 2021**



ASSAM POWER GENERATION CORPORATION LIMITED

Regd. Office: Bijulee Bhawan, 3rd floor, Paltanbazar,
Guwahati-781 001, Assam; CIN: U40101AS2003SGC007239
Tele-Fax: 0361-2739546; www.apgcl.org

Md. Ataur Rahman
Chief General Manager (Gen)
E-mail: cgm-g@apgcl.com

No: CGM (G)/APGCL/NRPP/PH-1/2020-21/ 01

Date: 19-07-2021

To,

1. The Chief General Manager, SLDC, AEGCL
Kahilipara, Guwahati-781 019
2. The Chief General Manager (Commercial), APDCL
Bijulee Bhawan, Guwahati-781 001

**Sub: Declaration of Commercial Operation Date (COD) of 1x100 MW Namrup
Replacement Power Project (NRPP) Phase-I.**


Sir,

With reference to the above, this is to inform you that after successful trial run for 72 hours (w.e.f. 00.00 hours of 13-07-2021 to 00.00 hours of 16-07-2021), the Commercial Operation Date (COD) of the 1x100 MW Namrup Replacement Power Project (NRPP) Phase-I is hereby declared as **the 16th of July, 2021**. The joint statement of observations by the representatives present is enclosed herewith.

This is for your kind information.

Enclosed: As stated above.

Yours faithfully,


Chief General Manager (Gen)
APGCL

Copy to:

- 1) The Managing Director, APGCL, Bijulee Bhawan: for favour of kind information.
- 2) The Secretary, AERC, 6th Mile, Guwahati- 22: for favour of kind information.
- 3) The Chief General Manager, AEGCL: for favour of information.
- 4) The Chief General Manager (F&A), APGCL: for favour of information.
- 5) The General Manager, NTPS: for favour of information.
- 6) Relevant file.

Minutes of observation of Trial Run of 1X100 MW Combined Cycle Namrup Replacement Power Project (NRPP), APGCL, Namrup for declaration of commercial operation

Date: 16/07/2021

Ref.: APGCL/CGM (G)/NRPP/PH-I/2018/PT-I/65, dtd.09/07/2021.

For declaration of Commercial Operation Date (COD), uninterrupted full load operation of the 1X100 MW Combined Cycle Namrup Replacement Power Project (NRPP) for 72 hours commencing from 00.00 hours of 13/07/2021 to 00.00 hours of 16/07/2021 was successfully completed. For witnessing the trial run of the Plant, representatives from SLDC, AEGCL and APDCL (Commercial wing) were present at the Plant during the period.

During the Trial Run of 72 hours, readings were taken for each of the 288 blocks of 15 minutes period and the following points were observed:

1. The Gas Turbine Unit (Rated Capacity: 62.25 MW) along with the corresponding Steam Turbine Unit (Rated Capacity: 36.15 MW) was running at an average total load of 96.1169 MW. The Guaranteed CCPP Gross output at GT 100% Base Load at rated site conditions is 98.4 MW.
2. The power generated by the Gas Turbine Unit was evacuated through 1X100 MVA (11/220 kV) GT SUT-1 and the power generated by the Steam Turbine Unit was evacuated through 1X55 MVA (11/220 kV) ST SUT-1.
3. One (01) no. of energy meter of make Secure (Mtr. No. TN900425) is installed and commissioned at GT SUT-1 (100 MVA) in the 220 kV side and one (01) no. of energy meter of make SATEC is installed and commissioned at GT SUT-1 (100 MVA) in the 11 KV side. Relevant test reports are enclosed. The last testing of the meters was carried out on 17-05-2018. The testing of the meters will be carried out afresh during the shutdown to be taken for conducting PG Test of the units.
4. One (01) no. energy meter of make Secure (Mtr. No. TN900429) is installed and commissioned at ST SUT-1 (55 MVA) in the 220 kV side and one (01) no. of energy meter of make SATEC is installed and commissioned at ST SUT-1 (55 MVA) in the 11 kV side. Relevant test reports are enclosed. The last testing of the meters was carried out on 17-05-2018. The testing of the meters will be carried out afresh during the shutdown to be taken for conducting PG Test of the units..
5. The evacuation of power from NRPP is made through the 220 kV Tinsukia Feeder and 220 kV NTPS Feeder.
6. Two (02) nos. of energy meter of make Secure (Mtr. Nos. TN900427 & TN900428) are installed at 220 kV NRPP-Tinsukia line and two (02) nos. of energy meter of make Secure (Mtr. Nos. TN90042G & TN900430) are installed at 220kV NRPP-NTPS line Relevant test reports

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are enclosed. The last testing of the meters was carried out on 17-05-2018. The testing of the meters will be carried out afresh during the shutdown to be taken for conducting PG Test of the units.

7. Various parameters recorded during the Trial Run of NRPP Units are enclosed herewith.
8. The Telemetry System at NRPP couldn't be fully brought into service during the Trial Run due to the concerned vendor's inability to arrive at site owing to the current CoVid-19 pandemic situation. However, a temporary arrangement has been made to make the following data available at SLDC: i.e. Analog outputs (MW, MVAR, Voltage, Current, and Frequency) for Gas Turbine, Steam Turbine and Line Feeders. The pending work will be completed by the vendor after normalization of the current pandemic situation.
9. During this period of operation, the performance of the Gas Turbine and Steam Turbine Units along with the auxiliaries was found satisfactory.
10. In view of the successful completion of the trial run of the Units of NRPP for COD declaration, it is agreed that APGCL may initiate further action for declaration of COD of the Plant.

The Trial Run has been witnessed by:

i) For APGCL

- a) Sri Sonit Kumar Neog, Special officer to MD, APGCL.
- b) Sri Chiranjib Adhikari, DGM, NRPP, APGCL.
- c) Sri Janardan Das, DGM (O&M), APGCL.

Sonit Kumar Neog
16.07.2021

Chiranjib Adhikari
16.07.2021

Janardan Das
16/07/21

ii) For SLDC, AEGCL

- a) Sri Paban Borah, CGM, SLDC.
- b) Sri Bimal Chandra Borah, DGM (Operation), SLDC.

Paban Borah
16/7/21

Bimal Chandra Borah
16/7/21

iii) For APDCL (Commercial).

- a) Md. Anamul Haque Laskar, GM (TRC), APDCL.
- b) Sri Parag Jyoti Kalita, DM (TRC), APDCL.

Anamul Haque Laskar
16/7/21

Parag Jyoti Kalita
16/7/21

iv) For AEGCL

- a) Sri Hosur Sundaran Mohan, GM (UAZ), AEGCL, Dibrugarh.
- b) Sri Arnab Chakraborty, AGM, AEGCL, Tinsukia.

Hosur Sundaran Mohan
16/7/2021

Arnab Chakraborty
16/7/2021

**Annexure 2 - Auditor Certificate for the capital
expenditure undertaken up to 16th July 2021
(COD)**

UDIN: 21066620AAAACY2548

TO WHOMSOEVER IT MAY CONCERN

We, M/s Nilotpal Dhar & Associates, Chartered Accountants having been assigned the Review of capital expenditure of 1 X 100 MW Namrup Replacement Power Project (NRPP) Phase I by M/s **Assam Power Generation Corporation Limited** having its registered office at Bijulee Bhawan, Paltan Bazar, Guwahati-781001, have hereby reviewed the capital expenditure of 1 X 100 MW Namrup Replacement Power Project (NRPP) Phase I till the Commercial Operation Date (COD) i.e. 16-07-2021. The review is made on the basis of information and explanation provided by the company.

The total capital expenditure of the Project till the COD i.e. 16-07-2021 is as under:

Capital Expenditure against 1 x 100 MW Namrup Replacement Power Project (NRPP) Phase I till COD (16.07.2021)		
Particulars	Amount (Rs. in Crore)	F. Y.
I. Name of Vendor		
National Productivity Council	0.03	2007-08
National Remote Sensing Agency	0.01	
The E& AO,A&NA GDC Survey of India	0.00	
Pollution Control Board	0.07	
Development Consultants PVT. LTD.	0.13	
Sub Total	0.23	
National Productivity Council	0.07	2008-09
ESS Foundation	0.05	
Development Consultants PVT. LTD.	0.14	
Govt. of India Meteorological Deptt.	0.00	
Foundation Stone Laying	0.10	
Sub Total	0.36	
Development Consultants PVT. LTD.	0.22	2009-10
Power Grid Associates	0.57	
BHEL	1.77	
National Productivity Council	0.00	
Foundation Stone Laying	0.12	
Sub Total	2.69	
Power Grid Associates	0.78	2010-11
BHEL	49.07	
Development Consultants PVT. LTD.	0.33	
Others	1.28	
Sub Total	51.46	
BHEL	119.07	2011-12
Others	2.56	
Development Consultants PVT. LTD.	0.24	
Power Grid Associates	0.19	
Sub Total	122.05	
BHEL	108.40	2012-13



Development Consultants PVT. LTD.	0.07	
Sub Total	108.47	
BHEL	7.14	2013-14
Development Consultants PVT. LTD.	0.04	
Others	0.66	
Sub Total	7.84	
Others	0.80	2014-15
BHEL	76.62	
Development Consultants PVT. LTD.	0.03	
Sub Total	77.46	
Others	1.38	2015-16
BHEL	98.58	
Development Consultants PVT. LTD.	0.11	
Sub Total	100.08	
Others	0.63	2016-17
BHEL	32.94	
Development Consultants PVT. LTD.	0.06	
Sub Total	33.63	
Others	1.01	2017-18
BHEL	10.84	
Sub Total	11.84	
Others	0.09	2018-19
BHEL	5.41	
Development Consultants PVT. LTD.	0.05	
Sub Total	5.55	
Others	0.42	2019-20
Sub Total	0.42	
BHEL	0.06	2021-22
Sub Total	0.06	
Total of (I)	522.15	Upto 16-07-2021 (COD)
II. Various Expenses incl. Entry Tax	12.75	
III. Interest during Construction (IDC)	262.84	
IV. Employee Cost Capitalised	9.34	
Grand Total (I+II+III+IV)	807.07	

PLACE: GUWAHATI
DATE: 25.11.2021

For, NILOTPAL DHAR & ASSOCIATES
CHARTERED ACCOUNTANTS



N. Dhar
CA. NILOTPAL DHAR
PROPRIETOR
MEM NO.066620
FRN:326586E

Annexure 3 – EPC Contract Copy

भारतीय गैर न्यायिक

एक सौ रुपये

Rs. 100

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ONE
HUNDRED RUPEES

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भारत INDIA

INDIA NON JUDICIAL

असम ASSAM

A 819025

SUPPLY CONTRACT

(Contract No APGCL/ CGM (G)/ NRPP/ Main Plant/ BHEL/ Contract/ 52 Dt. 15-09-09)

This agreement (the "Cover Agreement") is made this 15th (day) of September Two Thousand and Nine by and between Assam Power Generation Corpn. Limited, having its registered office at Assam Power Generation Company Ltd, Bijulee Bhawan, Paltanbazar, Guwahati - 781001 (hereinafter referred as a "Owner" or "Purchaser" or APGCL or Company or First Party which expression shall include its administrators, successors, executors and assigns thereof) of the one part

AND

M/s Bharat Heavy Electricals Limited (BHEL), a company registered under the Company's Act, 1956 having its registered office at BHEL House, Siri Fort, New Delhi-110 049 (hereinafter referred as a "Contractor" or BHEL which expression shall include its successors and permitted assigns thereof) on the other part

APGCL and BHEL shall each individually be referred to as a "Party" and collectively as the "Parties"

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WHEREAS APGCL is desirous of setting up its Gas Based Combined Cycle Power Plant Phase-I at Namrup Thermal power Station (NTPS), Dibrugarh District, Assam, with gross capacity of 100 MW and has invited bids for design & engineering, manufacture, fabrication, assembly, shop testing, packing & forwarding of Plant and Equipment (as defined in the GCC) for the said project (the "Supply")

AND WHEREAS the Company had invited a Tender enquiry vide their Tender Specification No. K7205-SPC-001 for the Supply.

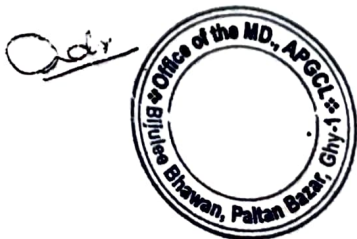
AND WHEREAS the Contractor represents that it has expertise and technical know-how in respect of the said Supply and had submitted its offer for 100 MW (hereafter called the "Project") in response to the above said Tender enquiry of the Company vide the Contractor's offer No. MS-1-07-E-0040 dated 15.03.08

AND WHEREAS pursuant to the above and the discussions conducted with the Contractor, the Company has awarded to the Contractor the Contract for the said Supply by its LOI No. APGCL/CGM (G)/NRPP/EPC/224 dated 31.12.08

NOW THIS AGREEMENT WITNESSETH AS FOLLOWS:

- a) APGCL agreed to sign this contract agreement after mutual consent with BHEL that BHEL will submit the tentative monthly billing schedule/ cash flow interlinked with PERT Network by 30th October 2009 and APGCL will approve the same within 2 (two) months from the date of submission. This will form a part of the contract.
- b) Except for words and expressions specifically defined in this Cover Agreement, words and expression used herein shall have the same meaning as are respectively assigned to them in the Special Conditions of Contract and the General Conditions of Contract.
- c) The following documents annexed herewith shall be taken as mutually explanatory of one another and shall be deemed to form and be read and construed as integral parts of this Contract:

Book I	The Contract Agreement , Acceptance of LOI and copy of LOI
Book II	Post Bid Correspondence between BHEL and APGCL
	Post Bid MOM
Book III	BHEL's OFFER -
	Envelope-I (Bid Security)
	Envelope-II A (Covering Letter, Qualification Data, and Techno-Commercial Schedules)



003



Book IV	BHEL's OFFER -	
		Envelope-II B (Technical Write-Ups, Technical Data Sheet and Drawings)
		Envelope—III(Price Proposal)
Book V	APGCL SPECIFICATION	
		Amendment Issued
		Volume-I (Contract Conditions)
		Volume-II(General and Mechanical)
Book VI	APGCL SPECIFICATION	
		Volume-III (Electrical, Instrumentation & Control)
		Volume-IV (Civil Structural and Architectural)
Book VII	APGCL SPECIFICATION	
		Volume-V (Technical Schedules and Drawings)
		Volume-VI (Price Schedule)

In case of any discrepancy, conflict or dispute between the documents comprising the Contract, they shall be referred to the documents in order of priority as cited below:

- i). This Cover Agreement
 - ii) Letter of Intent dated 31.12.2008 (LOI)
 - iii) Revised price proposal
 - iv) Post bid minutes of meeting along with relevant correspondences till signing of the contract.
 - v) BHEL techno-commercial offer comprising Envelope-I (Bid Security) ,Envelope-II A (Covering Letter, Qualification Data, and Techno-Commercial Schedules) Envelope-II B (Technical Write-Ups, Technical Data Sheet and Drawings) and original price proposal submitted as part of BHEL's Offer
 - vi) APGCL specifications, Volume I — VI as set out in Books V to VII.
- d) The Contract constitutes the entire Agreement as stipulated above in clause (c) between the Company and the Contractor, with respect to the Supply and supersedes all communication, negotiations and agreements (whether written or oral) of the parties with respect thereto made prior to the date of Agreement.
- e) The Contractor hereby covenants with Company to undertake the design, engineering, manufacture, fabrication, assembly, shop testing, packing & forwarding of the Plant and Equipment in conformity in all respect with provisions of the Contract and in consideration of the carrying out of the Supply by the Contractor, the Company hereby covenants to pay the amounts at the times and in the manner described hereinafter.

Qadri

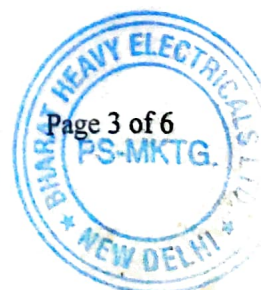


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Page 3 of 6
PS-MKTG.

* Revised cost: Rs. 27.58 Cr

f) **SUPPLY PRICE:**

The break-up of the Supply Price shall be as under, subject to adjustment as per Clause 11.2 of the GCC, and are detailed in the annexed documents:

Sl No	Item Description	Price Rupees in Crores
1	Supply Ex- works including Excise duty @ 10 % Education cess @3% and CST @ 2 %	355.9
2	Mandatory spares including freight charges	44.4
	Total	400.3

(Rupees four hundred crores thirty lakh only).

g) **COMPLETION SCHEDULE:**

The project completion schedule shall be thirty-five (35) months from the date of issue of full advance which is 09.02.09.

h) **TERMS OF PAYMENT**

For Supply of Equipment

Nature of Payment	Percentage of Supply Price	Conditions to be fulfilled
A. Supply (FOB/Ex-Works)		
i) Initial Advance	5%	As laid down in clause no. 8.3.1 of Tender Specification Vol – I Section - 3
ii) Payment for engineering drawing	5%	Progressive on approval of Drgs. by the Owner.
iii) Prorata payment against supply of Goods at site & Production of Material Receipt Certificate by Contractor.	65%	Certification by the APGCL.
iv) Completion of erection & commissioning against mile stones indicated in the Contract.	10%	Certification by the APGCL.
v) On completion of Reliability run and achieving commercial operation.	5%	Certification by the APGCL

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vi) Successful demonstration of performance guaranteed parameters in accordance with the Contract requirements and taking over of the plant.	10%	Presentation of acceptance certificate issued by the APGCL
B. Supply of Spares		
1) Advance	10%	Along with LOI.
2) On receipt of spares at the site and handed over to the purchaser	90%	Prorata basis for each item of spares on certification by APGCL.

i) MODE OF PAYMENT:

All payments except advance payment and last payment shall be paid through irrevocable letter of Credit to be opened by Owner.

j) ZERO DATE OF CONTRACT:

The zero date of the contract shall be reckoned from. 09-02-2009.

k) WARRANTY PERIOD:

The Warranty shall be for a period of twelve (12) calendar months commencing from the date of completion of reliability run of Combined Cycle Power Plant i.e as per tender specification and subsequent MOM.

l) LIQUIDATED DAMAGES:

The Liquidated Damages on account of delay in execution and non fulfillment of performance guarantee shall be as per Tender Specification and subsequent MOM.

m) LAWS COVERING THE CONTRACT:

This contract shall be in all respect be construed in accordance with Indian law in force from time to time.

The governing language of the Contract shall be English.

Signature



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n) NOTICES:

Any Notice to be given under the Contract shall be sent to the Owner or the Contractor, as the case may be, at the address below:

Owner:

Assam Power Generation Corporation Limited,
Bijulee Bhawan, Paltanbazar
Guwahati - 781001

Contractor

Bharat Heavy Electricals Limited
BHEL House, Siri Fort
Power Sector (Marketing)
New Delhi - 110049

o) No amendment or modification or change or deletion to this Contract shall be effective, unless evidenced in writing and duly signed by the authorized representatives respectively of the Owner and the Contractor.

p) This Agreement or Contract is executed in counter-parts, each of which shall be deemed to be original and retained by each of the Parties but together they shall constitute one and the same Agreement.

IN WITNESS WHEREOF the Owner and the Contractor have caused this Agreement to be duly executed by their duly authorized representatives as of the day, month and year herein above written

For and on behalf of
Assam Power Generation Corpn. Limited

By [Signature]

Name: Arjun Kumar Das

Title: **Chief General Manager (Gen.)**
Assam Power Generation Corpn. Ltd.
Bijulee Bhawan, 3rd Floor
Paltan Bazar, Guwahati - 1

WITNESSES:

1. Mukut Das

Name: MUKUT DAS

Senior Manager (Tech.)
O/o the M.D., Assam Power Generation Corpn. Ltd.
Bijulee Bhawan, Guwahati-1



For and on behalf of
BHARAT HEAVY ELECTRICALS LIMITED

By [Signature]

Name: **T. K. DAS**
Additional General Manager (Mktg.)
BHEL, Power Sector - Marketing
New Delhi

Title: _____

1. T. Kumar

Name: TRIPURARI KUMAR

Title: ENGINEER, PS-MARKETING
BHEL, NEW DELHI



007

भारतीय गैर न्यायिक

एक सौ रुपये

Rs. 100

रु. 100



सत्यमेव जयते

ONE
HUNDRED RUPEES

भारत INDIA
INDIA NON JUDICIAL

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A 819028

SERVICES CONTRACT

;(Contract No APGCL/ CGM (G)/ NRPP/ Main Plant/ BHEL/ Contract/ 53 Dt. 15-09-09)

This agreement (the "Cover Agreement") is made this 15th (day) of September Two Thousand Nine by and between Assam Power Generation Company Limited, having its registered office at Assam Power Generation Corporation Ltd, Bijulee Bhawan, Paltanbazar Guwahati - 781001 and (hereinafter referred as a "Owner" or "Purchaser" or APGCL or Company or First Party which expression shall include its administrators, successors, executors and assigns thereof) of the one part

AND

M/s Bharat Heavy Electricals Limited ("BHEL"), a company registered under the Company's Act, 1956 having its registered office at BHEL House, Siri Fort, New Delhi-110 049 (hereinafter referred as a "Contractor" or "BHEL" which expression shall include its successors and permitted assigns thereof) on the other part APGCL and BHEL shall each individually be referred to as a "Party" and collectively as the "Parties"

WHEREAS APGCL is desirous of setting up its Gas Based Combined Cycle Power Plant Phase-I at Namrup Thermal power Station (NTPS), Dibrugarh District, Assam, with gross capacity of 100 MW and has invited bids for civil works; port handling, and port charges for the imported goods, further loading, inland transportation for delivery at Site, inland transit insurance, unloading,



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Page 1 of 6

storage, handling at site of all goods to be used for the Project; installation; insurance covers other than inland transit insurance; testing, commissioning and conducting guarantee tests in respect of the facility and all other services specified in the Contract (together the "Services")

AND WHEREAS the Company had invited a Tender enquiry vide their Tender their Tender Specification No. K7205-SPC-001 for the provision of the Services.

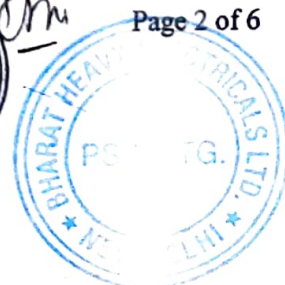
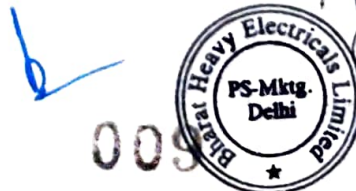
AND WHEREAS the Contractor represents that it has expertise and technical know-how in respect of the said Services and had submitted its offer for 100 MW (hereafter called the "Project") in response to the above said Tender enquiry of the Company vide the Contractor's offer No. MS-1-07-E-0040 dated 15.03.08.

AND WHEREAS pursuant to the above and the discussions conducted with the Contractor, the Company has awarded to the Contractor the Contract for the provision of the Services, by its LOI No. APGCL/CGM (G)/NRPP/EPC/224 dated 31.12.08 and the Effective Date of commencement of this Contract and on the terms and conditions as agreed to by the two parties is the date of release of full initial advance, which is 09.02.2009.

NOW THIS AGREEMENT WITNESSETH AS FOLLOWS:

- a) APGCL agreed to sign this contract agreement after mutual consent with BHEL that BHEL will submit the tentative monthly billing schedule/ cash flow interlinked with PERT Network by 30th October 2009 and APGCL will approve the same within 2 (two) months from the date of submission. This will form a part of the contract.
- b) Except for words and expressions specifically defined in this Cover Agreement, words and expression used herein shall have the same meaning as are respectively assigned to them in the Special Conditions of Contract and the General Conditions of Contract.
- c) The following documents annexed herewith shall be taken as mutually explanatory of one another and shall be deemed to form and be read and construed as integral parts of this Contract:

Book I	The Contract Agreement . Acceptance of LOI and copy of LOI
Book II	Post Bid Correspondence between BHEL and APGCL
	Post Bid MOM
Book III	BHEL's OFFER -
	Envelope-I (Bid Security)
	Envelope-II A (Covering Letter, Qualification Data, and Techno-Commercial Schedules)
Book IV	BHEL's OFFER -
	Envelope-II B (Technical Write-Ups, Technical Data Sheet and Drawings)
	Envelope—III(Price Proposal)
Book V	APGCL SPECIFICATION
	Amendment Issued
	Volume-I (Contract Conditions)



		Volume-II(General and Mechanical)
Book VI	APGCL SPECIFICATION	
		Volume-III (Electrical, Instrumentation & Control)
		Volume-IV (Civil Structural and Architectural)
Book VII	APGCL SPECIFICATION	
		Volume-V (Technical Schedules and Drawings)
		Volume-VI (Price Schedule)

In case of any discrepancy, conflict or dispute between the documents comprising the Contract, they shall be referred to the documents in order of priority as cited below::

- i). This Cover Agreement
 - ii) Letter of Intent dated 31.12.2008 (LOI)
 - iii) Revised price proposal
 - iv) Post bid minutes of meeting along with relevant correspondences till signing of the contract.
 - v) BHEL techno-commercial offer comprising Envelope-I (Bid Security) Envelope-II A (Covering Letter, Qualification Data, and Techno-Commercial Schedules) Envelope-II B (Technical Write-Ups, Technical Data Sheet and Drawings) and original price proposal submitted as part of BHEL's Offer
 - vi) APGCL specifications, Volume I — VI as set out in Books V to VII.
- d) The Contract constitutes the entire agreement as stipulated above in clause (c) between the Company and the Contractor, with respect to the Services and supersedes all communication, negotiations and Agreement (whether written or oral) of the Parties with respect thereto made prior to the date of Agreement.
- e) The Contractor hereby covenants with Company to perform all Services in conformity in all respect with provisions of the Contract and in consideration of the provision of the Services by the Contractor, the Company hereby covenants to pay the amounts at the times and in the manner described hereinafter.



f) **SERVICES PRICE:**

The break-up of the Services Price for the Services covered under this Contract shall be as under

Sl. No.	Item Description	Price Rupees in Crores
1	Erection & Commissioning including service tax @12.36 %	44.00
2	Civil works including service tax @ 4.12 % on composite basis	114.50
3	Freight Charges for Main Equipments	5.80
4	Total Prices inclusive of Service tax	164.30 (Rs. One Hundred sixty four crores and thirty lakhs only)

g) **COMPLETION SCHEDULE:**

The project completion schedule shall be thirty-five (35) months from 09.02.09

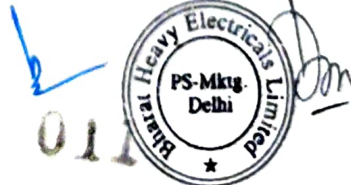
h) **TERMS OF PAYMENT:**

I) **For Civil Works and Erection ,Testing and Commissioning**

Nature of Payment	Percentage of Service Price	Conditions to be fulfilled
Civil Works and Erection/ testing/Commissioning		
i) Initial advance	5%	As laid down in clause no. 8.3.2 of Tender Specification Vol - I Section - 3
ii) Prorata payment against progress made	80%	Progressive payments as per agreed PERT network and interlinked monthly billing schedule / cash flow certified by APGCL.
iii) On completion of Reliability run and achieving commercial operation.	5%	Certified by the APGCL
iv) Successful demonstration of performance and guaranteed parameters in accordance with the Contract requirements and taking over.	7.5%	Certified by the APGCL
v) Taking over of the complete Plant and submission of "As-built" drawings.	2.5%	On completion of total Work as per Contract.

II) **For Transportation of Equipments:**

Nature of Payment	Percentage of Service Price	Conditions to be fulfilled
On receipt of Material at Site	100%	Certified by the APGCL



i) MODE OF PAYMENT:

All payments except advance payment and last payment shall be made through irrevocable letter of Credit to be opened by Owner.

j) ZERO DATE OF CONTRACT:

The zero date of the contract shall be reckoned from 09-02-2009.

k) WARRANTY PERIOD:

The Warranty shall be for a period of twelve (12) calendar months commencing from the date of completion of reliability run of Combined Cycle Power Plant i.e as per tender specification and subsequent MOM.

l) LIQUIDATED DAMAGES:

The Liquidated Damages on account of delay in execution and non fulfillment of performance guarantee shall be as per Tender Specification and subsequent MOM.

m) LAWS COVERING THE CONTRACT:

This Contract shall be in all respect be construed in accordance with the Indian laws in force from time to time.

The governing language of the Contract shall be English.

n) NOTICES:

Any Notice to be given under the Contract shall be sent to the Owner or the Contractor, as the case may be, at the address below:

Owner:
Assam Power Generation Corpn Limited,
Bijulee Bhawan, Paltanbazar
Guwahati - 781001

Contractor:
Bharat Heavy Electricals Limited.
Power Sector (Marketing)
BHEL House, Sin Fort,
New Delhi — 110049

- o) No amendment or modification or change or deletion to this Contract shall be effective, unless evidenced in writing and duly signed by the authorized representatives respectively of the Owner and the Contractor.
- p) This Agreement or Contract is executed in counter-parts, each of which shall be deemed to be original and retained by each of the Parties but together they shall constitute one and the same Agreement.



012



IN WITNESS WHEREOF the Owner and the Contractor have caused this Agreement to be duly executed by their duly authorized representatives as of the day, month and year herein above written.

For and on behalf of
Assam Power Generation Corpn. Limited

By

Name: Arjun Kumar Das

Title: Chief General Manager (Gen.)
Assam Power Generation Corpn. Ltd.
Bijoo Bhawan, 3rd Floor
Paltan Bazar, Guwahati -1

WITNESSES:

1.

Name: T. DAS

Title: Senior Manager (Tech.)

Offo the M.D., Assam Power Generation Corpn. Ltd.
Bijoo Bhawan, Guwahati-1

Senior Manager (Tech.)
Offo the M.D., Assam Power Generation Corpn. Ltd.
Bijoo Bhawan, Guwahati-1



For and on behalf of
BHARAT HEAVY ELECTRICALS LIMITED

By

Name: T. K. DAS
Additional General Manager (Mktg.)
BHEL, Power Sector - Marketing
New Delhi

Title:

1.

Name: T. K. DAS

Title: Additional General Manager (Mktg.)
BHEL, Power Sector - Marketing
New Delhi





013



BHARAT HEAVY ELECTRICALS LTD.

Power Sector - Marketing
Asian Games Village, NEW DELHI - 110 049, INDIA

Registered Office: BHEL HOUSE, SRI PORT, NEW DELHI-110049.
TEL (91) (11) 2 6001191
FAX (91) (11) 2 6001172, 26493661

Ref No. MS-1-07-0040

Dated :06.01.2009

To,
Chief General Manager
Assam Power Generation Company Ltd.
Vidyut Bhawan, Palton Bazar
Gowahati.

Sub : ICB for 100 MW Namrup Replacement Power Project (Phase-1)
by APGCL - Specification No. K7206-SPC-001

Ref: APGCL's Letter of Intent No APGCLCGM(G)/NRPP/EPC/224
dated 31.12.2008

Dear Sir,

This has reference to our proposal No. MS-1-07-E-0040 dated 15.03.08, subsequent correspondence between APGCL and BHEL and Letter of Intent issued by APGCL as mentioned under reference above. We are pleased to confirm our acceptance of letter of Intent issued vide your letter under reference subject to the following :

- 1) APGCL to release the advance payment of 5% of contract price for Supply and Services against submission of Bank Guarantee for Contract Performance within 7 days. This will enable us to start zero date of contract and commission the project within contractual schedule.
- 2) PERT Network will be submitted within 15 days after receipt of initial advance.
- 3) Monthly billing schedule shall be submitted to APGCL within one month from receipt of initial advance for their approval.

After hearing from you, we will submit the Bank Guarantee and Invoices towards advances for Supply and Services.

Thanking you and assuring you our best attention always.

Yours faithfully

(T.C. Das)

Addl. General Manager (Mktg)

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ASSAM POWER GENERATION CORPORATION LTD.

Regd. Office: Bijulee Bhawan, 3rd floor, Paltanbazar, Guwahati-781 001, Assam
Tele-Fax: 0361-2739502. E-mail: apgc@nrpp.co.uk

A.C. Bhuyan
Managing Director

No. APGCL/CGM (G)/NRPP/EPC/224

Dated 31st Dec'2008.

✓ To.

M/S Bharat Heavy Electricals Limited.
BHEL House
Siri Fprt
New Delhi - 110049

Faxno.011-26001172 /2649356

ATTN: Mr. T. K. Das, AGM (M/kg)

Subject: Letter of Intent (LOI) for the award of contract for Single point responsibility turnkey contract for Supplies including design, engineering, procurement, manufacture, fabrication, shop inspection & testing, packing, transportation & insurance, Erection, testing & commissioning including PG tests of the 100 MW Gas fired Combined Cycle Plant, Gas conditioning system along with Gas booster Compressors, 220kV Switchyard, Raw Water System, Water treatment Plant & Cooling System and other system / facilities required for Combined Cycle Power Plant, all associated Civil & Structural works, Electrical distribution, fire protection, Complete mechanical, electrical, instrumentation and civil works, putting into operation and establishing the successful performance during the PG tests of the project including all other incidental services required for the satisfactory performance of the project.

REF:

1. NIT No. APGCL/CGM (G)/NRPP/EPC/ Main Plant' Tender :1 dt 21-09-07
2. NIT Specification No K7205-SPC-001, Volume 1 to 6 and Addendum -1 to EPC Specification No K7205-SPC-001 dated 07 01.2008
3. BHEL original offer ref no. MS-1-07-E-0040 dated 15.03.2008
4. MOM for Post Bid discussion at APGCL, Guwahati on 22nd & 23rd May 2008
5. APGCL letter dated 29.05.2008
6. BHEL e-mail dated 11.06.2008 forwarding pending reply against Bid clarification meeting.
7. DCPI e-mail reference K7205/039 dated 10.06.2008 requesting BHEL for furnishing balance reply for Bid clarification meeting.
8. BHEL e-mail dated 17.06.08 forwarding their reply pending technical & commercial issues vide letter no. MS-1-07-E-0040 dated 17 06 2008

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9. BHEL letter ref. no. MS-1-07-E-0040 dated 23.06.2008 for revised price adjustment based on previous MOM & correspondence.
10. APGCL letter APGCL/CGM (G)/NRPP/EPC/Main Plant/Tender/1265 dated 17.07.2008
11. BHEL letter ref. no. MS-1-07-E-0040 dated 21.07.2008
12. APGCL letter no. APGCL/CGM (G)/NRPP/EPC/Main Plant/Tender dated 04.09.2008 informing some changes in the requirement of the specification and requesting for submission of final prices
13. BHEL Letter ref no. MS-1-07-E-0040 dated 29.09.2008 forwarded their revised prices.
14. APGCL letter ref no. APGCL/CGM (G)/NRPP/EPC/Main Plant/Tender dated 21.10.2008
15. MOM with BHEL at DCPL, Kolkata dated 03.11.2008
16. APGCL letter no. APGCL/CGM (G)/NRPP/EPC/Main Plant/Tender dated 14.11.2008 regarding Stack height
17. APGCL letter No. APGCL/CGM(G)/NRPP/EPC/Main Plant/Tender dated 08.11.2008
18. BHEL letter ref. no. MS-1-07-0040 dated 18.11.2008 indicating reduction of price 10.1 Crores due to some plant equipment optimization
19. APGCL letter no. APGCL/CGM (G)/NRPP/EPC/Main Plant/Tender dated 29.11.2008 regarding Extension of validity of offer
20. Record Notes of Discussion between APGCL & BHEL at BHEL office dated 24.12.2008 indicating final prices of the project

Dear Sirs,

With reference to the above, We (Assam Power Generation Corporation Limited) are pleased to issue this Letter of Intent (LOI) towards award of contract for above subject work with you for 1x100MW Combined Cycle Power Plant for Namrup Replacement Power Project (Phase-I) at Namrup thermal Power Station, Dibrugarh District, Assam.

The total contract price for carrying out the scope of work after discount is as under:

Sl. No.	Description	Price Rupees in Crores
1	Supply ex-works including Excise duty @10%, Education Cess @ 3% and CST @ 2%	355.9
2.	Freight Charges	5.8
3	Erection & Commissioning including service tax @ 12.36%	44.0
4.	Civil work including service tax @ 4.12% on composite basis	114.5
5.	Mandatory spares including freight charges	44.4
	TOTAL	564.6 (Rs. Five hundred sixty-four Crores and sixty lakhs only)



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No custom duty on CIF portion is applicable because of Deemed Export benefit.

The above prices are firm till execution of project.

The terms of payment are as per NIT document and other applicable MOM & correspondences

Project Completion Schedule shall be thirty-five (35) months from the date of issue of LOI

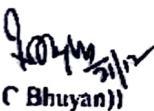
This Letter of Intent is not a binding obligation on APGCL and APGCL is not liable to compensate M/S BHEL, if the contract is not entered as said above.

You are requested to indicate your acceptance of this Letter of Intent by affixing Signature of your duly Authorized representative on a copy of this letter and forward the same to us (APGCL) immediately

You are also requested to depute your representative to finalize the contract agreement

Thanking You,

Yours faithfully,



(A C Bhuyan)

(Managing Director)

ASSAM POWER GENERATION CORPORATION LTD

Guwahati, Assam

C C

- 1 The PS to the Chairman for information of the chairman. ASEB, Bijulee Bhawan, Guwahati-1
- 2 The Chief Engineer (Gen), APGCL, Bijulee Bhawan, Guwahati-1.
- 3 The Chief General Manager (F&A), Bijulee Bhawan, Guwahati-1. This has reference of Board's resolution no 09 Dt 29-12-2008.
- 4 The Dy. General Manager (F&A), Bijulee Bhawan, Guwahati-1
- 5 The General Manager, NTPS-786622, Namrup
- 6 M/s DCPL., 24B Park Street, Kolkata-700016



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**Annexure 4 – Copy of relevant excerpts from
CERC order no. 15 of 2014 dated 05.02.2016**

**CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI**

Petition No. 15/MP/2014

Coram:

Shri Gireesh B. Pradhan, Chairperson

Shri A.K. Singhal, Member

Shri A.S. Bakshi, Member

Date of Hearing: 30.9.2014

Date of Order 05.2.2016

In the matter of

Relaxation of Heat Rate Norms of Assam Gas Based Power Station (AGBPP) and Agartala Gas Turbine Power Station (AGTPP) of NEEPCO as per provisions of Regulation 44 (Power to Relax) of the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2009.

And

In the matter of

North Eastern Electric Power Corporation Limited
Brookland Compound, Lower New Colony,
Shillong-793 003
Meghalaya

....Petitioner

Vs

1. Assam Power Distribution Company Ltd.
Bijulee Bhawan, Paltan Bazar,
Guwahati – 781001
2. Meghalaya Energy Corporation Ltd.
Short Round Road, Lumjingshai,
Shillong – 793001
3. Tripura State Electricity Corporation Ltd
Agartala Banamalipur,
Agartala – 799001
4. Power and Electricity Department
Government of Mizoram,
Power House Complex,
Electric Veng, Aizawl – 796001
5. Electricity Department, Government of Manipur
Imphal Government of Manipur Keishampet,

determined by the Commission in terms of Section 79(1)(a) read with Section 62(1)(a) of the Electricity Act, 2003.

3. On 26.3.2009, the Commission notified the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2009 ('the 2009 Tariff Regulations') applicable for the period 2009-14 and in terms of Regulation 26(ii)(e) of the 2009 Tariff Regulations, the normative Gross Station Heat Rate (GSHR) in respect of the generating stations are as under :

Name of the generating station	Heat Rate (kCal/kWh)	
	Combined Cycle	Open Cycle
Assam GPS	2400	3440
Agartala GPS	-	3500

4. Based on the 2009 Tariff Regulations, the Commission vide orders dated 6.9.2011 and 11.3.2011 in Petition Nos. 295/2009 and 299/2009 respectively approved the tariff for the generating stations considering the following Gross Station Heat Rate norms:

Name of the generating station	Heat Rate (kCal/kWh)	
	Combined Cycle	Open Cycle
Assam GPS	2400	3440
Agartala GPS	-	3500

5. Subsequently, based on the petition filed by the petitioner to revise the heat rate norms specified in 2009 Tariff Regulations, the Commission vide order dated 7.6.2012 in Petition No. 133/MP/2011 revised the Heat Rate norms with observation that GSHR specified in 2009 Tariff Regulations for generating stations were based on Net Calorific Value of fuel furnished by the petitioner inadvertently during the finalisation of 2009 Tariff Regulations and same is required to be recomputed and reviewed on the Gross Calorific Value of fuel. Relevant portion of said order dated 7.6.2012 is extracted as under:

“19..On analysis, it is noticed that the actual energy rate recovered during the period 2004-05 to 2007-08 was lower than the energy rate recoverable based on actual

consumption of fuel and the actual price of fuel. Thus, it is evident that the petitioner had suffered due to higher actual Heat Rate in comparison to the Heat Rate norms specified under the 2004 Tariff Regulations, on account of mistake attributable to it. Based on the above discussions, and facts on record, we are of the view that the mistake in the data pertaining to Gross Station Heat Rate in respect of this generating station submitted by the petitioner during the finalization of operational norms for 2009-14 which had resulted in the notification of the 2009 Tariff Regulations, appears to be genuine for which necessary correction is required to be undertaken, in the interest of justice. Accordingly, in exercise of 'Power to relax' under Regulation 44 of the 2009 Tariff Regulations, we relax the normative Gross Station Heat Rate in respect of AGBPP (combined cycle mode) specified under Regulation 26(e)(ii) of the 2009 tariff Regulations. The actual average Heat Rate on NCV of fuel for the period 2003-04 to 2007-08 for the generating station is 2369 kCal/kWh, based on which the normative Heat Rate of 2400 kCal/kWh has been specified under Regulation 26(e)(ii) of the 2009 Tariff Regulations. After conversion of the Heat Rate based on NCV of fuel to GCV of fuel, the said Heat Rate (combined cycle) for the generating station would be 2511 kCal/kWh (2369x1.06). It is noticed that the actual gross Heat Rate of GT machines of similar frame size, of Indraprastha Power Generation Company Limited (IPGCL), New Delhi is found to be in the range of 2504 kCal/kWh and 2557 kCal/kWh during 2007-08 to 2010-11. In terms of the above discussions, the normative Gross Heat Rate of 2400 kCal/kWh specified in respect of AGBPP (combined cycle mode) under Regulation 26(e)(ii) of the 2009 Tariff Regulations, is revised to 2500 kCal/kWh.

21. Based on the above decision, the prayer of the petitioner in paragraph 1(a) is disposed of by revision of Heat Rate norms for the generating stations as under:

Name of the generating station	Heat Rate (kCal/kWh)	
	Combined Cycle	Open Cycle
Assam GPS	2400	3440
Agartala GPS	-	3700

6. Gist of the submission of the petitioner in the present petition is as under:

(a) The fuel gas to Assam Gas Based Power Project (AGBPP) and Agartala Gas Turbine Power Plant (AGTPP) is being supplied by M/s Oil India Ltd and M/s GAIL respectively. The landed cost of fuel gas comprising price of fuel gas and transportation charge is recoverable from the beneficiaries based on the normative Gross Station Heat Rate (GSHR) and the normative Station Auxiliary Consumption (SAC) as specified under the 2009 Tariff Regulations.

(b) Subsequently, the petitioner observed that there was an inadvertent problem in the operational data, more specifically in the normative Gross Station Heat Rates prescribed by the Commission in the 2009 Tariff

**Annexure 5 – Ministry of Power document of
'Normalization Document and Monitoring &
Verification Guidelines' for Thermal power
plants**



NORMALIZATION DOCUMENT AND MONITORING & VERIFICATION GUIDELINES

Thermal Power Plant Sector



MINISTRY OF POWER
GOVERNMENT OF INDIA



6. Formula for Target Setting

Section 6.01 Formula for target setting for Coal based Thermal Power Plant

(a) Design Net Heat Rate

Station Installed Capacity (MW)

$$= [U\#1 \text{ Capacity (MW)} + U\#2 \text{ Capacity (MW)} + \dots \dots \dots]$$

Station Design Boiler Efficiency

$$= ([U\#1 \text{ Installed Capacity (MW)} \times U\#1 \text{ Boiler Efficiency (\%)}] + [U\#2 \text{ Installed Capacity (MW)} \times U\#2 \text{ Boiler Efficiency (\%)}]) / \text{Station Installed Capacity (MW)}$$

Station DGHR(kcal/kWh)

$$= ([U\#1 \text{ DGHR} \times U\#1 \text{ Installed Capacity (MW)}] + [U\#2 \text{ DGHR} \times U\#2 \text{ Installed Capacity (MW)}] + \dots \dots \dots) / \text{Station Installed Capacity (MW)}$$

$$\text{Station Design Net Heat Rate (kcal/kWh)} = \frac{\text{Station DGHR (kcal/kWh)}}{(1 - \% \text{Operating APC})}$$

Where

DGHR = Design Gross Heat Rate (kcal/kWh)

THR = Turbine Heat Rate (kcal/kWh)

DNHR = Design Net Heat Rate (kcal/kWh)

APC = Auxiliary Power Consumption (%)
[Operating APC in Baseline Year]

(b) Operating Net Heat Rate

Station Operating Load (MW)

$$= U\#1 \text{ Operating Load (MW)} + U\#2 \text{ Operating Load (MW)} + \dots \dots$$

Operating Load (MW)

$$= \text{Unit Gross Generation (MWh)} / \text{Unit Operating hours}$$

$$\text{Efficiency (\%)} + \dots \dots \dots] / \text{Station Installed Capacity (MW)}$$

Station THR (kcal/kWh)

$$= ([U\#1 \text{ THR} \times U\#1 \text{ Installed Capacity (MW)}] + [U\#2 \text{ THR} \times U\#2 \text{ Installed Capacity (MW)}] + \dots \dots \dots) / \text{Station Installed Capacity (MW)}$$

Unit DGHR (kcal/kWh)

$$= \text{Unit THR (kcal/kWh)} / \text{Boiler Efficiency (\%)}$$

Station Loading Factor (%)

$$= ([U\#1 \text{ loading factor (\%)} \times U\#1 \text{ Gross Generation (MU)}] + [U\#2 \text{ loading factor (\%)} \times U\#2 \text{ Gross Generation (MU)}] + \dots \dots \dots) / \text{Station Gross Generation (MU)}$$

Station Gross Generation(MU)

$$= (U\#1 \text{ Gross Generation (MU)} + U\#2 \text{ Gross Generation (MU)} + \dots \dots \dots)$$

Station Net Generation (MU)

$$= \text{Station Gross Generation (MU)} \times [1 - \% \text{Operating APC}] / 100$$

Station OGHR (kcal/kWh)

$$= ([U\#1 \text{ OGHR (kcal/kWh)} \times U\#1 \text{ Gross Generation (MU)}] + [U\#2 \text{ OGHR (kcal/kWh)} \times U\#2 \text{ Gross Generation (MU)}] + \dots \dots \dots) / \text{Station Gross Generation (MU)}$$

$$\text{Station ONHR (kcal/kWh)} = \frac{\text{Station ONHR (kcal/kWh)}}{1 - \% \text{Operating APC}}$$



Where

OGHR = Operating Gross Heat Rate

ONHR = Operating Net Heat Rate

APC=Auxiliary Power Consumption [Operating APC in Baseline Year]

(c) Heat Rate Reduction Target

The target in Thermal Power Sector under PAT Scheme is set by taking the deviation of NHR of Baseline year and design NHR. Based on the deviation percentage (to design), the target values for Heat Rate reduction are set in the slab.

Let the deviation percentage be “X”, then

If X is <= 5(five), then the HR reduction target is 10% of the deviation.

If X is >5, but <=10, then the HR reduction target is 17% of the deviation.

If X is >10, but <=20, then the HR reduction target is 21% of the deviation.

If X is >20, then the HR reduction target is 24% of the deviation.

(d) Coal based thermal Power Plant Station Target Net Operating Heat Rate without Normalization

The Station Net Operating Heat Rate without Normalization is the ONHR of baseline year minus the heat rate reduction target given to it.

Target Station ONHR (kcal/kWh)

= Station Operating NHR for BY- Heat Rate Reduction Target

Where

OGHR = Operating Gross Heat Rate

ONHR = Operating Net Heat Rate

APC= Auxiliary Power Consumption

This Heat Rate has to be attained by the Station. If the station fails to meet its target, i.e., operates

on a Heat Rate higher than the target, penalty will be levied on the Station. On the other hand, if the station over achieves its target, i.e., operates at a Heat Rate lesser than the target, it will be granted E-Certs, which can be traded in open market.

Section 6.02 Formula for target setting for Gas based Thermal Power Plant

(a) Design Parameters

Station Installed Capacity (MW)

= [U#1 Capacity (MW) + U#2 Capacity (MW) +]

Station Design Module Efficiency

=([U#1 Installed Capacity (MW) X U#1 Module Efficiency} + {U# 2 Installed Capacity (MW) XU# 2 Module Efficiency} +... ..])/(Station Installed Capacity (MW))

Station Module Heat Rate (Gross Heat Rate) (kcal/kWh)

=([U#1 THR X U#1 Installed Capacity (MW)} + {U#2 THR X U#2 Installed Capacity (MW)}+...])/(Station Installed Capacity (MW))

Station Design Net Heat Rate (kcal/kWh)

= $\frac{\text{Station DGHR (kcal/kWh)}}{(1-\% \text{Operating APC})}$

(b) Operating Parameters

Station Operating Load (MW)=U#1 Operating Load (MW)+U# 2 Operating Load (MW)+...

Station Gross Generation(MU)=

(U#1 Gross Generation (MU)+U#2 Gross Generation (MU) + ...)

Station OGHR (kcal/kWh)

=([U#1 OGHR (kcal/kWh) X U#1 Gross Generation (MU)} +{U#2 OGHR (kcal/kWh) X U#2 Gross Generation (MU) }+... ..]

**Annexure 6 – Performance Guarantee Test
Report of NRPP**

Form No:



BHARAT HEAVY ELECTRICALS LIMITED
PROJECT ENGINEERING & SYSTEMS DIVISION
HYDERABAD

PEMC-07561

Rev. No. 00

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PERFORMANCE GUARANTEE TEST REPORT
FOR
1X100MW NAMRUP REPLACEMENT POWER PROJECT,
NAMRUP, ASSAM

PREPARED BY

PROJECT ENGINEERING & SYSTEMS DIVISION
BHARAT HEAVY ELECTRICALS LIMITED
RAMCHANDRAPURAM, HYDERABAD-502032

Rev. no.	Prepared	Checked	Approved	Date
00	Chintan Gajera	S.V.N.Raghavendra	K.Srinivas	07.09.2021

Form No:



BHARAT HEAVY ELECTRICALS LIMITED
PROJECT ENGINEERING & SYSTEMS DIVISION
Hyderabad
PERFORMANCE GUARANTEE TEST REPORT
FOR
1x100MW NAMRUP REPLACEMENT POWER PROJECT,
NAMRUP, ASSAM

PEMC-07561

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5.0	NOISE LEVEL CALCULATION
6.0	LOG SHEETS FOR COMBINED CYCLE
7.0	CALIBRATION CERTIFICATES / TEST CERTIFICATES
8.0	CORRECTION CURVES
9.0	GAS FUEL ANALYSIS REPORT
10.0	MINUTES OF MEETING

Form No:	 PE&SD	BHARAT HEAVY ELECTRICALS LIMITED PROJECT ENGINEERING & SYSTEMS DIVISION Hyderabad PERFORMANCE GUARANTEE TEST REPORT FOR 1x100MW NAMRUP REPLACEMENT POWER PROJECT, NAMRUP, ASSAM	PEMC-07561
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1.0 INTRODUCTION

Form No:	 PE&SD	BHARAT HEAVY ELECTRICALS LIMITED PROJECT ENGINEERING & SYSTEMS DIVISION Hyderabad PERFORMANCE GUARANTEE TEST REPORT FOR 1x100MW NAMRUP REPLACEMENT POWER PROJECT, NAMRUP, ASSAM	PEMC-07561
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1.0 INTRODUCTION

As per the contract with Assam Power Generation Corporation Ltd (APGCL), BHEL has supplied and commissioned Combined Cycle Power Project at NAMRUP, Assam, India.

Performance Guarantee (PG) test was performed for the one module of 1 X 100 MW APGCL combined cycle plant on 5th Sep 2021 in order to demonstrate the performance of the module (Gas Turbine, Heat Recovery Steam Generator and Steam Turbine together) with Gas Turbine running on Natural Gas.

The test had been carried out to evaluate the Gross output at 100% Combined Cycle Base load and Gross Heat rate at 100% & 75% Combined Cycle load.

The site results are corrected for the site conditions deviating from design conditions to compare the obtained results with the guaranteed values.

This PG test report is for 1 x Fr-6FA+e GTG, 1 no of unfired Triple pressure HRSG, 1 no of matching STG and other associated auxiliaries. Description of the procedure adopted, instruments used, calculation, Test results and conclusions are given in the following chapters of this report.

1.1 PROJECT DESCRIPTION

1.1.1 The Combined Cycle Power Plant consists

- One no. Fr-6FA+e Gas Turbine
- One no. Unfired Triple Pressure HRSG
- One no. Steam Turbine
- Associated auxiliaries.

1.2 TEST OBJECTIVE

- 1.2.1 The objective of the performance test is to demonstrate and document the Combined cycle performance of the plant at the rated site conditions as per guaranteed values agreed between APGCL and BHEL. Following are demonstrated in the test.



- a) Gross Combined Cycle Power Output
- b) Gross Combined Cycle Heat Rate (Weighted of 100% & 75% Base load)
- c) Auxiliary Power Consumption for 100% base load operation.
- d) NOx Emissions
- e) Noise Level

1.3 SCHEME OF INSTRUMENTS

- 1.3.1 Calibrated RTDs, pressure transmitters, hygrometer were used to measure the temperature, pressure, relative humidity at various locations in the plant. Relevant certificates are attached with this report.
- 1.3.2 Calibrated power meters are used for measuring power output from GTG & STG.
- 1.3.3 Gas fuel flow readings were taken from Fuel flow meter located near GT inlet.
- 1.3.4 The Gas sample collected in presence of APGCL and BHEL.
- 1.3.5 The readings taken during the test are enclosed with this report.

1.4 ACTUAL TEST

- 1.4.1 Performance Guarantee test was conducted in line with ASME-PTC-46 for combined cycle as mutually agreed with customer.

Test time and duration was mutually agreed with customer as below

Sl. No	Test Description	Start time	End time
1	Combined Cycle PG Test – 100% base Load	09:40 Hrs of 05/09/21	10:40 Hrs of 05/09/21
2	Combined Cycle PG Test – 75% base Load	11:40 Hrs of 05/09/21	12:40 Hrs of 05/09/21

- 1.4.2 Representative of following parties were present for the performance guarantee test.

APGCL - APGCL, Namrup

BHEL - PE&SD Hyd, HPEP Hyd, HPBP Trichy, PSER & PSTS Noida

Form No:



PE&SD

BHARAT HEAVY ELECTRICALS LIMITED

PROJECT ENGINEERING & SYSTEMS DIVISION

Hyderabad

PERFORMANCE GUARANTEE TEST REPORT

FOR

**1x100MW NAMRUP REPLACEMENT POWER PROJECT,
NAMRUP, ASSAM****PEMC-07561**

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1.5 RESULTS AT GLANCE:**A. PLANT GUARANTEES**

Sl. No	Parameter	Guaranteed Value as per contract	Test result after correction	Remarks
1	Combined Cycle Gross Power Output at GT 100% based load at rated site ambient condition.	98400 kW	101142 kW	Plant is delivering better power output than guaranteed
2	Weighted Gross Plant Heat rate of GT 100% base load & GT 75% load at rated site ambient conditions (Weighted average gross heat rate of CCP = CCP Weighted Gross Heat Rate = $(4 \times HR_{100} + 3 \times HR_{75})/7$)	1705.8 Kcal/kWhr	1674.0 kCal/kWh	Plant is working at better Heat Rate output than guaranteed
3	Guaranteed CCP Auxiliary Power requirement at GT 100% base load at rated site ambient condition	6200 kW	4,753.14 kW	Plant is operating with lesser Aux. power consumption than guaranteed

Form No:



BHARAT HEAVY ELECTRICALS LIMITED
PROJECT ENGINEERING & SYSTEMS DIVISION
Hyderabad
PERFORMANCE GUARANTEE TEST REPORT
FOR
1x100MW NAMRUP REPLACEMENT POWER PROJECT,
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B. DEMONSTRATION TESTS


Sl. No	Parameter	Performance Value as per contract	Test result	Remarks
1	NOx Level	<50 ppmvd@15%O ₂	11.3 ppmvd@15%O ₂	Plant is operating at lesser NOx level than guaranteed

The test results of Combined Cycle Gross Power Output, Gross Heat Rate, Auxiliary Power Consumption and NOx level when corrected to guarantee conditions are better than the guaranteed values.

Thus, the performance guarantees have been successfully fulfilled.

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Form No:	 PE&SD	BHARAT HEAVY ELECTRICALS LIMITED PROJECT ENGINEERING & SYSTEMS DIVISION Hyderabad	PEMC-07561
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2.0 COMBINED CYCLE POWER OUTPUT AND HEAT RATE CALCULATIONS

Form No:

**BHARAT HEAVY ELECTRICALS LIMITED**

PROJECT ENGINEERING & SYSTEMS DIVISION

Hyderabad

PERFORMANCE GUARANTEE TEST REPORT

FOR

**1x100MW NAMRUP REPLACEMENT POWER PROJECT,
NAMRUP, ASSAM****PEMC-07561**

Rev. No. 00

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**2.0 COMBINED CYCLE GROSS POWER OUTPUT AND GROSS HEAT RATE
CALCULATIONS - FOR 100% CC LOAD****2.1 Guarantee Conditions**

Sl. No.	Parameter	Value
1	Combined Cycle Gross Power Output	98400 kW
2	Combined Cycle Gross Heat Rate (Weighted Average)	1705.8 Kcal/kWhr
3	Auxiliary Power requirement at 100% Base Load Operation	6200 kW
5	Ambient temperature	35 Deg C
6	Relative Humidity	60 %
7	Site ambient pressure	9986 mBar
8	Cooling water temperature	32 Deg C
9	Frequency	50 Hz
10	Fired Hours	0 Hrs
11	Power Factor	0.8

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**2.2 Average values of actual site conditions**

- Test date : 05-09-2021
- Test Duration : 09.40 to 10.40 Hrs
- Load Condition : 100% GT Base Load Operation

Sl. No.	Parameter	Value
1	Ambient temperature	34.44 Deg C
2	Relative Humidity	67 %
3	Site ambient pressure	996 mbar
4	Cooling water temperature	33.23 Deg C
5	Frequency	50.06 Hz
6	Fired Hours	3317 Hrs
7	Power Factor of GTG	0.99
8	Power Factor of STG	0.99
9	GT Generator Voltage	10.53 kV
10	STG Generator Voltage	10.62 kV

Note: All above values are average values collected during the PG Test. Please refer the enclosed signed log sheets.



2.3 Combined Cycle Gross Power Output calculations (at 100% GT Base Load)

Measured power of GTG at generator terminals = 65439 KW (Average value) After power factor correction.

Measured power of STG at generator terminals = 34704 KW (Average value) After power factor correction.

Correction Factors:

2.3.1 Correction due to Ambient temperature

- | | |
|--|-----------------------|
| (a) Average Measured Amb Temperature | - 34.44 Deg C |
| (b) Amb. Temperature at Guarantee Condition | - 35.0 Deg C |
| (c) Percentage of CC Gross Power Output at Guarantee | - 100 % |
| (d) Percentage of CC Gross Power output at actual Amb Temp – | 100.3 % |
| (e) Correction factor due to change in Ambient temperature | - $0.997 = (c) / (d)$ |

2.3.2 Correction due to Ambient pressure

- | | |
|---|-----------------------|
| (a) Average Measured Amb Pressure | - 996.0 mbar |
| (b) Amb Pressure at Guarantee Condition | - 998.6 mbar |
| (c) Percentage of CC Gross Power Output at Guarantee | - 100 % |
| (d) Percentage of CC Gross Power output at actual Amb. Pressure | - 99.6 % |
| (e) Correction factor due to change in Ambient Pressure | - $1.004 = (c) / (d)$ |

2.3.3 Correction due to Relative Humidity

- | | |
|--|-----------------------|
| (a) Average Measured Relative Humidity | - 67 % |
| (b) Relative Humidity at Guarantee Condition | - 60% |
| (c) Percentage of CC Gross Power Output at Guarantee | - 100 % |
| (d) Percentage of CC Gross Power output at Actual RH | - 100.0 % |
| (e) Correction factor due to change in Relative Humidity | - $1.000 = (c) / (d)$ |

2.3.4 Correction due to Frequency

- | | |
|---|-----------------------|
| (a) Average Measured Frequency | - 50.06 Hz |
| (b) Frequency at Guarantee Condition | - 50 Hz |
| (c) Percentage of CC Gross Power Output at Guarantee | - 100 % |
| (d) Percentage of CC Gross Power output at Actual Frequency | - 100.2 % |
| (e) Correction factor due to change in Frequency | - $0.998 = (c) / (d)$ |

**PERFORMANCE GUARANTEE TEST REPORT**

FOR

**1x100MW NAMRUP REPLACEMENT POWER PROJECT,
NAMRUP, ASSAM****COPYRIGHT AND CONFIDENTIAL**

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2.3.5 Correction due to Fired hours

- | | |
|---|--------------------|
| (a) Actual Fired Hours at the time of PG Test | - 3317 Hrs |
| (b) Fired hours at Guarantee condition | - 0 Hrs |
| (c) Percentage of CC Gross Power Output at Guarantee | - 100 % |
| (d) Percentage of CC Gross Power output at Actual Fired Hours | - 99.0 % |
| (e) Correction factor due to change in Fired Hours | - 1.01 = (c) / (d) |
- (Fired Hours Correction factor is considered for the maximum fired hours considered to draw the curve)

2.3.6 Correction due to Cooling water temperature

- | | |
|---|---------------------|
| (a) Average measured CW Temperature | - 33.23 Deg C |
| (b) CW Temperature at Guarantee condition | - 32 Deg C |
| (c) Percentage of CC Gross Power Output at Guarantee | - 100 % |
| (d) Percentage of CC Gross Power output at Actual CW Temp | - 99.9 % |
| (e) Correction factor due to change in CW temperature | - 1.001 = (c) / (d) |

2.3.7 Overall Correction

Gross Combined Cycle Power Output =

$$= 65439 + 34704 = 100143 \text{ KW}$$

- | | |
|--|---------|
| (a) Correction factor due to change in Ambient temperature | - 0.997 |
| (b) Correction factor due to change in Ambient Pressure | - 1.004 |
| (c) Correction factor due to change in Relative Humidity | - 1.000 |
| (d) Correction factor due to change in Frequency | - 0.998 |
| (e) Correction factor due to change in Fired Hours | - 1.01 |
| (f) Correction factor due to change in CW temperature | - 1.001 |

Corrected Combined Cycle Gross Power Output

$$= 100143 \times (a) \times (b) \times (c) \times (d) \times (e) \times (f)$$

$$= 100143 \times 0.997 \times 1.004 \times 1.000 \times 0.998 \times 1.01 \times 1.001$$

$$= 101142.9 \text{ kW}$$

Corrected Combined Cycle Gross Power Output at 100% Load = 101143 kW

Form No:

**BHARAT HEAVY ELECTRICALS LIMITED**

PROJECT ENGINEERING & SYSTEMS DIVISION

Hyderabad

PERFORMANCE GUARANTEE TEST REPORT

FOR

**1x100MW NAMRUP REPLACEMENT POWER PROJECT,
NAMRUP, ASSAM****PEMC-07561**

Rev. No. 00

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**2.4 Combined Cycle Gross Heat Rate calculations
(at 100% GT Base Load)**Measured Gas Flow to GT = 857.9 Am³/hr (Average value)Measured Gas Pressure to GT (P) = 29.99 kg/cm² (a) (Average value)
= 29.03 atm

Measured Gas Temperature to GT (T) = 95.98 Deg C (Average value)

Gas Molecular Weight (M) = 16.35 (As Gas Analysis Report dated 06.09.21, Gas
gravity * 28.97)

Gas Compressibility Factor (Z) = 0.9717 (As per AGA-8 1992 Calculation)

Ideal Gas Constant (R) = 0.082 L atm mol⁻¹ K⁻¹Gas Density = 0.6917 Kg/m³ (As Gas Analysis Report dated 06.09.21)Gas LHV = 8226.89 Kcal/m³ (As Gas Analysis Report dated 06.09.21)

Gas LHV = 8226.89 / 0.6917 = 11893.73 Kcal/Kg

Gas flow (Am³/Hr) x P (atm) x M

Measured Gas Flow to GT in Kg/Hr = -----

 $Z \times R \times (T+273.15)$

857.9 x 29.03 x 16.35

= ----- Kg/Hr

 $0.9717 \times 0.082 \times (95.98 + 273.15)$

Measured Gas Flow to GT = 13845 Kg/Hr

**Measured Gross Combined Cycle Heat Rate = (13845 x 11893.73) / 100143
= 1644.33 kCal/kWh**

**Correction Factors for Heat Rate:****2.1.1 Correction due to Ambient temperature**

- | | |
|--|----------------------|
| (a) Average Measured Amb Temperature | - 34.44 Deg C |
| (b) Amb Temperature at Guarantee Condition | - 35.0 Deg C |
| (c) Percentage of CC Gross Heat Rate at Guarantee | - 100 % |
| (d) Percentage of CC Gross Heat Rate at actual Amb Temp | - 100.02 % |
| (e) Correction factor due to change in Ambient temperature | - 0.9998 = (c) / (d) |

2.1.2 Correction due to Ambient pressure

- | | |
|---|----------------------|
| (a) Average Measured Amb Pressure | - 996.0 mbar |
| (b) Amb Pressure at Guarantee Condition | - 998.6 mbar |
| (c) Percentage of CC Gross Heat Rate at Guarantee | - 100 % |
| (d) Percentage of CC Gross Heat Rate at actual Amb Pressure | - 100.13 % |
| (e) Correction factor due to change in Ambient Pressure | - 0.9987 = (c) / (d) |

2.1.3 Correction due to Relative Humidity


- | | |
|--|----------------------|
| (a) Average Measured Relative Humidity | - 67 % |
| (b) Relative Humidity at Guarantee Condition | - 60% |
| (c) Percentage of CC Gross Heat Rate at Guarantee | - 100 % |
| (d) Percentage of CC Gross Heat Rate at actual RH | - 100.05 % |
| (e) Correction factor due to change in Relative Humidity | - 0.9995 = (c) / (d) |

2.1.4 Correction due to Frequency

- | | |
|--|----------------------|
| (a) Average Measured Frequency | - 50.06 Hz |
| (b) Frequency at Guarantee Condition | - 50 Hz |
| (c) Percentage of CC Gross Heat Rate at Guarantee | - 100 % |
| (d) Percentage of CC Gross Heat Rate at actual Frequency | - 100.02 % |
| (e) Correction factor due to change in Frequency | - 0.9998 = (c) / (d) |

2.1.5 Correction due to Fired Hours

- | | |
|--|----------------------|
| (a) Actual Fired Hours at the time of PG Test | - 3317 Hrs |
| (b) Fired hours at Guarantee condition | - 0 Hrs |
| (c) Percentage of CC Gross Heat Rate at Guarantee | - 100 % |
| (d) Percentage of CC Gross Heat Rate at actual Frequency | - 100.23 % |
| (e) Correction factor due to change in Fired Hours | - 0.9977 = (c) / (d) |
- (Fired Hours Correction factor is considered for the maximum fired hours considered to draw the curve)

Form No:	 PE&SD	BHARAT HEAVY ELECTRICALS LIMITED PROJECT ENGINEERING & SYSTEMS DIVISION Hyderabad	PEMC-07561
		PERFORMANCE GUARANTEE TEST REPORT FOR	Rev. No. 00
		1x100MW NAMRUP REPLACEMENT POWER PROJECT, NAMRUP, ASSAM	Page 15 of 170

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2.1.6 Correction due to Cooling water temperature

- (a) Average measured CW Temperature - 33.23 Deg C
- (b) CW Temperature at Guarantee condition - 32 Deg C
- (c) Percentage of CC Gross Heat Rate at Guarantee - 100 %
- (d) Percentage of CC Gross Heat Rate at actual Frequency - 100.14 %
- (e) Correction factor due to change in CW temperature - 0.9986

2.1.7 Overall Correction

- (a) Correction factor due to change in Ambient temperature - 0.9998
- (b) Correction factor due to change in Ambient Pressure - 0.9987
- (c) Correction factor due to change in Relative Humidity - 0.9995
- (d) Correction factor due to change in Frequency - 0.9998
- (e) Correction factor due to change in Fired Hours - 0.9977
- (f) Correction factor due to change in CW temperature - 0.9986

Corrected Combined Cycle Gross Heat rate Output = **1644.33** x (a) x (b) x (c) x (d) x (e) x (f)

Corrected Combined Cycle Gross Heat Rate = **1644.33** x 0.9998 x 0.9987 x 0.9995 x 0.9998
 x 0.9977 x 0.9986
 = 1634.6 kCal / kWh

Corrected Combined Cycle Gross Heat Rate (at 100% GT Base Load) = 1634.6 kCal / KWHr



3.0 COMBINED CYCLE GROSS POWER OUTPUT AND GROSS HEAT RATE CALCULATIONS FOR 75% GT BASE LOAD

3.1 Table of Average values of actual site conditions

- Test date : 05-09-2021
- Test Duration : 11.40 to 12.40 Hrs
- Load Condition : 75% GT Base Load Operation

Sl. No.	Parameter	Value
1	Ambient temperature	35.44 Deg C
2	Relative Humidity	62 %
3	Site ambient pressure	995.0 mbar
4	Cooling water temperature	33.1 Deg C
5	Frequency	50.04 Hz
6	Fired Hours	3319 Hrs
7	Power Factor of GTG	0.99
8	Power Factor of STG	0.99
9	GT Generator Voltage	10.55 kV
10	STG Generator Voltage	10.59 kV

Note: All above values are average values collected during the PG Test. Please refer the enclosed signed log sheets.



3.2 Combined Cycle Gross Power Output calculations (75% GT Base Load)

Measured power of GTG at generator terminals = 48275 KW (Average value) After power factor correction.

Measured power of STG at generator terminals = 28783 KW (Average value) After power factor correction.

Total Measured power from GTG & STG = 77058 KW (Average value) After power factor correction.

3.3 Combined cycle Gross Heat Rate calculations (75% GT Base Load)

Measured Gas Flow to GT = 697.1 Am³/hr (Average value)

Measured Gas Pressure to GT (P) = 30.02 kg/cm² (a) (Average value)
= 29.06 atm

Measured Gas Temperature to GT (T) = 96.45 Deg C (Average value)

Gas Molecular Weight (M) = 16.4028 (As Gas Analysis Report dated 06.09.21,
Gas gravity * 28.97)

Gas Compressibility Factor (Z) = 0.9714 (As per AGA-8 1992 Calculation)

Ideal Gas Constant (R) = 0.082 L atm mol⁻¹ K⁻¹

Gas Density = 0.6940 Kg/m³ (As Gas Analysis Report dated 06.09.21)

Gas LHV = 8226.56 Kcal/m³ (As Gas Analysis Report dated 06.09.21)

Gas LHV = 8226.56 / 0.6940 = 11853.83 Kcal/Kg

Gas flow (Am³/Hr) x P (atm) x M

Measured Gas Flow to GT in Kg/Hr = -----

$Z \times R \times (T+273.15)$

$697.1 \times 29.06 \times 16.4028$

= ----- Kg/Hr

$0.9714 \times 0.082 \times (96.45 + 273.15)$

Measured Gas Flow to GT = 11287 Kg/Hr

Measured Gross Combined Cycle Heat Rate = (11287 x 11853.83) / 77053

= 1736.3 kCal/kWh

**PERFORMANCE GUARANTEE TEST REPORT**

FOR

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3.3.1 Correction due to Ambient temperature

- | | |
|--|-----------------------|
| (f) Average Measured Amb Temperature | - 35.44 Deg C |
| (g) Amb Temperature at Guarantee Condition | - 35.0 Deg C |
| (h) Percentage of CC Gross Heat Rate at Guarantee | - 100 % |
| (i) Percentage of CC Gross Heat Rate at actual Amb Temp | - 99.975 % |
| (j) Correction factor due to change in Ambient temperature | - 1.00025 = (c) / (d) |

3.3.2 Correction due to Ambient pressure

- | | |
|---|----------------------|
| (f) Average Measured Amb Pressure | - 995.0 mbar |
| (g) Amb Pressure at Guarantee Condition | - 998.6 mbar |
| (h) Percentage of CC Gross Heat Rate at Guarantee | - 100 % |
| (i) Percentage of CC Gross Heat Rate at actual Amb Pressure | - 100.18 % |
| (j) Correction factor due to change in Ambient Pressure | - 0.9982 = (c) / (d) |

3.3.3 Correction due to Relative Humidity

- | | |
|--|----------------------|
| (f) Average Measured Relative Humidity | - 62 % |
| (g) Relative Humidity at Guarantee Condition | - 60% |
| (h) Percentage of CC Gross Heat Rate at Guarantee | - 100 % |
| (i) Percentage of CC Gross Heat Rate at actual RH | - 100.05 % |
| (j) Correction factor due to change in Relative Humidity | - 0.9995 = (c) / (d) |

3.3.4 Correction due to Frequency

- | | |
|--|----------------------|
| (f) Average Measured Frequency | - 50.04 Hz |
| (g) Frequency at Guarantee Condition | - 50 Hz |
| (h) Percentage of CC Gross Heat Rate at Guarantee | - 100 % |
| (i) Percentage of CC Gross Heat Rate at actual Frequency | - 100.02 % |
| (j) Correction factor due to change in Frequency | - 0.9998 = (c) / (d) |

3.3.5 Correction due to Fired Hours

- | | |
|--|----------------------|
| (f) Actual Fired Hours at the time of PG Test | - 3319 Hrs |
| (g) Fired hours at Guarantee condition | - 0 Hrs |
| (h) Percentage of CC Gross Heat Rate at Guarantee | - 100 % |
| (i) Percentage of CC Gross Heat Rate at actual Frequency | - 100.23 % |
| (j) Correction factor due to change in Fired Hours | - 0.9977 = (c) / (d) |
- (Fired Hours Correction factor is considered for the maximum fired hours considered to draw the curve)

**3.3.6 Correction due to Cooling water temperature**

- | | |
|--|--------------|
| (f) Average measured CW Temperature | - 33.1 Deg C |
| (g) CW Temperature at Guarantee condition | - 32 Deg C |
| (h) Percentage of CC Gross Heat Rate at Guarantee | - 100 % |
| (i) Percentage of CC Gross Heat Rate at actual Frequency | - 100.14 % |
| (j) Correction factor due to change in CW temperature | - 0.9986 |

3.3.7 Overall Correction

- | | |
|--|-----------|
| (g) Correction factor due to change in Ambient temperature | - 1.00025 |
| (h) Correction factor due to change in Ambient Pressure | - 0.9982 |
| (i) Correction factor due to change in Relative Humidity | - 0.9995 |
| (j) Correction factor due to change in Frequency | - 0.9998 |
| (k) Correction factor due to change in Fired Hours | - 0.9977 |
| (l) Correction factor due to change in CW temperature | - 0.9986 |

Corrected Combined Cycle Gross Heat rate Output = 1736.3 x (a) x (b) x (c) x (d) x (e) x (f)

Corrected Combined Cycle Gross Heat Rate = 1736.3 x 1.00025 x 0.9982 x 0.9995 x 0.9998
x 0.9977 x 0.9986
= 1726.0 kCal / kWh

Corrected Combined Cycle Gross Heat Rate = 1726.0 kCal / KWHr

As per Contract, Weighted Heat rate to be guaranteed which shall be as follows:

CCPP Weighted Gross Heat Rate = $(4 \times HR_{100} + 3 \times HR_{75})/7$

CCPP Weighted Measured Gross Heat Rate = $(4 \times 1634.6 + 3 \times 1726.0) / 7$

CCPP Weighted Measured Gross Heat rate = **1673.77** kcal/kw-hr.

Result

- a) **Corrected Combined Cycle Gross Power Output at 100% Load = 101416 kW**
b) **Corrected Combined Cycle Gross Heat Rate (weighted) = 1674 kCal/kWh**

**Annexure 7 – PFC Loan Details for FY2021-22
(April to September)**

Identified Loan

POWER FINANCE CORPORATION LIMITED
(A Govt. of India Undertaking)
CIN No.:L65910DL1986GOI024862
Regd.Office:Urja Nidhi, 1,Barakhamba Lane, New Delhi-110001
E-Mail:loanrecovery@pfcindia.com Website:www.pfcindia.com

Rep.Name:dem_not_hindi_pnl_em_gst
PageNo : 1 / 4

GSTIN 07AAACP1570H1ZM

Dated : 09/04/2021

Ref. No 04:06: (624):2021-2022

MR. C.D.GOGOI

CHIEF GENERAL MANAGER (F&A)

ASSAM POWER GENERATION CORPORATION LTD.
ASSAM POWER GENERATION CORPORATION LIMITED,
3RD FLOOR, BIJULEE BHAVAN,
PALTAN BAZAR,GUWAHATI-781 001
ASSAM

Dear Sir/Madam,

fnukal - 15@04@2021 dksns eyw/ku] C; kt] I fcl Mh eadVks'h] ifrc) rk i Hkkj] bR; kfn dk Hkqrku 15@04@2021 rd djA

PAYMENT OF PRINCIPAL, INTEREST, REDUCTION SUB., COMMITMENT CHARGES ETC. DUE ON : 15/04/2021 TO BE PAID ON OR BEFORE 15/04/2021

fuEufyf[kr __.kksd'fy, fnukal 15@04@2021 dkseyw/ku] C; kt] I fcl Mh eadVks'h] ifrc) rk i Hkkj] bR; kfn dh fd'rkadk Hkqrku ns gSA

The instalments of Principal, Interest, Reduction Sub., Commitment Charges ect. are due for payment on or before 15/04/2021 as per details given below :

The Summary of Dues is as under:

Due for the current month	20,15,02,002
(+)Overdue of Previous demands - if any	0
(+)Interest & Penal Interest on overdue	0
Total Amount to be paid	20,15,02,002

50 djA : i; svlj ml I svf|d dsfdl h Hkh Hkqrku dsfy, ih, Ql h , ybZ/kbZ 3358003Q6D9LIJZ1614 bAr djA
Quote PFC LEI 3358003Q6D9LIJZ1614 for any payment of Rs.50 cr and above.

d)di ; k ukS djafd ns jkf'k dk Hkqrku u djusi j] fdl h __.k jokrsdks, u ih , ds: i eaoxh'dr djusdh vof| vc 90 fnu dj nh xbZ gSA

a) Kindly note that, the period for classifying a loan account as NPA/Stage 3 on account of non-payment of dues has been reduced to 90 days.

[k)mi; Dr i jv jkf'k tek djkuh gks'h rFkk ns I sfd, x, vFkok de fd, x, Hkqrku ij ; Fkk ykxvLo: i C; kt rFkk C; kt ij C; kt i Hkkfjr fd; k tk, xkA vi Ekr Li "Vhdj.k] ; fn dksZ gJckn esiklr fd; k tk I drk gA Hkqrku I adh vumSk rFkk x.kuk bl dsl kFk I gXu gA

x) ;g ekā i= vki dksf'k"Vkpjko'k Hksk tk jgk gā ekā l pāk dh i kfr u gksk@ vl; dksz xyrh foya l shkxrk dju@shkxrk u djustk vf/kdkj ughansh rFkk __.kdrkz dks muds nlf; Ro l sfoepr ughadjrhA

b) The above amount is to be remitted in full and penal interest/Int on Int. as applicable shall be charged for delayed and short payments. Clarifications required, if any, may be sought subsequently. Payment instructions and calculations are enclosed herewith.

c) This Demand Notice is being sent as a matter of courtesy. Non-Receipt of Demand Notice/any mistake does not give any right for late payment/non payment and will not absolve from the obligations of Borrower.

?k) ih, Qih dks shkxrk djrsl e; dl; k cā-dfku ea "APGCL - 624" vādr djā

d) Kindly Indicate "APGCL - 624" in Bank Narration while making all the payments to PFC.

M) bl ds vfrfjDr] ;g Hkh fuosu gSfd] __.k&drrkz 11-30 ctsl si vā ih, Qih [kkrse dS/V djuk l fuf'Pkr djavk ftl Hkh fof/k l shkxrk jk'k tek djkbz gk's ml dh l pāk QDI @bley ds}kjk Hkh nshA

e) Further it is requested that, THE BORROWER MAY ENSURE CREDIT TO PFC'S A/C BEFORE 11.30 AM. Please also inform the same by Fax /email regarding remittances.

Hky&pd/ysh nshA

Errors and Omissions are excepted.

/kl; okn A Thanking you,

Hkonh;~, Yours faithfully,

ikoj Okbus dkkkku fyevā dsfy, / FOR POWER FINANCE CORPORATION LIMITED

D.V.SUBBA RAO
SENIOR GENERAL MANAGER (FINANCE)
LOAN RECOVERY UNIT

Copy To :

MR NAWJIT BARMAN
ASSAM POWER GENERATION CORPORATION LTD.
FINANCE OFFICER

ASSAM POWER GENERATION CORPORATION LIMITED,
3RD FLOOR, BIJULEE BHAVAN,
PALTAN BAZAR, GUWAHATI-781 001
ASSAM

Hkkqrku vumSk / PAYMENT INSTRUCTIONS

1. __.kdrk{ka}kjk n\$ frffk ij l Hkh izdkj dk l afdkr Hkkqrku fuEukuq kj fuxe ds[kkrseafdk; k tk, %

1.All monies payable by the borrower to the Corporation shall be paid on due dates of the relevant payments to the Corporation's Accounts as given below:

1 Account No. 00030350000790 of HDFC Bank K G Marg, New Delhi (IFSC code HDFC0000003)

2. ih, Ql h __.kdrk{ka}kjk n\$ jkf'k dk Hkkqrku b&Hkkqrku@vkjVhth, l izkkyh }kjk fd, tkusdksi kFkfedrk nsk g\$ rFkk i kkl kfgj djrk gA

2.PFC would prefer and encourage the Borrowers in remitting the dues through e-Payment/ RTGS System, For which you may like to take up with your Bankers.

3 __.kdrkz i vkr% l fuf'Pkr djafd n\$ frffk ij fuxe ds[kkrseafdk Hkkqrku dj fn; k x; k gA

3.The Borrower will fully ensure that the monies are duly credited on the due dates to the Corporations's above said Accounts.

4 __.knkrk dsi {k eans l afdkr Hkkqrku rc vnk ekuk tk, xk ; fn og jkf'k n\$ frffk dksfuxe ds[kkrseatek gkstk, xhA

4.The amount due from the borrower on the due dates of the relevant payments will be construed to have been paid only if such amount is duly credited to the Corporation's said Accounts on the due date.

5 n\$ jkf'k dk Hkkqrku n\$ frffk ij u gkasdh l fkr eabl s__k dh 'kriksapav ekuk t; sk rFkk __.kdrkz pav dh rkjh[k rd __.k dh 'kriksdsvud kj n\$ Lo: i C; kt dk Hkkqrku djusdsfy; smRrjnk; h gkzka

5.In the event the amount due is not credited to the said Accounts on the due dates of the relevant payments, such non-payment will constitute a default within the terms of the loan and the borrower will be liable to pay penal interest from the date of default till the date on which the amount is duly credited to the said accounts calculated at the rate and in the manner as specified in terms of the sanction of loan.

6 di; k uk\$ djafd ih, Ql h ubz fnYyh dk GSTIN 07AAACP1570H1ZM gA

6.GSTIN of PFC New Delhi is 07AAACP1570H1ZM which may please be updated in Your records.

7 mDr ij i=kpkj rFkk vl; dksz Li "Vhdj.k fuEufyf[kr vf/kdkfj; kal si klr fd; k tk l drk gA

7.Correspondences on the above, and any clarification that may be required may be addressed to :

uke	i nuke	Oks@QDI @bl ey
i) D.V.SUBBA RAO	SENIOR GENERAL MANAGER (FINANCE)	TEL. 011-23456279, subba_rao@pfcindia.com
ii) D.V.SUBBA RAO	SENIOR GENERAL MANAGER (FINANCE)	TEL. 011-23456279, subba_rao@pfcindia.com
iii) D.V.SUBBA RAO	SENIOR GENERAL MANAGER (FINANCE)	TEL. 011-23456279, subba_rao@pfcindia.com

**** This is not an Invoice**

LOAN NO	INST NO	PRINCIPAL	INTEREST	RED.	SUBSIDY	COMM.	CHARGE	Moratorium Int.	Addl. Int. due to Due_dt shifting	CGST	SGST	IGST	TOTAL (₹)
62102002	172	69,29,556	5,76,801					0	0	0	0	0	75,06,357
62401001	52	3,03,25,984	80,85,946					0	0	0	0	0	3,84,11,930
62401003	11	6,17,79,538	8,96,95,698					0	0	0	0	0	15,14,75,236
62404001	49	30,47,387	10,61,092					0	0	0	0	0	41,08,479
;/kX /TOTAL :		10,20,82,465	9,94,19,537					0	0	0	0	0	20,15,02,002

**** This is not an Invoice**

Identified Loan

POWER FINANCE CORPORATION LIMITED
(A Govt. of India Undertaking)
CIN No.:L65910DL1986GOI024862
Regd.Office:Urja Nidhi, 1,Barakhamba Lane, New Delhi-110001
E-Mail:loanrecovery@pfcindia.com Website:www.pfcindia.com

Rep.Name:dem_not_hindi_pnl_em_gst
PageNo : 1 / 4

GSTIN 07AAACP1570H1ZM

Ref. No 04:06: (624):2021-2022

Dated : 15/05/2021

MR. C.D.GOGOI

CHIEF GENERAL MANAGER (F&A)
ASSAM POWER GENERATION CORPORATION LTD.
ASSAM POWER GENERATION CORPORATION LIMITED,
3RD FLOOR, BIJULEE BHAVAN,
PALTAN BAZAR,GUWAHATI-781 001
ASSAM

Dear Sir/Madam,

fnukal - 15@05@2021 dksns eyw/ku] C; kt] I fcl Mh eadVks-h] ifrc) rk i Hkkj] bR; kfn dk Hkqrku 15@05@2021 rd djs

PAYMENT OF PRINCIPAL, INTEREST, REDUCTION SUB., COMMITMENT CHARGES ETC. DUE ON : 15/05/2021 TO BE PAID ON OR BEFORE 15/05/2021

fuEufyf[kr __.kksdfy, fnukal 15@05@2021 dkseyw/ku] C; kt] I fcl Mh eadVks-h] ifrc) rk i Hkkj] bR; kfn dh fd'rkadk Hkqrku ns gS

The instalments of Principal, Interest, Reduction Sub., Commitment Charges ect. are due for payment on or before 15/05/2021 as per details given below :

The Summary of Dues is as under:

Due for the current month	75,05,807
(+)Overdue of Previous demands - if any	20,15,02,002
(+)Interest & Penal Interest on overdue	0
Total Amount to be paid	20,90,07,809

50 djsM : i ; svlj ml I svf|d dsfdl h Hkh Hkqrku dsfy, ih, Ql h , ybZ/kbZ 3358003Q6D9LIJZ1614 bkr djs
Quote PFC LEI 3358003Q6D9LIJZ1614 for any payment of Rs.50 cr and above.

d)di ; k ukS djsfd ns jkf'k dk Hkqrku u djustij] fdl h __.k jokrsdks, u ih , ds: i esoxhdir djusdh vof| vc 90 fnu dj nh xbZ gSA

a) Kindly note that, the period for classifying a loan account as NPA/Stage 3 on account of non-payment of dues has been reduced to 90 days.

[k)mi ; Dr i jv jkf'k tek djkuh gksxh rFkk ns I sfd, x, vFkok de fd, x, Hkqrku ij ; Fkk ykxvnaLo: i C; kt rFkk C; kt ij C; kt i Hkkfjr fd; k tk, xkA vi Ekr Li "Vhdj.k] ; fn dksZ gJckn esiklr fd; k tk I drk gA Hkqrku I adh vumSk rFkk x.kuk bl dsl kFk I gXu gA

x) ;g ekā i= vki dksf'k"Vkpjko'k Hksk tk jgk gā ekā l pāk dh i kfr u gksk@ vl; dksz xyrh foya l shkxrk dju@Hkxrk u djustk vf/kdkj ughansh rFkk __.kdrkz dks muds nlf; Ro l sfoePr ughadjrhA

b) The above amount is to be remitted in full and penal interest/Int on Int. as applicable shall be charged for delayed and short payments. Clarifications required, if any, may be sought subsequently. Payment instructions and calculations are enclosed herewith.

c) This Demand Notice is being sent as a matter of courtesy. Non-Receipt of Demand Notice/any mistake does not give any right for late payment/non payment and will not absolve from the obligations of Borrower.

?k) ih, Qih dksHkxrk djrs l e; dl; k cā-dfku ea "APGCL - 624" vādr djā

d) Kindly Indicate "APGCL - 624" in Bank Narration while making all the payments to PFC.

M) bl dsvfrfjDr] ;g Hkh fuosu gSfd] __.k&drrkz 11-30 ctsl siw ih, Qih [kkrse dS/V djuk l fuf'Pkr djavk ftl Hkh fof/k l shkxrk jk'k tek djkbz gk's ml dh l pāk QDI @bley ds}kjk Hkh nsnā

e) Further it is requested that, THE BORROWER MAY ENSURE CREDIT TO PFC'S A/C BEFORE 11.30 AM. Please also inform the same by Fax /email regarding remittances.

Hky&pd/ ysh nshA

Errors and Omissions are excepted.

/ku; okn A Thanking you,

Hkonh; -, Yours faithfully,

ikoj Okbus dWksu fyevā dsfy, / FOR POWER FINANCE CORPORATION LIMITED

D.V.SUBBA RAO
SENIOR GENERAL MANAGER (FINANCE)
LOAN RECOVERY UNIT

Copy To :

MR NAWJIT BARMAN
ASSAM POWER GENERATION CORPORATION LTD.
FINANCE OFFICER

ASSAM POWER GENERATION CORPORATION LIMITED,
3RD FLOOR, BIJULEE BHAVAN,
PALTAN BAZAR, GUWAHATI-781 001
ASSAM

Hkkqrku vumSk / PAYMENT INSTRUCTIONS

1. __.kdrk{ka}kjk n\$ frffk ij l Hkh izdkj dk l afdkr Hkkqrku fuEukuq kj fuxe ds[kkrseafdk; k tk, %

1.All monies payable by the borrower to the Corporation shall be paid on due dates of the relevant payments to the Corporation's Accounts as given below:

1 Account No. 00030350000790 of HDFC Bank K G Marg, New Delhi (IFSC code HDFC0000003)

2. ih, Ql h __.kdrk{ka}kjk n\$ jkf'k dk Hkkqrku b&Hkkqrku@vkjVhth, l izkkyh }kjk fd, tkusdksi kFkfedrk nsk gS rFkk i kkl kfgR djrk gA

2.PFC would prefer and encourage the Borrowers in remitting the dues through e-Payment/ RTGS System, For which you may like to take up with your Bankers.

3 __.kdrkz i vkr-% l fuf'Pkr djafd n\$ frffk ij fuxe ds[kkrseafdk Hkkqrku dj fn; k x; k gA

3.The Borrower will fully ensure that the monies are duly credited on the due dates to the Corporations's above said Accounts.

4 __.knkrk dsi {k eans l afdkr Hkkqrku rc vnk ekuk tk, xk ; fn og jkf'k n\$ frffk dksfuxe ds[kkrseatek gkstk, xhA

4.The amount due from the borrower on the due dates of the relevant payments will be construed to have been paid only if such amount is duly credited to the Corporation's said Accounts on the due date.

5 n\$ jkf'k dk Hkkqrku n\$ frffk ij u gkasdh l fkr eabl s__k dh 'kriksapav ekuk t; sk rFkk __.kdrkz pav dh rkjh[k rd __.k dh 'kriksdsvud kj nA Lo: i C; kt dk Hkkqrku djusdsfy; smRrjnk; h gkzka

5.In the event the amount due is not credited to the said Accounts on the due dates of the relevant payments, such non-payment will constitute a default within the terms of the loan and the borrower will be liable to pay penal interest from the date of default till the date on which the amount is duly credited to the said accounts calculated at the rate and in the manner as specified in terms of the sanction of loan.

6 di; k ukS djafd ih, Ql h ubz fnYyh dk GSTIN 07AAACP1570H1ZM gA

6.GSTIN of PFC New Delhi is 07AAACP1570H1ZM which may please be updated in Your records.

7 mDr ij i=kpkj rFkk vU; dksz Li "Vhdj.k fuEufyf[kr vf/kdkfj; kal si klr fd; k tk l drk gA

7.Correspondences on the above, and any clarification that may be required may be addressed to :

uke	inuke	Qks@QDI @bl ey
i) D.V.SUBBA RAO	SENIOR GENERAL MANAGER (FINANCE)	TEL. 011-23456279, subba_rao@pfcindia.com
ii) D.V.SUBBA RAO	SENIOR GENERAL MANAGER (FINANCE)	TEL. 011-23456279, subba_rao@pfcindia.com
iii) D.V.SUBBA RAO	SENIOR GENERAL MANAGER (FINANCE)	TEL. 011-23456279, subba_rao@pfcindia.com

**** This is not an Invoice**

LOAN NO	INST NO	PRINCIPAL	INTEREST	RED.	SUBSIDY	COMM.	CHARGE	Moratorium Int.	Addl. Int. due to Due_dt shifting	CGST	SGST	IGST	TOTAL (₹)
62102002	173	69,29,556	5,58,196		18,055		0	0	0	0	0	0	75,05,807
;/kx /TOTAL :		69,29,556	5,58,196		18,055		0	0	0	0	0	0	75,05,807

** This is not an Invoice

Identified Loan

POWER FINANCE CORPORATION LIMITED
(A Govt. of India Undertaking)
CIN No.:L65910DL1986GOI024862
Regd.Office:Urja Nidhi, 1,Barakhamba Lane, New Delhi-110001
E-Mail:loanrecovery@pfcindia.com Website:www.pfcindia.com

Rep.Name:dem_not_hindi_pnl_em_gst
PageNo : 1 / 4

GSTIN 07AAACP1570H1ZM

Ref. No 04:06: (624):2021-2022

Dated : 10/06/2021

MR. C.D.GOGOI

CHIEF GENERAL MANAGER (F&A)
ASSAM POWER GENERATION CORPORATION LTD.
ASSAM POWER GENERATION CORPORATION LIMITED,
3RD FLOOR, BIJULEE BHAVAN,
PALTAN BAZAR,GUWAHATI-781 001
ASSAM

Dear Sir/Madam,

fnukal - 15@06@2021 dksns eyw/ku] C; kt] I fcl Mh eadVks'h] ifrc) rk i Hkkj] bR; kfn dk Hkqrku 15@06@2021 rd djA

PAYMENT OF PRINCIPAL, INTEREST, REDUCTION SUB., COMMITMENT CHARGES ETC. DUE ON : 15/06/2021 TO BE PAID ON OR BEFORE 15/06/2021

fuEufyf[kr __.kksd'fy, fnukal 15@06@2021 dkseyw/ku] C; kt] I fcl Mh eadVks'h] ifrc) rk i Hkkj] bR; kfn dh fd'rkadk Hkqrku ns gS&

The instalments of Principal, Interest, Reduction Sub., Commitment Charges ect. are due for payment on or before 15/06/2021 as per details given below :

The Summary of Dues is as under:

Due for the current month	73,92,540
(+)Overdue of Previous demands - if any	0
(+)Interest & Penal Interest on overdue	0
Total Amount to be paid	73,92,540

50 djM : i ; svlj ml l svf|d dsfdl h Hkh Hkqrku dsfy, ih, Ql h , ybZ/kbZ 3358003Q6D9LIJZ1614 bAr djA
Quote PFC LEI 3358003Q6D9LIJZ1614 for any payment of Rs.50 cr and above.

d)di ; k ukS djafd ns jkf'k dk Hkqrku u djusi j] fdl h __.k jokrsdks, u ih , ds: i esoxh'dr djusdh vof| vc 90 fnu dj nh xbZ gSA

a) Kindly note that, the period for classifying a loan account as NPA/Stage 3 on account of non-payment of dues has been reduced to 90 days.

[k)mi ; Dr i jv jkf'k tek djkuh gks'h rFkk ns l sfd, x, vFkok de fd, x, Hkqrku ij ; Fkk ykxvnaLo: i C; kt rFkk C; kt ij C; kt i Hkkfjr fd; k tk, xkA vi Ekr Li "Vhdj.k] ; fn dksZ gJckn esiklr fd; k tk l drk gA Hkqrku l adh vumSk rFkk x.kuk bl dsl kFk l gXu gA

x) ;g ekā i= vki dksf'k"Vkpjjo'k Hksk tk jgk gā ekā l pāk dh itfir u gksk@ vll; dksz xyrh foya l shkxrk dju@Hkxrk u djustk vf/kdkj ughansh rFkk __.kdrkz dks muds nlf; Ro l sfoePr ughadjrhA

b) The above amount is to be remitted in full and penal interest/Int on Int. as applicable shall be charged for delayed and short payments. Clarifications required, if any, may be sought subsequently. Payment instructions and calculations are enclosed herewith.

c) This Demand Notice is being sent as a matter of courtesy. Non-Receipt of Demand Notice/any mistake does not give any right for late payment/non payment and will not absolve from the obligations of Borrower.

?k) ih, Qih dksHkxrk djrs l e; dl; k cā-dfku ea "APGCL - 624" vādr djā

d) Kindly Indicate "APGCL - 624" in Bank Narration while making all the payments to PFC.

M) bl dsvfrfjDr] ;g Hkh fuosu gSfd] __.k&drrkz 11-30 ctsl siwih, Qih [kkrse dS/V djuk l fuf'Pkr djavk ftl Hkh fof/k l shkxrk jk'k tek djkbz gk's ml dh l pāk ODI @bley ds}kjk Hkh nsrā

e) Further it is requested that, THE BORROWER MAY ENSURE CREDIT TO PFC'S A/C BEFORE 11.30 AM. Please also inform the same by Fax /email regarding remittances.

Hky&pd/ysh nshA

Errors and Omissions are excepted.

/kl; okn A Thanking you,

Hkonh;~, Yours faithfully,

ikoj Okbus dWk'sku fyevā dsfy, / FOR POWER FINANCE CORPORATION LIMITED

D.V.SUBBA RAO
CHIEF GENERAL MANAGER (LOAN RECOVERY)
LOAN RECOVERY UNIT

Copy To :

MR NAWJIT BARMAN
ASSAM POWER GENERATION CORPORATION LTD.
FINANCE OFFICER

ASSAM POWER GENERATION CORPORATION LIMITED,
3RD FLOOR, BIJULEE BHAVAN,
PALTAN BAZAR, GUWAHATI-781 001
ASSAM

Hkkqrku vumSk / PAYMENT INSTRUCTIONS

1. __.kdrk{ka}kjk n\$ frffk ij l Hkh izdkj dk l afdkr Hkkqrku fuEukuq kj fuxe ds[kkrseafdk; k tk, %

1.All monies payable by the borrower to the Corporation shall be paid on due dates of the relevant payments to the Corporation's Accounts as given below:

1 Account No. 00030350000790 of HDFC Bank K G Marg, New Delhi (IFSC code HDFC0000003)

2. ih, Ql h __.kdrk{ka}kjk n\$ jkf'k dk Hkkqrku b&Hkkqrku@vkjVhth, l izkkyh }kjk fd, tkusdksi kFkfedrk nsk g\$ rFkk i kkl kfgj djrk gA

2.PFC would prefer and encourage the Borrowers in remitting the dues through e-Payment/ RTGS System, For which you may like to take up with your Bankers.

3 __.kdrkz i vkr-% l fuf'Pkr djafd n\$ frffk ij fuxe ds[kkrseafdkkrku dj fn; k x; k gA

3.The Borrower will fully ensure that the monies are duly credited on the due dates to the Corporations's above said Accounts.

4 __.knkrk dsi {k eans l afdkr Hkkqrku rc vnk ekuk tk, xk ; fn og jkf'k n\$ frffk dksfuxe ds[kkrseatek gkstk, xhA

4.The amount due from the borrower on the due dates of the relevant payments will be construed to have been paid only if such amount is duly credited to the Corporation's said Accounts on the due date.

5 n\$ jkf'k dk Hkkqrku n\$ frffk ij u gkasdh l fkr eabl s__ .k dh 'kriksapav ekuk t; sk rFkk __.kdrkz pav dh rkjh[k rd __.k dh 'kriksdsvud kj nhlLo: i C; kt dk Hkkqrku djusdsfy; smRrjnk; h gkzka

5.In the event the amount due is not credited to the said Accounts on the due dates of the relevant payments, such non-payment will constitute a default within the terms of the loan and the borrower will be liable to pay penal interest from the date of default till the date on which the amount is duly credited to the said accounts calculated at the rate and in the manner as specified in terms of the sanction of loan.

6 di; k uk\$ djafd ih, Ql h ubz fnYyh dk GSTIN 07AAACP1570H1ZM gA

6.GSTIN of PFC New Delhi is 07AAACP1570H1ZM which may please be updated in Your records.

7 mDr ij i=kpkj rFkk vl; dksz Li "Vhdj.k fuEufyf[kr vf/kdkfj; kal si klr fd; k tk l drk gA

7.Correspondences on the above, and any clarification that may be required may be addressed to :

uke i nuke Oks@QDI @bl ey

i) D.V.SUBBA RAO CHIEF GENERAL MANAGER (LOAN RECOVERY) TEL. 011-23456279, subba_rao@pfcindia.com

ii) D.V.SUBBA RAO CHIEF GENERAL MANAGER (LOAN RECOVERY) TEL. 011-23456279, subba_rao@pfcindia.com

iii) D.V.SUBBA RAO CHIEF GENERAL MANAGER (LOAN RECOVERY) TEL. 011-23456279, subba_rao@pfcindia.com

**** This is not an Invoice**

__k l a	fd'r l a	ey/ku	C; kt	I fcl Mh esdVh	ifrc) rk i Hkj	Moratorium	Addl. Int.	th, l Vh dj				; kx
LOAN NO	INST NO	PRINCIPAL	INTEREST	RED.	SUBSIDY	COMM.	CHARGE Int.	due to Due_dt	CGST	SGST	IGST	TOTAL (')
								shifting				
62102002	174	69,29,556	4,62,984		0	0	0	0	0	0	0	73,92,540
; kx /TOTAL :		69,29,556	4,62,984		0	0	0	0	0	0	0	73,92,540

** This is not an Invoice

Identified Loan

POWER FINANCE CORPORATION LIMITED
(A Govt. of India Undertaking)
CIN No.:L65910DL1986GOI024862
Regd.Office:Urja Nidhi, 1,Barakhamba Lane, New Delhi-110001
E-Mail:loanrecovery@pfcindia.com Website:www.pfcindia.com

Rep.Name:dem_not_hindi_pnl_em_gst
PageNo : 1 / 4

GSTIN 07AAACP1570H1ZM

Dated : 09/07/2021

Ref. No 04:06: (624):2021-2022

MR. C.D.GOGOI

CHIEF GENERAL MANAGER (F&A)
ASSAM POWER GENERATION CORPORATION LTD.
ASSAM POWER GENERATION CORPORATION LIMITED,
3RD FLOOR, BIJULEE BHAVAN,
PALTAN BAZAR,GUWAHATI-781 001
ASSAM

Dear Sir/Madam,

fnukal - 15@07@2021 dksns eyw/ku] C; kt] I fcl Mh eadVks'h] ifrc) rk i Hkkj] bR; kfn dk Hkqrku 15@07@2021 rd dja

PAYMENT OF PRINCIPAL, INTEREST, REDUCTION SUB., COMMITMENT CHARGES ETC. DUE ON : 15/07/2021 TO BE PAID ON OR BEFORE 15/07/2021

fuEufyf[kr __.kksd'fy, fnukal 15@07@2021 dkseyw/ku] C; kt] I fcl Mh eadVks'h] ifrc) rk i Hkkj] bR; kfn dh fd'rkadk Hkqrku ns gS

The instalments of Principal, Interest, Reduction Sub., Commitment Charges ect. are due for payment on or before 15/07/2021 as per details given below :

The Summary of Dues is as under:

Due for the current month	20,36,19,373
(+)Overdue of Previous demands - if any	0
(+)Interest & Penal Interest on overdue	0
Total Amount to be paid	20,36,19,373

50 dja : i ; svlj ml l svf|d dsfdl h Hkh Hkqrku dsfy, ih, Ql h , ybZ/kbZ 3358003Q6D9LIJZ1614 bkr dja
Quote PFC LEI 3358003Q6D9LIJZ1614 for any payment of Rs.50 cr and above.

d)di ; k ukS djsfd ns jkf'k dk Hkqrku u djustij] fdl h __.k jokrsdks, u ih , ds: i esoxh'dr djusdh vof| vc 90 fnu dj nh xbZ gSA

a) Kindly note that, the period for classifying a loan account as NPA/Stage 3 on account of non-payment of dues has been reduced to 90 days.

[k)mi ; Dr i jv jkf'k tek djkuh gks h rFkk ns l sfd, x, vFkok de fd, x, Hkqrku ij ; Fkk ykxv Lo: i C; kt rFkk C; kt ij C; kt i Hkkfjr fd; k tk, xkA vi Ekr Li "Vhdj.k] ; fn dksZ gJckn esiklr fd; k tk l drk gA Hkqrku l adh vumSk rFkk x.kuk bl dsl kFk l gXu gA

x) ;g ekā i= vki dksf'k"Vkpjjo'k Hksk tk jgk gā ekā l pāk dh i kfr u gksk@ vl; dksz xyrh foya l shkxrk dju@Hkxrk u djustk vf/kdkj ughansh rFkk __.kdrkz dks muds nlf; Ro l sfoePr ughadjrhA

b) The above amount is to be remitted in full and penal interest/Int on Int. as applicable shall be charged for delayed and short payments. Clarifications required, if any, may be sought subsequently. Payment instructions and calculations are enclosed herewith.

c) This Demand Notice is being sent as a matter of courtesy. Non-Receipt of Demand Notice/any mistake does not give any right for late payment/non payment and will not absolve from the obligations of Borrower.

?k) ih, Qih dksHkxrk djrs l e; dl; k cā-dfku ea "APGCL - 624" vādr djā

d) Kindly Indicate "APGCL - 624" in Bank Narration while making all the payments to PFC.

M) bl ds vfrfjDr] ;g Hkh fuosu gSfd] __.k&drrkz 11-30 ctsl si vā ih, Qih [kkrse dS/V djuk l fuf'Pkr djavk ft l Hkh fof/k l shkxrk jk'k tek djkbz gk's ml dh l pāk ODI @bley ds}kjk Hkh nsnā

e) Further it is requested that, THE BORROWER MAY ENSURE CREDIT TO PFC'S A/C BEFORE 11.30 AM. Please also inform the same by Fax /email regarding remittances.

Hky&pd/ ysh nshA

Errors and Omissions are excepted.

/kl; okn A Thanking you,

Hkonh; -, Yours faithfully,

ikoj Okbus dWk'sku fyevā dsfy, / FOR POWER FINANCE CORPORATION LIMITED

D.V.SUBBA RAO
CHIEF GENERAL MANAGER (LOAN RECOVERY)
LOAN RECOVERY UNIT

Copy To :
MR NAWJIT BARMAN
ASSAM POWER GENERATION CORPORATION LTD.
FINANCE OFFICER

ASSAM POWER GENERATION CORPORATION LIMITED,
3RD FLOOR, BIJULEE BHAVAN,
PALTAN BAZAR, GUWAHATI-781 001
ASSAM

Hkkqrku vumSk / PAYMENT INSTRUCTIONS

1. __.kdrk\k\}kjk n\$ frffk ij l Hkh izdkj dk l afdkr Hkkqrku fuEukuq kj fuxe ds[kkrseafdk; k tk, %

1.All monies payable by the borrower to the Corporation shall be paid on due dates of the relevant payments to the Corporation's Accounts as given below:

1 Account No. 00030350000790 of HDFC Bank K G Marg, New Delhi (IFSC code HDFC0000003)

2. ih, Ql h __.kdrk\k\}kjk n\$ jkf'k dk Hkkqrku b&Hkkqrku@vkjVhth, l izkkyh }kjk fd, tkusdksi kFkfedrk nsk gS rFkk i kkl kfgR djrk gA

2.PFC would prefer and encourage the Borrowers in remitting the dues through e-Payment/ RTGS System, For which you may like to take up with your Bankers.

3 __.kdrkz i vkr-% l fuf'Pkr djafd n\$ frffk ij fuxe ds[kkrseafdk Hkkqrku dj fn; k x; k gA

3.The Borrower will fully ensure that the monies are duly credited on the due dates to the Corporations's above said Accounts.

4 __.knkrk dsi {k eans l afdkr Hkkqrku rc vnk ekuk tk, xk ; fn og jkf'k n\$ frffk dksfuxe ds[kkrseatek gkstk, xhA

4.The amount due from the borrower on the due dates of the relevant payments will be construed to have been paid only if such amount is duly credited to the Corporation's said Accounts on the due date.

5 n\$ jkf'k dk Hkkqrku n\$ frffk ij u gksdsh l fkr eabl s__ .k dh 'kriksapdv ekuk t; sk rFkk __.kdrkz pav dh rkjh[k rd __.k dh 'kriksdsvud kj nhl Lo: i C; kt dk Hkkqrku djusdsfy; smRrjnk; h gkskA

5.In the event the amount due is not credited to the said Accounts on the due dates of the relevant payments, such non-payment will constitute a default within the terms of the loan and the borrower will be liable to pay penal interest from the date of default till the date on which the amount is duly credited to the said accounts calculated at the rate and in the manner as specified in terms of the sanction of loan.

6 di; k ukS djafd ih, Ql h ubz fnYyh dk GSTIN 07AAACP1570H1ZM gA

6.GSTIN of PFC New Delhi is 07AAACP1570H1ZM which may please be updated in Your records.

7 mDr ij i=kpkj rFkk vl; dksz Li "Vhdj.k fuEufyf[kr vf/kdkfj; kal si klr fd; k tk l drk gA

7.Correspondences on the above, and any clarification that may be required may be addressed to :

uke i nuke Oks@QDI @bl ey

i) D.V.SUBBA RAO CHIEF GENERAL MANAGER (LOAN RECOVERY) TEL. 011-23456279, subba_rao@pfcindia.com

ii) D.V.SUBBA RAO CHIEF GENERAL MANAGER (LOAN RECOVERY) TEL. 011-23456279, subba_rao@pfcindia.com

iii) D.V.SUBBA RAO CHIEF GENERAL MANAGER (LOAN RECOVERY) TEL. 011-23456279, subba_rao@pfcindia.com

**** This is not an Invoice**

LOAN NO	INST NO	PRINCIPAL	INTEREST	RED.	SUBSIDY	COMM.	CHARGE	Moratorium Int.	Addl. Int. due to Due_dt shifting	CGST	SGST	IGST	TOTAL (₹)
62102002	175	69,29,557	3,97,645					0	0	0	0	0	73,27,202
62401001	53	3,03,25,984	73,49,024					0	0	0	0	0	3,76,75,008
62401003	12	6,30,01,916	9,15,73,334					0	0	0	0	0	15,45,75,250
62404001	50	30,47,387	9,94,526					0	0	0	0	0	40,41,913
;kx /TOTAL :		10,33,04,844	10,03,14,529					0	0	0	0	0	20,36,19,373

** This is not an Invoice

Identified Loan

POWER FINANCE CORPORATION LIMITED
(A Govt. of India Undertaking)
CIN No.:L65910DL1986GOI024862
Regd.Office:Urja Nidhi, 1,Barakhamba Lane, New Delhi-110001
E-Mail:loanrecovery@pfcindia.com Website:www.pfcindia.com

Rep.Name:dem_not_hindi_pnl_em_gst
PageNo : 1 / 4

GSTIN 07AAACP1570H1ZM

Dated : 13/08/2021

Ref. No 04:06: (624):2021-2022

MR. C.D.GOGOI

CHIEF GENERAL MANAGER (F&A)

ASSAM POWER GENERATION CORPORATION LTD.
ASSAM POWER GENERATION CORPORATION LIMITED,
3RD FLOOR, BIJULEE BHAVAN,
PALTAN BAZAR,GUWAHATI-781 001
ASSAM

Dear Sir/Madam,

fnukel - 16@08@2021 dksns eyw/ku] C; kt] I fcl Mh eadVks'h] ifrc) rk i Hkkj] bR; kfn dk Hkqrku 16@08@2021 rd djA

PAYMENT OF PRINCIPAL, INTEREST, REDUCTION SUB., COMMITMENT CHARGES ETC. DUE ON : 16/08/2021 TO BE PAID ON OR BEFORE 16/08/2021

fuEufyf[kr __.kksd'fy, fnukel 16@08@2021 dkseyw/ku] C; kt] I fcl Mh eadVks'h] ifrc) rk i Hkkj] bR; kfn dh fd'rkadk Hkqrku ns gSA

The instalments of Principal, Interest, Reduction Sub., Commitment Charges ect. are due for payment on or before 16/08/2021 as per details given below :

The Summary of Dues is as under:

Due for the current month	73,78,010
(+)Overdue of Previous demands - if any	-1
(+)Interest & Penal Interest on overdue	0
Total Amount to be paid	73,78,009

50 djA : i ; svlj ml l svf|d dsfdl h Hkh Hkqrku dsfy, ih, Ql h , ybZ/kbZ 3358003Q6D9LIJZ1614 bAr djA

Quote PFC LEI 3358003Q6D9LIJZ1614 for any payment of Rs.50 cr and above.

d)di ; k ukS djafd ns jkf'k dk Hkqrku u djusi j] fdl h __.k jokrsdks, u ih , ds: i eaoxh'dr djusdh vof| vc 90 fnu dj nh xbZ gSA

a) Kindly note that, the period for classifying a loan account as NPA/Stage 3 on account of non-payment of dues has been reduced to 90 days.

[k)mi ; Dr i jv jkf'k tek djkuh gks'h rFkk ns l sfd, x, vFkok de fd, x, Hkqrku ij ; Fkk ykxvnaLo: i C; kt rFkk C; kt ij C; kt i Hkkfjr fd; k tk, xkA vi Bkr Li "Vhdj.k] ; fn dksZ gJckn esiklr fd; k tk l drk gA Hkqrku l adh vumSk rFkk x.kuk bl dsl kFk l gXu gA

x) ;g ekā i= vki dksf'k"Vkpjjo'k Hksk tk jgk gā ekā l pāk dh i kfr u gksk@ vl; dksz xyrh foya l shkxrk dju@Hkxrk u djustk vf/kdkj ughansh rFkk __.kdrkz dks muds nlf; Ro l sfoePr ughadjrhA

b) The above amount is to be remitted in full and penal interest/Int on Int. as applicable shall be charged for delayed and short payments. Clarifications required, if any, may be sought subsequently. Payment instructions and calculations are enclosed herewith.

c) This Demand Notice is being sent as a matter of courtesy. Non-Receipt of Demand Notice/any mistake does not give any right for late payment/non payment and will not absolve from the obligations of Borrower.

?k) ih, Qih dksHkxrk djrs l e; dl; k cā-dfku ea "APGCL - 624" vādr djā

d) Kindly Indicate "APGCL - 624" in Bank Narration while making all the payments to PFC.

M) bl ds vfrfjDr] ;g Hkh fuosu gSfd] __.k&drrkz 11-30 ctsl si vā ih, Qih [kkrse dS/V djuk l fuf'Pkr djavk ftl Hkh fof/k l shkxrk jk'k tek djkbz gk's ml dh l pāk ODI @bley ds}kjk Hkh nsnā

e) Further it is requested that, THE BORROWER MAY ENSURE CREDIT TO PFC'S A/C BEFORE 11.30 AM. Please also inform the same by Fax /email regarding remittances.

Hky&pd/ ysh nshA

Errors and Omissions are excepted.

/kl; okn A Thanking you,

Hkonh; -, Yours faithfully,

ikoj Okbus dWk'sku fyevā dsfy, / FOR POWER FINANCE CORPORATION LIMITED

D.V.SUBBA RAO
CHIEF GENERAL MANAGER (LOAN RECOVERY)
LOAN RECOVERY UNIT

Copy To :

MR NAWJIT BARMAN
ASSAM POWER GENERATION CORPORATION LTD.
FINANCE OFFICER

ASSAM POWER GENERATION CORPORATION LIMITED,
3RD FLOOR, BIJULEE BHAVAN,
PALTAN BAZAR, GUWAHATI-781 001
ASSAM

Hkkqrku vumSk / PAYMENT INSTRUCTIONS

1. __.kdrk{ka}kjk n\$ frffk ij l Hkh izdkj dk l afdkr Hkkqrku fuEukuq kj fuxe ds[kkrseafdk; k tk, %

1.All monies payable by the borrower to the Corporation shall be paid on due dates of the relevant payments to the Corporation's Accounts as given below:

1 Account No. 00030350000790 of HDFC Bank K G Marg, New Delhi (IFSC code HDFC0000003)

2. ih, Ql h __.kdrk{ka}kjk n\$ jkf'k dk Hkkqrku b&Hkkqrku@vkjVhth, l izkkyh }kjk fd, tkusdksi kFkfedrk nsk g\$ rFkk i kkl kfgj djrk gA

2.PFC would prefer and encourage the Borrowers in remitting the dues through e-Payment/ RTGS System, For which you may like to take up with your Bankers.

3 __.kdrkz i vkr-% l fuf'Pkr djafd n\$ frffk ij fuxe ds[kkrseafdk Hkkqrku dj fn; k x; k gA

3.The Borrower will fully ensure that the monies are duly credited on the due dates to the Corporations's above said Accounts.

4 __.knkrk dsi {k eans l afdkr Hkkqrku rc vnk ekuk tk, xk ; fn og jkf'k n\$ frffk dksfuxe ds[kkrseatek gkstk, xhA

4.The amount due from the borrower on the due dates of the relevant payments will be construed to have been paid only if such amount is duly credited to the Corporation's said Accounts on the due date.

5 n\$ jkf'k dk Hkkqrku n\$ frffk ij u gkasdh l fkr eabl s__k dh 'kriksapav ekuk t; sk rFkk __.kdrkz pav dh rkjh[k rd __.k dh 'kriksdsvud kj n\$ Lo: i C; kt dk Hkkqrku djusdsfy; smRrjnk; h gkzka

5.In the event the amount due is not credited to the said Accounts on the due dates of the relevant payments, such non-payment will constitute a default within the terms of the loan and the borrower will be liable to pay penal interest from the date of default till the date on which the amount is duly credited to the said accounts calculated at the rate and in the manner as specified in terms of the sanction of loan.

6 di; k uk\$ djafd ih, Ql h ubz fnYyh dk GSTIN 07AAACP1570H1ZM gA

6.GSTIN of PFC New Delhi is 07AAACP1570H1ZM which may please be updated in Your records.

7 mDr ij i=kpkj rFkk vl; dksz Li "Vhdj.k fuEufyf[kr vf/kdkfj; kal si klr fd; k tk l drk gA

7.Correspondences on the above, and any clarification that may be required may be addressed to :

uke i nuke Oks@QDI @bl ey

i) D.V.SUBBA RAO CHIEF GENERAL MANAGER (LOAN RECOVERY) TEL. 011-23456279, subba_rao@pfcindia.com

ii) D.V.SUBBA RAO CHIEF GENERAL MANAGER (LOAN RECOVERY) TEL. 011-23456279, subba_rao@pfcindia.com

iii) D.V.SUBBA RAO CHIEF GENERAL MANAGER (LOAN RECOVERY) TEL. 011-23456279, subba_rao@pfcindia.com

**** This is not an Invoice**

LOAN NO	INST NO	PRINCIPAL	INTEREST	RED.	SUBSIDY	COMM.	CHARGE	Moratorium Int.	Addl. Int. due to Due_dt shifting	CGST	SGST	IGST	TOTAL (₹)
62102002	176	69,29,556	4,24,154		24,300		0	0	0	0	0	0	73,78,010
₹ /TOTAL :		69,29,556	4,24,154		24,300		0	0	0	0	0	0	73,78,010

** This is not an Invoice

Identified Loan

POWER FINANCE CORPORATION LIMITED
(A Govt. of India Undertaking)
CIN No.:L65910DL1986GOI024862
Regd.Office:Urja Nidhi, 1,Barakhamba Lane, New Delhi-110001
E-Mail:loanrecovery@pfcindia.com Website:www.pfcindia.com

Rep.Name:dem_not_hindi_pnl_em_gst
PageNo : 1 / 4

GSTIN 07AAACP1570H1ZM

Dated : 09/09/2021

Ref. No 04:06: (624):2021-2022

MR. C.D.GOGOI

CHIEF GENERAL MANAGER (F&A)

ASSAM POWER GENERATION CORPORATION LTD.
ASSAM POWER GENERATION CORPORATION LIMITED,
3RD FLOOR, BIJULEE BHAVAN,
PALTAN BAZAR,GUWAHATI-781 001
ASSAM

Dear Sir/Madam,

fnukal - 15@09@2021 dksns eywku] C; kt] l fcl Mh eadVks'h] ifrc) rk i Hkkj] bR; kfn dk Hkqrku 15@09@2021 rd djA

PAYMENT OF PRINCIPAL, INTEREST, REDUCTION SUB., COMMITMENT CHARGES ETC. DUE ON : 15/09/2021 TO BE PAID ON OR BEFORE 15/09/2021

fuEufyf[kr __kksdfy, fnukal 15@09@2021 dkseywku] C; kt] l fcl Mh eadVks'h] ifrc) rk i Hkkj] bR; kfn dh fd'rkadk Hkqrku ns gSA

The instalments of Principal, Interest, Reduction Sub., Commitment Charges ect. are due for payment on or before 15/09/2021 as per details given below :

The Summary of Dues is as under:

Due for the current month	72,25,379
(+)Overdue of Previous demands - if any	-1
(+)Interest & Penal Interest on overdue	0
Total Amount to be paid	72,25,378

* : i; s50 djkm vlij ml l svf|d dsfdl h Hkh Hkqrku dsfy, ih, Ql h , ybZ/kbz 3358003Q6D9LIJZZ1614 bAkr djA

Quote PFC LEI 3358003Q6D9LIJZZ1614 for any payment of Rs.50 cr and above.

** ih, Ql h dksHkqrku djrs l e; dl; k cA+dFku ea "APGCL - 624" vA dr djA

Kindly Indicate "APGCL - 624" in Bank Narration while making all the payments to PFC.

d) di; k ukS djAfd ns jkf'k dk Hkqrku u djustij] fdl h __.k jokrsdks, u ih , ds: i eAoxhZdr djusd h vof| vc 90 fnu dj nh xbZ gSA

a) Kindly note that, the period for classifying a loan account as NPA/Stage 3 on account of non-payment of dues has been reduced to 90 days.

[k] mi; dr i jv jkf'k tek djkuh gksh rFkk ns l sfd, x, vFkok de fd, x, Hkqrku ij ; Fkk ykxvA Lo: i C; kt rFkk C; kt ij C; kt i Hkkfjr fd; k tk, xkA vi Ekr Li "Vhdj.k] ; fn dksZ g]ckn esiklr fd; k tk l drk gA Hkqrku l ead h vupSt rFkk x.kuk bl dsl kFk l gXu gA

b) The above amount is to be remitted in full and penal interest/Int on Int. as applicable shall be charged for delayed and short payments. Clarifications required, if any, may be sought subsequently. Payment instructions and calculations are enclosed herewith.

x) ;g ek i= vki dks'k"Vkpjjo'k Hksk tk jgk gA ek I pzk dh i kflr u gksk@ vl; dksl xyrh foya I shkxrku dju@Hkxrku u djusdk vf/kdkj ughansh rFkk __.kdrkz dks muds

c) This Demand Notice is being sent as a matter of courtesy. Non-Receipt of Demand Notice/any mistake does not give any right for late payment/non payment and will not absolve from the obligations of Borrower.

?k) bl dsvfrfjDr] ;g Hkh fuosu gSfd] __.k&drkz 11-30 ctsl siwih, Ql h [krsedB/V djuk I fuif'Pkr djavk\$ ftI Hkh fof/k I shkxrku jkf'k tek djkbz gk\$ml dh I pzk QDI @bl es ds}kjk Hkh nsnA

d)Further it is requested that, **THE BORROWER MAY ENSURE CREDIT TO PFC's A/C BEFORE 11.30 AM.** Please also inform the same by Fax /email regarding remittances.

Hky&pd/ ysh nshA

Errors and Omissions are excepted.

/kl; okn A Thanking you,

Hkonh;~, Yours faithfully,

i koj Okbub dkkjsu fyfeVA dsy, / FOR POWER FINANCE CORPORATION LIMITED

D.V.SUBBA RAO
CHIEF GENERAL MANAGER (LOAN RECOVERY)
LOAN RECOVERY UNIT

Copy To :
MR NAWJIT BARMAN
ASSAM POWER GENERATION CORPORATION LTD.
FINANCE OFFICER

ASSAM POWER GENERATION CORPORATION LIMITED,
3RD FLOOR, BIJULEE BHAVAN,
PALTAN BAZAR, GUWAHATI-781 001
ASSAM

Hkkqrku vuqfSk / PAYMENT INSTRUCTIONS

1. __.kdrk/ks}kjk n\$ frffk ij l Hkh idkj dk l afkr Hkkqrku fuEukuq kj fuxe ds[kkrseaf; k tk, %

1.All monies payable by the borrower to the Corporation shall be paid on due dates of the relevant payments to the Corporation's Accounts as given below:

1 Account No. 00030350000790 of HDFC Bank K G Marg, New Delhi (IFSC code HDFC0000003)

2- ih, Ql h __.kdrk/ks}kjk n\$ jkf'k dk Hkkqrku b&Hkkqrku@vkjVhth, l izkkyh }kjk fd, tkusdksi kFkfedrk nsk g\$ rFkk i k&l kfgR djrk gA

2.PFC would prefer and encourage the Borrowers in remitting the dues through e-Payment/ RTGS System, For which you may like to take up with your Bankers.

3 __.kdrkz i w% l fuf' Pkr djaf; n\$ frffk ij fuxe ds[kkrseaf Hkkqrku dj fn; k x; k gA

3.The Borrower will fully ensure that the monies are duly credited on the due dates to the Corporations's above said Accounts.

4 __.knkrk dsi {k eans l afkr Hkkqrku rc vnk ekuk tk, xk ; fn og jkf'k n\$ frffk dksfuxe ds[kkrseatek gkstk, xhA

4.The amount due from the borrower on the due dates of the relevant payments will be construed to have been paid only if such amount is duly credited to the Corporation's said Accounts on the due date.

5 n\$ jkf'k dk Hkkqrku n\$ frffk ij u gksdjh flFkr eabl s __.k dh 'krkzseapw ekuk t; sk rFkk __.kdrkz pav dh rkjh[k rd __.k dh 'krkzsdsvud kj n&lLo: i C; kt dk Hkkqrku djustsfy; smRrjnk; h gkskA

5.In the event the amount due is not credited to the said Accounts on the due dates of the relevant payments, such non-payment will constitute a default within the terms of the loan and the borrower will be liable to pay penal interest from the date of default till the date on which the amount is duly credited to the said accounts calculated at the rate and in the manner as specified in terms of the sanction of loan.

6 di ; k ukz djaf; ih, Ql h ubz fnYyh dk GSTIN 07AAACP1570H1ZM gA

6.GSTIN of PFC New Delhi is 07AAACP1570H1ZM which may please be updated in Your records.

7 mDr ij i =kpkj rFkk vl; dksz Li "Vhdj.k fuEufyf[kr vf/kdkfj; kal si klr fd; k tk l drk gA

7.Correspondences on the above, and any clarification that may be required may be addressed to :

- | | | |
|--------------------|--|------------------------|
| uke | i nuke | Oks@ODI @bl ey |
| i) D.V.SUBBA RAO | CHIEF GENERAL MANAGER (LOAN RECOVERY) TEL. 011-23456279, | subba_rao@pfcindia.com |
| ii) D.V.SUBBA RAO | CHIEF GENERAL MANAGER (LOAN RECOVERY) TEL. 011-23456279, | subba_rao@pfcindia.com |
| iii) D.V.SUBBA RAO | CHIEF GENERAL MANAGER (LOAN RECOVERY) TEL. 011-23456279, | subba_rao@pfcindia.com |

LOAN NO	INST NO	PRINCIPAL	INTEREST	RED.	SUBSIDY	COMM.	CHARGE	Moratorium Int.	Addl. Int. due to Due_dt shifting	CGST	SGST	IGST	TOTAL (₹)
62102002	177	69,29,556	2,95,823		0		0	0	0	0	0	0	72,25,379
;kx /TOTAL :		69,29,556	2,95,823		0		0	0	0	0	0	0	72,25,379

** This is not an Invoice

**Annexure 8 – State Govt. of Assam Interest
Rate Certificate for FY2021-22**

(175)

**GOVERNMENT OF ASSAM
FINANCE (BUDGET) DEPARTMENT
DISPUR**

NO.BW.22/89/175

Dated Dispur the 27th March, 2006.

OFFICE MEMORANDUM

Sub : Loans and advance by State Government- interest rates and other terms and conditions.

The undersigned is directed to invite a reference this Department's O.M. No.BW.22/89/137 dtd. 22.05. 2003 and to say that the Governor of Assam is pleased to order that the following rates of interest shall be charged on various kind of loans and advances sanctioned by this State Government with effect from 1st April, 2004 to 31st March, 2005 and from 1st April, 2005 to 31st March, 2006 and until further orders. The rates of interest and other terms and conditions applicable are indicated below:-


	Nature of loan	Rates of interest	
		2004-05 w.e.f. (1.4.04 to 31.3.05)	2005-06 w.e.f. (1.4.05 to 31.3.06)
1.	Loan under Agricultural Loan Act Land Improvement Act and other types of loans to Agriculture and loan under development of live stock Industries	10%	10%
2.	Loans to Local Bodies	11.5%	11.5%
3.	Loans to Co-Operative Societies	11.5%	11.5%
4.	Loans to Land Mortgage Bank and other Cooperative Banks	11.5%	11.5%
5.	Education Loan	11.5%	11.5%
6.	Loans to Cottage Industries	11.5%	11.5%
7.	Loans to Assam State Electricity Board	10%	10%
8.	Loans to Housing Board		
	(a) Loans for relenting by Board to low income group	11.5%	11.5%
	(b) Other Housing Scheme	11.5%	11.5%
9.	Loans to Financial Institution for Construction of Buildings	11.5%	11.5%
10.	Loans to Financial Institution in Public Sector	11.5%	11.5%
11.	Industrial loan to Medium and large scale Industries, Loans to Industrial & Commercial undertakings in Public Sector having equity capital not exceeding Rs.1.00 crore	12.5%	11.5%
12.	Industrial and Commercial undertaking in Public Sector having equity capital exceeding Rs.1.00 crore		
	(a) For loans other than working capital in cash deficit	12.5%	11.5%
	(b) For working capital loan loans for meeting cash deficit	15.5%	14.5%
13.	Industrial & Commercial undertaking in Public Sector	15.5%	14.5%

Contd/-2

D/C

While issuing loans to different Corporation/ Bodies etc. following terms and conditions should be strictly adhered to:-

1. In case of loans given by the Government of India, Financial Institutions i.e. Reserve Bank of India, Nationalised Bank, Life Insurance Corporation of India, National Co-operative Development Corporation (NCDC) National Bank of Agricultural and Rural Development etc. to the State government for specific purpose or scheme for relenting by the State Government for same purpose the rate of interest on such loan shall be charged 1/2% (half percent) above the rate charged by the Government of India on the sponsoring financial institutions lending the loan to the State Government.
2. The interest rate prescribed above assumes timely repayment and interest payments and hence no further rebate in rates is to be allowed for timely repayments.
3. No loan should be granted for a period of exceeding 10 years. If any longer period for repayment is sought, prior concurrence of Finance Department should be obtained.
4. The recovery should ordinarily be affected in annual equal instalment of principal and interest, No moratorium should be allowed in respect of interest payment on loan.
5. The loan sanctions/ agreements should invariably include a penalty clause providing for levy a higher rate of interest in the event of default the repayment of installments of principal or interest. The higher penal rate of interest should not be less than 2.75% (two and three fourth) above the normal rate of interest at which the loan is sanctioned.
6. In the event of a default, the recovery of interest at penal rate may not be waived unless there are special reasons justifying a waiver.
7. Whenever a fresh loan is to be sanctioned/ granted to a borrower who has earlier defaulted, the loan sanctioning authority must consider the question of recovery of defaulted dues.
8. The repayment schedule indicating all terms and conditions should be drawn up to by the concerned controlling branches of Finance at the time of concurring the proposal.

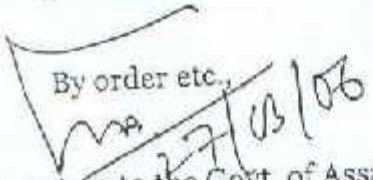

 Deputy Secretary to the Govt. of Assam,
 Finance (Budget) Department,

Dated Dispur the 27th March, 2006.

Memo NO. BW. 22/89/175-A

Copy forwarded for information and necessary action to :-

1. The Accountant General, Assam (E&E), Guwahati-28.
2. The Accountant General, Assam (Audit), Guwahati-28.
3. All Commissioners of Divisions.
4. All Commissioner & Secretary to the Govt. of Assam.
5. All Administrative Department.
6. All Head of Department.
7. All Deputy Commissioners/ Sub-Divisional Officers.
8. All Finance Advisers/ Treasury Officers/ Sub-Treasury Officers.
9. All Branches of Finance Department.

By order etc.

 Deputy Secretary to the Govt. of Assam,
 Finance (Budget) Department.

Annexure 9 – MYT Formats

Name of Company: Assam Power Generation Corporation Limited
Name of Plant/ Station: Namrup Replacement Power Plant

INDEX OF FORMATS

	Formats		PARTICULARS
1	Form	F1	Annual Revenue Requirement Summary
2	Form	F2a	Plant Characteristics-Thermal
3	Form	F2b	Plant Characteristics-Hydro
4	Form	F3a	Normative Parameters Considered for Tariff Computations-Thermal
5	Form	F3b	Normative Parameters Considered for Tariff Computations-Hydro
6	Form	F4	Generation Details and Variable Cost
7	Form	F5	Abstract of admitted Capital Cost for the existing Project
8	Form	F5a	Statement showing claimed capital cost
9	Form	F6	Details of Foreign Loans
10	Form	F7	Details of Foreign Equity
11	Form	F8	Capital Cost Estimates and Schedule of Commissioning for New projects
12	Form	F9a	Break-up of Capital Cost for Coal/ Lignite based projects
13	Form	F9b	Break-up of Capital Cost for Gas/ Liquid fuel based Projects
14	Form	F9c	Break-up of Capital Cost for Hydro projects
15	Form	F9d	Break-up of Capital Cost for Plant & Equipment of New Hydro projects
16	Form	F10	Break-up of Construction/ Supply/ Service packages
17	Form	F11	Draw Down Schedule for Calculation of IDC & Financing Charges
18	Form	F12	Financial Package Upto CoD
19	Form	F13	Details of Project Specific Loans
20	Form	F14a	Calculation of Weighted Average Rate of Interest on Actual Loans
21	Form	F14b	Calculation of Interest on Normative Loan
22	Form	F15	Details of Allocation of corporate loans to various projects
23	Form	F16	Statement of Additional Capitalisation after COD
24	Form	F16a	Details of Assets De-capitalized during the period
25	Form	F17	Financing of Additional Capitalisation
26	Form	F18	Statement of Capital Cost
27	Form	F19	Statement of Capital Works in Progress
28	Form	F20	R&M Expenses
29	Form	F21	Employee Expenses
30	Form	F22	Administration & General Expenses
31	Form	F23	Fixed Assets and Depreciation
32	Form	F24	Details computation of Interest on Loan
33	Form	F25	Return on Equity
34	Form	F26	Working Capital Requirements
35	Form	F27	Detailed Information in respect of fuel for computation of Energy Charges
36	Form	F28	Expenses Capitalised
37	Form	F29	Income Tax Provisions
38	Form	F30	Non-Tariff Income

Instructions for the Applicant

- 1) Electronic copy in the form of CD/ Floppy Disc shall also be furnished
- 2) These formats are indicative in nature and the utility may align the line items to its chart of accounts

Name of Company: Assam Power Generation Corporation Limited						
Name of Plant/ Station: Namrup Replacement Power Plant						
Annual Revenue Requirement Summary					Form No:	F1
						Rs Crore
		Form	2021-22	2022-23	2023-24	2024-25
			Estimated	Projected		
A	Generation					
1	Gross Generation (MU)	F4	481.34	732.69	732.69	732.69
2	Aux Consumption (%)	F4	5.0%	5.0%	5.0%	5.0%
3	Net Generation (MU)	F4	457.20	696.05	696.05	696.05
B	Capacity Charges (Annual Fixed Charges)					
1	O&M expenses (including Increase in AERC Tariff Fees)					
a	Employee Expenses	F21				
b	R & M Expense	F20	28.98	22.90	23.94	25.04
c	A&G Expense	F22				
2	Depreciation	F23	22.68	45.37	45.39	45.47
3	Interest on Loans	F14B	63.96	64.04	58.75	53.84
4	Return on Equity	F25	20.95	41.90	41.90	41.90
5	Interest on Working Capital	F26	4.82	6.08	6.05	6.03
6	Income Tax	F29	0.00	0.00	0.00	0.00
7	Cost of secondary fuel (only for coal based stations)	F4	0.00	0.00	0.00	0.00
8	Special allowance in lieu of R&M or separate compensation allowance					
9	Capacity Building					
10	Less: Other Income	F30	0.00	0.00	0.00	0.00
	Total		141.38	180.28	176.02	172.27
C	Variable Charges (Energy Charges)					
	Energy Charges from Primary Fuel (Rs Cr) ^{C1, C2, C3, C4}	F4	53.96	87.86	87.86	87.86
	Energy Charges from Primary Fuel (Rs/ kWh)	F4	1.18	1.26	1.26	1.26
			4.27	3.85	3.79	3.74
	C1 - If multifuel is used simultaneously, energy charges to be given in respect of every fuel individually					
	C2 - Energy charge shall be computed for open cycle operation and combined cycle operation separately in case of gas/ liquid fuel fired plants					
	C3 - Energy charge shall be worked out based on ex-bus energy scheduled to be sent out					
					Petitioner	

Name of Company: Assam Power Generation Corporation Limited			
Name of Plant/ Station: Namrup Replacement Power Plant			
Plant Characteristics-Thermal		F2a	
Unit(s)/ Block(s) Parameters	Unit I	Unit II	
Installed Capacity (MW)	62.25	36.15	
Schedule COD as per Investment Approval			
Actual COD Date of Taken Over (as applicable)	2021	2021	
Pit Head or Non Pit Head	Not applicable		
Name of the Boiler Manufacture	BHEL		
Name of Turbine Generator Manufacture	BHEL		
Main Steams Pressure at Turbine inlet (kg/Cm2) abs ¹	Not applicable		
Main Steam Temperature at Turbine inlet (oC) ¹	Not applicable		
Reheat Steam Pressure at Turbine inlet (kg/Cm2) ¹	N/A		
Reheat Steam Temperature at Turbine inlet (oC) ¹	N/A		
Main Steam flow at Turbine inlet under MCR condition (tons /hr) ²	Not applicable		
Main Steam flow at Turbine inlet under VWO condition (tons /hr) ²	Not applicable		
Unit Gross electrical output under MCR /Rated condition (MW) ²	62.25	36.15	
Unit Gross electrical output under VWO condition (MW) ²	20	21	
Guaranteed Design Gross Turbine Cycle Heat Rate (kCal/kWh) ³	2635 - Not Guaranteed	1988 - Guaranteed	
Conditions on which design turbine cycle heat rate guaranteed	NCV	NCV	
% MCR	Not applicable		
% Makeup Water Consumption			
Design Capacity of Make up Water System			
Design Capacity of Inlet Cooling System			
Design Cooling Water Temperature (oC)			
Back Pressure			
Steam flow at super heater outlet under BMCR condition (tons/hr)			
Steam Pressure at super heater outlet under BMCR condition) (kg/Cm2)			
Steam Temperature at super heater outlet under BMCR condition (oC)			
Steam Temperature at Reheater outlet at BMCR condition (oC)			
Design / Guaranteed Boiler Efficiency (%) ⁴			
Design Fuel with and without Blending of domestic/imported coal			
Type of Cooling Tower			
Type of cooling systems ⁵			
Type of Boiler Feed Pump ⁶			
Fuel Details ⁷			
-Primary Fuel			
-Secondary Fuel			
-Alternate Fuels			
Special Features/ Site Specific Features ⁸	MAKEUP WATER SYSTEM		
Special Technological Features ⁹	N/A		
Environmental Regulation related features ¹⁰			
Any other special features			
1: At Turbine MCR condition.			
2: with 0% (Nil) make up and design Cooling water temperature			
3: at TMCR output based on gross generation, 0% (Nil) makeup and design Cooling water temperature			
4: With Performance coal based on Higher Heating Value (HHV) of fuel and at BMCR) out put			
5: Closed circuit cooling, once through cooling, sea cooling, natural draft cooling, induced draft cooling			
6: Motor driven, Steam turbine driven etc.			
7: Coal or natural gas or Naptha or lignite etc.			
8: Any site specific feature such as Merry-Go-Round, Vicinity to sea, Intake /makeup water systems etc. scrubbers etc. Specify all such features			
9: Any Special Technological feature like Advanced class FA technology in Gas Turbines, etc.			
10: Environmental Regulation related features like FGD, ESP etc.			
Note 1: In case of deviation from specified conditions in Regulation, correction curve of manufacturer may also be submitted.			
Note 2: Heat Balance Diagram has to be submitted along with above information in case of new station			
Note 3: The terms – MCR, BMCR, HHV, Performance coal, are as defined in CEA Technical Standards for Construction of Electric Plants and Electric Lines Regulations – 2010 notified by the Central Electricity Authority.			

Name of Company: Assam Power Generation Corporation Limited						
Name of Plant/ Station: Namrup Replacement Power Plant						
Normative Parameters Considered for Tariff Computations-Thermal					Form No:	F3 (a)
	Particulars	Unit	2021-22	2022-23	2023-24	2024-25
			Estimated	Projected		
1	Base Rate of Return on Equity	%	15.5%	15.5%	15.5%	15.5%
2	Target Availability	%	85.00%	85.00%	85.00%	85.00%
3	Auxiliary Energy Consumption	%	5.00%	5.00%	5.00%	5.00%
4	Gross Station Heat Rate	kCal/ kWh	1791.00	1791.00	1791.00	1791.00
5	Specific Fuel Oil Consumption ml/kWh	ml/ kWh				
6	Cost of Coal/ Lignite	Rs/ Ton				
7	Cost of Main Secondary Fuel Oil	Rs/ kL				
8	Cost of Gas	Rs/ SCM	4.67	5.55	5.55	5.55
9	Primary Fuel (Coal/ Lignite/ Gas) for Working Capital	in Months				
10	Secondary Fuel for Working Capital	in Months				
11	O&M Expenses	Rs/ MW				
12	Maintenance Spares for Working Capital	% of O&M	30	30	30	30
13	Receivables for Working Capital	in Months	2 months	2 months	2 months	2 months
14	Base Rate of SBI as on _____	%	10.00%	10.00%	10.00%	10.00%
						Petitioner

Name of Company: Assam Power Generation Corporation Limited
Name of Plant/ Station: Namrup Replacement Power Plant

Abstract of admitted Capital Cost for the existing Project

Form No:

F5

	Particulars	Unit	Details
	Last date of order of Commission for the project as on 31.03.2020		
1	Capital Cost as admitted by AERC	Rs Lakhs	Not Applicable as Order for Capital Cost is yet to be issued
2	Amount of un-discharged liabilities included in above (& forming part of admitted capital cost)	Rs Lakhs	
3	Amount of un-discharged liabilities corresponding to above admitted capital cost (but not forming part of admitted capital cost being allowed on cash basis)	Rs Lakhs	
4	Gross Normative Debt	Rs Lakhs	
5	Cumulative Repayment	Rs Lakhs	
6	Net Normative Debt	Rs Lakhs	
7	Normative Equity	Rs Lakhs	
8	Cumulative Depreciation	Rs Lakhs	
9	Freehold land	Rs Lakhs	

Petitioner

Name of Company: Assam Power Generation Corporation
Name of Plant/ Station: Namrup Replacement Power Plan

Statement showing claimed capital cost

Form No: F5a

	Particulars	Unit	2021-22	2022-23	2023-24	2024-25
1	Opening Capital Cost	Rs Lakhs	0.00	90100.00	90194.83	90301.78
2	Add: Addition during the year / period	Rs Lakhs	90100.00	94.83	106.95	504.90
3	Less: Decapitalisation during the year / period	Rs Lakhs	0.00	0.00	0.00	0.00
4	Less: Reversal during the year / period	Rs Lakhs				
5	Add: Discharges during the year / period	Rs Lakhs				
6	Closing Capital Cost	Rs Lakhs	90100.00	90194.83	90301.78	90806.68
7	Average Capital Cost	Rs Lakhs	45050.00	90147.41	90248.30	90554.23

Petitioner

Name of Company: Assam Power Gener
Name of Plant/ Station: Namrup Replac

Rs Lakhs

Details of Foreign Loans Form No: F6

Details only in respect of loans applicable to the project under petition

Particulars	Date	Year 1			Year 2			Year 3 and so on				
		Amount (Foreign Currency)	Exchange Rate	Amount (Rs)	Date	Amount (Foreign Currency)	Exchange Rate	Amount (Rs)	Date	Amount (Foreign Currency)	Exchange Rate	Amount (Rs)
A Currency1¹												
1 Date of loan draw ²												
2 Scheduled Principal Repayment												
3 Scheduled Interest payment												
4 Closing at the end of financial year												
B In case of Hedging³												
1 At the date of Hedging												
2 Period of hedging												
3 Cost of hedging												
A Currency2¹												
1 Date of loan draw ²												
2 Scheduled Principal Repayment												
3 Scheduled Interest payment												
4 Closing at the end of financial year												
B In case of Hedging³												
1 At the date of Hedging												
2 Period of hedging												
3 Cost of hedging												
A Currency3¹												
1 Date of loan draw ²												
2 Scheduled Principal Repayment												
3 Scheduled Interest payment												
4 Closing at the end of financial year												
B In case of Hedging³												
1 At the date of Hedging												
2 Period of hedging												
3 Cost of hedging												

Not Applicable

¹ Name of the currency to be mentioned e.g. US \$, DM, etc.

² In case of more than one drawl during the year, Exchange rate at the date of each drawl to be provided.

³ Furnish details of hedging, in case of more than one hedging during the year or part hedging, details of each hedging to be provided.

Petitioner

Name of Company: Assam Power Gener:
 Name of Plant/ Station: Namrup Replace

Details of Foreign Equity

Form No: F7

Details only in respect of loans applicable to the project under petition

Particulars	Year 1			Year 2			Year 3 and so on					
	Date	Amount (Foreign Currency)	Exchange Rate	Amount (Rs)	Date	Amount (Foreign Currency)	Exchange Rate	Amount (Rs)	Date	Amount (Foreign Currency)	Exchange Rate	Amount (Rs)
Currency1¹												
1 Date of Infusion												
2												
3												
4												
Currency2¹												
1 Date of Infusion												
2												
3												
4												
Currency3¹												
1 Date of Infusion												
2												
3												
4												

Not Applicable

¹ Name of the currency to be mentioned e.g. US \$, DM, etc.

² In case of equity infusion more than once during the year, Exchange rate at the date of each infusion to be provided

Petitioner

Name of Company: Assam Power Generation Corporation
Name of Plant/ Station: Namrup Replacement Power Pla

Capital Cost Estimates and Schedule of Commissioning Form No: F8

Capital Cost Estimates

Board of Director/ Agency approving the Capital cost	APGCL board	
Date of approval of the Capital cost estimates:	17/03/2007 - Date of Investment Approval by the Board	
	Present Day Cost	Completed Cost
Price level of approved estimates	As on Scheduled COD of the Station	End of FY2021-22 (Estimated)
Foreign Exchange rate considered for the Capital cost estimates		
Capital Cost excluding IDC, IEDC & FC		
Foreign Component, if any (In Million US \$ or the relevant Currency)		
Domestic Component (Rs. Lakhs)	544.23	638.16
Capital cost excluding IDC, IEDC & FC (Rs. Lakhs)	544.23	638.16
IDC, IEDC, FC, FERV & Hedging Cost		
Foreign Component, if any (In Million US \$ or the relevant Currency)		
Domestic Component (Rs. Lakhs)	262.84	262.84
Total IDC, IEDC, FC , FERV & Hedging Cost (Rs. Lakhs)	262.84	262.84
Rate of taxes & duties considered		
Capital cost Including IDC, IEDC, FC, FERV & Hedging Cost		
Foreign Component, if any (In Million US \$ or the relevant Currency)	0.00	0.00
Domestic Component (Rs. Lakhs)	807.07	901.00
Capital cost Including IDC, IEDC, FC, FERV & Hedging Cost (Rs. Lakhs)	807.07	901.00
Schedule of Commissioning as per Investment Approval		
COD of Unit-I/ Block-I		
COD of Unit-II/ Block-II		

COD of last Unit/ Block		

Note:

1. Copy of approval letter should be enclosed.
2. Details of Capital cost are to be furnished as per Form 9 or Form 10 as applicable.
3. Details of IDC & Financing Charges are to be furnished as per Form 12

Petitioner

No	Break Down	As per original estimates	Actual capital expenditure as on COD	Liabilities/ provisions	Variation (B-C-D)	Reasons for Variation	Actual/Estimated Capital Expenditure upto Cut-off date
	A	B	C	D	E	F	G
1	Cost of Land & Site Development						
1.1	Land						
1.2	Rehabilitation & Resettlement (R&R)						
1.3	Preliminary Investigation & Site development		0.53				
	Total Land & Site Development		0.53				
2	Plant & Equipment						
2.1	Steam Turbine generator Island						
2.2	Turbine Generator Island						
2.3	WHRB Island						
2.4	BOP Mechanical						
2.4.1	Fuel Handling & Storage system						
2.4.2	External water supply system						
2.4.3	CW system						
2.4.4	Cooling Towers						
2.4.5	DM water Plant						
2.4.6	Clarification plant						
2.4.7	Chlorination Plant						
2.4.8	Air condition & Ventilation System						
2.4.9	Fire Fighting system						
2.4.10	HP/LP Piping						
	Total BOP Mechanical		466.47				
2.5	BOP Electrical						
2.5.1	Switch Yard Package						
2.5.2	Transformers Package						
2.5.3	Switchgear Package						
2.5.4	Cables, Cable facilities & grounding						
2.5.5	Lighting						
2.5.6	Emergency D.G. set						
	Total BOP Electrical						
2.6	C & I Package						
	Total Plant & Equipment excl taxes & duties						
2.7	Taxes and Duties						
2.7.1	Custom Duty						
2.7.2	Other Taxes & Duties						
	Total Taxes & Duties						
	Total Plant & Equipment						
3	Initial spares						
4	Civil Works						
4.1	Main plant/Adm. Building						
4.2	External water supply system						
4.3	CW system						
4.4	Cooling Towers						
4.5	DM water Plant						
4.6	Clarification plant						
4.7	Fuel Handling & Storage system						
4.8	Township & Colony						
4.9	Temp. construction & enabling works						
4.10	Road & Drainage						
4.11	Fire Fighting system						
	Total Civil works		77.2				
5	Construction & Pre- Commissioning Expenses						
5.1	Erection Testing and commissioning						
5.2	Site supervision						
5.3	Operator's Training						
5.4	Construction Insurance						
5.5	Tools & Plant						
5.6	Start up fuel						
	Total Construction & Pre- Commissioning Expenses						
6	Overheads						
6.1	Establishment						
6.2	Design & Engineering						
6.3	Audit & Accounts						
6.4	Contingency						
	Total Overheads		544.73				
7	Capital cost excluding IDC & FC						
8	IDC, FC, FERV & Hedging Cost		262.84				
8.1	Interest During Construction (IDC)						
8.2	Financing Charges (FC)						
8.3	Foreign Exchange Rate Variation (FERV)						
8.4	Hedging Cost						
	Total of IDC, FC, FERV & Hedging Cost		262.84				
9	Capital cost including IDC, FC, FERV & Hedging Cost		807.57				

Note:

- In case of time & Cost over run, a detailed note giving reasons of such time and cost over run should be submitted clearly bring out the agency responsible and whether such time & cost over run was beyond the control of the generating company.
- A list of balance work assets/work wise including initial spare on original scope of works along with estimate shall be furnished positively

Name of Company: Assam Power Generation Corporation Limited

Name of Plant/ Station: Namrup Replacement Power Plant

Break-up of Construction/ Supply/ Service packages

Form No: F10

1	Name/ No. of Construction / Supply / Service Package	Single Package			
2	Scope of works ¹ (in line with head of cost break-ups as applicable)	Design, Engineering, Manufacture, Fabrication, Assembly, Shop Testing, Packing and forwarding of the Plant & Equipment for 100 MW NRPP			
3	Whether awarded through ICB/DCB/ Departmentally/ Deposit Work	ICB			
4	No. of bids received	1			
5	Date of Award	15-09-09			
6	Date of Start of work	2009-10			
7	Date of Completion of Work	ongoing			
8	Value of Award ² in (Rs. Lakh)	590.33			
9	Firm or With Escalation in prices				
10	Actual capitalexpenditure till the completion or up to COD whichever is earlier(Rs.Cr.)	638.16			
11	Taxes & Duties and IEDC (Rs. Lakh)				
12	IDC, FC, FERV & Hedging cost (Rs. Lakh)	262.84			
13	Sub -total (9+10+11)	901.00			

1 The scope of work in any package should be indicated in conformity of Capital cost break-up for the Hydro plants/coal/lignite/gas based plants in the Form 9 (a,b,c,d) to the extent possible.

2 If there is any package, which need to be shown in Indian Rupee and foreign currency(ies), the same should be shown separately alongwith the currency, the exchange rate and the date e.g. Rs. 80 Crore + US\$50 mn = Rs.380 Crore at US\$ = Rs 60 as on say 1 April 2015

Petitioner

Name of Company: Assam Power Generation Corporation Limited
Name of Plant/ Station: Namrup Replacement Power Plant

Draw Down Schedule for Calculation of IDC &			F11 Draw Down Schedule for Calculation of				F11 Draw Down Schedule for Calculation of IDC & Financing				
No	Draw Down Particulars	Rs Lakhs									
		Upto 2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
1	Loans										
1.2	Indian Loans										
1.2.1	PFC										
	Draw down Amount	9,000	5,000	0	10,500	6,674		-530	-41	288	
	IDC	149	1,410	1,820	2,479	3,479	3,899	3,824	3,648	3,763	1,813
	Financing charges										
	Total Indian Loans										
	Draw down Amount	9,000	5,000	0	10,500	6,674	0	-530	-41	288	0
	IDC	149	1,410	1,820	2,479	3,479	3,899	3,824	3,648	3,763	1,813
	Financing charges										
	Total of Loans drawn	9,000	5,000	0	10,500	6,674	0	-530	-41	288	0
	IDC	149	1,410	1,820	2,479	3,479	3,899	3,824	3,648	3,763	1,813
	Financing charges										
2	Equity										
2.1	Foreign equity drawn										
2.2	APGCL Equity	20,205		686							
	Total equity deployed	20,205		686	0	0	0				

Note: Drawal of debt and equity shall be on paripassu basis quarter basis to meet the commissioning schedule. Drawal of higher equity in the beginning is permissible.

Note 2: for PFC Loan, the repayment of the loans started from FY18-19 and hence some figures are in negative

Name of Company: Assam Powe

Name of Plant/ Station: Namrup

Financial Package Upto CoD

Form No:

F12

Project Cost as on COD¹

807.07

Date of Commercial Operation of the Station²

16-07-21

	Financial Package as Approved		Financial Package as on COD		As Admitted on COD	
	Currency	Amount	Currency	Amount	Currency	Amount
Loans						
PFC	INR	485	INR	311.74		
GoA Loan	INR	10.13	INR	0		
Loan-III						
and so on						
Total Loan						
Equity						
Foreign						
APGCL	INR	198.81	INR	208.86		
Total Equity						
Debt : Equity Ratio						

¹ Say Rs 80 cr+US \$ 200mn or Rs 1280 Cr including US \$ 200mn at Exchange rate of US \$=Rs 60

² Date of Commercial Operation means Commercial Operation of the last unit

Petitioner

Name of Company: Assam Power Generati
 Name of Plant/ Station: Namrup Replacem

Details of Project Specific Loans Form No: F13

		Rs. Crore	
Particulars	NRPP		
Source of Loan ¹	I PFC Loans		
Currency ²	INR		
Amount of Loan sanctioned	485		
Amount of Gross Loan drawn upto 31.03.2021 COD ^{3,4,5,13,15} - including repayments	309		
Interest Type ⁶	Floating		
Fixed Interest Rate, if applicable	12.18%		
Base Rate, if Floating Interest ⁷			
Margin, if Floating Interest ⁸	Yes/No		
Are there any Caps/Floor ⁹			
If above is yes,specify caps/floor			
Moratorium Period ¹⁰			
Moratorium effective from			
Repayment Period ¹¹			
Repayment effective from			
Repayment Frequency ¹²			
Repayment Instalment ^{13,14}			
Base Exchange Rate ¹⁶			
Are foreign currency loan hedged?			
If above is yes,specify details ¹⁷			

Note:

- ¹ Source of loan means the agency from whom the loan has been taken such as WB, ADB, WMB,
- ² Currency refers to currency of loan such as US\$, DM, Yen, Indian Rupee etc.
- ³ Details are to be submitted as on 31.03.2015 for existing assets and as on COD for the remaining
- ⁴ Where the loan has been refinanced, details in the Form is to be given for the loan refinanced. However, the details of the original loan is to be given seperately in the same form.
- ⁵ If the Tariff in the petition is claimed seperately for various units, details in the Form is to be given
- ⁶ Interest type means whether the interest is fixed or floating.
- ⁷ Base rate means the base as PLR, LIBOR etc. over which the margin is to be added. Applicable base rate on different dates from the date of drawl may also be enclosed.
- ⁸ Margin means the points over and above the floating rate.
- ⁹ At times caps/ floor are put at which the floating rates are frozen. If such a condition exists,
- ¹⁰ Moratorium period refers to the period during which loan servicing liability is not required.
- ¹¹ Repayment period means the repayment of loan such as 7 years, 10 years, 25 years etc.
- ¹² Repayment frequency means the interval at which the debt servicing is to be done such as
- ¹³ Where there is more than one drawal/repayment for a loan, the date & amount of each
- ¹⁴ If the repayment instalment amount and repayment date can not be worked out from the data
- ¹⁵ In case of Foreign loan,date of each drawal & repayment alongwith exchange rate at that date
- ¹⁶ Base exchange rate means the exchange rate prevailing as on 31.03.2015 for existing assets
- ¹⁷ In case of hedging, specify details like type of hedging, period of hedging, cost of heging, etc.
- ¹⁸ In case of foreign loans, provide details of exchange rate considered on date of each repayment o
- ¹⁹ At the time of truing up rate of interest with relevant reset date (if any) to be furnished separately.
- ²⁰ At the time of truing up provide details of refinancing of loans considered earlier. Details such as date on which refinancing done, amount of refinanced loan, terms and conditions of refinanced

Petitioner

Name of Company: Assam Power Generation Corporation								
Name of Plant/ Station: Namrup Replacement Power Plant								
Calculation of Weighted Average Rate of Interest on Actual Loans							Form No:	F14a
	Particulars	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25
		Actual	Actual	Actual	Estimated	Projected		
	Loan-1 from PFCL							
	Gross loan - Opening							
	Cumulative repayments of Loans upto previous year							
	Net loan - Opening	414.02	387.03	364.92	346.12	476.25	437.34	407.53
	Add: Drawal(s) during the Year	0.00	21.28	26.38	173.26	0.00	0.00	0.00
	Less: Repayment (s) of Loans during the year	32.08	43.39	45.18	43.13	38.91	29.81	25.56
	Net loan - Closing	381.94	364.92	346.12	476.25	437.34	407.53	381.97
	Average Net Loan	397.98	375.97	355.52	411.19	456.80	422.44	394.75
	Rate of Interest on Loan on annual basis	11.64%	11.54%	11.97%	14.54%	11.71%	11.77%	11.80%
	Interest on loan	48.20	44.68	43.66	50.33	55.76	51.48	48.09
	Loan-2 Govt. of Assam							
	Gross loan - Opening							
	Cumulative repayments of Loans upto previous year							
	Net loan - Opening	206.75	239.80	278.95	603.22	603.28	645.47	683.35
	Add: Drawal(s) during the Year	27.98	9.98	-18.26	0.29	42.19	37.88	29.26
	Less: Repayment (s) of Loans during the year	-10.39	-21.69	-23.51	0.00	0.00	0.00	0.00
	Net loan - Closing	245.12	271.48	284.20	603.51	645.47	683.35	712.61
	Average Net Loan	225.93	255.64	281.57	603.37	624.38	664.41	697.98
	Rate of Interest on Loan on annual basis	6.93%	7.61%	7.55%	10.00%	10.35%	10.29%	10.21%
	Interest on loan	14.33	18.25	21.06	60.31	62.44	66.44	69.80
	Total Loan							
	Gross loan - Opening							
	Cumulative repayments of Loans upto previous year							
	Net loan - Opening	620.77	626.83	643.87	949.34	1079.53	1082.81	1090.88
	Add: Drawal(s) during the Year	27.98	31.26	8.13	173.55	42.19	37.88	29.26
	Less: Repayment (s) of Loans during the year	21.69	21.69	21.67	43.13	38.91	29.81	25.56
	Net loan - Closing	627.05	636.40	630.32	1079.76	1082.81	1090.88	1094.58
	Average Net Loan	623.91	631.61	637.09	1014.55	1081.17	1086.85	1092.73
	Interest on loan	62.53	62.93	64.73	110.64	118.19	117.93	117.89
	Weighted average Rate of Interest on Loans	10.07%	10.04%	10.16%	10.91%	10.93%	10.85%	10.79%
	Note:							
	1.In case of Foreign Loans, the calculations in Indian Rupees is to be furnished. However, the calculations in Original currency is also to be furnished separately in the same form.							
							Petitioner	

Name of Company: Assam Power Generation C					
Name of Plant/ Station: Namrup Replacement					
Calculation of Interest on Normative Loan				Form No:	F14b
					Rs. Crores
S. No	Particulars	2021-22	2022-23	2023-24	2024-25
		Estimated	Projected		
1	Gross Normative loan – Opening				
2	Cumulative repayment of Normative loan upto previous year				
3	Net Normative loan – Opening	564.95	608.02	563.61	519.29
4	Add: Increase due to addition during the year / period	65.75	0.95	1.07	5.05
5	Less: Decrease due to de-capitalisation during the year / period				
6	Less: Decrease due to reversal during the year / period	22.68	45.37	45.39	45.47
7	Add: Increase due to discharges during the year / period				
8	Net Normative loan - Closing	608.02	563.61	519.29	478.87
9	Average Normative loan	586.49	585.81	541.45	499.08
10	Weighted average rate of interest	10.91%	10.93%	10.85%	10.79%
	Interest on Loan	63.96	64.04	58.75	53.84
	Bank Charges	0.00	0.00	0.00	0.00
11	Interest on Loan with Bank Charges	63.96	64.04	58.75	53.84
Petitioner					

Name of Company: Assam Power Gene

Name of Plant/ Station: Namrup Repla

Details of Allocation of corporate loans to various projects

F15

Rs. Crore

Particulars	NRPP	
Source of Loan ¹	I PFC Loans	
Currency ²	INR	
Amount of Loan sanctioned	485.00	
Amount of Gross Loan drawn upto 31.03.2021/ COD ^{3,4,5,13,15} - incl. repayments	308.90	
Interest Type ⁶	Floating	
Fixed Interest Rate, if applicable	12.18%	
Base Rate, if Floating Interest ⁷		
Margin, if Floating Interest ⁸	Yes/No	
Are there any Caps/Floor ⁹		
If above is yes,specify caps/floor		
Moratorium Period ¹⁰		
Moratorium effective from		
Repayment Period ¹¹		
Repayment effective from		
Repayment Frequency ¹²		
Repayment Instalment ^{13,14}		
Base Exchange Rate ¹⁶		
Are foreign currency loan hedged?		
If above is yes,specify details ¹⁷		

Distribution of loan packages to various projects

Name of the Projects		Total
Project 1		
Project 2		
Project 3 and so on		

Note:

¹ Source of loan means the agency from whom the loan has been taken

² Currency refers to currency of loan such as US\$, DM, Yen,Indian

³ Details are to be submitted as on 31.03.2015 for existing assets and

⁴ Where the loan has been refinanced, details in the Form is to be given for the loan refinanced. However, the details of the original loan is

⁵ If the Tariff in the petition is claimed seperately for various units,

⁶ Interest type means whether the interest is fixed or floating.

⁷ Base rate means the base as PLR, LIBOR etc. over which the margin is to be added. Applicable base rate on different dates from the date of

⁸ Margin means the points over and above the floating rate.

⁹ At times caps/ floor are put at which the floating rates are frozen. If

¹⁰ Moratorium period refers to the period during which loan servicing

¹¹ Repayment period means the repayment of loan such as 7 years, 10

¹² Repayment frequency means the interval at which the debt servicing

¹³ Where there is more than one drawal/repayment for a loan, the date

¹⁴ If the repayment instalment amount and repayment date can not be

¹⁵ In case of Foreign loan,date of each drawal & repayment alongwith

¹⁶ Base exchange rate means the exchange rate prevailing as on

¹⁷ In case of hedging, specify details like type of hedging, period of

¹⁸ In case of foreign loans, provide details of exchange rate considered on date of each repayment of principal and date of interest payment.

¹⁹ At the time of truing up rate of interest with relevant reset date (if any)

²⁰ At the time of truing up provide details of refinancing of loans considered earlier. Details such as date on which refinancing done,

Name of Company: Assam Power Generation C

Name of Plant/ Station: Namrup Replacement I

Statement of Additional Capitalisation after COD

Form No:

F16

Rs. Lakhs

No	Head of Work/ Equipment	Actual/ Projected additional capital expenditure claimed				Regulations under which claimed	Justification	Admitted Cost by Commission if any
		2021-22	2022-23	2023-24	2024-25			
1	Land	-	-	-	-			
2	Building	-	-	-	-			
3	Hydraulic works	-	-	-	-			
4	Other civil works	11,450.00	94.83	106.95	504.90			
5	Plant & machinery- Gas	78,650.00	-	-	-			
6	Plant & machinery- Hydel	-	-	-	-			
7	Lines & cables	-	-	-	-			
8	Vehicle	-	-	-	-			
9	Furniture	-	-	-	-			
10	Other office equipment	-	-	-	-			
11	Roads on land belonging to others	-	-	-	-			
12	Capital spares at Generating Stations	-	-	-	-			

Note:

1 Fill the form in chronological order year wise along with detailed justification clearly bring out the necessity and the benefits accruing to the

2 In case initial spares are purchased alongwith any equipment, then the cost of such spares should be indicated separately. e.g. Rotor - 50

3 Actual/Projected additional capital expenditure claimed for past period shall be governed by Tariff Regulation for the relevant period

Petitioner

Name of Company: Assam Power Generation (

Name of Plant/ Station: Namrup Replacement

Date of Commercial Operation:

Financing of Additional Capitalisation Form No: F17

Rs. Lakh

Financial Year (Starting from COD)				
	2021-22	2022-23	2023-24	2024-25
Amount capitalised in Work/ Equipment				
Financing Details				
GOA Loan				
PFC	63070.00	94.83	106.95	504.90
Total Loan²	63070.00	94.83	106.95	504.90
Grant				
Equity	27030.00	0.00	0.00	0.00
Internal Resources				
Others				
Total	90100.00	94.83	106.95	504.90

¹ Year 1 refers to Financial Year of COD and Year 2, Year 3 etc. are the subsequent financial ye

² Loan details for meeting the additional capitalisation requirement should be given as per Form

Name of Company: Assam Power Generation Corporation Limited

Name of Plant/ Station: Namrup Replacement Power Plant

Statement of Capital Cost

Form No: F18

Rs Crore

	Particulars	As on relevant date ¹
A	a Opening Gross Block Amount as per books	-
	b Amount of capital liabilities in A(a) above	
	c Amount of IDC, FC, FERV & Hedging cost included in A(a) above	0.00
	d Amount of IEDC (excluding IDC, FC, FERV & Hedging cost) included in A(a)	
B	a Addition in Gross Block Amount as per books	901.00
	b Amount of capital liabilities in B(a) above	
	c Amount of IDC, FC, FERV & Hedging cost included in B(a) above	262.84
	d Amount of IEDC (excluding IDC, FC, FERV & Hedging cost) included in B(a)	
C	a Deletion in Gross Block Amount as per books if any	-
	b Amount of capital liabilities in C(a) above	
	c Amount of IDC, FC, FERV & Hedging cost included in C(a) above	
	d Amount of IEDC (excluding IDC, FC, FERV & Hedging cost) included in C(a)	
D	a Closing Balance of Gross Block Amount as per books	901.00
	b Amount of capital liabilities in C(a) above	-
	c Amount of IDC, FC, FERV & Hedging cost included in C(a) above	262.84
	d Amount of IEDC (excluding IDC, FC, FERV & Hedging cost) included in C(a)	-

¹ Relevant date/s means date of COD of unit/s, station and financial year start date and end date

Petitioner

Name of Company: Assam Power Generation Corporation Limited

Name of Plant/ Station: Namrup Replacement Power Plant

Statement of Capital Works in Progress

Form No: F19

Rs. Crore

	Particulars	As on relevant date¹
A	a Opening CWIP Amount as per books	901.00
	b Amount of capital liabilities in above	
	c Amount of IDC, FC, FERV & Hedging cost included in a above	262.84
B	a Addition/Adjustment in CWIP Amount during the period	
	b Amount of capital liabilities in above	
	c Amount of IDC, FC, FERV & Hedging cost included in a above	
C	a Capitalization/Transfer to Fixed asset of CWIP Amount during the period	901.00
	b Amount of capital liabilities in above	
	c Amount of IDC, FC, FERV & Hedging cost included in a above	262.84
D	a Closing CWIP Amount as per books	
	b Amount of capital liabilities in above	
	c Amount of IDC, FC, FERV & Hedging cost included in a above	

¹ Relevant date/s means date of COD of unit/s, station and financial year start date and end date

Petitioner

Name of Company: Assam Power Generation Corporation Lin					
Name of Plant/ Station: Namrup Replacement Power Plant					
Employee Expenses					Form No: F21
					Rs. Lakhs
	Particulars	2020-21	2021-22	2022-23	2023-24
		Actual	Estimated	Projected	
1	Salaries				
2	Additional Pay				
3	Dearness Allowance (DA)				
4	Other Allowances & Relief				
5	Add. Pay & C.Off Encashment				
6	Interim Relief / Wage Revision				
7	Honorarium/Overtime				
8	Bonus/ Exgratia To Employees				
9	Medical Expenses Reimbursement				
10	Travelling Allowance(Conveyance Allowance)				
11	Leave Travel Assistance				
12	Earned Leave Encashment				
13	Payment Under Workman's Compensation And Gratuity				
14	Subsidised Electricity To Employees				
15	Any Other Item				
16	Staff Welfare Expenses				
	Capacity Building Expenses				
17	Apprentice And Other Training Expenses				
18	Contribution To Terminal Benefits				
19	Provident Fund Contribution				
20	Provision for PF Fund				
21	Any Other Items (ROP				
	Total Employee Costs				
22	Less: Employee expenses capitalised				
	Net Employee expenses (D)-(E)				
					Petitioner

APGCL is claiming normative O&M expenses as a whole for FY2020-21 to FY2024-25. Please Refer to the excel "NRPP 2021-22 and 2024-25_vfinal.xlsx"

Name of Company: Assam Power Generation Corporation Limited						
Name of Plant/ Station: Namrup Replacement Power Plant						
Administration & General Expenses					Form No: F22	
					Rs. Lakhs	
	Particulars	2020-21	2021-22	2022-23	2023-24	2024-25
		Actual	Estimated	Projected		
1	Lease/ Rent					
2	Insurance					
3	Revenue Stamp Expenses Account					
4	Telephone, Postage, Telegram & Telex Charges					
5	Incentive & Award To Employees/Outsiders					
6	Consultancy Charges					
7	Technical Fees					
8	Other Professional Charges					
9	Conveyance And Travelling					
10	License and Registration Fees					
11	Vehicle Expenses					
12	Security / Service Charges Paid To Outside Agencies					
13	Fee And Subscriptions Books And Periodicals					
14	Fees paid to AERC					
15	Printing And Stationery					
16	Advertisement Expenses					
17	Contributions/Donations To Outside Institutes / Associations					
18	Electricity Charges To Offices					
19	Water Charges					
20	Entertainment Charges					
21	Miscellaneous Expenses					
22	Legal Charges					
23	Auditor's Fee					
24	Freight On Capital Equipments					
25	Purchase Related Advertisement Expenses					
26	Vehicle Running Expenses Truck / Delivery Van					
27	Vehicle Hiring Expenses Truck / Delivery Van					
28	Other Freight					
29	Transit Insurance					
30	Octroi					
31	Incidental Stores Expenses					
32	Fabrication Charges					
33	CSR					
	Total A&G Expenses	0.00	0.00	0.00	0.00	0.00
	Less: A&G Expenses Capitalised				5.00	
	Total A&G Expenses	0.00	0.00	0.00	-5.00	0.00
					Petitioner	

APGCL is claiming normative O&M expenses as a whole for FY2020-21 to FY2024-25. Please Refer to the excel "NRPP 2021-22 and 2024-25_vfinal.xlsx"

Name of Company: Assam Power						
Name of Plant/ Station: Namrup R						
Return on Equity					Form No: F25	
	Loan Details	Unit	2021-22	2022-23	2023-24	2024-25
			Estimated	Projected		
1	Equity (Opening Balance)	Rs. Crore	0.00	270.30	270.30	270.30
2	Add: Increase due to discharges during the year / period	Rs. Crore	0	0	0	0
3	Less: Decrease due to de-capitalisation during the year / period	Rs. Crore	0	0	0	0
4	Less: Decrease due to reversal during the year / period	Rs. Crore	0	0	0	0
5	Equity (Closing Balance)	Rs. Crore	270.30	270.30	270.30	270.30
6	Average Equity	Rs. Crore	135	270	270	270
7	Rate of Return on Equity	%	15.50%	15.50%	15.50%	15.50%
8	Return on Equity	Rs. Crore	20.95	41.90	41.90	41.90
				Petitioner		

Name of Company: Assam Power Generation Corp						
Name of Plant/ Station: Namrup Replacement Powe						
Working Capital Requirements				Form No: F26		
	Particulars	Unit	2021-22	2022-23	2023-24	2024-25
			Estimated	Projected		
	For Open-cycle Gas Turbine/ Combined Cycle thermal generating stations					
1	Fuel expenses for 1 month *	Rs. Crore	4.50	7.32	7.32	7.32
2	Liquid fuel stock for 15 days*	Rs. Crore				
3	Maintenance spares @ 30% of O&M	Rs. Crore	8.70	6.87	7.18	7.51
4	O&M expenses for 1 month	Rs. Crore	2.42	1.91	2.00	2.09
5	Receivables equivalent to 2 months of capacity and energy charge^	Rs. Crore	32.56	44.69	43.98	43.36
	Total Working Capital Requirement	Rs. Crore	48.16	60.79	60.48	60.28
	Rate of Interest #	%	10.00%	10.00%	10.00%	10.00%
	Interest on Normative Working Capital Requirement	Rs. Crore	4.82	6.08	6.05	6.03
	* corresponding to target availability					
	^ calculated on target availability					
	# shall be equal to the interest rate equivalent to State Bank of India base rate as on 1st April of the respective year plus 350 basis points					
					Petitioner	

Name of Company: Assam Power Generation Corporation Limited					
Name of Plant/ Station: Namrup Replacement Power Plant					
Detailed Information in respect of fuel for computation of Energy Charges			Form No:		F27
	Particulars	Unit	Preceeding 3rd Month*	Preceeding 2nd Month*	Preceeding 1st Month*
1	Quantity of Coal/ Lignite supplied by Coal/ Lignite Company	MMT	Gas Price sheets included separately (Sheet:Gas Price)		
2	Adjustment (+/-) in quantity supplied made by Coal/ Lignite Company	MMT			
3	Coal supplied by Coal/ Lignite Company (1+2)	MMT			
4	Normative Transit & Handling Losses (For Coal/ Lignite Projects)	MMT			
5	Net coal / Lignite Supplied (3-4)	MMT			
6	Amount charged by the Coal /Lignite Company	Rs Lakhs			
7	Adjustment (+/-) in amount charged made by Coal/Lignite Company	Rs Lakhs			
8	Total amount Charged (6+7)	Rs Lakhs			
9	Transportation charges by rail/ship/road transport	Rs Lakhs			
10	Adjustment (+/-) in amount charged made by Railways/Transport Company	Rs Lakhs			
11	Demurrage Charges, if any	Rs Lakhs			
12	Cost of diesel in transporting coal through MGR system, if applicable	Rs Lakhs			
13	Total Transportation Charges (9+/-10-11+12)	Rs Lakhs			
14	Total amount Charged for coal/lignite supplied including Transportation (8+13)	Rs Lakhs			
15	Landed cost of coal/ Lignite	Rs./MT			
16	Blending Ratio (Domestic/Imported)				
17	Weighted average cost of coal/ Lignite for preceding three months	Rs./MT			
18	GCV of Domestic Coal as per bill of Coal Company				
19	GCV of Imported Coal as per bill Coal Company				
20	Weighted average GCV of coal/ Lignite as Billed	kCal/ kg			
21	GCV of Domestic Coal as received at Station				
22	GCV of Imported Coal as received at Station				
23	Weighted average GCV of coal/ Lignite as Received	kCal/ kg			
	<i>* From COD of 1/4/2016 as the case may be</i>				
Similar details to be furnished for natural gas/liquid fuel for CCGT station and secondary fuel oil for coal/lignite based thermal plants					
					Petitioner

Name of Company: Assam Power Generation Corporatio									
Name of Plant/ Station: Namrup Replacement Power Pla									
Details of Expenses Capitalised							Form No: F 28		
							(Rs Lakhs)		
		2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	
		Actual	Actual	Actual	Estimated	Projected			
1	Interest & Finance charges Capitalised	3,824	3647.79	3763.20	1812.69				
2	Employee expenses	0	376.58	412.97	144.13				
3	A&G Expenses	0	0.00	0.00	0.00				
4	Others, if any	0	0	0.00	0.00				
Grand Total		3824.01	4024.37	4176.17	1956.82	0.00	0.00	0.00	

Name of Company: Assam Power Generation Corporation Ltd					
Name of Plant/ Station: Namrup Replacement Power Plant					
Income Tax Provisions		Form No: F29			
		(Rs Lakhs)			
		2021-22	2022-23	2023-24	2024-25
		Estimated	Projected		
1	Income Tax on the Return on Equity				
2	As Per Return Filed For The Year	0.00	0.00	0.00	0.00
3	As Assessed For The Year				
4	Credit/Debit Of Assessment Year(s) (Give Details)				
	Total	0.00	0.00	0.00	0.00
Note: 'Income Tax Provisions' details which could not be provided by the Generation Company at the time of this filing shall be furnished as and when they become due/ available.					

Name of Company: Assam Power Genera					
Name of Plant/ Station: Namrup Replac					
Non-Tariff Income		Form No: F30			
		(Rs Lakhs)			
S. No.	Particulars	2021-22	2022-23	2023-24	2024-25
		Estimated	Projected		
A	Income from Investment, Fixed & Call Deposits				
	Income from Investments:				
	Interest on securities				
	Interest on fixed deposits				
	Income on other investments				
	Interest from Banks				
	Interest on (any other items)				
	Sub-Total				
B	Other Non-Tariff Income				
	Interest on Loans and Advances to staff				
	Interest on Loans and Advances to Licensee				
	Interest on Loans and Advances to Lessors				
	Interest on Loans and Advances to Suppliers/ Contractors				
	Income from trading				
	Gain on sale of Fixed Assets				
	Income/Fees /Collections against staff welfare activities:				
	Miscellaneous Receipts:				
	Delayed Payment charges from Beneficiaries				
	Net profit from UI charges				
	Penalty for contractor/ supplier for delay etc				
	Misc Charges				
	Sub-Total				
	Grand Total	0.00	0.00	0.00	0.00

Namrup Thermal Power Station		2021-22 (from Oct 2021 onwards)	2022-23	2023-24	2024-25	Remarks
A. Gas supplied by OIL, Duliajan (APM)						
1.00	Basic Price (for G.C.V. 10000)/ 1000 SCM	5079.38	5079.38	5079.38	5079.38	As per new gas price implemented from Oct'21
2.00	Basic Price after adjustment with CV	4675.47	4675.47	4675.47	4675.47	
3.00	Marketing Margin (for NCV 10000) /1000 SCM	200.00	200.00	200.00	200.00	
4.00	Marketing Margin after adjustment with CV	165.88	165.88	165.88	165.88	
	Total	4841.35	4841.35	4841.35	4841.35	
5.00	VAT @ 14.5% on above	702.00	702.00	702.00	702.00	
	Total (A)	5543.34	5543.34	5543.34	5543.34	
B. T.C. for Transportation of the OIL Gas by AGCL						
1.00	T.C./ 1000 SCM @ Rs. 1.81 / MMBTU	70.14	72.24	74.41	76.64	
2.00	GST @ 12%	8.42	8.67	8.93	9.20	
	Total (B)	78.56	8.67	8.93	9.20	
C. Landed price of gas supplied to NTPS (A+B)/ 1000 SCM		5621.90	5552.01	5552.27	5552.54	
Lakwa Thermal Power Station		2021-22 (from Oct 2021 onwards)	2022-23	2023-24	2024-25	Remarks
A. Gas supply by GAIL (APM)						
1.00	Basic Price (for G.C.V. 10000)/ 1000 SCM	5079.38	5079.38	5079.38	5079.38	As per new gas price implemented from Oct'21
2.00	10% Royalty /1000 SCM	Included	Included	Included	Included	
	Total	5079.38	5079.38	5079.38	5079.38	
3.00	Basic Price after adjustment with CV	4860.79	4860.79	4860.79	4860.79	
4.00	Marketing Margin (for NCV 10000) /1000 SCM @ Rs. 5.04 / MMBTU	200.00	200.00	200.00	200.00	
5.00	Marketing Margin after adjustment with CV	172.71	172.71	172.71	172.71	
6.00	Monthly Metering charge(Rs./ 1000 SCM)	24.67	25.41	26.17	26.95	Yearly escalation 3% on TC as per agreement.
7.00	Sales Tax @ 14.5 % on above	733.43	733.54	733.65	733.77	
	Landed price of gas supply to LTPS by GAIL / 1000 SCM(A)	5766.93	5767.04	5767.15	5767.26	
B. Gas supplied by OIL Duliajan (Non APM)						
1.00	Basic Price (for G.C.V. 10000)/ 1000 SCM	8465.63	8465.63	8465.63	8465.63	As per new gas price implemented from Oct'21 - excluding North east discount as per contract
2.00	Basic Price after adjustment with CV	7792.45	7792.45	7792.45	7792.45	
3.00	Marketing Margin (for NCV 10000) /1000 SCM	200.00	200.00	200.00	200.00	
4.00	Marketing Margin after adjustment with CV	165.88	165.88	165.88	165.88	
	Total	7958.33	7958.33	7958.33	7958.33	
5.00	VAT @ 14.5 % on above	1153.96	1153.96	1153.96	1153.96	
	Landed price of gas supply to LTPS by OIL (B)	9112.28	9112.28	9112.28	9112.28	
C. T.C for Transportation of OIL gas by AGCL						
1.00	T.C./ 1000 SCM @ Rs. 1.81 / MMBTU	70.14	72.24	74.41	76.64	TC @ 3% escalation
2.00	GST @ 12% on TC	8.42	8.67	8.93	9.20	
	Total T.C. (C)	78.56	80.91	83.34	85.84	
D. Landed price of gas supply to LTPS by OIL (B+C)/ 1000 SCM		9190.84	9193.20	9195.62	9198.13	
Wtd Avg landed price of LTPS gas		7935.55	7937.08	7938.66	7940.29	

			Projections			
OIL GAS for NTPS / NRPP	Unit	2021-22	2022-23	2023-24	2024-25	
Non-APM rate/MMBTU (effective from October of FY) and before discount of 40% of the price as per Pricing Policy of Gol	Rs./ MMBTU	2.90	2.90	2.90	2.90	
Non-APM rate/MMBTU (effective from October of FY) and after discount of 40% of the price as per Pricing Policy of Gol	Rs./ MMBTU	1.74	1.74	1.74	1.74	
Conversion factor	Factor	39.68	39.68	39.68	39.68	
\$ exchange rate for the month of September of Financial Year in Rs as obtained from RBI website	Rs per Dollar	73.56	73.56	73.56	73.56	
Avg. GCV till September of Financial Year - OIL Gas for NTPS	kcal / scm	9204.80	9204.80	9204.80	9204.80	
Avg. NCV till September of Financial year - OIL Gas for NTPS	kcal / scm	8294.06	8294.06	8294.06	8294.06	

LTPS			Projections			
GAIL Gas for LTPS / LRPP	Unit	2021-22	2022-23	2023-24	2024-25	
Avg. GCV till September of Financial Year	kcal / scm	9569.65	9569.65	9569.65	9569.65	
Avg. NCV till September of Financial year	kcal / scm	8635.56	8635.56	8635.56	8635.56	
Marketing Margin	Rs / 1000 scm	5.04	5.04	5.04	5.04	
Monthly Metering charge(Rs./ 1000 SCM)	Rs/ 1000 scm	24.67	25.41	26.17	26.95	
GAIL Gas MMSCM received til September of the financial year in MMSCM	MMSCM	39.70	39.70	39.70	39.70	
Oil Gas MMSCM received til September of the financial year in MMSCM	MMSCM	68.59	68.59	68.59	68.59	