



**NAVA LIMITED**

(Formerly Nava Bharat Ventures Limited)

NAVA/FIN/297/2023-24  
September 19, 2023

**The Commission Secretary,  
Telangana State Electricity Regulatory Commission  
11-4-660, 5<sup>th</sup> Floor, Singareni Bhavan, Red Hills,  
Hyderabad-500 004**

Dear Sir,

Sub: Submission of objections on RPPO Compliance status report submitted by the State Agency, TSSLDC to the Hon'ble Commission for the FY 2018-19 to FY 2021-22 against the Regulation No 2 of 2018 -Reg..

Ref: Your Notice dated 30.08.2023, Inviting objections/suggestions/Comments in the matter of RPPO Compliance status report submitted by the State Agency TSSLDC to the Hon'ble Commission for the FY 2018-19 to FY 2021-22 against the Regulation No 2 of 2018

-----

With reference to the above-mentioned subject, the Hon'ble State Commission (TSERC) has issued a Public Notice inviting objections/suggestions/Comments in the matter of RPPO Compliance status report submitted by the State Agency, TSSLDC to the Hon'ble Commission for the FY from 2018-19 to FY 2021-22 against the Regulation No 2 of 2018 and directed to submit the objections on or before 20.09.2023 by 05:00 PM.

**Grounds:**

1. It is submitted that, Nava Limited (*formerly Nava Bharat Ventures Limited*) Paloncha, is operating 4 Nos of Ferro Alloy Furnaces at a total capacity of 72 MVA with 3 Captive thermal power generating units of a total Capacity of 114 MW with 2 Waste Heat Recovery Plants which generate Energy up to 5 MW

Contd..2

:2:

for Captive use from flue gases of submerged electric arc furnaces at its factory premises, which qualifies as Captive Co-generating plant and should therefore entitle our unit to be exempt from RPPO under Section 86 (1) (e) of the Electricity Act 2003.

2. It is submitted that this Hon'ble Commission has issued Regulation 2 of 2018 for the Renewable Power Purchase Obligation (*Compliance by Purchase of Renewable Energy/Renewable Energy Certificate*) ("*Regulations*"). Clause 3 of the said Regulations provides for the RPPO and clause 3.1 requires every obligated entity in the State of Telangana to purchase of quantum of 6% to 8% of its total consumption of electricity during the FY 2018-19 to 2021-22 from Renewable Energy Sources. The purchase of Renewable Energy Certificates is also treated as fulfilment of the prescribed RPPO.
3. It is submitted that the renewable power purchase obligation i.e., Regulation 2 of 2018 is framed by this Hon'ble Commission in exercise of the powers conferred under S.86(1)(e) of the Act and the said provision reads as follows:

*"Promote co-generation and generation of electricity from renewable sources of energy by providing suitable measures for connectivity with the grid and sale of electricity to any person and also specify for purchase of electricity from such sources, a percentage of the total consumption of electricity in the area of distribution licence."*

Further, S.2(12) of the Act defines co-generation as follows:

*"Cogeneration" means a process which simultaneously produces two or more forms of useful energy (including electricity)"*

Contd..3

:3:

4. A reading of section 86(1)(e) of the Act, it is clear that there are two categories or generators of electricity i.e., co-generators and generators of electricity through renewable sources of energy. The intention of the Legislature in including the words co-generation and generation of electricity from renewable sources in section 86(1)(e) of the Act was to ensure that both the generators i.e., co-generator and generators of electricity from renewable sources of energy are entitled for the benefit of the provisions of section 86(1)(e) of the Act. It is submitted that as stated supra, Nava Limited is generating up to 5 MW of Power from the waste heat available in the furnace exit flue gas and the same is be considered as co-generation and thus the Company is entitled for the exemption.
5. It also submitted that the Company has filed O.P. No.20 of 2020 before the Commission for exemption from RPPO under Regulation 2 of 2018 in view of consumption of power generated from its Co-generation units through Waste Heat received from flue gases relying upon the Judgment of the Hon'ble Appellate Tribunal for Electricity (APTEL) in Appeal No.57 of 2009 dated 26.04.2010 (Century Rayon case), Appeal No.146 of 2017 dated 16.04.2019, Appeal No.54 of 2012 dated 30.01.2013, Appeal No.278 of 2015 dated 02.01.2019, Appeal No.322 of 2016 dated 09.04.2019 and the Orders of Hon'ble APERC in O.P.No.7 of 2016 dated 06.08.2016, and O.P.No.8 of 2017 dated 31.03.2017 and requested the Commission for exemption from RPPO compliance who meet their consumption from WHRS.
6. It is submitted that, in the matter of Suo-Moto determination of compliance of Renewable Power Purchase Obligation (RPPO) of Obligated Entities for the FY 2018-19, vide Order dated 09.03.2021 in OP No.31 of 2020, this Hon'ble

Contd..4

:4:

Commission has made it clear vide para 36 and passed an Order that “the Commission is of the view that any consumer consuming electricity from captive co-generation plant or captive co-generation plant using WHR unit beyond its RPPO target for any specific year as per the Regulation No.2 of 2018, shall not be required to purchase additional renewable energy/RECs for that year. In case any consumer consuming electricity from captive co-generation plant or captive co-generation plant using WHR lesser than its RPPO target, the remaining consumption till the RPPO target shall be met through purchase of renewable energy/RECs to meet the RPPO target. Accordingly, vide page No.40 of Order dated 09.03.2021 in OP No.31 of 2020, the Hon’ble Commission has considered NAVA Limited (formerly Nava Bharat Ventures Limited) as Captive Co-generating plant and has directed TSSLDC to re-compute the RPPO compliance for FY 2018-19 for all Obligated Entities which consume electricity through captive co-generation plant or captive co-generation plant using WHR from conventional sources and submit the relevant details of such computation along with the report on the status of compliance of RPPO for FY 2019-20.

7. It is relevant to submit that in OP No. 20 of 2020 Order dated 14.03.2022, the Hon’ble Commission has made it clear that the observations made by the Commission in O.P.No.31 of 2020 would stand to be limited period, for which it is made and further it would not be carried for the period subsequent to the Order dated 14.03.2022. Thus the directions of the Hon’ble Commission in OP No.31 of 2020 dated 09.03.2021 remained applicable till 14.03.2022
8. Considering the findings and Order of the Hon’ble Commission in OP No.31 of 2020 and in OP No.20 of 2020, Nava Limited had submitted it RPPO Compliance

Contd..5

:5:

reports along with Cost Auditors Certificates to the State Agency, TSSLDC, for the FY 2018-19, FY 2019-20, FY 2020-21 and FY 2021-22 vide it letters dated 02.06.2021, 10.01.2022 and 04.04.2022 respectively under a copy to the Hon'ble Commission, which can be seen from the enclosed documents.

9. It is submitted that, even though the Company has fully fulfilled the RPPO Obligation and submitted its Compliance report from time to time to the SLDC under a copy to the Hon'ble Commission for all the 4 years i.e. FY 2018-19, FY 2019-20, FY 2020-21 and FY 2021-22, to the surprise of the Company, it is noticed from the Compliance report submitted by the State Agency (SLDC) to the Hon'ble Commission, that our Compliance report is not reflected in the statement for the FY 2018-19, 2019-20 and 2020-21 and still showing under "balance to fulfil", **is not correct and to be rectified immediately**. However, for the FY 2021-22, SLDC has considered in the statement as fully fulfilled under the category of CPPs having Waste Heat Recovery.

**In the above context, since NAVA LIMITED has fully fulfilled the RPPO obligation against Regulation 2 of 2018, we request the Hon'ble Commission to direct the state agency, SLDC, to consider our submissions and accordingly rectify in the RPPO Compliance statements.**

Thanking you,

Yours faithfully,

**For NAVA LIMITED**

*(Formerly Nava Bharat Ventures Limited)*



**GRK Prasad**  
**Executive Director**

Encl: As above



**NAVA LIMITED**

(Formerly Nava Bharat Ventures Ltd.)

Corp. Office: Silicon House, No. 8-3-318/1, Plot 78,  
Road No. 14, Banjara Hills, Hyderabad - 500 034, Telangana, India.

NAVA/FIN/ 622 /2022-23

March 30, 2023

The Chief Engineer, TSSLDC,  
Room No.611, TSTRANSCO  
Vidyut Soudha, Khairatabad,  
Hyderabad-500082

Dear Sir,

Sub:TSSLDC -Compliance of Renewable Power Purchase Obligation -  
Initiating proceedings under TSERC Regulation No.2 of 2018 against  
the RPPO Non-Complied obligated entities for the FY 2021-22 duly  
including the short fall of the FY 2018-19 to 2021-21-Comments on  
the RPPO information-Called for -Reg..

Ref: Your Letter No.CE/SLDC/REC/F.RPPO/DNO.699/23 Dt.27.03.2023  
received by us through email on 28.03.2023

--- --- ---

With reference to the above-mentioned subject, vide your letter dated  
27.03.2023, we were directed to furnish our comments on RPPO  
compliance computed by TSSLDC for the FY 2021-22 duly including  
shortfall of FY 2018-19, FY 2019-20 & FY 2020-21. Accordingly, we have  
gone through the computation made by the state agency, SLDC, and  
found that the Computation is not correct.

Your goodselves are also aware that as per the findings of the Hon'ble  
State Commission, *"any consumer consuming electricity from captive  
cogeneration plant or captive cogeneration plant using WHR unit  
beyond its RPPO target for any specific year as per the Regulation No.2  
of 2018, shall not be required to purchase additional renewable  
energy/RECs for that year"*.

We would like to bring to your kind notice that our 114 MW Captive  
Cogeneration plant having WHRS was fully fulfilled the RPP obligation for the FY  
2018-19, FY 2019-20, FY 2020-21 and FY 2021-22 and accordingly  
already submitted the Compliance Returns/Reports along with statutory  
Cost Auditor Certificate, details as furnished below.

1. Please refer our letter No.NBV/FIN/94/2022-23 dated 27, May 2022  
(copy of the letter enclosed for your ready reference)

Contd..2



**NAVA LIMITED**

(Formerly Nava Bharat Ventures Ltd.)

Corp. Office: Silicon House, No. 8-3-318/1, Plot 78,  
Road No. 14, Banjara Hills, Hyderabad - 500 034, Telangana, India.

:2:

2. RPPO Compliance for the FY 2021-22, Compliance return submitted vide our letter No.NBV/FIN/002/2022-23 dated 04.04.2022 (copy of the letter enclosed for your ready reference)
3. RPPO Compliance for the FY 2020-21, Compliance return submitted vide our letter No.NBV/FIN/577/2021-22 dated 10.01.2022 (copy of the letter enclosed for your ready reference)
4. RPPO Compliance for the FY 2018-19 and FY 2019-20, Compliance return submitted vide our letter No.Elect/162/2021-22 dated 02.06.2021 (copy of the letter enclosed for your ready reference)

Keeping in view of the above information, since we already Compiled the RPP Obligation in full for the FY 2018-19 to FY 2021-22, we request your goodselves to take it on your records.

Thanking you,

Yours faithfully,

For NAVA LIMITED

(Formerly Nava Bharat Ventures Limited)

GRK Prasad

Executive Director

Copy to : The Secretary, TSERC, Hyderabad

NBV/FIN/ 94 /2022-23  
May 27, 2022

The Chief Engineer / SLDC  
Transmission Corporation of Telangana Limited,  
Vidyut Soudha, Khairtabad,  
Hyderabad- 500 082

Dear Sir,

Sub: Submission of certain information on RPP Obligation -Reg.

Ref: Your Letter No.CE/SLDC/F.RPPO/D.No.78/22 dated 11.05.22 received through mail by us on 16.05.22 and subsequent meeting held on 18.05.22.

With reference to the above-mentioned subject and subsequent discussion held in your good office, and as sought the information, please find the enclosed documents.

1. Copy of letter dated 02.06.2021 regarding RPPO Compliance Return submitted for the FY 2018-19 and 2019-20
2. Copy of letter dated 10.01.2022 regarding RPPO Compliance Return submitted for the FY 2020-21
3. Copy of letter dated 04.04.2022 regarding RPPO Compliance Return submitted for the FY 2021-22.
4. Calculation details of equivalent steam and power generated from WHRS during the FY from 2018-19 to FY 2021-22
5. Statutory Cost Auditor Certificate
6. Write-up on Waste Heat Recovery plant along with layout and flow charts

Thanking you,

Yours faithfully,  
For NAVA BHARAT VENTURES LIMITED



AUTHORIZED SIGNATORY

Encl: As above







## NAVA BHARAT VENTURES LIMITED

PALONCHA : 507 154, Bhadradi Kothagudem Dt. Telangana, INDIA.  
TEL : (08744) 256015-18 FAX : (08744) 256419, 256077, Website: www.nbv.in  
GSTIN : 36AAACN7327C1ZQ PAN NO : AAACN7327C



Elect/162/2021-22

Date: 02.06.2021

The Chief General Manager,  
IPC & RAC, TSNPDCL,  
Corporate Office, 2-5-31/2, Vidyut Bhavan,  
4<sup>th</sup> Floor, Nakkalagutta, Hanumakonda,  
Warangal - 506001.

Dear Sir,

Sub: Submission of consumption details of our 114 MW Captive Power Plant - Reg.

Ref. Lr.No.CGM/(IPC&RAC)/GM/DE.(IPC)/ADE/F.28/D.No.53/21.Dt:27.04.2021.

With reference to the above letter, we are submitting consumption details of our 114 MW Captive Power Plant for the financial year 2018-19 and 2019-20 in prescribed proforma.

Thanking you,

Yours faithfully  
For Nava Bharat Ventures Limited.

  
(Y.V Srinivasa Rao)  
General Manager - PPP

*Kuan*  
Enclosed: Details as above.

Copy to:

1. The Chief Engineer- SLDC, Vidyut Soudha, TSTRANSCO, "A" Block, 6<sup>th</sup> Floor, Room No. 611, Khairatabad, Hyderabad-500082.
2. The Superintending Engineer - Operation, TSNPDCL, Bhadradi Kothagudem Circle, Back Side of Pochamma Temple, (Opposite to Singareni Bunglow), Kothagudem.

**NAVA BHARAT VENTURES LIMITED**  
**114 MW CPP - PALONCHA**  
**RPPO COMPLIANCE FOR THE FY 2018-19 & FY 2019-20**

FY2018-19

Sl. No	HT S.No	Name of the Consumer	Concerned DISCOM	Source of Purchase				Open access from fossil fuel generator	Total Energy Consumption through Captive consumption
				Self Consumption from fossil fuel generator	Cogeneration from waste heat recovery (WHRS)	Consumption from cogeneration	iEX		
1	2	3	4	MVWH	MVWH	MVWH	MVWH	MVWH	10
				5	6	7	8	9	
1	BKM-001	Nava Bharat Ventures Limited	TSNPDCL	4,71,444	34,035	NA	Nil	Nil	4,71,444

FY2019-20

Sl. No	HT S.No	Name of the Consumer	Concerned DISCOM	Source of Purchase				Open access from fossil fuel generator	Total Energy Consumption through Captive consumption
				Self Consumption from fossil fuel generator	Cogeneration from waste heat recovery (WHRS)	Consumption from cogeneration	iEX		
1	2	3	4	MVWH	MVWH	MVWH	MVWH	MVWH	10
				5	6	7	8	9	
1	BKM-001	Nava Bharat Ventures Limited	TSNPDCL	4,65,565	34,815	NA	Nil	Nil	4,65,565

Yours faithfully,  
 For Nava Bharat Ventures Limited.



(Y.V. Srinivasa Rao)  
 General Manager - PPP.



NAVA BHARAT VENTURES LIMITED

COPY

NBV/FIN/ 577 /2021-22  
January 10, 2022

The Chief Engineer,  
SLDC, Room No.611,  
TS Transco,Vidyut Soudha,  
Hyderabad- 500 082

Dear Sir,

Sub: Submission of RPPO Compliance Report for the FY 2020-21 -Reg..

Ref: Your letter No.CE/SE/SLDC/F.RPPO/D.NO.413/21 dated 15.12.2021, received  
by us,09.01.2022.

With reference to the above-mentioned subject, please find the enclosed RPPO  
Compliance Report for the FY 2020-21 in regarding our 114 MW Co-gen Captive  
Power Plant, Paloncha, Telangana.

According to the enclosed statement, considering consumption from WHRS, RPP  
obligation stands fully fulfilled for the FY 2020-21.

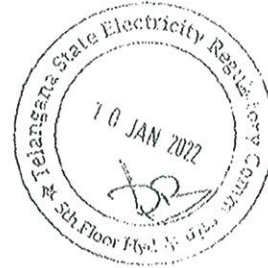
Thanking you,

Yours sincerely,  
For **Nava Bharat Ventures Limited**

  
**General Manager -Commercial**

Encl: As above

Copy to :The Secretary (FAC),TSERC, Hyderabad



NAVA BHARAT VENTURES LIMITED  
 114 MW POWER PLANT - PALONCHA  
 BHADRADRI -KOTHAGUDEM DISTRICT  
 TELANGANA STATE

RPPO COMPLIANCE REPORT FOR THE FY 2020-21

FY	HT S.No	Name of the Consumer	Concerned DISCOM	Source of Purchase			Total Energy Consumption through captive consumption-MWH	
				Total Self Consumption -MWH	Consumption from waste heat recovery (WHRs) - MWH	iEX - MWH		Open access from fossil fuel generator - MWH
2020-21	BKM -001	Nava Bharat Ventures Ltd	NPDCL	4,45,611	32,899	Nil	Nil	4,45,611

NAVA BHARAT VENTURES LIMITED

COPY

NBV/FIN/ 002 /2022-23  
April 4, 2022

The Chief Engineer, SLDC  
TS TRANSCO  
Vidyutsoudha, Khairatabad  
Hyderabad -500 082



Dear Sir,

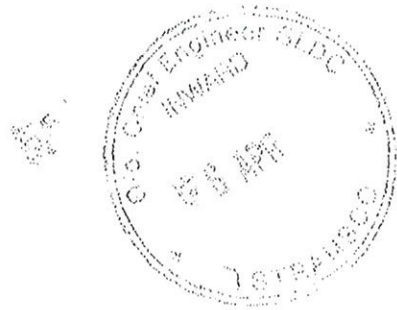
Sub: Submission of RPPO Compliance Report for the FY 2021-22 - Reg...  
Ref: TSERC RPP Regulations 2 of 2018 and OP No.31 of 2020 and 20 of 2020 Order dated 14.03.2022

With reference to the above-mentioned subject, as the matter clarified by the Hon'ble State Commission vide Order dated 14.03.2022 in OP No.20 of 2020 that of the observations made vide O.P.NO.31 of 2020 would stand to be applicable till the Order dated 14.03.2022 i.e. till FY 2021-22, please find the enclosed RPPO Compliance Report for the FY 2021-22 in regarding to our 114 MW Co-gen Captive Power Plant, Paloncha, Telangana.

According to the enclosed statement, considering consumption from WHRS, RPP obligation stands fully fulfilled for the FY 2021-22.

Thanking you,

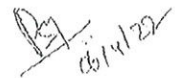
Yours faithfully,  
for NAVA BHARAT VENTURES LIMITED



  
GENERAL MANAGER-COMMERCIAL

Encl: As above

Copy to : The Secretary, TSERC, Hyderabad, for kind information.

  
06/04/22

NAVA BHARAT VENTURES LIMITED  
 114 MW POWER PLANT - PALONCHA  
 BHADRADRI-KOTHAGUDEM DISTRICT  
 TELANGANA STATE

RPPD COMPLIANCE REPORT FOR THE FY 2021-22

FY	HT SC.No	Name of the Consumer	Concerned DISCOM	Source of Purchase				Total Energy Consumption through captive consumption-MWH
				Total Self Consumption - MWH	Consumption from waste heat recovery (WHR) - MWH	IEX - MWH	Open access from fossil fuel generator -MWH	
2021-22	BKM-001	Nave Bharat Ventures Ltd	NPDCL	4,51,909	36,489	0	0	4,51,909

**Narasimha Murthy & Co.,**  
**Cost Accountants**

Phones : 23228562, 23227303  
Fax : 91-40-23221612  
E-mail : kum.nmc@gmail.com

3-6-365, 104 & 105, PAVANI ESTATE, Y. V. RAO MANSION, HIMAYATNAGAR, HYDERABAD - 500 029

**TO WHOMSOEVER IT IS CONCERNED**

**CERTIFICATE**

Sub: Power Generation in 114 MW Co-gen Captive Power Plant through the  
Waste Heat for the Financial Years 2018-19, 2019-20 & 2020-21

We, Narasimha Murthy & Co., Cost Accountants, the Cost Auditors of M/s. Nava Bharat Ventures Limited, Paloncha based on the data provided by the Company and Cost Records for the Financial Years 2018-19, 2019-20 & 2020-21, Certify that the quantum of Equivalent Steam Generation from Waste Heat Recovery Systems (WHRS) and Equivalent Power Generation during the Financial Years 2018-19, 2019-20 & 2020-21 are as under:

Sl. No	Financial Year	Equivalent Steam Generation in MT	Equivalent Power Generation in MWH
1	2018-19	134104	34035
2	2019-20	137182	34815
3	2020-21	129630	32899

For NARASIMHA MURTHY & CO.,  
Cost Accountants



(K. SREE CHARAN),  
(Firm's Registration No. 000042)  
Partner, M. No. 35262  
UDIN: 22352622Z57ZQIF3RM  
Place: Hyderabad  
Date: 27-05-2022.

Narasimha Murthy & Co.,  
Cost Accountants

Phones : 23228562, 23227303  
Fax : 91-40-23221612  
E-mail : km.nmc@gmail.com

3-6-365, 104 & 105, PAVANI ESTATE, Y. V. RAO MANSION, HIMAYATNAGAR, HYDERABAD - 500 029

TO WHOMSOEVER IT IS CONCERNED

CERTIFICATE

Sub: Power Generation in 114 MW Co-Gen Captive Power Plant through the  
Waste Heat for the Financial Year 2021-22

We, Narasimha Murthy & Co., Cost Accountants, the Cost Auditors of M/s. Nava Bharat Ventures Limited, Paloncha based on the data provided by the Company for the Financial Year 2021-22, Certify that the Provisions numbers of quantum of Equivalent Steam Generation from Waste Heat Recovery Systems (WHRS) and Equivalent Power Generation during the Financial Years 2021-22 is as under:

Sl. No	Financial Year	Equivalent Steam Generation in MT (Provisional)	Equivalent Power Generation in MWH (Provisional)
1	2021-22	143862	36489

For NARASIMHA MURTHY & CO.,  
Cost Accountants



(K. SREE CHARAN),  
(Firm's Registration No. 000042)  
Partner, M. No. 35262  
UDIN: 2235262ZZOLFZJZZ0M  
Place: Hyderabad  
Date: 27-05-2022.



Nava Bharat Ventures Limited  
Details of Steam and Power generation from WHRS

S.No	FY	WHRs - 3					WHRs - 4					Equivalent steam generated from WHRS - 3&4 - MWH			
		Operating Hrs	Thermal energy in fuel gas - M. KCal/Hr	Sp. Thermal energy required for Steam Generation - KCal/Kg	Equivalent steam generated - TPH	Total Steam Generated in MT	Equivalent power generation - MW	Operating Hrs	Thermal energy in fuel gas - M. KCal/Hr	Sp. Thermal energy required for Steam Generation - KCal/Kg	Equivalent steam generated - TPH		Equivalent power generation - MW		
a	b	c	c	c	e = (d-c) * 10 <sup>3</sup>	f = (bxe) / 10 <sup>3</sup>	g = e / 3.94	d	f	j	k = (i * j) / 10 <sup>3</sup>	l = k / 3.94	m = (g * k)	n = (f * m)	o = ((g * j) * (f * l)) / 10 <sup>3</sup>
1	2018-19	6,724	5,076	762	6.66	44,791	1.69	8,428	8,075	762	10.60	2.69	89,312	1,34,104	34,035
2	2019-20	8,352	5,076	762	6.66	55,903	1.69	7,670	8,075	762	10.60	2.69	81,260	1,37,162	34,815
3	2020-21	7,204	5,076	762	6.66	47,998	1.69	7,703	8,075	762	10.60	2.69	81,661	1,29,630	32,899
4	2021-22	7,754	5,390	762	7.07	54,848	1.80	7,743	8,760	762	11.50	2.91	89,014	1,43,662	36,489



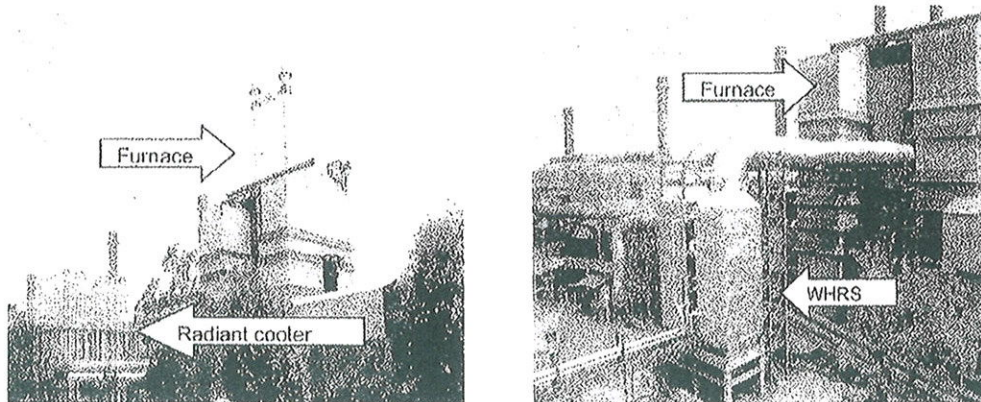
### **Waste Heat Recovery System:**

NBVL operates 3 thermal power generating units of a total capacity of 114 MW with 2 waste heat recovery systems which generate thermal energy upto 5 MW for captive use from flue gases of submerged electric arc furnaces at its factory premises by utilizing the waste heat with a view to conserve natural resources and reduce Air Pollution. It is submitted that the thermal power units employ steam turbines which extract thermal energy from superheated steam under high pressure. The exhaust steam coming out of Turbine is condensed to water and pumped back to the boiler through a regenerative heating system. Regenerative heating system is designed to heat the feed water (turbine condensate) with the help of steam extracted from the intermediate stages of turbine.

During internal performance reviews, a potential quantity of thermal energy is identified in the exit flue gas temperatures of submerged electric arc furnaces. About 9 Mkal/hr is available in this flue gas. But, converting this energy to suit for operating a power generating unit is technically and economically not feasible. Therefore, the heat available in the furnace exit flue gas is planned to utilize in the feed water regenerating system of steam turbine, thereby reducing the steam quantity extracted from turbine intermediate stages and the additional steam available is used for power generation.

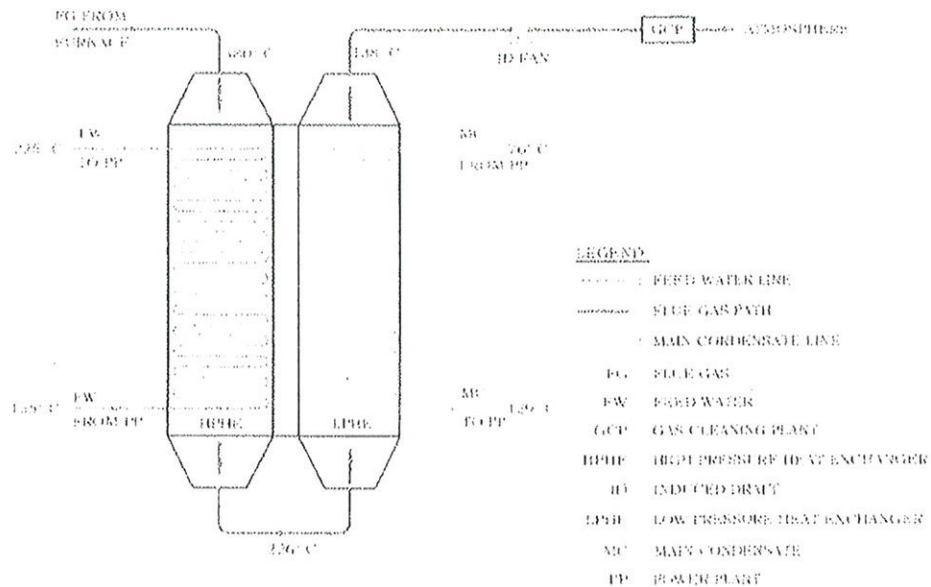
Therefore, for recovering the waste heat available in the furnace flue gases and thereby utilizing the additional steam for power generation, two heat exchangers are installed in a phased manner as a part of Waste Heat Recovery System (WHRS). The maximum operating temperature of submerged electric arc furnace is 1600°C and the exit flue gas temperature is 380°C & 300°C from furnace - 4 & 3 respectively. The waste heat available in the flue gas is used for heating the power plant's feed water & Main Condensate in WHRS, and thereby cooling the flue gas to 138°C. As a result, the steam extraction at intermediate stages of turbines is coming down and thereby both Waste Heat Recovery Systems are able to produce upto 5 MW power.

**Layout of furnace before and after installation of WHRS**



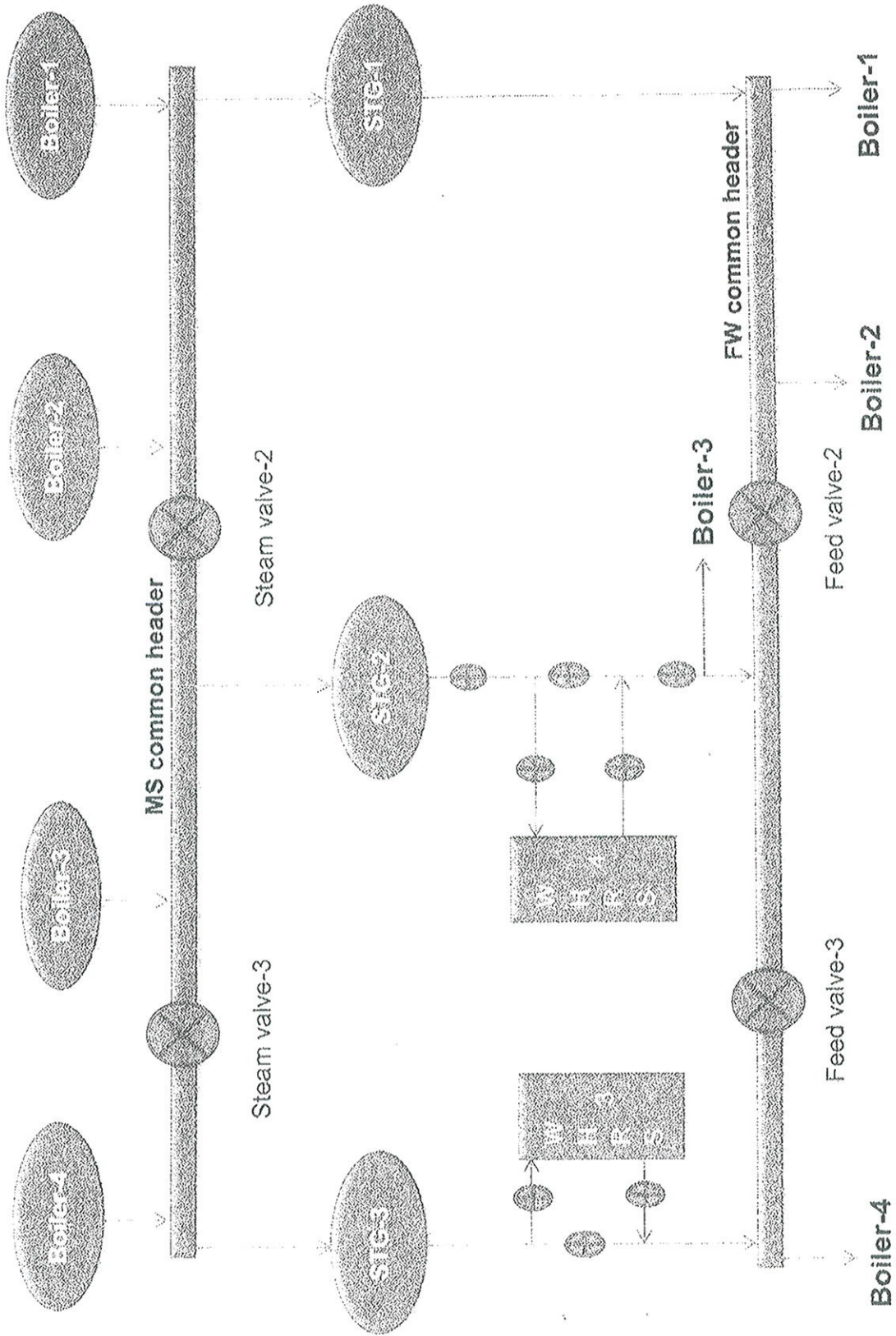
This is a unique project since no Ferro alloy industry in India is utilizing the waste heat from flue gas of open type Submerged Electric arc furnace and it is conserving natural resources such as coal in a thermal power plant and also reduces thermal pollution. Both the Waste recovery units are capturing thermal energy up to 5 MW power generation.

WASTE HEAT RECOVERY SYSTEM (WHRS) FLOW DIAGRAM



# Plant Configuration

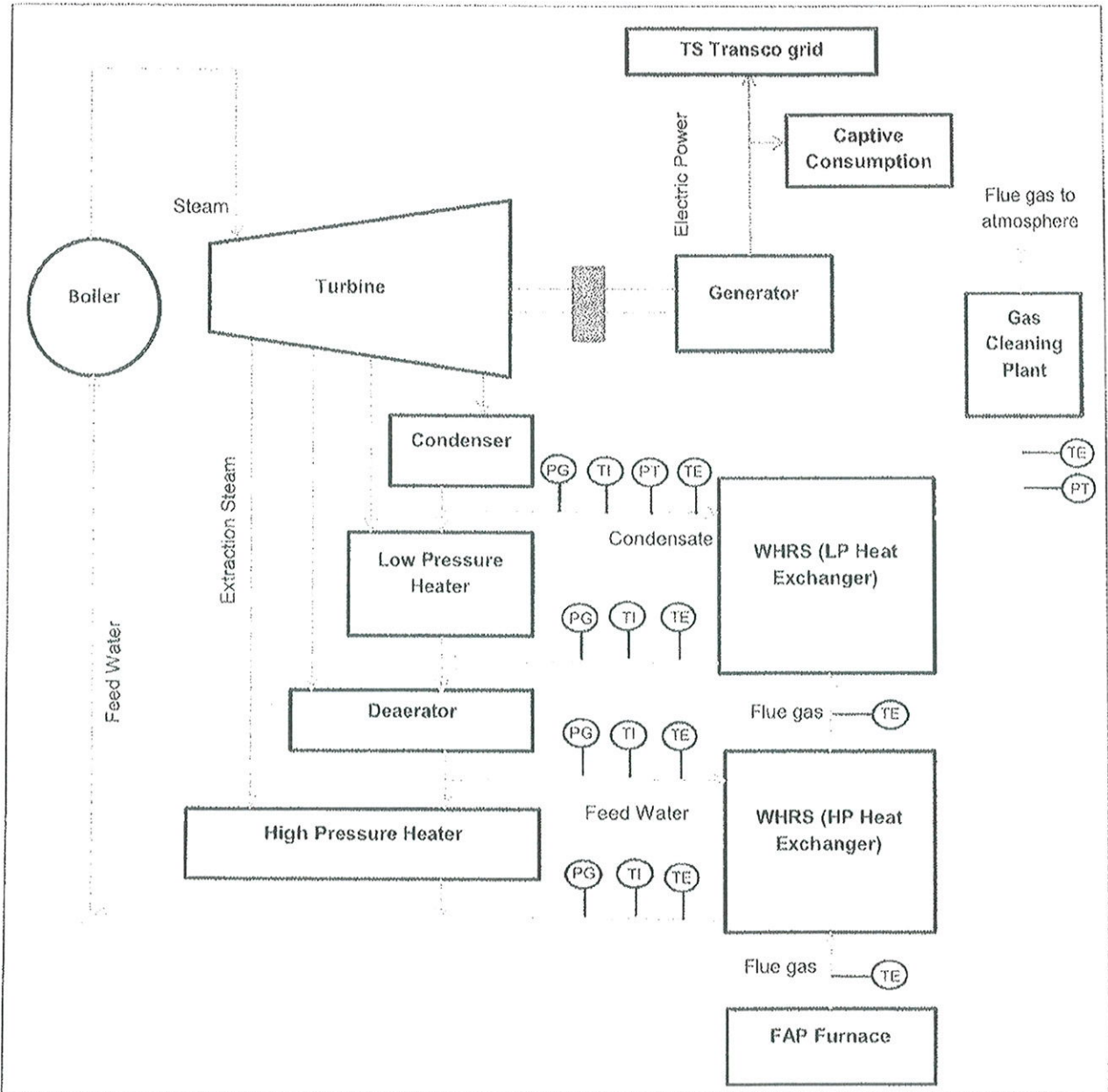
MS&A SMART





Nava Bharat Ventures Limited  
114MW CPP, Paloncha

**WHRS-4 connected with STG-2 Flow chart – 114 MW CPP**

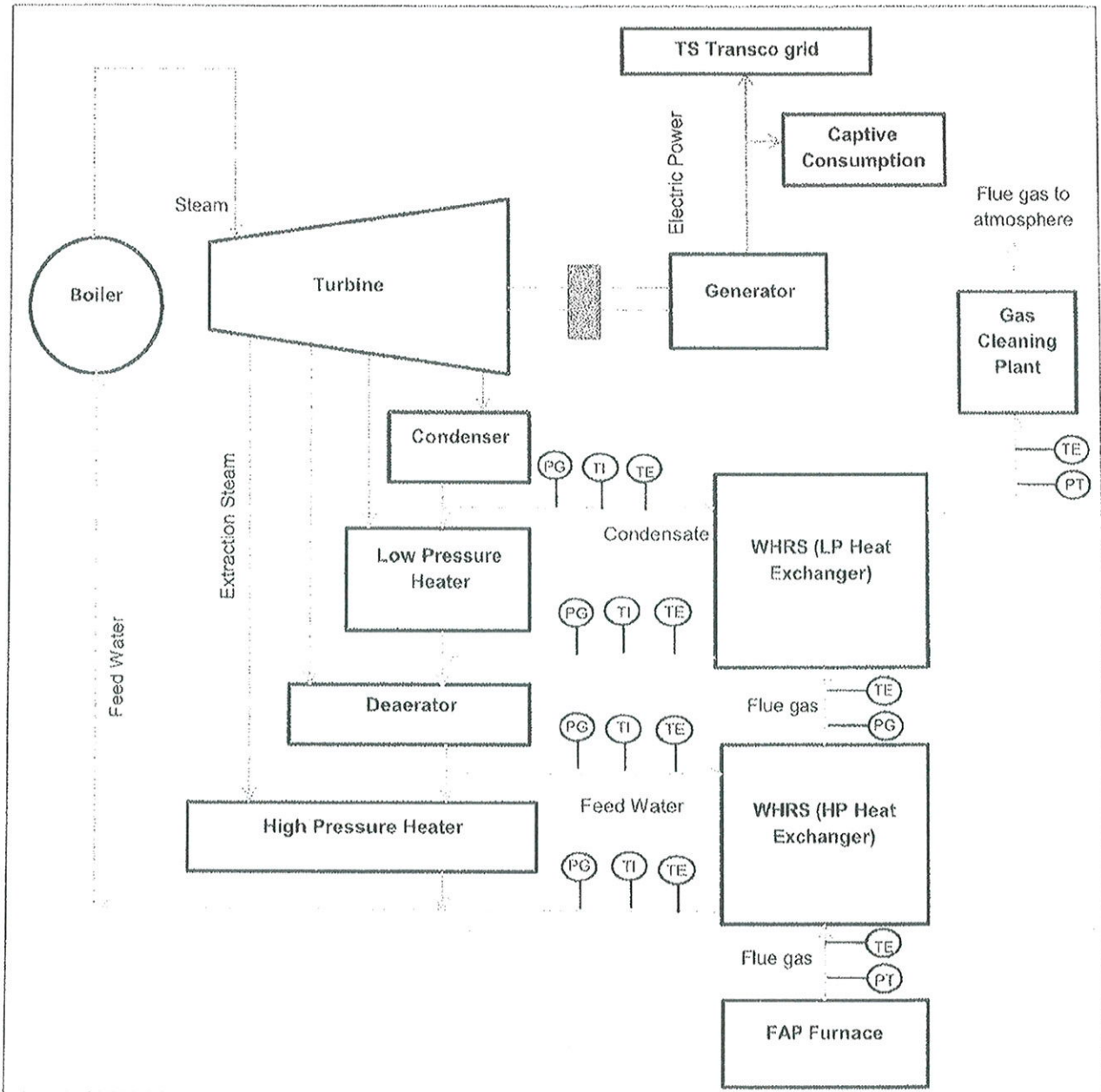


**LEGEND:**  
 PG : Pressure Gauge (Local)  
 PT : Pressure Transmitter (DCS)  
 TI : Temperature Indicator (Local)  
 TE : Temperature Element (DCS)



Nava Bharat Ventures Limited  
114MW CPP, Paloncha

### WHRS-3 connected with STG-3 Flow chart – 114 MW CPP



LEGEND:  
PG : Pressure Gauge (Local)  
PT : Pressure Transmitter (DCS)  
TI : Temperature Indicator (Local)  
TE : Temperature Element (DCS)

**Compliance of RPPO Obligation by Captive Power Plants (CPPs) having Waste Heat Recovery (WHR) Plant for the FY 2021-22**

Sl. No	HTSCh	Name of the consumer	Concerned Discorn	Source of Purchase			Total Energy Consumption through Open Access and/or Captive consumption during FY 2021-22	RPPO target to be met (8% of total energy consumption) for FY 2021-22	WHR consumption	Balance RPPO to be fulfilled for FY 2021-22	GDAM	No of Solar RECs submitted/ Self retention	No of Non Solar RECs submitted/ Self retention
				Self-Consumption from fossil fuel Generator	IEX	Open Access from fossil fuel Generator							
1	MDK893	Agarwal Foundries Pvt Ltd	TSSPDCL	0.00	23013.00	0.00	23013.00	1841.04	12297.00	0.00	339.00	794	101
2	SPT351	My Home Industries Pvt. Ltd.	TSSPDCL	134071.57	2327.00	0.00	136398.57	10911.89	79093.06	0.00	0.00	0	0
3	SPT209	NCL Industries Ltd(NLG209)	TSSPDCL	0.00	48459.31	0.00	48459.31	3876.74	33684.03	0.00	0.00	8605	748
4	BKM001	M/s. Navabharat Ventures Ltd	TSNPDCL	451909.20	0.00	0.00	451909.20	36152.74	36489.00	0.00	0.00	0	0
5	NLG162	M/s. India Cements Limited, Vishnupuram, NLG	TSSPDCL	50491.42	0.00	0.00	50491.42	4039.31	46875.30	0.00	0.00	0	0

15/22

  
**Chief Engineer/SLDC**  
**TS TRANSCO, Vijayalaxmi**  
**HYDERABAD - 500 082**