



ANDHRA PRADESH
POWER GENERATION CORPORATION LIMITED
(Govt. of A.P. Undertaking)

Tariff Filings of

APGENCO

For the control period
2019-2024

Volume 2 of 2

**BEFORE THE
ANDHRA PRADESH ELECTRICITY REGULATORY COMMISSION
AT HYDERABAD**

O.P. of 2019

In the matter of:

Determination of Tariff for the control period FY 2019-2024 under Section 62 of the Electricity Act, 2003 for the electricity supplied by APGENCO to the Distribution Licensees in Andhra Pradesh

And in the matter of:

Andhra Pradesh Power Generation Corporation Limited

Applicant

And

Southern Power Distribution Company of Andhra Pradesh Ltd.

Eastern Power Distribution Company of Andhra Pradesh Ltd.

Respondents

**VOLUME 2
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NAME OF COMPANY : APGENCO

NAME OF POWER STATION : SILERU COMPLEX

SALIENT FEATURES OF HYDROELECTRIC PROJECT

1. LOWER SILERU HYDRO ELECTRIC SCHEME

I. GENERAL

- | | |
|----------------------------|---|
| 1. Location | : Pollur Camp, Mothugudem in Khammam dist.,
(about 100 KM from Bhadracalam Road) |
| 2. Category | : Hydro Electric Project |
| 3. Capacity | : 4 x 115 MW = 460 MW |
| 4. River | : Sileru |
| 5. Dam | : Donkarayi / Forebay |
| 6. No. of Units | : 4 |
| 7. Design Energy (in Mu) | : 1050 MU |

II. HYDROLOGY:

- | | |
|-----------------------------------|--------------------|
| 1. Reservoir | : Donkarayi |
| 2. Catchment Area | : 4908 Sq. KM |
| 3. Max. flood discharge | : 2,75, 500 Cusecs |
| 4. Live Storage | : 13.257 TMC Ft |
| 5. Gross Storage | : 16.5 TMC Ft |
| 6. Dead Storage | : 3.243 TMC Ft. |
| 7. Generation per TMC | : 11.905 MU |
| 8. Design Head | : |
| 9. Net head Max. | : 620 Ft. |
| 10. Net Head Average | : |
| 11. Full Reservoir level (FRL) | : 1037 Ft. |
| 12. Min. Draw Down Level (MDDL) | : 955 Ft. |
| 13. Tail Race water level | : 255 Ft. |
| 14. Design Disch. through Machine | : 72 Cumecs |

III. FOREBAY:

- | | |
|--------------------------|----------------|
| 1. FRL | : EL 930 Ft |
| 2. MDDL | : EL 920 Ft. |
| 3. Live Storage | : 2176 A. CFt. |
| 4. Free Board | : 10 Ft. |
| 5. Top of Dam | : 940 Ft. |
| 6. Bed level of Stream | : EL 770 Ft. |
| 7. Average Height of Dam | : 50 Ft. |
| 8. Length at Top | : 4450 Ft. |
| 9. Width | : 30 Ft. |

IV. COMMISSIONING DETAILS

Unit – 1	: 28th March' 1976
Unit – 2	: 6th October' 1976
Unit – 3	: 8th November' 1977
Unit – 4	: 13th August' 1978

V. TECHNICAL:

1. Turbine	Unit - 1 & 2	Unit – 3 & 4
a) Type	: Francis Vertical	Francis Vertical
b) Make	: LMW, Russia	BHEL
c) Net Head	: 193.5 Mts.	193.5 Mts.
d) Rated Output	: 119 MW	119 MW
e) Normal Speed	: 300 RPM	300 RPM
f) Runway speed	: 580 RPM	580 RPM
g) Disc. Through Machine	: 72 Cumecs	
1. Generator		
a) Type	:	
b) Make	: Russian	BHEL, Hardwar
c) Rated Voltage	: 11 KV	11 KV
d) Rated Out put	: 127.7 MVA	127.7 MVA
e) Current	: 6700 A	6700 A
f) Speed	: 300 RPM	300 RPM
g) Power Factor	: 0.9 Lagging	0.9 Lagging
2. Generator Transformer		
a) Make	:	
b) Capacity	: 42.5 MVA single Phase	
c) Voltage Ratio	: 11/ 220 KV	
3. Transmission Line	: 220 KV	: 6 Nos.
		2 Nos. to Upper Sileru
		2 Nos. to Kothagudem
		1 No. to Bommuru
		1 No. to Barsur

2. UPPER SILERU HYDRO ELECTRIC SCHEME

I. GENERAL

1. Location	: Upper Sileru in Midst of Chintal pally Agency, 200 KM from Visakhapatnam
2. Category	: Hydro Electric Project
3. Capacity	: 4 x 60 MW = 240 MW
4. Designed capacity	:
5. River	: Sileru
6. Dam	: Forebay Dam
7. No. of Units	: 4 Nos.
8. Annual Energy Potential	: 575 MU

II. HYDROLOGY:

1. Reservoir	: Guntawada Reservoir
2. Catchment Area	: 1994 Sq. Miles
3. Max. flood discharge	: 2,50,000 Cusecs
4. Live Storage	: 3.108 TMC Ft. (88 M.Cum)
5. Gross Storage	:
6. Dead Storage	: 0.712 TMC
7. Generation per TMC	: 7 MU
8. Design Head	: 290 Ft.
9. Net head Max./Min	: 310 / 290 Ft
10. Net Head Average	: 304 Ft.
11. Full Reservoir level (FRL)	: 1360.00 Ft
12. Min. Draw Down Level (MDDL)	: 1333.50 Ft.
13. Tail Race water level	: 1045 Ft
14. Design Disch. through Machine	: 1800 Cusecs

III. COMMISSIONING DETAILS

Unit – 1	: 14th October' 1967
Unit – 2	: 31st March' 1968
Unit – 3	: 31st March' 1994
Unit – 4	: 21st March' 1995

IV. TECHNICAL:

1. Turbine	
a) Type	: Francis Vertical
b) Make	: Excherwyss, Charmilies Switzerland (Stage – I) BHEL (Stage – II)
c) Net Head	: 90 M
d) Rated Output	: 9500 BHP
e) Normal Speed	: 187.5 RPM
f) Runway speed	: 350 RPM
g) Disc. Through Machine	:
2. Generator	
a) Type	: Synchronous
b) Make	: Oerlikon, Switzerland (Stage – I) BHEL (Stage – II)
c) Rated Voltage	: 11 KV
d) Rated Out put	: 60 MW / 66.67 MVA
e) Current	: 3500 A
f) Speed	: 300RPM
g) Power Factor	: 0.9 Lag
3. Generator Transformer	
a) Make	: TELK, Angamally, Kerela
b) Capacity	: 25 MVA, Single Phase (Out Door Type)
c) Voltage Ratio	: 11 KV/ 220 KV
4. Transmission Line	: 220 KV, 3 Nos. (Stage – I) 220 KV, 2 Nos. (Stage – II)

3. DONKARAYI DAM CANAL POWER HOUSE

I. GENERAL

- | | |
|----------------------------|---|
| 1. Location | : Donkarayi Camp, East Godavari dist., |
| 2. Category | : Hydro Electric Project, Canal Power House |
| 3. Capacity | : 1 x 25 MW = 25 MW |
| 4. Designed capacity | : |
| 5. River | : Sileru |
| 6. Dam | : Donkarayi Dam |
| 7. No. of Units | : 1 |
| 8. Annual Energy Potential | : 153 MU |

II. HYDROLOGY:

- | | |
|-----------------------------------|--------------------|
| 1. Reservoir | : Donkarayi |
| 2. Catchment Area | : 4908 Sq. KM |
| 3. Max. flood discharge | : 2,75, 500 Cusecs |
| 4. Live Storage | : 13.257 TMC Ft |
| 5. Gross Storage | : 16.5 TMC Ft |
| 6. Dead Storage | : 3.243 TMC Ft. |
| 7. Generation per TMC | : 11.905 MU |
| 8. Design Head | : 25 Mts. |
| 9. Net head | : 21 Mts. |
| 10. Net Head Average | : |
| 11. Full Reservoir level (FRL) | : 1037 Ft. |
| 12. Min. Draw Down Level (MDDL) | : 955 Ft. |
| 13. Design Disch. through Machine | : 123.15 Cumecs |

III. COMMISSIONING DETAILS : 4th October' 1983

IV. TECHNICAL:

- | | |
|--------------------------|------------------------|
| 1. Turbine | |
| a) Type | : Vertical Kaplan |
| b) Make | : BHEL |
| c) Net Head | : 21.0 Mts. |
| d) Rated Output | : 26100 KW |
| e) Normal Speed | : 136.6 RPM |
| 2. Generator | |
| a) Type | : |
| b) Make | : BHEL, Hardwar |
| c) Rated Voltage | : 11 KV |
| d) Rated Out put | : 25300 KW/ 29760 KVA |
| e) Current | : 1560 A |
| f) Speed | : |
| g) Power Factor | : 0.85 Lagging |
| 3. Generator Transformer | |
| a) Make | : NGEF |
| b) Capacity | : 31.5 MVA (3 – Phase) |
| c) Voltage Ratio | : 11 KV / 220 KV |
| 4. Transmission Line | : 2 Nos. 220 KV |

FORM-1

Summary Sheet

Name of the Company **APGenco**
Name of the Power Station : **Sileru complex**

S.No.	Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
1	2	3	4	5	6	7
1.1	Depreciation	20.62	20.62	20.62	20.62	20.62
1.2	Return on Capital Employed ¹	38.12	36.35	34.63	33.75	32.18
1.3	O & M Expenses	168.65	179.85	191.79	204.53	218.11
	Total	227.39	236.82	247.04	258.90	270.91

(Rs in Crs)

Abstract of Admitted Capital Cost for the existing Projects**Name of the Power Station : Sileru**

Capital Cost as admitted by APERC	Rs 696.70 Crs
Capital cost admitted as on_____	31.03.2014
(Give reference of the relevant APERC Order with Petition No. & Date)	O.P.No.3 of 2016 dated 26.03.2016
Foreign Component, if any (In Million US \$ or the relevant Currency)	-
Domestic Component (Rs. Cr.)	Rs 696.70 Crs
Foreign Exchange rate considered for the admitted Capital cost	-
Total Capital cost admitted (Rs. Cr)	Rs 696.70 Crs

PETITIONER

	Form 7
Name of the Company	APGENCO
Name of the Power Station	Upper Sileru HEP
Particulars	Package1
1	2
Source of Loans	PFC
Currency	INDIAN Rs
Amount of Loan sanctioned	3.35
Amount of Gross Loan drawn Upto 31.03.19	3.12
Interest Type	Floating
Fixed Interest Rate, if applicable	-
Base Rate, if Floating Interest	12.10%
Margin, if Floating Interest	
Are there any Caps/Floor	-
If above is yes, specify caps/floor	-
Moratorium Period	
Moratorium efective from	
Repayment Period	10 Years
Repayment efective from	15-Jan-09
Repayment Frequency	Quarterely
Repayment Instalment	40
Base ExchangeRate	-

Statement of Depreciation

Name of the Company

APGENCO

Name of the Power Station

SILERU COMPLEX

Financial Year	Upto 2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
1	2	3	4	5	6	7
Depreciation on Capital Cost	686.57	698.61	698.61	698.61	698.61	698.61
Depreciation recovered during the Year	20.62	20.62	20.62	20.62	20.62	20.62
Depreciation & Advance against Depreciation recovered during the year	20.62	20.62	20.62	20.62	20.62	20.62
Cumulative Depreciation & Advance against Depreciation recovered upto the year	482.02	502.64	523.26	543.88	564.50	585.12

Calculation of Depreciation Rate

Name of the Power Station-USHES(7200)

(Amount in lacs)

Sl. no.	Asset Name	Gross Block as on 31.03.2019 or as on COD, whichever is later	Additions	Depreciation Rates as per CERC's Depreciation Rate Schedule	Depreciation Amount
	1	2		3	4
1	Land & Land rights	6.05		0.00%	
2	Building	1,969.87	546.58	3.02%	48.81
3	Lines and Cable networks	-			
4	Plant&Equipment	26,212.27		7.84%	885.37
5	Capital spares	-			
6	Hydraulic works	869.19	63.09	3.40%	13.63
7	other civil works	1,571.40		3.02%	47.70
8	Vehicles	4.47		33.40%	
9	Land(Lease hold)	-			
10	Others	373.04	18.71	12.77%	48.95
11	Intangible assets	-			
12	TOTAL (1 to 11)	31,006.29	628.38	0.63	1,044.46
	Weighted Average Depreciation Rate (%)				3.37%

Calculation of Depreciation Rate**Name of the Power Station-LSHES(7300)**

(Amount in lacs)

Sl. no.	Asset Name	Gross Block as on 31.03.2019 or as on COD, whichever is later	Additions	Depreciation Rates as per CERC's Depreciation Rate Schedule	Depreciation Amount
	1	2		3	4
1	Land & Land rights	55.86		0.00%	
2	Building	2,331.21	419.87	3.02%	44.88
3	Lines and Cable networks	-			
4	Plant&Equipment	29,967.16		7.84%	885.07
5	Capital spares	-			
6	Hydraulic works	6,763.40		3.40%	119.32
7	other civil works	933.76	123.14	3.02%	21.68
8	Vehicles	42.33		33.40%	
9	Land(Lease hold)	-			
10	Others	750.71	33.23	12.77%	95.02
11	Intangible assets	-			-
12	TOTAL(1 to 11)	40,844.45	576.24	0.63	1,165.97
	Weighted Average Depreciation Rate (%)				2.85%

Calculation of Return on Capital Employed

Name of the Company APGENCO

Name of the Power Station SILERU COMPLEX

		(Amount in Crs)			
Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
1	2	3	4	5	6
Regulated Rate Base ¹	11.8%	11.8%	11.8%	11.8%	11.8%
WACC ¹	323.02	308.04	293.45	286.03	272.73
RoCE	38.12	36.35	34.63	33.75	32.18

Petitioner

Working Capital

Name of the Company

APGENCO

Name of the Power Station

SILERUCOMPLEX

Sl. No.	Particulars	(Amount in Crs)				
		2019-20	2020-21	2021-22	2022-23	2023-24
1	2	3	4	5	6	7
1	O & M expenses	14.05	14.99	15.98	17.04	18.18
2	Maintenance Spares	18.02	18.74	19.49	20.27	21.08
3	Recievables	74.35	78.34	82.63	93.98	99.36
	Total Working Capital	106.42	112.07	118.10	131.29	138.62

Petitioner

A - 9**Form 2&3**

NAME OF COMPANY : APGENCO

NAME OF POWER STATION : NAGARJUNA SAGAR RCPH

SALIENT FEATURES OF HYDROELECTRIC PROJECT**I. GENERAL**

- | | |
|---------------------------|--|
| 1. Location | : On the Right Bank Irrigation Canal of Nagarjuna Sagar Reservoir |
| 2. Category | : Canal Power House |
| 3. Capacity | : 3 x 30 MW = 90 MW |
| 4. River | : Krishna River (Utilising releases from Nagarjuna Sagar Reservoir in to the Right Side Irrigation Canal). |
| 5. Dam | : Nagarjuna Sagar |
| 6. No. of Units | : 3 Nos. |
| 7. Design energy (in Mu) | : 292.5 MU |

II. HYDROLOGY:

- | | |
|----------------------------------|-------------------------------|
| 1. Reservoir | : Nagarjuna Sagar |
| 2.. Max. discharge | : 15000 Cusecs |
| 3. Design Head | : 25 Mts (82.03 Ft.) |
| 4. Gross head | : 33.95 Mts (111.39 Ft.) |
| 5. Net Head | : 25.59 Mts (83.96 Ft.) |
| 6. Min. Draw Down Level (MDDL) | : 530.00 Ft. |
| 7. Design Disch. through Machine | : 5000 Cusecs (141.27 cumecs) |

III. COMMISSIONING DETAILS

- | | |
|----------|------------------------------------|
| Unit – 1 | : 24 th February' 1983 |
| Unit – 2 | : 14 th September' 1983 |
| Unit – 3 | : 10 th September' 1990 |

VI. TECHNICAL:

- | | |
|-----------------|--------------------|
| 1. Turbine | |
| a) Type | : Vertical Kaplan |
| b) Make | : M/s. BOVING, U.K |
| c) Net Head | : 25 Mts. |
| d) Rated Output | : 30 MW |
| e) Normal Speed | : 150 RPM |

- f) Runway speed : **360 RPM**
- g) Disc. Through Machine :

1. Generator

- a) Type : **Synchronous**
- b) Make : **M/s. GEC Large Machines Ltd., U.K**
- c) Rated Voltage : **11 KV**
- d) Rated Out put : **30 MW / 39.65 MVA**
- e) Current : **2080 A**
- f) Speed : **150 RPM**
- g) Power Factor : **0.85 Lag**

2. Generator Transformer

- a) Make : **M/s. BHEL**
- b) Capacity : **40 MVA, 3 - Phase**
- c) Voltage Ratio : **11 / 132 KV**

4. Transmission Line : **132 KV (2 Nos)**

Abstract of Admitted Capital Cost for the existing Projects**Name of the Power Station : NSRCPH**

Capital Cost as admitted by APERC	Rs 113.6 Crs
Capital cost admitted as on_____	31.03.2014
(Give reference of the relevant APERC Order with Petition No. & Date)	O.P.No.3 of 2016 dated 26.03.2016
Foreign Component, if any (In Million US \$ or the relevant Currency)	-
Domestic Component (Rs. Cr.)	Rs 113.6 Crs
Foreign Exchange rate considered for the admitted Capital cost	-
Total Capital cost admitted (Rs. Cr)	Rs 113.6 Crs

PETITIONER

Statement of Depreciation

Name of the Company

APGENCO

Name of the Power Station

NAGARJUNA SAGAR RCPH

(Rs in Crs)

Financial Year	Upto 2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
1	2	3	4	5	6	7
Depreciation on Capital Cost	113.60	114.78	114.78	114.78	114.78	114.78
Depreciation recovered during the Year	3.58	3.58	3.58	3.58	3.58	3.58
Depreciation & Advance against Depreciation recovered during the year	3.58	3.58	3.58	3.58	3.58	3.58
Cumulative Depreciation & Advance against Depreciation recovered upto the year	83.16	86.74	90.32	93.91	97.49	101.07

Calculation of Depreciation Rate**Name of the Power Station-NSRCPH**

(Amount in lacs)

Sl. no.	Asset Name	Gross Block as on 31.03.2019 or as on COD, whichever is later	Additions	Depreciation Rates as per CERC's Depreciation Rate Schedule	Depreciation Amount
	1	2		3	4
1	Land & Land rights	0.17			
2	Building	537.39	51.72	3.02%	
3	Lines and Cable networks	-			18.20
4	Plant&Equipment	10,358.77	50.18	7.84%	
5	Capital spares	-			791.77
6	Hydraulic works	474.50			16.13
7	other civil works	-			
8	Vehicles	13.16	11.51	33.40%	1.46
9	Land(Lease hold)	-			
10	Others	131.66	4.59	12.77%	17.36
11	Intangible assets	-			
	TOTAL(1 to 11)	11,515.64	118.00		844.92
	Weighted Average Depreciation Rate (%)				7.34%

Calculation of Return on Capital Employed

Name of the Company

APGENCO

Name of the Power Station

NAGARJUNASAGAR RCPH

		(Amount in Crs)				
Particulars	2019-20	2020-21	2021-22	2022-23	2023-24	
1	2	3	4	5	6	
Regulated Rate Base	11.8%	11.8%	11.8%	11.8%	11.8%	
WACC	45.16	42.24	39.37	37.39	34.67	
RoCE	5.33	4.98	4.65	4.41	4.09	

Petitioner

**PART-I
FORM- 14**

Working Capital

Name of the Company

APGENCO

Name of the Power Station

NAGARJUNASAGAR RCPH

(Amount in Crs)

Sl. No.	Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
1	2	3	4	5	6	7
1	O & M expenses	1.53	1.63	1.74	1.86	1.98
2	Maintenance Spares	2.93	3.05	3.17	3.30	3.43
3	Recievables	9.07	9.52	10.00	11.36	11.97
	Total Working Capital	13.53	14.20	14.91	16.52	17.38

Petitioner

NAME OF COMPANY : APGENCO**NAME OF POWER STATION : SRISAILAM RIGHT BANK POWER STATION****SALIENT FEATURES OF HYDROELECTRIC PROJECT****I. GENERAL**

1. Location : **Sunnipenta, Srisailam Kurnool Dist. A.P.**
2. Category : **Hydro Power Project**
3. Capacity : **7 x 110 MW = 770 MW**
4. Designed capacity : **7 x 112.2 MW**
5. River : **KRISHNA**
6. Dam : **Srisailam Dam, across Krishna River in Nandi Kotkur, Kurnool District, Andhra Pradesh.**
7. No. of Units : **SEVEN**
8. Design Energy(in Mu) : **1752 MU**

II. HYDROLOGY:

1. Reservoir : **Srisailam**
2. Catchment Area : **2,03,597 Sq. K.M (79,530 Sq. Miles)**
3. Max. flood discharge : **30,316 Cumecs**
4. Live Storage : **247.79 TMC Ft.**
5. Gross Storage : **308.06 TMC Ft.**
(Between FRL: 885 Ft. and MDDL: 805 Ft)
6. Dead Storage : **60.3 TMC Ft. (2122 MCM) at 805 Ft.**
7. Generation per TMC : **5.5 MU**
8. Design Head : **91.44 Mts.**
9. Max. gross head : **104.85 Mts.**
10. Design Net Head : **91.44 Mts.**
11. Net Head Max/Min : **104.85 / 72.5 Mts.**
12. Full Reservoir level (FRL): **885 Ft. (269.75 M)**
13. Min. Draw Down Level (MDDL) : **805 Ft. (245.37 M)**
14. Design Disch. through Machine : **137.5 M³**

III. COMMISSIONING DETAILS

- Unit – 1 : 30th August' 1982**
- Unit – 2 : 14th December' 1982**
- Unit – 3 : 19th November' 1983**

Unit – 4	: 27th August' 1984
Unit – 5	: 31st March' 1986
Unit – 6	: 30th October' 1986
Unit – 7	: 19th March' 1987

V. TECHNICAL:

1. TURBINE

a) Type	: Francis RA 115/697 –VM - 3600
b) Make	: BHEL
c) Net Head Max./Min	: 104.85 / 91.44 Mts.
d) Design Net Head	: 91.44 Mts.
e) Rated Output	: 112.2 MW
f) Output Max./ Min	: 123.5 MW/72.5 MW
g) Normal Speed	: 187.5 RPM
h) Runway speed	: 375 RPM
i) Disc. Through Machine	: 137.5 M³

2. GENERATOR - MOTOR

a) Type	: SV 857 / 180 – 32 SUSPENSION
b) Make	: BHEL
c) Rated Voltage	: 11000 V
d) Rated Out put	: 122000 KVA
e) Current	:
f) Speed	: 187.5 RPM
g) Power Factor	: 0.90 Lagging

3. GENERATOR TRANSFORMER

a) Make	: TELK
b) Capacity	: 3 X 42.5 MVA
c) Voltage Ratio	: 11 / 220

FORM-1

Summary Sheet

Name of the Company

APGenco

Name of the Power Station :

SRBPH

(Rs in Crs)

S.No.	Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
1	2	3	4	5	6	7
1.1	Depreciation	32.09	32.09	32.09	32.09	32.09
1.2	Return on Capital Employed ¹	46.61	43.45	40.34	38.12	35.15
1.3	O & M Expenses	139.11	148.35	158.20	168.70	179.90
	Total	217.81	223.89	230.63	238.91	247.14

Abstract of Admitted Capital Cost for the existing Projects**Name of the Power Station : SRBPH**

Capital Cost as admitted by APERC	Rs 946.28 Crs
Capital cost admitted as on_____	31.03.2014
(Give reference of the relevant APERC Order with Petition No. & Date)	O.P.No.3 of 2016 dated 26.03.2016
Foreign Component, if any (In Million US \$ or the relevant Currency)	-
Domestic Component (Rs. Cr.)	Rs 946.28 Crs
Foreign Exchange rate considered for the admitted Capital cost	-
Total Capital cost admitted (Rs. Cr)	Rs 946.28 Crs

PETITIONER

	Form 7
Name of the Company	APGENCO
Name of the Power Station	R&M of SRB HEP 31305009
Particulars	Package1
1	2
Source of Loans	PFC
Currency	INDIAN Rs
Amount of Loan sanctioned	13.36
Amount of Gross Loan drawn Upto 31.03.19	6.74
Interest Type	Floating
Fixed Interest Rate, if applicable	-
Base Rate, if Floating Interest	12.10%
Margin, if Floating Interest	
Are there any Caps/Floor	-
If above is yes, specify caps/floor	-
Moratorium Period	34 Months
Moratorium effective from	13-Jan-05
Repayment Period	12 Years
Repayment effective from	15-Oct-07
Repayment Frequency	Quarterly
Repayment Instalment	48
Base ExchangeRate	-

Statement of Depreciation

Name of the Company

APGENCO

Name of the Power Station

SRBPH

		(Rs in Crs)						
Financial Year		Upto 2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	
1		2	3	4	5	6	7	
Depreciation on Capital Cost		946.28	963.76	963.76	963.76	963.76	963.76	
Depreciation recovered during the Year		32.09	32.09	32.09	32.09	32.09	32.09	
Depreciation & Advance against Depreciation recovered during the year		32.09	32.09	32.09	32.09	32.09	32.09	
Cumulative Depreciation & Advance against Depreciation recovered upto the year		679.79	711.88	743.97	776.06	808.15	840.24	

Calculation of Depreciation Rate

Name of the Power Station-SRBPH(7600)

(Amount in lacs)

Sl. no.	Asset Name	Gross Block as on 31.03.2019 or as on COD, whichever is later	Additions	Depreciation Rates as per CERC's Depreciation Rate Schedule	Depreciation Amount
	1	2		3	4
1	Land & Land rights				
2	Building	4,288.30	1,235.89	3.02%	80.95
3	Lines and Cable networks	62.72	1.48	7.84%	0.97
4	Plant&Equipment	87,033.50	357.73	7.84%	2,748.94
5	Capital spares	969.60		7.84%	
6	Hydraulic works	2,771.44		3.40%	31.78
7	other civil works	939.99	35.80	3.02%	28.52
8	Vehicles	177.96	74.68	33.40%	24.18
9	Land(Lease hold)	-			
10	Others	1,167.95	42.42	12.77%	143.29
11	Intangible assets	-			
12	TOTAL(1 to 12)	97,411.47	1,748.00		3,058.63
	Weighted Average Depreciation Rate (%)				3.14%

[illegible]

Calculation of Return on Capital Employed

Name of the Company APGENCO

Name of the Power Station SRBPH

Particulars	(Amount in crs)					
	2019-20	2020-21	2021-22	2022-23	2023-24	
1	2	3	4	5	6	
Regulated Rate Base ¹	11.8%	11.8%	11.8%	11.8%	11.8%	
WACC ¹	394.97	368.21	341.82	323.01	297.91	
RoCE	46.61	43.45	40.33	38.12	35.15	

Petitioner

**PART-I
FORM- 14**

Working Capital

Name of the Company

APGENCO

Name of the Power Station

SRBPH

Sl. No.	Particulars	(Amount in lacs)				
		2019-20	2020-21	2021-22	2022-23	2023-24
1	2	3	4	5	6	7
1	O & M expenses	11.59	12.36	13.18	14.06	14.99
2	Maintenance Spares	24.40	25.37	26.39	27.44	28.54
3	Recievables	75.01	78.60	82.46	93.81	98.77
	Total Working Capital	111.00	116.33	122.03	135.31	142.30

Petitioner

NAME OF COMPANY : APGENCO

NAME OF POWER STATION : PABR

SALIENT FEATURES OF HYDROELECTRIC PROJECT**I. GENERAL**

- | | | | |
|----|------------------------|---|--|
| 1. | Location | : | PABR DAM, Urvakonda (Mandal),
Ananthapur (Dt.) A.P, 40 KM from Ananthapur |
| 2. | Category | : | CANAL POWER HOUSE |
| 3. | Capacity | : | 2 x 10 MW |
| 4. | Designed capacity | : | 20 MW (50 MW P.A) |
| 5. | River | : | PENNNAR |
| 6. | DAM | : | Penna Ahobilam balancing Reservoir |
| 7. | No. of Units | : | 2 |
| 8. | Design Energy (in Mu) | : | 54 MU |

II. HYDROLOGY

- | | | | |
|-----|------------------------------|---|----------------------------------|
| 1. | Reservoir | : | PABR |
| 2. | Catchment Area | : | 6165 Sq. Km (2420 Sq. miles) |
| 3. | Max. flood discharge | : | 4596 Cusecs (1,62,300 Cusecs) |
| 4. | Live Storage | : | 10.77 TMC |
| 5. | Gross Storage | : | 11.10 TMC |
| 6. | Dead Storage | : | |
| 7. | Generation per TMC | : | 1.374 MU |
| 8. | Design Head | : | 42.67 |
| 9. | Gross Head Max/Min | : | 44.63 |
| 10. | Net Head | : | 43.11 |
| 11. | Full Reservoir Level (FRL) | : | 443 M |
| 12. | Min. Draw Down Level (MDDL): | : | 419.5 M |
| 13. | Tail Race water level | : | 399.29 |
| 14. | Design Disc. thro' Machine | : | 2000 Cubes (1000 Cubes each M/c) |

III. COMMISSIONING DETAILS

- | | | | |
|----|----------|---|------------|
| 1. | Unit # 1 | : | 10.01.1994 |
| 2. | Unit # 2 | : | 23.01.1994 |

IV. TECHNICAL**1. TURBINE**

- | | | | |
|----|--------------|---|-----------------|
| a. | Type | : | KAPLAN VERTICAL |
| b. | Make | : | BHEL-BHOPAL |
| c. | Net Head | : | 43.11 M |
| d. | Rated Output | : | 20 MW |

- e. Max. Output : 20 KW
- f. Normal speed : 300
- g. Runway Speed : 450
- h. Disc. thro' Machine : 20000 Cusecs

2. GENERATOR

- a. Type : Salient Pole, HGS 400/65 – 20D
- b. Make : BHEL – BHOPAL
- c. Rated voltage : 11 kV
- d. Rated out put : 10 MW
- e. Current : 617 Amps
- f. Speed : 300 RPM
- g. Power Factor : 0.85 Lag

3. GENERATOR TRANSFORMER

- a. Make : TELK
- b. Capacity : 15000 KVA
- c. Voltage Ratio : 132 /11 kV

4. TRANSMISSION LINE : 132 kV, Ananthapur to Kalyanadurg line.

FORM-1

Summary Sheet

Name of the Company

APGenco

Name of the Power Station :

PABR

(Rs in Crs)

S.No.	Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
1	2	3	4	5	6	7
1.1	Depreciation	1.61	1.61	1.61	1.61	1.61
1.2	Return on Capital Employed	3.49	3.32	3.16	3.02	2.86
1.3	O & M Expenses	7.80	8.32	8.87	9.46	10.09
	Total	12.90	13.25	13.64	14.09	14.56

Petitioner

Abstract of Admitted Capital Cost for the existing Projects**Name of the Power Station : PABR**

Capital Cost as admitted by APERC	Rs 56.68 Crs
Capital cost admitted as on_____	31.03.2014
(Give reference of the relevant APERC Order with Petition No. & Date)	O.P.No.3 of 2016 dated 26.03.2016
Foreign Component, if any (In Million US \$ or the relevant Currency)	-
Domestic Component (Rs. Cr.)	Rs 56.68 Crs
Foreign Exchange rate considered for the admitted Capital cost	-
Total Capital cost admitted (Rs. Cr)	Rs 56.68 Crs

PETITIONER

Statement of Depreciation

Name of the Company

APGENCO

Name of the Power Station

PABR

Financial Year	Upto 2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
1	2	3	4	5	6	7
Depreciation on Capital Cost	56.68	56.68	56.68	56.68	56.68	56.68
Depreciation recovered during the Year	1.61	1.61	1.61	1.61	1.61	1.61
Depreciation & Advance against Depreciation recovered during the year	1.61	1.61	1.61	1.61	1.61	1.61
Cumulative Depreciation & Advance against Depreciation recovered upto the year	32.04	33.65	35.26	36.87	38.47	40.08

PART-I
FORM- 12

Calculation of Depreciation Rate

Name of the Power Station-PABRHES

(Amount in lacs)

Sl. no.	Asset Name	Gross Block as on 31.03.2019 or as on COD, whichever is later	Additions	Depreciation Rates as per CERC's Depreciation Rate Schedule	Depreciation Amount
	1	2		3	4
1	Land & Land rights	-			
2	Building	475.42		3.02%	16.16
3	Lines and Cable networks	-			
4	Plant&Equipment	4,295.09		7.84%	144.07
5	Capital spares	-			
6	Hydraulic works	87.22		3.40%	2.36
7	other civil works	-			
8	Vehicles	-			
9	Land(Lease hold)	-			
10	Others	28.93	0.45	12.77%	3.57
11	Intangible assets	-			
12	TOTAL(1 to 11)	4,886.67	0.45		166.16
	Weighted Average Depreciation Rate (%)				3.40%

Calculation of Return on Capital Employed

Name of the Company		APGENCO					
Name of the Power Station		PABR					
Particulars	2019-20	2020-21	2021-22	2022-23	2023-24	(Amount in Crs)	
1	2	3	4	5	6		
Regulated Rate Base ¹	11.8%	11.8%	11.8%	11.8%	11.8%		
WACC ¹	29.55	28.15	26.77	25.59	24.26		
RoCE	3.49	3.32	3.16	3.02	2.86		

Petitioner

Working Capital

[illegible]

Petitioner

NAME OF COMPANY : APGENCO

NAME OF POWER STATION : CHETTIPETA MINI HYDEL STATION
(2X500 KW)

1. **SALIENT FEATURES:**

- | | | | |
|-----|-------------------------|---|---|
| 1.1 | Sate | : | Andhra Pradesh |
| 1.2 | District | : | West Godavari |
| 1.3 | Taluk | : | Kovvur |
| 1.4 | Canal | : | Weir @ (Mile 6/0) KM.9.60 of Eluru Canal. |
| 1.5 | Site of
Power House. | : | Mini Hydro Power House at Chettipeta weir
on Eluru canal. The site is 4 KM from
Nidadavolu – Tadepalligudem Canal Road. |

2. **HYDROLOGY:**

- | | | | |
|-----|---------------------|---|--|
| 2.1 | Source of potential | : | Irrigation canal discharge from Eluru Canal
into Chettipeta weir canal and Nandamuru
weir canal. |
| 2.2 | No. of Canal drops | : | It is only one drop at Chettipeta weir
available. |

3. **POWER HOUSE:**

- | | | | |
|-----|---|---|-------------------------|
| 3.1 | Maximum discharge | : | 47.66 cumecs (1683 c/s) |
| 3.2 | Head available (net) | : | 2.74 Mts. |
| 3.3 | Power generation | : | 6.35 M.K.W.Hrs. |
| 3.4 | Maximum Power | : | 1000 K.W. |
| 3.5 | No. of units installed | : | 2 Nos. of 500 K.Ws. |
| 3.6 | Type of turbines proposed | : | Tubular type. |
| 3.7 | Dimensions of Power House
Including service bay. | : | 19 M X 17 M. |
| 3.8 | Maximum Tail Water Level | : | + 8.537 M. |
| 3.9 | Elevation of unit floor level | : | + 7.45 M. |

4. **COMMISSIONING DETAILS**

- | | | |
|----------|---|------------|
| Unit – 1 | : | 01.10.1991 |
| Unit – 2 | : | 04.10.1991 |

5. TECHNICAL

1. Turbine
 - a) Type : **Francis Vertical**
 - b) Make : **Excherwyss, Charmilies Switzerland (Stage – I)**
BHEL (Stage – II)
 - c) Net Head : **90 M**
 - d) Rated Output : **9500 BHP**
 - e) Normal Speed : **187.5 RPM**
 - f) Runway speed : **350 RPM**

2. Generator
 - a) Type : **Synchronous**
 - b) Make : **Oerlikon, Switzerland (Stage – I)**
BHEL (Stage – II)
 - c) Rated Voltage : **11 KV**
 - d) Rated Out put : **60 MW / 66.67 MVA**
 - e) Current : **3500 A**
 - f) Speed : **300RPM**
 - g) Power Factor : **0.9 Lag**

3. Generator Transformer
 - a) Make : **TELK, Angamally, Kerela**
 - b) Capacity : **25 MVA, Single Phase (Out Door Type)**
 - c) Voltage Ratio : **11 KV/ 220 KV**

4. Transmission Line
 - : **220 KV, 3 Nos. (Stage – I)**
 - : **220 KV, 2 Nos. (Stage – II)**

FORM-1

Summary Sheet

Name of the Company

APGenco

Name of the Power Station :

Chettipeta

(Rs in Crs)

S.No.	Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
1	2	3	4	5	6	7
1.1	Depreciation	0.08	0.08	0.08	0.08	0.08
1.2	Return on Capital Employed	0.29	0.28	0.27	0.27	0.26
1.3	O & M Expenses	1.20	1.28	1.36	1.45	1.55
	Total	1.57	1.64	1.71	1.80	1.89

Petitioner

Abstract of Admitted Capital Cost for the existing Projects**Name of the Power Station : Cettipeta**

Capital Cost as admitted by APERC	Rs 3.55 Crs
Capital cost admitted as on_____	31.03.2014
(Give reference of the relevant APERC Order with Petition No. & Date)	O.P.No.3 of 2016 dated 26.03.2016
Foreign Component, if any (In Million US \$ or the relevant Currency)	-
Domestic Component (Rs. Cr.)	Rs 3.55 Crs
Foreign Exchange rate considered for the admitted Capital cost	-
Total Capital cost admitted (Rs. Cr)	Rs 3.55 Crs

PETITIONER

Statement of Depreciation

Name of the Company

APGENCO

Name of the Power Station

Chettipeta

Financial Year	Upto 2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
1	2	3	4	5	6	7
Depreciation on Capital Cost	3.55	3.55	3.55	3.55	3.55	3.55
Depreciation recovered during the Year	0.08	0.08	0.08	0.08	0.08	0.08
Depreciation & Advance against Depreciation recovered during the year	0.08	0.08	0.08	0.08	0.08	0.08
Cumulative Depreciation & Advance against Depreciation recovered upto the year	1.60	1.68	1.76	1.84	1.92	2.00

**PART-I
FORM- 14**

Working Capital

Name of the Company APGENCO

Name of the Power Station Chettipeta

Sl. No.	Particulars	(Amount in Crs)				
		2019-20	2020-21	2021-22	2022-23	2023-24
1	2	3	4	5	6	7
1	O & M expenses	0.10	0.11	0.11	0.12	0.13
2	Maintenance Spares	0.06	0.06	0.07	0.07	0.07
3	Recievables	0.31	0.33	0.34	0.37	0.39
	Total Working Capital	0.47	0.50	0.52	0.56	0.59

Petitioner

FORM-1

Summary Sheet

Name of the Company

APGENCO

Name of the Power Station :

Dr. NTTPS(6x210 Mw)

S.No.	Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
1	2	3	4	5	6	7
1.1	Depreciation	41.59	41.59	41.59	0.00	0.00
1.2	Return on Capital Employed	183.11	180.06	177.15	174.91	177.36
1.3	O & M Expenses	590.46	629.66	671.47	716.06	763.61
	Total	815.16	851.31	890.21	890.97	940.97
2.Calculation of Rate of Energy Charge(Rs./kWh)						
2.1	Rate of Energy Charge from Primary Fuel (REC)p	3.59	3.59	3.59	3.59	3.59
2.2	Rate of Energy Charge from Secondary Fuel (REC)	0.08	0.08	0.08	0.08	0.08
2.3	Rate of Energy Charge ex-bus(REC)	3.67	3.67	3.67	3.67	3.67

Petitioner

Plant Characteristics

APGENCO

: Dr Narla Tata Rao Thermal Power Station (Dr.NTTPS)

Basic characteristics of the plant¹

Coal based thermal station(6x210 MW) with conventional boiler and steam turbine

Special Features of the Plant

Site Specific Features²

Near to river Krishna. Cooling water is taken from the upstream of the river and return water is fed back to the river downstream. Alternative cooling water system with forced draught cooling towers is also available.

Special Technological Features³

Environmental Regulation related features⁴

: ESPs are provided for pollution control in all the Units. Opacity meters are provided for SPM measurement and measurement of SOX and NOX emissions provided.

Any other special features

Fuel Details⁵		Primary Fuel	Secondary Fuel	Alternate Fuels
Details		Module number or Unit number		
Unit No.	1	2	3	4
Installed Capacity (IC)	210	210	210	210
Date of Commercial Operation (COD)	1.11.79	10.10.80	5.10.89	23.08.90
Type of cooling system ⁶	Once through cooling by river water along with Forced draught cooling towers in summer	Once through cooling by river water along with Forced draught cooling towers in summer	Once through cooling by river water along with Forced draught cooling towers in summer	Once through cooling by river water along with Forced draught cooling towers in summer
Type of Boiler Feed Pump ⁷	Motor driven	Motor driven	Motor driven	Motor driven

PETITIONER

Normative parameters considered for tariff computations**Name of the Company** APGENCO**Name of the Power Station** Dr.NTTPS (6x210 MW)

Particulars	Unit	As per filings	As per APERC norms
1	2	3	4
Rate of Return on Capital Employed	%	11.8	not mentioned
Target Availability	%	80%	80%
Target PLF	%	80%	80%
Auxiliary Energy Consumption	%	8.75	8.75
Gross Station Heat Rate	kCal/kWh	2500	2500
Specific Fuel Oil Consumption	ml/kWh	2	2
O&M Cost *	Rs.Lakh/MW	-	-
Cost of Coal/Lignite for WC¹	in Months	1	1
Cost of Secondary Fuel Oil for WC¹	in Months	1	1
Fuel Cost for WC²	in Months	1	1
Liquid Fuel Stock for WC²	in Months	1	1
O & M Expenses for WC	in Months	1	1
Maintenance Spares for WC	%	1	1
Receivables for WC	in Months	2	2
Base Rate of SBI as on	%	-	-
Incentive Rate	Paise / kWh	25	25

PETITIONER

Abstract of Admitted Capital Cost for the existing Projects**Name of the Power Station : Dr NTTPS O&M**

Capital Cost as admitted by APERC	Rs 2962.24 Crs
Capital cost admitted as on_____	31.03.2014
(Give reference of the relevant APERC Order with Petition No. & Date)	O.P.No.3 of 2016 dated 26.03.2016
Foreign Component, if any (In Million US \$ or the relevant Currency)	-
Domestic Component (Rs. Cr.)	Rs 2962.24 Crs
Foreign Exchange rate considered for the admitted Capital cost	-
Total Capital cost admitted (Rs. Cr)	Rs 2962.24 Crs

PETITIONER

	FORM 7
Name of the Company	APGENCO
Name of the Power Station	Dr NTPS
Particulars	Package1
1	2
Source of Loans	PFC 31304028
Currency	INDIAN Rs
Amount of Loan sanctioned	155.00
Amount of Gross Loan drawn Upto 31.03.19	143.31
Interest Type	Floating
Fixed Interest Rate, if applicable	-
Base Rate, if Floating Interest	11.25%
Margin, if Floating Interest	
Are there any Caps/Floor	-
If above is yes, specify caps/floor	-
Moratorium Period	25 Months
Moratorium effective from	29-Sep-06
Repayment Period	10 Years
Repayment effective from	15-Oct-08
Repayment Frequency	Quarterly
Repayment Instalment	40
Base ExchangeRate	-

Statement of Depreciation

Name of the Company

APGENCO

Name of the Power Station

Dr.NTTPS (6 X 210 Mw)

		(Rs in Crs)					
Financial Year		Upto 2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
1		2	3	4	5	6	7
Depreciation on Capital Cost		2962.24	3107.07	3107.07	3107.07	3107.07	3107.07
Depreciation recovered during the Year		72	41.59	41.59	41.59	0.00	0.00
Depreciation & Advance against Depreciation recovered during the year		72	41.59	41.59	41.59	0.00	0.00
Cumulative Depreciation & Advance against Depreciation recovered upto the year		2671.58	2713.17	2754.76	2796.35	2796.35	2796.35

Calculation of Depreciation Rate**Name of the Power Station-Dr.NTTPS- O&M(4500) including Training Institute**

(Amount in lacs)

Sl. no.	Asset Name	Gross Block as on 31.03.2019 or as on COD, whichever is later	Additions	Depreciation Rates as per CERC's Depreciation Rate Schedule	Depreciation Amount
	1	2		3	4
1	Land & Land rights	795.09	-	0.00%	
2	Building	11,646.13	1,037.13	3.02%	38.60
3	Lines and Cable networks	107.07	107.07	7.84%	10.86
4	Plant&Equipment	267,751.57	8,060.25	7.84%	227.56
5	Capital spares	5,488.14	1,720.59	7.84%	268.42
6	Hydraulic works	11,345.91	786.23	3.40%	67.71
7	other civil works	10,133.05	2,055.32	3.02%	459.83
8	Vehicles	708.47	192.58	33.40%	64.32
9	Land(Lease hold)	38.01	-		1.09
10	Others	2,804.80	518.56	12.77%	313.28
11	Intangible assets	46.08	4.82	25.00%	1.61
12	TOTAL(1 to 11)	310,864.32	14,482.55	1.04	1,453.28
	Weighted Average Depreciation Rate (%)				0.47%

Form -13									
	Name of the Company		APGENCO						
	Name of the Power Station		R&M VTPS		Amount in Crores				
S.No	Particulars		Existing 18-19	19-20	20-21	21-22	22-23	23-24	
1	Loan 4 - PFC 31304028								
	Gross Loan - Openig		143.31	143.31	143.31				
	Cumulative Repayment of Loans upto Current Year		(108.78)	(122.59)	(136.40)				
	Net Loan - Opening		34.53	20.72	6.91				
	Add: Drawals during the Year		-	-	-				
	Less: Repayment of the Loans during the year		(13.81)	(13.81)	(6.91)				
	Net Loan - Closnig		20.72	6.91	0.00				
	Average Net Loan		20.72	6.91	0.00				
	Rate of Interest on Loan		11.25%	11.25%	11.25%				

Calculation of Return on Capital Employed

Name of the Company

APGENCO

Name of the Power Station

Dr.NTTPS

(Amount in Crs)

Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
1	2	3	4	5	6
Regulated Rate Base ¹	11.80%	11.80%	11.80%	11.80%	11.80%
WACC ¹	1551.76	1525.97	1501.23	1482.29	1503.05
RoCE	183.11	180.06	177.15	174.91	177.36

Petitioner

**PART-I
FORM- 14**

Working Capital

Name of the Company

APGENCO

Name of the Power Station

Dr.NTTPS

(Amount in Crs)

Sl. No.	Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
1	2	3	4	5	6	7
1	Cost of Fuel	270.05	270.05	270.05	270.05	270.05
2	O & M expenses	49.20	52.47	55.96	59.67	63.63
3	Maintenance Spares	57.70	60.01	62.41	64.90	67.50
4	Recievables	739.31	749.55	760.51	776.95	791.15
	Total Working Capital	1116.26	1132.08	1148.93	1171.57	1192.33

Petitioner

FORM-18														
Details/Information to be provided to beneficiaries under Clause (7) of Regulation 30 of CERC (Terms & Conditions of Tariff) Regulations, 2014														
Details/Information to be submitted in respect of Fuel for Computation of Energy Charges														
Name of Company : APGENCO														
Name of Station : VTPS O&M														
Month : 01-07-2018 TO 30-09-2018														
S.No.	Particulars	Unit	Jul-18			Aug-18			Sep-18			Imported Coal		
			Supplied by MGR	Supplied by ARR	E-Auction Coal	Supplied by MGR	Supplied by ARR	E-Auction Coal	Supplied by MGR	Supplied by ARR	E-Auction Coal			
			(i)	(ii)	(iii)	(vi)	(i)	(ii)	(iii)	(vi)	(i)	(ii)	(iii)	(vi)
1	Quantity of coal supplied by coal company inclusive of opening stock of coal	(MT)		641866.55				599723.69				662069.30		
2	Adjustment (+/-) in quantity supplied by coal company	(MT)												
3	Coal supplied by coal company inclusive of opening stock of coal (1+2)	(MT)		641866.55				599723.69				662069.30		
4	Normative transit & handling losses (for coal based projects)	(MT)		4743.75				4287.97				4928.39		
5	Net coal supplied inclusive of opening stock of coal (3+4)	(MT)												
6	Amount charged by coal company inclusive of value of opening stock of coal	(Rs.)		1640056801.06				1421329748.02				1623538490.46		
7	Adjustment (+/-) in amount charged by coal company	(Rs.)												
8	Total amount charged inclusive of opening stock of coal (6+7)	(Rs.)		1640056801.06				1421329748.02				1623538490.46		
9	Transportation charges by Rail/Ship/Road Transport	(Rs.)		584417009.00				643545687.00				807351698.40		
10	Adjustment (+/-) in amount charged by Railways/Transport company	(Rs.)												
11	Demurrage charges, if any	(Rs.)												
12	Cost of diesel in transporting coal through MGR system	(Rs.)				0.00								
13	Total transportation charges (9+/-10-11+12)	(Rs.)		584417009.00				643545687.00		0.00		807351698.40		0.00
13A	Ors (Stone picking charges, Loco driver's salary, sampling charges etc.)	(Rs.)		27574250.91				23092021.86				26329810.24		
14	Total amount charged for coal supplied including transportation (8+13+13A)	(Rs.)		2252048060.97				2087967456.88				2457219999.10		
15	Landed cost of coal	(Rs.)												
16	Blending ratio													
17	Weighted average cost of coal	(Rs./MT)		3534.72				3506.62				3739.26		
18	GCV of Domestic coal as per bill of coal company, CIMFR EM basis	(KCal/Kg)		3453				3353				3478		
19	GCV of Imported coal as per bill of coal company AD basis	(KCal/Kg)		-				-				-		
20	Weighted average GCV of coal as billed CIMFR EM basis	(KCal/Kg)		3453				3353				3478		
21	GCV of Domestic coal as received at station (Bunker front sample, AFR)	(KCal/Kg)		2958				2935				2944		
22	GCV of Imported coal as received at station, TM basis	(KCal/Kg)		-				-				-		
23	Weighted average GCV of coal as received at station (Bunker front sample, AFR)	(KCal/Kg)		2958				2935				2944		

FORM-18

Details/Information to be provided to beneficiaries under Clause (7) of Regulation 30 of CERC (Terms & Conditions of Tariff) Regulations, 2014
Details/Information to be submitted in respect of Fuel for Computation of Energy Charges

Name of Company : APGENCO

Name of Station : VTPS Complex

Month : 01-07-2018 TO 30-09-2018

S.No.	Particulars	Unit	Jul-18		Aug-18		Sep-18	
			HFO (i)	HSD (ii)	HFO (i)	HSD (ii)	HFO (i)	HSD (ii)
1	Quantity of oil supplied by oil company inclusive of opening stock of oil	(MT)	5658.33	394.50	4926.83	330.00	4622.83	333.00
2	Adjustment (+/-) in quantity supplied by oil company	(MT)						
3	Oil supplied by oil company inclusive of opening stock of oil (1+2)	(MT)	5658.33	394.50	4926.83	330.00	4622.83	333.00
4	Normative transit & handling losses (for oil based projects)	(MT)						
5	Net oil supplied inclusive of opening stock of oil (3-4)	(MT)						
6	Amount charged by oil company inclusive of value of opening stock of oil	(Rs.)	190424838.26	25990792.43	165807001.72	21741304.19	155576212.51	22373693.27
7	Adjustment (+/-) in amount charged by oil company	(Rs.)						
8	Total amount charged inclusive of opening stock of oil (6+7)	(Rs.)	190424838.26	25990792.43	165807001.72	21741304.19	155576212.51	22373693.27
9	Transportation charges by Rail/Ship/Road Transport	(Rs.)						
10	Adjustment (+/-) in amount charged by Railways/Transport company	(Rs.)						
11	Demurrage charges, if any	(Rs.)						
12	Cost of diesel in transporting oil through MGR system	(Rs.)						
13	Total transportation charges (9+/-10-11+12)	(Rs.)						
13A	Oil (Stone picking charges, Loco driver's salary, sampling charges, etc.)	(Rs.)						
14	Total amount charged for oil supplied including transportation (8+13+13A)	(Rs.)	190424838.26	25990792.43	165807001.72	21741304.19	155576212.51	22373693.27
15	Landed cost of oil	(Rs.)	33653.91	65883.54	33653.91	65883.54	33653.91	67189.08
16	Blending ratio							
17	Weighted average cost of oil	(Rs./MT)	36265.48		37150.97		35230.51	
18*	GCV of HFO oil as per bill of oil company (As per Test Report)	(KCal/Ltr)	9753	-	9753	-	9753	-
19	GCV of HSD as per bill of oil company	(KCal/Ltr)	-	-	-	-	-	-
20*	Weighted average GCV of oil as billed (As per Test Report)	(KCal/Ltr)	9753	-	9753	-	9753	-
21	GCV of HFO Oil as recieved at station	(KCal/Ltr)	-	-	-	-	-	-
22	GCV of HSD as recieved at station	(KCal/Ltr)	-	-	-	-	-	-
23	Weighted average GCV of oil as recieved at station	(KCal/Ltr)	-	-	-	-	-	-

* There is no change in GCV of HFO oil as the oil is not procured for Dr.NTTPS complex for the period of Q2 of FY 2018-19.

Summary Sheet

Name of the Company

APGenco

Name of the Power Station :

RTPP stage I

S.No.	Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
1	2	3	4	5	6	7
1.1	Depreciation	15.23	15.23	15.23	15.23	15.23
1.2	Return on Capital Employed	82.91	81.88	80.90	80.43	79.58
1.3	O & M Expenses	196.81	209.88	223.82	238.68	254.53
	Total	294.95	306.99	319.95	334.34	349.34

(Rs in Crs)

2.Calculation of Rate of Energy Charge(Rs./kWh)

2.1	Rate of Energy Charge from Primary Fuel	3.79	3.79	3.79	3.79	3.79
2.2	Rate of Energy Charge from Secondary Fuel	0.08	0.08	0.08	0.08	0.08
2.3	Rate of Energy Charge ex-bus	3.87	3.87	3.87	3.87	3.87

**PART-I
FORM-2**

Plant Characteristics

- Name of the Company** : APGENCO
- Name of the Power Station** : Rayalaseema Thermal Power Station Stage I
- Basic characteristics of the plant¹** : Coal based thermal plant with conventional Boiler and Steam Turbine.
- Special Features of the Plant** :
- Site Specific Features²** :
- Special Technological Features³** :
- Environmental Regulation related features⁴** : ESPs are provided for pollution control in both the Units. Opacity meters are provided for SPM measurement and measurement of SOX and NOX emissions provided.
- Any other special features** :

Fuel Details⁵	Primary Fuel	Secondary Fuel	Alternate Fuels
	Coal	Heavy oil/Light Diesel oil	---

Details	Module number or Unit number	
Unit No.	1	2
	Unit-1	Unit-2
Installed Capacity (IC)	210MW	210MW
Date of Commercial Operation (COD)	31.3.1994	25.2.1995
Type of cooling system ⁶	Closed cycle cooling system with ND cooling towers	
Type of Boiler Feed Pump ⁷	Motor driven	Motor driven

PETITIONER

Normative parameters considered for tariff computations

Name of the Company **APGENCO**

Name of the Power Station **RTPP Stage-1**

Particulars	Unit	As per fillings	As per APERC norms
		2019-24	
-1		2	3
Rate of Return on Capital Employed	%	11.8	Not mentioned
Target Availability	%	80%	80%
Target PLF	%	-	80%
Auxiliary Energy Consumption	%	9	9
Gross Station Heat Rate	kCal/kWh	2500	2500
Specific Fuel Oil Consumption	ml/kWh	2	2
O&M Cost	Rs.Lakh/MW	-	5 Years average
Cost of Coal/Lignite for WC¹	in Months	1	1
Cost of Secondary Fuel Oil for WC¹	in Months	1	1
Fuel Cost for WC²	in Months		
Liquid Fuel Stock for WC²	in Months		
O & M Expenses for WC	in Months	1	1
Maintenance Spares for WC	%	1	1
Receivables for WC	in Months	2	2
Prime lending Rate of SBI as on	%	-	-
Incentive Rate	Paise / kWh	25	25

PETITIONER

Abstract of Admitted Capital Cost for the existing Projects**Name of the Power Station : RTPP I**

Capital Cost as admitted by APERC	Rs 2011.33 Crs
Capital cost admitted as on_____	31.03.2014
(Give reference of the relevant APERC Order with Petition No. & Date)	O.P.No.3 of 2016 dated 26.03.2016
Foreign Component, if any (In Million US \$ or the relevant Currency)	-
Domestic Component (Rs. Cr.)	Rs 2011.33 Crs
Foreign Exchange rate considered for the admitted Capital cost	-
Total Capital cost admitted (Rs. Cr)	Rs 2011.33 Crs

PETITIONER

Statement of Depreciation

Name of the Company

APGENCO

Name of the Power Station

RTPP-I

(Rs in Crs)							
Financial Year	Upto 2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	
1	2	3	4	5	6	7	
Depreciation on Capital Cost	2011.33	2044.69	2044.69	2044.69	2044.69	2044.69	
Depreciation recovered during the Year	39.2	15.23	15.23	15.23	15.23	15.23	
Depreciation & Advance against Depreciation recovered during the year	39.2	15.23	15.23	15.23	15.23	15.23	
Cumulative Depreciation & Advance against Depreciation recovered upto the year	1764.06	1779.29	1794.52	1809.75	1824.98	1840.21	

PART-I
FORM- 12

Calculation of Depreciation Rate

Name of the Power Station-RTPP-O&M stage -I

(Amount in lacs)

Sl. no.	Asset Name	Gross Block as on 31.03.2019 or as on COD, whichever is later	Additions	Depreciation Rates as per CERC's Depreciation Rate Schedule	Depreciation Amount
	1	2		3	4
1	Land & Land rights	187.88	45.65	0.00%	
2	Building	10,085.74	-	3.02%	963.25
3	Lines and Cable networks	24.14	22.12	7.84%	0.06
4	Plant&Equipment	180,428.95	2,853.04	7.84%	8,568.50
5	Capital spares	-	0		
6	Hydraulic works	6,514.77	38.47	3.40%	739.57
7	other civil works	7,851.10	1.10	3.02%	4.69
8	Vehicles	2,282.59	223.50	33.40%	
9	Land(Lease hold)	-	-		
10	Others	1,061.30	152.42	12.77%	78.95
11	Intangible assets	1.09			
	TOTAL(1 to 11)	208,437.56	3,336.30		10,355.02
	Weighted Average Depreciation Rate (%)				4.97%

Calculation of Return on Capital Employed

Name of the Company

APGENCO

Name of the Power Station

RTPP-I

(Amount in Crs)					
Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
1	2	3	4	5	6
Regulated Rate Base ⁱ	11.8%	11.8%	11.8%	11.8%	11.8%
WACC ⁱ	702.59	693.88	685.56	681.59	674.41
RoCE	82.91	81.88	80.90	80.43	79.58

Petitioner

**PART-I
FORM- 14**

Working Capital

Name of the Company

APGENCO

Name of the Power Station

RTPP-I

		(Amount in Crs)				
Sl. No.	Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
1	2	3	4	5	6	7
1	Cost of Fuel	94.92	94.92	94.92	94.92	94.92
2	O & M expenses	16.40	17.49	18.65	19.89	21.21
3	Maintenance Spares	50.51	52.53	54.63	56.82	59.09
4	Recievables	260.12	263.53	267.18	275.02	279.47
	Total Working Capital	421.95	428.47	435.38	446.65	454.69

Petitioner

Summary Sheet

Name of the Company

APGenco

Name of the Power Station :

RTPP stage II

S.No.	Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
1	2	3	4	5	6	7
1.1	Depreciation	7.85	7.85	7.85	7.85	7.85
1.2	Return on Capital Employed ¹	79.37	78.94	78.55	78.19	77.87
1.3	O & M Expenses	196.81	209.88	223.82	238.68	254.53
	Total	284.03	296.67	310.22	324.72	340.25

(Rs in Crs)

2.Calculation of Rate of Energy Charge(Rs./kWh)¹

2.1	Rate of Energy Charge from Primary Fuel (REC)p ²	3.79	3.79	3.79	3.79	3.79
2.2	Rate of Energy Charge from Secondary Fuel (REC)	0.08	0.08	0.08	0.08	0.08
2.3	Rate of Energy Charge ex-bus(REC) ^{3A,3B,3C}	3.87	3.87	3.87	3.87	3.87

Petitioner

**PART-I
FORM-2**

Plant Characteristics

- Name of the Company** : APGENCO
- Name of the Power Station** : Rayalaseema Thermal Power Station Stage II
- Basic characteristics of the plant¹** : Coal based thermal plant with conventional Boiler and Steam Turbine.
- Special Features of the Plant** :
- Site Specific Features²** :
- Special Technological Features³** :
- Environmental Regulation related features⁴** : ESPs are provided for pollution control in both the Units. Opacity meters are provided for SPM measurement and measurement of SOX and NOX emissions provided.
- Any other special features** :

Fuel Details⁵	Primary Fuel	Secondary Fuel	Alternate Fuels
	Coal	Heavy oil/Light Diesel oil	---

Details	Module number or Unit number	
Unit No.	1	2
	Unit-1	Unit-2
Installed Capacity (IC)	210MW	210MW
Date of Commercial Operation (COD)	12.08.2007	29.03.2008
Type of cooling system ⁶	Closed cycle cooling system with ND cooling towers	Closed cycle cooling system with ND cooling towers
Type of Boiler Feed Pump ⁷	Motor driven	Motor driven

PETITIONER

**PART-I
FORM-3**

Normative parameters considered for tariff computations

Name of the Company

APGENCO

Name of the Power Station

RTTP Stage II

Particulars	Unit	Year ending March		
		As per fillings 2019-24	As per APERC norms	
1	2	3	4	
Rate of Return on Capital Employed	%	11.8	Not mentioned	
Target Availability	%	80%	80%	
Target PLF	%	-	80%	
Auxiliary Energy Consumption	%	9	9	
Gross Station Heat Rate	kCal/kWh	2500	2500	
Specific Fuel Oil Consumption	ml/kWh	2	2	
O&M Cost *	Rs.Lakh/MW	-	-	
Cost of Coal/Lignite for WC ¹	in Months	1	1	
Cost of Secondary Fuel Oil for WC ¹	in Months	1	1	
Fuel Cost for WC ²	in Months			
Liquid Fuel Stock for WC ²	in Months			
O & M Expenses for WC	in Months	1	1	
Maintenance Spares for WC	%	1	1	
Reievables for WC	in Months	2	2	
Prime lending Rate of SBI	%	-		
Incentive Rate	Paise / kWh	25	25	

PETITIONER

Abstract of Admitted Capital Cost for the existing Projects**Name of the Power Station : RTPP II**

Capital Cost as admitted by APERC	Rs 1874.46 Crs
Capital cost admitted as on_____	31.03.2014
(Give reference of the relevant APERC Order with Petition No. & Date)	O.P.No.3 of 2016 dated 26.03.2016
Foreign Component, if any (In Million US \$ or the relevant Currency)	-
Domestic Component (Rs. Cr.)	Rs 1874.46 Crs
Foreign Exchange rate considered for the admitted Capital cost	-
Total Capital cost admitted (Rs. Cr)	Rs 1874.46 Crs

PETITIONER

			Form 7
Name of the Company	APGENCO		
Name of the Power Station	RTPP II		
	Package1	Package2	Package3
1	2	3	4
Source of Loans	PFC	Karnataka Bank	Karur Vysya Bank
Currency	INDIAN Rs	INDIAN Rs	INDIAN Rs
Amount of Loan sanctioned	1215.00	50.00	54.40
Amount of Gross Loan drawn Upto 31.03.19	1215.00	48.13	51.67
Interest Type	Floating	Floating	Floating
Fixed Interest Rate, if applicable	-	-	-
Base Rate, if Floating Interest	10.20%	8.50%	9.00%
Margin, if Floating Interest	-	-	-
Are there any Caps/Floor	-	-	-
If above is yes, specify caps/floor	-	-	-
Moratorium Period		1 Year	1 Year
Moratorium efective from		2-Jul-09	22-Jul-16
Repayment Period	12 Years	10 Years	10 Years
Repayment efective from	15-Oct-07	31-Jul-10	22-Aug-17
Repayment Frequency	Monthly	Monthly	Monthly
Repayment Instalment	32 #	120	108
Base ExchangeRate	-	-	-
# Note : After 37 Quarterly installments (out of 48), repayment of this loan was rescheduled to monthly basis @ IR of 10.20% from Nov'16 for the remaining period of the loan i.e 32 monthly installments			

Statement of Depreciation

Name of the Company

APGENCO

Name of the Power Station

RTPP-II

Financial Year		(Rs in Laks)					
		Upto 2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
1		2	3	4	5	6	7
Depreciation on Capital Cost		1874.46	1905.93	1905.93	1905.93	1905.93	1905.93
Depreciation recovered during the Year		144.22	7.85	7.85	7.85	7.85	7.85
Depreciation & Advance against Depreciation recovered during the year		144.22	7.85	7.85	7.85	7.85	7.85
Cumulative Depreciation & Advance against Depreciation recovered upto the year		1578.18	1586.03	1593.88	1601.73	1609.58	1617.43

Petitioner

PART-I
FORM- 12

Calculation of Depreciation Rate

Name of the Power Station-RTPP-O&M stage -II

(Amount in lacs)

Sl. no.	Asset Name	Gross Block as on 31.03.2019 or as on COD, whichever is later	Additions	Depreciation Rates as per CERC's Depreciation Rate Schedule	Depreciation Amount
	1	2		3	4
1	Land & Land rights	5.81		0.00%	
2	Building	12,981.83		3.02%	963.93
3	Lines and Cable networks	0.46	0.46	7.84%	0.06
4	Plant&Equipment	148,230.54	98.90	7.84%	10,269.75
5	Capital spares	-	0		
6	Hydraulic works	27,739.26	3.55	3.40%	1,936.35
7	other civil works	1,218.66		3.02%	167.49
8	Vehicles	375.88		33.40%	
9	Land(Lease hold)	-			
10	Others	689.54	21.87	12.77%	78.95
11	Intangible assets				
	TOTAL(1 to 11)	191,241.99	124.78		13,416.53
	Weighted Average Depreciation Rate (%)				7.02%

Form 13							
	Name of the Company	APGENCO					
	Name of the Power Station	RTPP II		Amount in Crores			
S.No	Particulars	Existing 18-19	19-20	20-21	21-22	22-23	23-24
1	Loan 1 - PFC 31301013						
	Gross Loan - Openig	1215.00	1215.00				
	Cumulative Repayment of Loans upto Current Year	(1,083.70)	(1,188.74)				
	Net Loan - Opening	131.30	26.26				
	Add: Drawals during the Year	-	-				
	Less: Repayment of the Loans during the year	(105.04)	(26.26)				
	Net Loan - Closnig	26.26	0.00				
	Average Net Loan	26.26	0.00				
	Rate of Interest on Loan	10.20%	10.20%				
2	Loan 2 - Karnataka Bank						
	Gross Loan - Openig	48.13	48.13				
	Cumulative Repayment of Loans upto Current Year	(38.80)	(43.80)				
	Net Loan - Opening	9.33	4.33				
	Add: Drawals during the Year	-	-				
	Less: Repayment of the Loans during the year	(5.00)	(4.33)				
	Net Loan - Closnig	4.33	0.00				
	Average Net Loan	4.33	0.00				
	Rate of Interest on Loan	8.50%	8.50%				
3	Loan 3 - Karur Vysya Bank						
	Gross Loan - Openig	50.34	51.67	51.67	51.67	51.67	51.67
	Cumulative Repayment of Loans upto Current Year	(4.03)	(10.07)	(16.11)	(22.15)	(28.19)	(34.23)
	Net Loan - Opening	46.31	41.60	35.56	29.52	23.48	17.44
	Add: Drawals during the Year	1.33	-	-	-	-	-
	Less: Repayment of the Loans during the year	(6.04)	(6.04)	(6.04)	(6.04)	(6.04)	(6.04)
	Net Loan - Closnig	41.60	35.56	29.52	23.48	17.44	11.40
	Average Net Loan	41.60	35.56	29.52	23.48	17.44	11.40
	Rate of Interest on Loan	9.00%	9.00%	9.00%	9.00%	9.00%	9.00%

Calculation of Return on Capital Employed

Name of the Company APGENCO

Name of the Power Station RTPPP-II

		(Amount in Crs)			
Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
1	2	3	4	5	6
Regulated Rate Base ⁱ	11.8%	11.8%	11.8%	11.8%	11.8%
WACC ⁱ	672.61	669.02	665.69	662.64	659.89
RoCE	79.37	78.94	78.55	78.19	77.87

Petitioner

**PART-I
FORM-14**

Working Capital

Name of the Company APGENCO

Name of the Power Station RTPP-II

		(Rs in Crs)				
Sl. No.	Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
1	2	3	4	5	6	7
1	Cost of Fuel	94.92	94.92	94.92	94.92	94.92
2	O & M expenses	16.40	17.49	18.65	19.89	21.21
3	Maintenance Spares	26.57	27.63	28.74	29.89	31.09
4	Recievables	237.19	239.29	241.55	243.97	246.56
	Total Working Capital	375.08	379.33	383.86	388.67	393.78

Petitioner

Summary Sheet

Name of the Company

APGenco

Name of the Power Station :

RTPP stage III

(Rs in Crs)

S.No.	Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
1	2	3	4	5	6	7
1.1	Depreciation	90.11	90.11	12.57	12.57	12.57
1.2	Return on Capital Employed	82.97	72.40	60.30	59.09	57.91
1.3	O & M Expenses	98.41	104.94	111.91	119.34	127.26
	Total	271.49	267.45	184.78	191.00	197.74

2.Calculation of Rate of Energy Charge(Rs./kWh)

2.1	Rate of Energy Charge from Primary Fuel	3.79	3.79	3.79	3.79	3.79
2.2	Rate of Energy Charge from Secondary Fuel	0.08	0.08	0.08	0.08	0.08
2.3	Rate of Energy Charge ex-bus	3.87	3.87	3.87	3.87	3.87

Petitioner

**PART-I
FORM-2**

Plant Characteristics

- Name of the Company** : APGENCO
- Name of the Power Station** : Rayalaseema Thermal Power Station Stage III
- Basic characteristics of the plant¹** : Coal based thermal plant with conventional Boiler and Steam Turbine.
- Special Features of the Plant** :
- Site Specific Features²** :
- Special Technological Features³** :
- Environmental Regulation related features⁴** : ESPs are provided for pollution control in both the Units. Opacity meters are provided for SPM measurement and measurement of SOX and NOX emissions provided.
- Any other special features** :

Fuel Details⁵	Primary Fuel	Secondary Fuel	Alternate Fuels
	Coal	Heavy oil/Light Diesel oil	---
Details	Module number or Unit number		
Unit No.	1		
Installed Capacity (IC)	210MW		
Date of Commercial Operation (COD)	10.02.2011		
Type of cooling system ⁶	Closed cycle using induced draft cooling tower		
Type of Boiler Feed Pump ⁷	Motor driven		

PETITIONER

Normative parameters considered for tariff computations

Name of the Company

APGENCO

Name of the Power Station

RTPP Stage III

Particulars	Unit	As per fillings	As per APERC norms
1	2	3	4
Rate of Return on Capital Employed	%	11.8	Not mentioned
Target Availability	%	80%	80%
Target PLF	%	-	80%
Auxiliary Energy Consumption	%	9	9
Gross Station Heat Rate	kCal/kWh	2500	2500
Specific Fuel Oil Consumption	ml/kWh	2	2
O&M Cost *	Rs.Lakh/MW	28.68(with 6.64% esc)	-
Cost of Coal/Lignite for WC ¹	in Months	1	1
Cost of Secondary Fuel Oil for WC ¹	in Months	1	1
Fuel Cost for WC ²	in Months		
Liquid Fuel Stock for WC ²	in Months		
O & M Expenses for WC	in Months	1	1
Maintenance Spares for WC	%	1	1
Receivables for WC	in Months	2	2
Prime lending Rate of SBI	%	-	
Incentive Rate	Paise / kWh	25	25

PETITIONER

Abstract of Admitted Capital Cost for the existing Projects**Name of the Power Station : RTPP III**

Capital Cost as admitted by APERC	Rs 1182.42 Crs
Capital cost admitted as on_____	31.03.2014
(Give reference of the relevant APERC Order with Petition No. & Date)	O.P.No.3 of 2016 dated 26.03.2016
Foreign Component, if any (In Million US \$ or the relevant Currency)	-
Domestic Component (Rs. Cr.)	Rs 1182.42 Crs
Foreign Exchange rate considered for the admitted Capital cost	-
Total Capital cost admitted (Rs. Cr)	Rs 1182.42 Crs

PETITIONER

Form 7		
Name of the Company	APGENCO	
Name of the Power Station	RTPP III	
Particulars	Package1	Package2
1	2	3
Source of Loans	PFC 31301015	Vijaya Bank
Currency	INDIAN Rs	INDIAN Rs
Amount of Loan sanctioned	796.80	200.00
Amount of Gross Loan drawn Upto 31.03.19	796.80	200.00
Interest Type	Floating	Floating
Fixed Interest Rate, if applicable	-	-
Base Rate, if Floating Interest	10.20%	9.75%
Margin, if Floating Interest		
Are there any Caps/Floor	-	-
If above is yes, specify caps/floor	-	-
Moratorium Period	28 Months	36 Months
Moratorium effective from	27-Mar-08	20-Nov-07
Repayment Period	15 Years	10 Years
Repayment effective from	15-Jul-10	31-Jan-11
Repayment Frequency	Monthly	Quarterly
Repayment Instalment	101 #	40
Base ExchangeRate	-	-
# Note : After 26 Quarterly installments (out of 60), repayment of this loan was rescheduled to monthly basis @ IR of 10.20% from Nov'16 for the remaining period of the loan i.e 101 monthly installments		

Statement of Depreciation

Name of the Company

APGENCO

Name of the Power Station

RTPP-III

(Rs in Laks)

Financial Year	Upto 2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
1	2	3	4	5	6	7
Depreciation on Capital Cost	1182.42	1219.14	1219.14	1219.14	1219.14	1219.14
Depreciation recovered during the Year	90.11	90.11	90.11	12.57	12.57	12.57
Depreciation & Advance against Depreciation recovered during the year	90.11	90.11	90.11	12.57	12.57	12.57
Cumulative Depreciation & Advance against Depreciation recovered upto the year	728.40	818.51	908.62	921.19	933.76	946.33

Petitioner

Calculation of Depreciation Rate

Name of the Power Station-RTPP-III

Sl. no.	Asset Name	Gross Block as on 31.03.2019 or as on COD, whichever is later	Additions	(Amount in lacs)	
				Depreciation Rates as per CERC's Depreciation Rate Schedule	Depreciation Amount
	1	2		3	4
1	Land & Land rights	-			
2	Building	11,949.32		3.02%	900.82
3	Lines and Cable networks	51.78		7.84%	4.06
4	Plant&Equipment	94,696.16	3,629.02	7.84%	8,204.94
5	Capital spares	-			
6	Hydraulic works	14,043.07	8.12	3.40%	1,530.47
7	other civil works	871.36	22.32	3.02%	32.24
8	Veehicles	-			
9	Land(Lease hold)	-			
10	Others	323.09	12.39	12.77%	40.34
11	Intangible assets				
	TOTAL(1 to 11)	121,934.78	3,671.85		10,712.87
	Weighted Average Depreciation Rate (%)				8.79%

Form 13							
	Name of the Company	APGENCO					
	Name of the Power Station	RTPP III		Amount in Crores			
S.No	Particulars	Existing 18-19	19-20	20-21	21-22	22-23	23-24
1	Loan 1 - PFC 31301015						
	Gross Loan - Openig	796.80	796.80	796.80	796.80	796.80	796.80
	Cumulative Repayment of Loans upto Current Year	(412.89)	(467.73)	(522.57)	(577.41)	(632.25)	(687.09)
	Net Loan - Opening	383.91	329.07	274.23	219.39	164.55	109.71
	Add: Drawals during the Year	-	-	-	-	-	-
	Less: Repayment of the Loans during the year	(54.84)	(54.84)	(54.84)	(54.84)	(54.84)	(54.84)
	Net Loan - Closnig	329.07	274.23	219.39	164.55	109.71	54.87
	Average Net Loan	329.07	274.23	219.39	164.55	109.71	54.87
	Rate of Interest on Loan	10.20%	10.20%	10.20%	10.20%	10.20%	10.20%
2	Loan 2 - Vijaya Bank						
	Gross Loan - Openig	200.00	200.00	200.00			
	Cumulative Repayment of Loans upto Current Year	(145.18)	(165.18)	(185.18)			
	Net Loan - Opening	54.82	34.82	14.82			
	Add: Drawals during the Year	-	-	-			
	Less: Repayment of the Loans during the year	(20.00)	(20.00)	(14.82)			
	Net Loan - Closnig	34.82	14.82	0.00			
	Average Net Loan	34.82	14.82	0.00			
	Rate of Interest on Loan	9.75%	9.75%	9.75%			

Calculation of Return on Capital Employed

Name of the Company APGENCO

Name of the Power Station RTPP-III

(Amount in Crs)					
Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
1	2	3	4	5	6
Regulated Rate Base ⁱ	11.8%	11.8%	11.8%	11.8%	11.8%
WACC ⁱ	703.17	613.60	510.98	500.78	490.74
RoCE	82.97	72.40	60.30	59.09	57.91

Petitioner

FORM-18

Details/Information to be provided to beneficiaries under Clause (7) of Regulation 30 of CERC (Terms & Conditions of Tariff) Regulations, 2014)													
Details/Information to be submitted in respect of Fuel for Computation of Energy Charges													
Name of the Company : APGENCO													
Name of the Station : RTPP													
Month : 01-07-2018 TO 30-09-2018													
S.No.	Particulars	Unit	Jul-18			Aug-18			Sep-18				
			Supplied by MGR	Supplied by ARR	E- Auction Coal (iii)	Imported Coal (vi)	Supplied by MGR	Supplied by ARR	E- Auction Coal (iii)	Imported Coal (vi)	Supplied by MGR	Supplied by ARR	E- Auction Coal (iii)
1	Quantity of coal supplied by the coal company inclusive of opening stock of coal	(MT)		409423.11									
2	Adjustment (+/-) in quantity supplied by the coal company	(MT)											
3	Coal supplied by the coal company inclusive of opening stock of coal (1+2)	(MT)		409423.11									
4	Normative transit & handling losses (for coal based projects)	(MT)		2940.42									
5	Net coal supplied inclusive of opening stock of coal (3-4)	(MT)											
6	Amount charged by the coal company inclusive of value of opening stock of coal	(Rs.)		1308309913.00									
7	Adjustment (+/-) in amount charged by the coal company	(Rs.)											
8	Total amount charged inclusive of opening stock of coal (6+7)	(Rs.)		1308309913.00									
9	Transportation charges by Rail/Ship/Road Transport	(Rs.)		675093369.64									
10	Adjustment (+/-) in amount charged by Railways/Transport company	(Rs.)											
11	Demurrage charges, if any	(Rs.)											
12	Cost of diesel in transporting coal through MGR system	(Rs.)											
13	Total transportation charges (9+10-11+12)	(Rs.)		675093369.64									
13A	Others (Stone picking charges, Loco driver's salary, sampling charges etc.)	(Rs.)		9870304									
14	Total amount charged for coal supplied including transportation (8+13+13A)	(Rs.)		1993273586.64									
15	Landed cost of coal	(Rs.)											
16	Blending ratio												
17	Weighted average cost of coal	(Rs./MT)		4903.71									
18	GCV of Domestic coal as per bill of coal company, CIMFR EM basis	(kCal/kg)		4007									
19	GCV of Imported coal as per bill of coal company AD basis	(kCal/kg)											
20	Weighted average GCV of coal as billed CIMFR EM basis	(kCal/kg)											
21	GCV of Domestic coal as received at station (Bunker front sample, AFB)	(kCal/kg)		3252									
22	GCV of Imported coal as received at station, TM basis	(kCal/kg)											
23	Weighted average GCV of coal as received at station (Bunker front sample, AFB)	(kCal/kg)		3252									

FORM-18
Details/Information to be provided to beneficiaries under Clause (7) of Regulation 30 of CERC (Terms & Conditions of Tariff) Regulations, 2014
Details/Information to be submitted in respect of Fuel for Computation of Energy Charges

Name of the Company : APGENCO

Name of the Station : RTPP

Month : 01-07-2018 TO 30-09-2018

S.No.	Particulars	Unit	Jul-18		Aug-18		Sep-18	
			HFO (i)	HSD (ii)	HFO (i)	HSD (ii)	HFO (i)	HSD (ii)
1	Quantity of oil supplied by the oil company inclusive of opening stock of oil	(MT)	3301.44	615.91	2833.84	594.01	2525.64	577.71
2	Adjustment (+/-) in quantity supplied by the oil company	(MT)						
3	Oil supplied by the oil company inclusive of opening stock of oil (1+2)	(MT)	3301.44	615.91	2833.84	594.01	2525.64	577.71
4	Normative transit & handling losses (for oil based projects)	(MT)						
5	Net oil supplied inclusive of opening stock of oil (3-4)	(MT)						
6	Amount charged by the oil company inclusive of value of opening stock of oil	(Rs.)	139097167.22	28767308.37	119396116.95	27744425.07	106410950.80	26983100.97
7	Adjustment (+/-) in amount charged by the oil company	(Rs.)						
8	Total amount charged inclusive of opening stock of oil (6+7)	(Rs.)	139097167.22	28767308.37	119396116.95	27744425.07	106410950.80	26983100.97
9	Transportation charges by Rail/Ship/Road Transport	(Rs.)						
10	Adstument (+/-) in amount charged by Railways/Transport company	(Rs.)						
11	Demurrage charges, if any	(Rs.)						
12	Cost of diesel in transporting oil through MGR system	(Rs.)						
13	Total transportation charges (9+/-10-11+12)	(Rs.)						
13A	Others (Stone picking charges, Loco driver's salary, sampling charges etc.)	(Rs.)						
14	Total amount charged for oil supplied including transportation (8+13+13A)	(Rs.)	139097167.22	28767308.37	119396116.95	27744425.07	106410950.80	26983100.97
15	Landed cost of oil	(Rs.)	42132.27	46707.00	42132.27	46707.00	42132.27	46707.00
16	Blending ratio	(Rs./MT)						
17	Weighted average cost of oil	(Rs./MT)	42336.94		42362.07		42422.17	
18	GCV of HFO oil as per bill of oil company (As per Test Report)	(kCal/Lr)	9728	-	9728	-	9728	-
19	GCV of HSD as per bill of oil company	(kCal/Lr)	-	-	-	-	-	-
20	Weighted average GCV of oil as billed (As per Test Report)	(kCal/Lr)	9728	-	9728	-	9728	-
21	GCV of HFO Oil as recieved at station	(kCal/Lr)	-	-	-	-	-	-
22	GCV of HSD as recieved at station	(kCal/Lr)	-	-	-	-	-	-
23	Weighted average GCV of oil as recieved at station	(kCal/Lr)	-	-	-	-	-	-

Summary Sheet

Name of the Company
Name of the Power Station :

APGenco
Dr. NTTPS stage IV

S.No.	Particulars	2019-2020	2020-2021	2021-2022	2022-2023	2023-2024
1	2	3	4	5	6	7
1.1	Depreciation	156.98	23.97	23.97	23.97	23.97
1.2	Return on Capital Employed	133.06	111.96	109.57	107.21	104.87
1.3	O & M Expenses	156.86	167.28	178.39	190.23	202.86
	Total	446.90	303.21	311.93	321.41	331.70

(Rs in Crs)

2.Calculation of Rate of Energy Charge(Rs./kWh)

2.1	Rate of Energy Charge from Primary Fuel	3.07	3.07	3.07	3.07	3.07
2.2	Rate of Energy Charge from Secondary Fuel	0.08	0.08	0.08	0.08	0.08
2.3	Rate of Energy Charge ex-bus	3.15	3.15	3.15	3.15	3.15

Petitioner

Plant Characteristics

Name of the Company

APGenco

Name of the Power Station

Dr Narla Tata Rao Thermal Power Station stage IV

Basic characteristics of the plant¹

Coal based thermal station(1x500 MW) with conventional boiler and steam turbine

Special Features of the Plant

Site Specific Features²

Near to river Krishna. Cooling water is taken from the upstream of the river and return water is fed back to the river downstream. Alternative cooling water system with forced draught cooling towers is also available.

Special Technological Features³

Environmental Regulation related features⁴

ESPs are provided for pollution control in all the Units. Opacity meters are provided for SPM measurement and measurement of SOX and NOX emissions provided.

Any other special features

Fuel Details⁵	Primary Fuel	Secondary Fuel	Alternate Fuels
	Coal	Heavy Oil/Light Diesel Oil	-
Details	Unit no.1		
Installed Capacity (IC)	500 Mw		
Date of Commercial Operation (COD)	28.01.2010		
Type of cooling system ⁶	Once through cooling by river water along with Forced draught cooling towers in summer		
Type of Boiler Feed Pump ⁷	Motor driven & Turbine driven		

Normative parameters considered for tariff computations

Name of the Company **APGENCO**

Name of the Power Station **Dr NTTPS-IV**

Year ending March

Particulars	Unit	As per fillings	As per APERC norms
		2019-24	
-1		2	3
Rate of Return on Capital Employed	%	11.8	Not mentioned
Target Availability	%	80.00%	80.00%
Target PLF	%	80.00%	80.00%
Auxiliary Energy Consumption	%	7.5	7.5
Gross Station Heat Rate	kCal/kWh	2450	2450
Specific Fuel Oil Consumption	ml/kWh	2	2
O&M Cost	Rs.Lakh/MW	-	-
Cost of Coal/Lignite for WC¹	in Months	1	1
Cost of Secondary Fuel Oil for WC¹	in Months	1	1
Fuel Cost for WC²	in Months		
Liquid Fuel Stock for WC²	in Months		
O & M Expenses for WC	in Months	1	1
Maintenance Spares for WC	%	1	1
Receivables for WC	in Months	2	2
Prime lending Rate of SBI	%	-	
Incentive Rate	Paise / kWh	25	25

PETITIONER

Abstract of Admitted Capital Cost for the existing Projects**Name of the Power Station : Dr NTTPS IV**

Capital Cost as admitted by APERC	Rs 2118.85 Crs
Capital cost admitted as on_____	31.03.2014
(Give reference of the relevant APERC Order with Petition No. & Date)	O.P.No.3 of 2016 dated 26.03.2016
Foreign Component, if any (In Million US \$ or the relevant Currency)	-
Domestic Component (Rs. Cr.)	Rs 2118.85 Crs
Foreign Exchange rate considered for the admitted Capital cost	-
Total Capital cost admitted (Rs. Cr)	Rs 2118.85 Crs

PETITIONER

Name of the Company		APGENCO	
Name of the Power Station		VTPS IV	
Particulars	Package1	Package2	Package3
1	2	3	4
Source of Loans	REC	Andhra Bank	P&S Bank
Currency	INDIAN Rs	INDIAN Rs	INDIAN Rs
Amount of Loan sanctioned	1560.00	200.00	100.00
Amount of Gross Loan drawn Upto 31.03.19	1551.40	182.18	99.88
Interest Type	Floating	Floating	Floating
Fixed Interest Rate, if applicable	-	-	-
Base Rate, if Floating Interest	10.20%	9.70%	9.70%
Margin, if Floating Interest			
Are there any Caps/Floor	-	-	-
If above is yes, specify caps/floor	-	-	-
Moratorium Period	36 Months	36 Months	24 Months
Moratorium effective from	2-Jan-06	29-Mar-07	24-Jan-08
Repayment Period	12 Years	10 Years	10 Years
Repayment effective from	30-Jun-10	30-Jun-10	26-Feb-10
Repayment Frequency	Monthly	Quarterly	Monthly
Repayment Instalment	63 #	40	120
Base ExchangeRate	-	-	-
# Note : After 26 Quarterly installments (out of 48), repayment of this loan was rescheduled to monthly basis @ IR of 9.95% from Jan'17 for the remaining period of the loan i.e 63 monthly installments			

Statement of Depreciation

Name of the Company

APGENCO

Name of the Power Station

Dr.NTTP-IV

Financial Year	Upto 2018-19	2019-2020	2020-2021	2021-2022	2022-2023	2023-2024
1	2	3	4	5	6	7
Depreciation on Capital Cost	2118.85	2157.78	2157.78	2157.78	2157.78	2157.78
Depreciation recovered during the Year	156.98	156.98	23.97	23.97	23.97	23.97
Depreciation & Advance against Depreciation recovered during the year	156.98	156.98	23.97	23.97	23.97	23.97
Cumulative Depreciation & Advance against Depreciation recovered upto the year	1425.51	1582.49	1606.46	1630.43	1654.40	1678.37

Petitioner

PART-I
FORM- 12

Calculation of Depreciation Rate

Name of the Power Station-Dr.NTTPS- Stage-IV(4510)

(Amount in lacs)					
Sl. no.	Asset Name	Gross Block as on 31.03.2019 or as on COD, whichever is later	Additions	Depreciation Rates as per CERC's Depreciation Rate Schedule	Depreciation Amount
	1	2		3	4
1	Land & Land rights	1,848.91	-	0.00%	
2	Building	18,990.40	47.19	3.02%	1,401.65
3	Lines and Cable networks	29,083.66	1.06	7.84%	2,280.23
4	Plant&Equipment	167,419.64	2,982.04	7.84%	14,444.24
5	Capital spares	421.03	421.03	7.84%	33.00
6	Hydraulic works	4,592.00	57.75	3.40%	362.55
7	other civil works	5,417.69	338.90	3.02%	183.03
8	Vehicles	2.04	-	33.40%	
9	Land(Lease hold)	-	-	0.00%	
10	Others	786.82	45.43	0.80	98.28
11	Intangible assets		-	25.00%	
12	TOTAL(1 to 11)	228,562.19	3,893.40	1.71	18,802.98
	Weighted Average Depreciation Rate (%)				8.23%

Form 13							
	Name of the Company	APGENCO					
	Name of the Power Station	Dr NTPPS IV		Amount in Crores			
S.No	Particulars	Existing 18-19	19-20	20-21	21-22	22-23	23-24
1	Loan 1 - REC410007						
	Gross Loan - Openig	1551.40	1551.40	1551.40	1551.40		
	Cumulative Repayment of Loans upto Current Year	-1034.23	-1163.52	-1292.81	-1422.10		
	Net Loan - Opening	517.17	387.88	258.59	129.30		
	Add: Drawals during the Year	-	-	-	-		
	Less: Repayment of the Loans during the year	(129.29)	(129.29)	(129.29)	(129.30)		
	Net Loan - Closnig	387.88	258.59	129.30	0.00		
	Average Net Loan	387.88	258.59	129.30	0.00		
	Rate of Interest on Loan	10.20%	10.20%	10.20%	10.20%		
2	Loan 2 - Andhra Bank						
	Gross Loan - Openig	182.18	182.18				
	Cumulative Repayment of Loans upto Current Year	(160.43)	(180.43)				
	Net Loan - Opening	21.75	1.75				
	Add: Drawals during the Year	-	-				
	Less: Repayment of the Loans during the year	(20.00)	(1.75)				
	Net Loan - Closnig	1.75	0.00				
	Average Net Loan	1.75	0.00				
	Rate of Interest on Loan	9.70%	9.70%				
3	Loan 3 - P&S						
	Gross Loan - Openig	99.88	99.88				
	Cumulative Repayment of Loans upto Current Year	(81.75)	(91.75)				
	Net Loan - Opening	18.13	8.13				
	Add: Drawals during the Year	-	-				
	Less: Repayment of the Loans during the year	(10.00)	(8.13)				
	Net Loan - Closnig	8.13	0.00				
	Average Net Loan	8.13	0.00				
	Rate of Interest on Loan	9.70%	9.70%				

Calculation of Return on Capital Employed

Name of the Company APGENCO

Name of the Power Station Dr.NTTPS -IV

		(Amount in Crs)			
Particulars	2019-2020	2020-2021	2021-2022	2022-2023	2023-2024
1	2	3	4	5	6
Regulated Rate Base	11.8%	11.8%	11.8%	11.8%	11.8%
WACC	1126.71	948.81	928.55	908.52	888.75
RoCE	132.95	111.96	109.57	107.21	104.87

Petitioner

PART-I
FORM- 14

Working Capital

Name of the Company

APGENCO

Name of the Power Station

Dr.NTTPS -IV

Sl. No.	Particulars	(Amount in Crs)				
		2019-2020	2020-2021	2021-2022	2022-2023	2023-2024
1	2	3	4	5	6	7
1	Cost of Fuel	91.98	91.98	91.98	91.98	91.98
2	O & M expenses	13.07	13.94	14.87	15.85	16.91
3	Maintenance Spares	31.83	33.11	34.43	35.81	37.24
4	Recievables	258.44	234.49	235.95	237.53	239.24
	Total Working Capital	395.32	373.52	377.23	381.17	385.37

Petitioner

FORM-18														
Details/Information to be provided to beneficiaries under Clause (7) of Regulation 30 of CERC (Terms & Conditions of Tariff) Regulations, 2014														
Details/Information to be submitted in respect of Fuel for Computation of Energy Charges														
Name of Company : APGENCO														
Name of Station : VTPS -IV														
Month : 01-07-2018 TO 30-09-2018														
S.No.	Particulars	Unit	Jul-18				Aug-18				Sep-18			
			Supplied by MGR	Supplied by ARR	E- Auction Coal (iii)	Imported Coal (vi)	Supplied by MGR	Supplied by ARR	E- Auction Coal (iii)	Imported Coal (vi)	Supplied by MGR	Supplied by ARR	E- Auction Coal (iii)	Imported Coal (vi)
1	Quantity of coal supplied by coal company inclusive of opening stock of coal	(MT)		201289.81					221732.40			226766.87		
2	Adjustment (+/-) in quantity supplied by coal company	(MT)												
3	Coal supplied by coal company inclusive of opening stock of coal (1+2)	(MT)		201289.81					221732.40			226766.87		
4	Normative transit & handling losses (for coal based projects)	(MT)		1503.88					1680.11			1661.73		
5	Net coal supplied inclusive of opening stock of coal (3-4)	(MT)												
6	Amount charged by coal company inclusive of value of opening stock of coal	(Rs.)		511603729.49					453269581.74			545733715.93		
7	Adjustment (+/-) in amount charged by coal company	(Rs.)												
8	Total amount charged inclusive of opening stock of coal (6+7)	(Rs.)		511603729.49					453269581.74			545733715.93		
9	Transportation charges by Rail/Ship/Road Transport	(Rs.)		295629779.00					391458567.00			355200416.44		
10	Adsutment (+/-) in amount charged by Railways/Transport company	(Rs.)												
11	Demurrage charges, if any	(Rs.)												
12	Cost of diesel in transporting coal through MGR system	(Rs.)												
13	Total transportation charges (9+/-10-11+12)	(Rs.)		295629779.00					391458567.00			355200416.44		
13A	Ors (Stone picking charges, Loco driver's salary, sampling charges etc.)	(Rs.)		8741709.76					9047897.42			8877758.69		
14	Total amount charged for coal supplied including transportation (8+13+13A)	(Rs.)		815975218.25					853776046.16			909811891.06		
15	Landed cost of coal	(Rs.)												
16	Blending ratio													
17	Weighted average cost of coal	(Rs./MT)		4084.25					3879.88			4041.72		
18	GCV of Domestic coal as per bill of coal company, CIMFR EM basis	(kCal/kg)		3776					3916			3918		
19	GCV of imported coal as per bill of coal company AD basis	(kCal/kg)		-					-			-		
20	Weighted average GCV of coal as billed CIMFR EM basis	(kCal/kg)		3776					3916			3918		
21	GCV of Domestic coal as recieved at station (Bunker front sample, AFB)	(kCal/kg)		3315					3467			3483		
22	GCV of imported coal as recieved at station, TM basis	(kCal/kg)		-					-			-		
23	Weighted average GCV of coal as recieved at station (Bunker front sample, AFB)	(kCal/kg)		3315					3467			3483		

FORM-18										
Details/Information to be provided to beneficiaries under Clause (7) of Regulation 30 of CERC (Terms & Conditions of Tariff) Regulations, 2014										
Details/Information to be submitted in respect of Fuel for Computation of Energy Charges										
Name of Company : APGENCO										
Name of Station : VTPS -IV										
Month Month : 01-07-2018 TO 30-09-2018										
S.No.	Particulars	Unit	Jul-18		Aug-18		Sep-18			
			HFO (i)	HSD (ii)	HFO (i)	HSD (ii)	HFO (i)	HSD (ii)		
1	Quantity of oil supplied by oil company inclusive of opening stock of oil	(MT)	3481.83	355.00	3186.83	327.50	5877.55	316.00		
2	Adjustment (+/-) in quantity supplied by oil company	(MT)								
3	Oil supplied by oil company inclusive of opening stock of oil (1+2)	(MT)	3481.83	355.00	3186.83	327.50	5877.55	316.00		
4	Normative transit & handling losses (for oil based projects)	(MT)								
5	Net oil supplied inclusive of opening stock of oil (3-4)	(MT)								
6	Amount charged by oil company inclusive of value of opening stock of oil	(Rs.)	97128996.08	22394123.78	88899680.30	20659348.17	197802448.82	19933896.55		
7	Adjustment (+/-) in amount charged by oil company	(Rs.)								
8	Total amount charged inclusive of opening stock of oil (6+7)	(Rs.)	97128996.08	22394123.78	88899680.30	20659348.17	197802448.82	19933896.55		
9	Transportation charges by Rail/Ship/Road Transport	(Rs.)								
10	Adstument (+/-) in amount charged by Railways/Transport company	(Rs.)								
11	Demurrage charges, if any	(Rs.)								
12	Cost of diesel in transporting oil through MGR system	(Rs.)								
13	Total transportation charges (9+/-10-11+12)	(Rs.)								
13A	Ors (Stone picking charges, Loco driver's salary, sampling charges etc.)	(Rs.)								
14	Total amount charged for oil supplied including transportation (8+13+13A)	(Rs.)	97128996.08	22394123.78	88899680.30	206593348.17	197802448.82	19933896.55		
15	Landed cost of oil	(Rs.)	27895.99	63082.75	27895.99	63082.75	33653.91	63082.75		
16	Blending ratio									
17	Weighted average cost of oil	(Rs./MT)	30896.41		29470.49		36282.36			
18	GCV of HFO oil as per bill of oil company (As per Test Report)	(kCal/Lr)	9753	-	9753	-	9753	-		
19	GCV of HSD as per bill of oil company	(kCal/Lr)	-	-	-	-	-	-		
20	Weighted average GCV of oil as billed (As per Test Report)	(kCal/Lr)	9753	-	9753	-	9753	-		
21	GCV of HFO Oil as recieved at station	(kCal/Lr)	-	-	-	-	-	-		
22	GCV of HSD as recieved at station	(kCal/Lr)	-	-	-	-	-	-		
23	Weighted average GCV of oil as recieved at station	(kCal/Lr)	-	-	-	-	-	-		

SALIENT FEATURES OF HYDRO ELECTRIC PROJECT

NAME OF COMPANY: APGENCO.**NAME OF POWER SATION:** Nagarjuna Sagar Tail Pond Dam Power House.

1. Location	
State /Distt.	Satrasala Village, Rentachintala Mandal, Guntur (Dist).
River	Krishna
2. Diversion Tunnel	
Size, shape	
Length	
3. Dam	
Type	Gravity with gates
Maximum dam height	16.0M (Max. Spillway height)
4. Spillway	
Type	OGEE
Crest level of spillway	59.20M
5. Reservoir	
Full Reservoir Level (FRL)	+EL:75.5M
Minimum Draw Down Level (MDDL)	+EL:74.0M
Live storage (MCM)	1 TMC
6. Desalting Arrangement	
Type	SLUICE Gates
Number and Size	2Nos, 1.80m X 3.0m
Particle size to be removed (mm)	
7. Head Race Tunnel	
Size and type	
Length	
Design discharge (Cumecs)	
8. Surge Shaft	
Type	
Diameter	
Height	
9. Penstock/ Pressure shafts	
Type	Steel
Diameter & Length	6.60m, 54m
10. Power House	
Type	Surface
Installed capacity (No of units x MW)	2x25MW
Packing capacity during lean period (MW)	-
Type of turbine	Vertical Kaplan
Rated Head (M)	21.9M
Rated Discharge (Cumecs)	135 Cumecs (4767C/s)
11. Tail Race Channel	
Diameters, shape width	38.30m
Length	540m
Minimum tail water level	52m (for 1 unit), 53.315m (2 units)
12. Switchyard	
Type of Switch gear	SF6
No. of generator bays	2
No. of Bus coupler bays	-
No. line bays	5

Note: Specify limitation on generation during specific time period on account of restriction (s) on water use due to irrigation, drinking water, industrial, environmental considerations etc.

PETITIONER

BREAK UP OF CAPITAL COST FOR HYDRO POWER GENERATION STATION

139

NAME OF POWER STATION :NAGARJUNA SAGAR TAIL POND DAM HES (2X25MW)

(Amount in Rs.)

Sl. No	Head of works	Original cost as approved by Authority			Cost on COD	Variation	Reasons for variation	Admitted cost
1	2				4	5	6	7
1.0	Infrastructure works	Revised administrative approval vide GOO No.402/Projects/2014, Dt.14-12-2004 : 464.73 Crores (Dam & Power House)	Revised administrative approval vide GOO No.209/HPC/2012, Dt.31-07-2018 : 295.00 Crores (958.67 crores-Dam : 695.22 +NSTP HES:263.45)	Revised administrative approval vide GOO No.92/CE(HPC& HP)/2017, Dt.12-07-2018 : 295.00 Crores (Power House)				
1.1	Preliminary including Developmnet				400000.00			
1.2	Land				4321000.00			
1.3	Buildings				160067562.00			
1.4	Township				24487315.00			
1.5	Maintenance							
1.6	Tools & Plants							
1.7	Communication				38410939.00			
1.8	Environment & Ecology							
1.9	Losses on stock							
1.10	Receipt & Recoveries							
1.11	Total (Infrastructure works)							
2.0	Major Civil works	Revised administrative approval vide GOO No.402/Projects/2014, Dt.14-12-2004 : 464.73 Crores (Dam & Power House)	Revised administrative approval vide GOO No.209/HPC/2012, Dt.31-07-2018 : 295.00 Crores (958.67 crores-Dam : 695.22 +NSTP HES:263.45)	Revised administrative approval vide GOO No.92/CE(HPC& HP)/2017, Dt.12-07-2018 : 295.00 Crores (Power House)				
2.1	Dam, Intake & Desilting Chambers							
2.2	HRT, TRT, Suge Shaft & Pressure shafts							
2.3	Power Plant civil works				778056791.00			
2.4	Other civil works (to be specified)				59581946.00			
2.5	Total (Major civil works)							
3.0	Hydro Mechanical equipments				129291159.00			
4.0	Plant & Equipment				890974385.00			
4.1	Initial spares of plant & Equipment							
4.2	Total (Plant & Equipment)							
5.0	Taxes and Duties							
5.1	Custom Duty							
5.2	Other taxes & Duties							
5.3	Total taxes & Duties							
6.0	Construction & Pre-commissioning expenses	Revised administrative approval vide GOO No.402/Projects/2014, Dt.14-12-2004 : 464.73 Crores (Dam & Power House)	Revised administrative approval vide GOO No.209/HPC/2012, Dt.31-07-2018 : 295.00 Crores (958.67 crores-Dam : 695.22 +NSTP HES:263.45)	Revised administrative approval vide GOO No.92/CE(HPC& HP)/2017, Dt.12-07-2018 : 295.00 Crores (Power House)				
6.1	Erection, testing & Commissioning							
6.2	Construciton Insurance							
6.3	Site supervision							
6.4	Total (Const. & Pre-commissioning)							
7.0	Overheads							
7.1	Establishment				227700000.00			
7.2	Design & Engineering				3000000.00			
7.3	Audit & Accounts							
7.4	Contingency							
7.5	Rehabilitation & Resettlement							
7.6	Total (Over heads)							
8.0	Capital cost without IDC & FC	Revised administrative approval vide GOO No.402/Projects/2014, Dt.14-12-2004 : 464.73 Crores (Dam & Power House)	Revised administrative approval vide GOO No.209/HPC/2012, Dt.31-07-2018 : 295.00 Crores (958.67 crores-Dam : 695.22 +NSTP HES:263.45)	Revised administrative approval vide GOO No.92/CE(HPC& HP)/2017, Dt.12-07-2018 : 295.00 Crores (Power House)				
9.0	Financing charges (FC)							
10.0	Interest during construcion (IDC)				632500000.00			
11.0	Capital cost with IDC & FC				295.00 Cr	2948791097.00		

Note :

1. In case of time and cost over-run of the project, a detailed note giving reasons of such time and cost over run should be submitted, bringing out the agency responsible and whether such time and cost over run was beyond the control of the generating company.

[Signature]
Chief Engineer

BREAK UP OF CAPITAL COST FOR PLANT & EQUIPMENT

NAME OF POWER STATION :NAGARJUNA SAGAR TAIL POND DAM HES (2X25MW)

(Amount in Rs.)

Sl No	Head of works	Original cost as approved by Authority	Cost on COD	Variation	Reasons for variation	Admitted cost
1	2	3	4	5	6	7
1.0	Generator, turbine & Accessories		626058129.5			
1.1	Generator package					
1.2	Turbine package					
1.3	Unit control Board		0			
1.4	C & I Package		80613069.5			
1.5	Bus Duct of GT connection		7456977.39			
1.6	Total (Generator, turbine & Accessories)		714128176.4			
2.0	Auxillary Electrical Equipment					
2.1	Step up transformer		38359465			
2.2	Unit Auxillary Transformer		1300000			
2.3	Local supply transformer		0			
2.4	Station transformer		163090.54			
2.5	SCAIDA		0			
2.6	Switchgear, Batteries, DC dist. Board		2189526			
2.7	Telecommunication equipment		0			
2.8	Illumination of Dam, PH and Switchyard		17996541			
2.9	Cables & Cable facilities, grounding		9723169.74			
2.10	Diesel Generating sets		1770805.17			
2.11	Total (Auxillary Elect. Equipment)		71502597.45			
3.0	Auxillary equipment & services for power station					
3.1	EOT crane		3776010			
3.2	Other cranes					
3.3	Electric lifts & elevators		4223989			
3.4	Cooling water system		4726227.45			
3.5	Drainage & dewatering system		4820170			
3.6	Fire fighting equipment		3221513.1			
3.7	Air conditioning, ventilation and heating		11887527			
3.8	Water supply system		0			
3.9	Oil handling equipment		4921799.44			
3.10	Workshop machines & equipment		2187022.7			
3.11	Total (Auxillary Equipment & Services for PS)		39764258.69			
4.0	Switchyard package		61123756			
5.0	Initial spares for all above equipment		4455597			
6.0	Total (Plant & Equipment)		890974385.53			

Chief Engineer
HPC & Hydel Projects
APGENCO, Vidyut Soudha,
VIJAYAWADA - 520 004,

Summary Sheet

Name of the Company

APGenco

Name of the Power Station :

NOTES

S.No.	Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
1	2	3	4	5	6	7
1.1	Depreciation	9.35	10.03	10.03	10.03	10.03
1.2	Return on Capital Employed ¹	32.71	32.95	32.79	31.62	30.45
1.3	O & M Expenses	7.58	8.08	8.62	9.19	9.80
	Total	49.64	51.06	51.44	50.84	50.28

Statement of Depreciation

Name of the Company

APGENCO

Name of the Power Station

NSTP HES

Financial Year	Upto 2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
1	2	3	4	5	6	7
Depreciation on Capital Cost	263.45	275.42	294.88	294.88	294.88	294.88
Depreciation recovered during the Year	-	9.35	10.03	10.03	10.03	10.03
Depreciation & Advance against Depreciation recovered during the year	-	9.35	10.03	10.03	10.03	10.03
Cumulative Depreciation & Advance against Depreciation recovered upto the year	10.09	19.44	29.47	39.5	49.53	59.56

(Rs in Crs)

Calculation of Return on Capital Employed

Name of the Company APGENCO
Name of the Power Station NSTPHES

Particulars 1	(Amount in crs)					
	2019-20 2	2020-21 3	2021-22 4	2022-23 5	2023-24 6	
Regulated Rate Base ¹	11.8%	11.8%	11.8%	11.8%	11.8%	
WACC ¹	277.20	279.20	277.91	267.95	258.01	
RoCE	32.71	32.95	32.79	31.62	30.45	

Petitioner

**PART-I
FORM- 14**

Working Capital

Name of the Company

APGENCO

Name of the Power Station

NSTPHES

Sl. No.	Particulars	(Amount in Rs)				
		2019-20	2020-21	2021-22	2022-23	2023-24
1	2	3	4	5	6	7
1	O & M expenses	0.63	0.67	0.72	0.77	0.82
2	Maintenance Spares	2.96	3.08	3.21	3.33	3.47
3	Recievables	8.27	8.68	8.57	8.47	8.38
	Total Working Capital	11.86	12.43	12.50	12.57	12.67

Petitioner

Sl.No.	Break Down	As on COD(Rs Cr)
1.0	Cost of Land & Site Development	
1.1	Land	27.44
1.2	Rehabilitation & Resettlement (R&R)(CSR works)	14.22
1.3	Preliminary Investigation & Site development	
	Total Land & Site Development	41.66
2.0	Plant & Equipment	
2.1	Steam Generator Island (incl. PVC)	
2.2	Turbine Generator Island (incl. PVC) BTG supply + PVC = 1161.54+200	1361.54
2.3	BOP Mechanical (steel, water sys)	636.56378
2.3.1	External water supply system(Raw water)	0.59
2.3.2	CW system(CW+ACW=19.94+5.29)	25.23
2.3.3	DM water Plant	17.65
2.3.4	Clarification plant	13.09
2.3.5	Chlorination Plant	7.84
2.3.6	Fuel Handling & Storage system	10
2.3.7	Ash Handling System	96.31378
2.3.8	Coal Handling Plant (CHP + Marshalling +TH+WT)	242
2.3.9	Rolling Stock and Locomotives	
2.3.10	MGR	
2.3.11	Air Compressor System	10
2.3.12	Air Condition & Ventilation System	17.08
2.3.13	Fire fighting System	12
2.3.14	HP/LP Piping	10.95
2.3.15	ETP + CPU + Lab equipment + W.S. Crane + NDCT + Chimney + Stack elevator +Misc pumps = 19.82+14.07+3.24+1.08+30+2.50+1.25+0.36	72.32
2.3.16	Cranes & hoists + Elevators + MRS + Workshop equipment +GERB springs + Misc supply =21+8+8+2.50+8+4.4	51.9
2.3.17	Structural steel for BOP works	54
	Total BOP Mechanical	640.96378
2.4	BOP Electrical	64
2.4.1	Switch Yard Package	
2.4.2	Transformers Package	
2.4.3	Switch gear Package	
2.4.4	Cables , Cable facilities & grounding	
2.4.5	Lighting	
2.4.6	Emergency D.G. set	
2.5	BOP C & I Package	22.35
	Total Plant & Equipment excluding taxes & Duties	2088.85378
2.60	Taxes and Duties (BTG supply tax 123.18+Taxes on Erection PO 40)	163.18
2.6.1	Custom Duty	
2.6.2	Other Taxes & Duties	
	Total Taxes & Duties	163.18
	Total Plant & Equipment with taxes	2252.03378

3.0	Initial spares incl. GST	65
4.0	Civil Works	
4.1	Main plant/Adm. Building	
4.2	CW system	
4.3	Cooling Towers	
4.4	DM water Plant	
4.5	Clarification plant	
4.6	chlorination plant	
4.7	Fuel Handling & Storage system	
4.8	Coal Handling Plant	
4.9	MGR & Marshalling Yard	
4.10	Ash Handling System	
4.11	Ash disposal area development	
4.12	Fire fighting System	
4.13	Township & Colony	
4.14	Temp. construction & enabling works	
4.15	Road & Drainage	
	BOP civil works	483.28
	Non BOP civil works	58.56
	Total Civil works	541.84
5.0	Construction & Pre- Commissioning Expenses	
5.1	Erection Testing and commissioning (BTG 174.39+ BOP 46.03)	220.42
5.2	Site supervision	
5.3	Operator's Training	2.86
5.4	Construction Insurance	
5.5	Tools & Plant	
5.6	Start up fuel HFO + LDO+ Coal + Demurrages (HFO&LDO=33.16)	33.16
	Total Construction & Pre- Commissioning Expenses	256.44
6.0	Overheads	
6.1	Establishment	95.49
6.2	Design & Engineering (Desein & Quest POs with taxes as per SAP)	6.3
6.3	Audit & Accounts	
6.4	Contingencies (including by-pass line works)	77.31
	Total Overheads	179.1
7.0	Capital cost excluding IDC & FC	3336.07378
7.1	Interest During Construction (IDC till 12.09.2014=660.58)	1533.75
7.2	Financing Charges (FC)	
8.0	Capital cost including IDC & FC	4869.82378


 Chief Engineer/Generation.

Summary Sheet

Name of the Company

APGenco

Name of the Power Station :

RTPP stage IV

(Rs in Crs)

S.No.	Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
1	2	3	4	5	6	7
1.1	Depreciation	373.71	373.71	373.71	373.71	373.71
1.2	Return on Capital Employed	647.12	602.61	558.12	513.66	469.22
1.3	O & M Expenses	117.60	125.41	133.74	142.62	152.09
	Total	1138.43	1101.73	1065.57	1029.99	995.02

2.Calculation of Rate of Energy Charge(Rs./kWh)

2.1	Rate of Energy Charge from Primary Fuel	3.56	3.56	3.56	3.56	3.56
2.2	Rate of Energy Charge from Secondary Fuel	0.08	0.08	0.08	0.08	0.08
2.3	Rate of Energy Charge ex-bus	3.64	3.64	3.64	3.64	3.64

Petitioner

**PART-I
FORM-2**

Plant Characteristics

- Name of the Company** : APGENCO
- Name of the Power Station** : Rayalaseema Thermal Power Station Stage IV
- Basic characteristics of the plant¹** : Coal based thermal plant with conventional Boiler and Steam Turbine.
- Special Features of the Plant** :
- Site Specific Features²** : Expansion in the same power plant area at Rayalaseema
- Special Technological Features³** :
- Environmental Regulation related features⁴** : ESPs are provided for pollution control in both the Units. Opacity meters are provided for SPM measurement and measurement of SOX and NOX emissions provided.
- Any other special features** :

Fuel Details⁵	Primary Fuel	Secondary Fuel	Alternate Fuels
	Coal	Heavy oil/Light Diesel oil	---
Details	Module number or Unit number		
Unit No.	1		
Installed Capacity (IC)	600 MW (1x500+20%)		
Date of Commercial Operation (COD)	29.03.2018		
Type of cooling system ⁶	Closed cycle cooling system using Natural draft cooling tower		
Type of Boiler Feed Pump ⁷	Motor driven		

PETITIONER

Normative parameters considered for tariff computations

Name of the Company

APGENCO

Name of the Power Station

RTPP Stage IV

Particulars	Unit	As per fillings	As per APERC norms
1	2	3	4
Rate of Return on Capital Employed	%	11.8	Not mentioned
Target Availability	%	80%	80%
Target PLF	%	-	80%
Auxiliary Energy Consumption	%	6	6
Gross Station Heat Rate	kCal/kWh	2425	2425
Specific Fuel Oil Consumption	ml/kWh	2	2
O&M Cost *	Rs.Lakh/MW	-	-
Cost of Coal/Lignite for WC ¹	in Months	1	1
Cost of Secondary Fuel Oil for WC ¹	in Months	1	1
Fuel Cost for WC ²	in Months		
Liquid Fuel Stock for WC ²	in Months		
O & M Expenses for WC	in Months	1	1
Maintenance Spares for WC	%	1	1
Receivables for WC	in Months	2	2
Prime lending Rate of SBI	%	-	
Incentive Rate	Paise / kWh	25	25

PETITIONER

	Form 7
Name of the Company	APGENCO
Name of the Power Station	RTPP IV
Particulars	Package1
1	2
Source of Loans	PFC 31301016
Currency	INDIAN Rs
Amount of Loan sanctioned	3612.80
Amount of Gross Loan drawn Upto 31.03.19	3612.80
Interest Type	Floating
Fixed Interest Rate, if applicable	-
Base Rate, if Floating Interest	10.20%
Margin, if Floating Interest	
Are there any Caps/Floor	-
If above is yes, specify caps/floor	-
Moratorium Period	83 Months
Moratorium efective from	15-Feb-11
Repayment Period	15 Years
Repayment efective from	15-Jan-18
Repayment Frequency	Quarterly
Repayment Instalment	60
Base ExchangeRate	-

Statement of Depreciation

Name of the Company

APGENCO

Name of the Power Station

RTPPP-IV

Financial Year	Upto 2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
1	2	3	4	5	6	7
Depreciation on Capital Cost		4853.38	4853.38	4853.38	4853.38	4853.38
Depreciation recovered during the Year		373.71	373.71	373.71	373.71	373.71
Depreciation & Advance against Depreciation recovered during the year		373.71	373.71	373.71	373.71	373.71
Cumulative Depreciation & Advance against Depreciation recovered upto the year		373.71	747.42	1121.13	1494.84	1868.55

(Rs in Laks)

Petitioner

Form 13									
	Name of the Company	APGENCO							
	Name of the Power Station	RTPP IV				Amount in Crores			
S.No	Particulars	Existing 18-19	19-20	20-21	21-22	22-23	23-24		
1	Loan 1 - PFC 31301016								
	Gross Loan - Openig	3612.80	3612.80	3612.80	3612.80	3612.80	3612.80		
	Cumulative Repayment of Loans upto Current Year	(60.21)	(301.06)	(541.92)	(782.77)	(1,023.62)	(1,264.48)		
	Net Loan - Opening	3552.59	3311.74	3070.88	2830.03	2589.18	2348.32		
	Add: Drawals during the Year	-	-	-	-	-	-		
	Less: Repayment of the Loans during the year	(240.85)	(240.85)	(240.85)	(240.85)	(240.85)	(240.85)		
	Net Loan - Closnig	3311.74	3070.88	2830.03	2589.18	2348.32	2107.47		
	Average Net Loan	3311.74	2778.76	2537.91	2297.06	2056.20	1815.35		
	Rate of Interest on Loan	10.20%	10.20%	10.20%	10.20%	10.20%	10.20%		

Calculation of Return on Capital Employed

Name of the Company APGENCO

Name of the Power Station RTPP-IV

(Amount in Crs)					
Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
1	2	3	4	5	6
Regulated Rate Base ⁱ	11.8%	11.8%	11.8%	11.8%	11.8%
WACC ⁱ	5484.09	5106.85	4729.83	4353.02	3976.46
RoCE	647.12	602.61	558.12	513.66	469.22

Petitioner

BREAK UP of CAPITAL COST

Name of the Power Station : Dr. Narla TataRao Thermal Power Station, Stage-V, 1x800 MW

S No.	Break Down	Cost in Rs. Cr	Remarks
1	Cost of Land & Site Development	-	
1.1	Land	-	
1.2	Rehabitation & Resettlement (R&R)	-	
1.3	Preliminary Investigation & site development	-	Included in Civil works SI No.4) below
2	Plant & Equipment		
2.1	Steam Generator Island	1775.35	
2.2	Turbine Generator Island		
2.3	BOP Mechanical	916.67	
2.4	BOP Electrical	232.69	
2.5	BOP C & I	61.16	
2.6	Taxes & Duties	394.40	
3	Initial Spares	110.50	
4	Civil Works	1002.22	
5	Construction & Pre Commissioning Expenses		
5.1	Erection Testing and commissioning	328.47	
5.2	Site Supervision	-	Included in Consultancy (6.2)
5.3	Operators Training	-	Included in Respective packages
5.4	Construction Insurance	-	Included in Respective packages
5.5	Tools & Plant	-	Included in Respective packages
5.6	Start up fuel	12.00	
6	Overheads		
6.1	Establishment	20.00	
6.2	Design & Engineering (Consultancy)	10.00	
6.3	Audit & Accounts	-	Included in 6.1 Above
6.4	Contingency	30.00	
6.5	CSR	40.00	
8	Implementation of MoE&F Norms	540.00	
7	Capital Cost Excluding IDC & FC	5473.46	
7.1	IDC & Financing Cost	670.34	
9	Capital Cost Including IDC & FC	6143.80	Total Cost may vary on the final completion of the project due to implementation of GST and MoE&F norms.


 Chief Engineer / TPC
 APGENCO, Vidyut Soudha,
 Vijayawada - 520 004

Summary Sheet

Name of the Company
Name of the Power Station :

APGenco
Dr. NTTPS stage V

S.No.	Particulars	2019-2020	2020-2021	2021-2022	2022-2023	2023-2024
1	2	3	4	5	6	7
1.1	Depreciation	156.12	473.08	473.08	473.08	473.08
1.2	Return on Capital Employed	269.86	792.21	735.90	679.64	623.41
1.3	O & M Expenses	51.75	167.22	178.32	190.16	202.79
	Total	477.73	1432.51	1387.30	1342.88	1299.28

(Rs in Crs)

2.Calculation of Rate of Energy Charge(Rs./kWh)

2.1	Rate of Energy Charge from Primary Fuel	2.84	2.84	2.84	2.84	2.84
2.2	Rate of Energy Charge from Secondary Fuel	0.08	0.08	0.08	0.08	0.08
2.3	Rate of Energy Charge ex-bus	2.92	2.92	2.92	2.92	2.92

Petitioner

Plant Characteristics

Name of the Company

APGenco

Name of the Power Station

Dr Narla Tata Rao Thermal Power Station stage V

Basic characteristics of the plant¹

Coal based thermal station(1x800 MW) with Super critical technology

Special Features of the Plant

Site Specific Features²

In the existing premises of Dr Narla Tata Rao Thermal power Station. Site is located on left side of river krishna at a distance of 2km between Ibrahimpatnam & Kondapalli Village in Krishna District & 16 Km north side of Vijayawada city.

Special Technological Features³

Super critical technology. The steam Generator is drumless.

Environmental Regulation related features⁴

ESPs are provided for pollution control in all the Units. Opacity meters are provided for SPM measurement and measurement of SOX and NOX emissions provided.

Any other special features

Fuel Details⁵	Primary Fuel	Secondary Fuel	Alternate Fuels
	Coal	Heavy Oil/Light Diesel Oil	-
Details	Unit no.1		
Installed Capacity (IC)	800 MW		
Date of Commercial Operation (COD)	-		
Type of cooling system ⁶	Closed cycle cooling system using Natural Draft cooling Tower		
Type of Boiler Feed Pump ⁷	Motor driven & Turbine driven		

Normative parameters considered for tariff computations

Name of the Company **APGENCO**Name of the Power Station **Dr NTTPS-V**

Year ending March

Particulars	Unit	As per fillings	As per APERC norms
		2019-24	
-1		2	3
Rate of Return on Capital Employed	%	11.8	Not mentioned
Target Availability	%	80%	80%
Target PLF	%	80%	80%
Auxiliary Energy Consumption	%	6	6
Gross Station Heat Rate	kCal/kWh	2425	2425
Specific Fuel Oil Consumption	ml/kWh	2	2
O&M Cost	Rs.Lakh/MW	-	-
Cost of Coal/Lignite for WC¹	in Months	1	1
Cost of Secondary Fuel Oil for WC¹	in Months	1	1
Fuel Cost for WC²	in Months		
Liquid Fuel Stock for WC²	in Months		
O & M Expenses for WC	in Months	1	1
Maintenance Spares for WC	%	1	1
Receivables for WC	in Months	2	2
Prime lending Rate of SBI	%	-	
Incentive Rate	Paise / kWh	25	25

PETITIONER

Name of the Company	APGENCO
Name of the Power Station	VTPS V
Particulars	Package¹
1	2
Source of Loans	REC 417478
Currency	INDIAN Rs
Amount of Loan sanctioned	4300.31
Amount of Gross Loan drawn Upto 31.03.19	3773.24
Interest Type	Floating
Fixed Interest Rate, if applicable	-
Base Rate, if Floating Interest	11.40%
Margin, if Floating Interest	
Are there any Caps/Floor	-
If above is yes, specify caps/floor	-
Moratorium Period	56 Months
Moratorium efective from	14-Dec-15
Repayment Period	10 Years
Repayment efective from	30-Dec-20
Repayment Frequency	Quarterly
Repayment Instalment	40
Base ExchangeRate	-

Statement of Depreciation

Name of the Company

APGENCO

Name of the Power Station

Dr.NTTP-V

Financial Year	Upto 2018-19	2019-2020	2020-2021	2021-2022	2022-2023	2023-2024
1	2	3	4	5	6	7
Depreciation on Capital Cost		6143.88	6143.88	6143.88	6143.88	6143.88
Depreciation recovered during the Year		156.12	473.08	473.08	473.08	473.08
Depreciation & Advance against Depreciation recovered during the year	0.00	156.12	473.08	473.08	473.08	473.08
Cumulative Depreciation & Advance against Depreciation recovered upto the year	0.00	156.12	629.20	1102.28	1575.36	2048.44

Petitioner

Form 13									
Name of the Company			APGENCO						
Name of the Power Station			VTPS V		Amount in Crores				
S.No	Particulars	Existing 18-19	19-20	20-21	21-22	22-23	23-24		
1	Loan 1 - REC 417478								
	Gross Loan - Openig	1988.23	3773.24	4300.31	4300.31	4300.31	4300.31		
	Cumulative Repayment of Loans upto Current Year	0.00	0.00	0.00	(215.02)	(645.05)	(1,075.08)		
	Net Loan - Opening	1988.23	3773.24	4300.31	4085.29	3655.26	3225.23		
	Add: Drawals during the Year	1785.01	527.07	-	-	-	-		
	Less: Repayment of the Loans during the year	0.00	0.00	(215.02)	(430.03)	(430.03)	(430.03)		
	Net Loan - Closnig	3773.24	4300.31	4085.29	3655.26	3225.23	2795.20		
	Average Net Loan	3773.24	4300.31	4085.29	3655.26	3225.23	2795.20		
	Rate of Interest on Loan	11.40%	11.40%	11.40%	11.40%	11.40%	11.40%		

Calculation of Return on Capital Employed

Name of the Company APGENCO

Name of the Power Station Dr.NTTPS -V

Particulars	(Amount in Crs)				
	2019-2020	2020-2021	2021-2022	2022-2023	2023-2024
1	2	3	4	5	6
Regulated Rate Base	11.8%	11.8%	11.8%	11.8%	11.8%
WACC	2286.94	6713.61	6236.48	5759.64	5283.11
RoCE	269.86	792.21	735.90	679.64	623.41

Petitioner

**PART-I
FORM- 14**

Working Capital

Name of the Company

APGENCO

Name of the Power Station

Dr.NTTPS -V

Sl. No.	Particulars	(Amount in Crs)				
		2019-2020	2020-2021	2021-2022	2022-2023	2023-2024
1	2	3	4	5	6	7
1	Cost of Fuel	136.42	136.42	136.42	136.42	136.42
2	O & M expenses	13.07	13.93	14.86	15.85	16.90
3	Maintenance Spares	61.44	63.90	66.45	69.11	71.88
4	Recievables	512.89	511.60	504.06	496.66	489.39
	Total Working Capital	723.82	725.85	721.79	718.04	714.59

Petitioner

NAME OF COMPANY : APGENCO
NAME OF POWER STATION : Polavaram HES 960 MW (12X80 MW)

SALIENT FEATURES**POLAVARAM DAM / RESERVOIR****Reservoir**

Catchment Area : 306643 Sq. Km.
Type of dam : Earth-Cum-Rock fill Dam
Length of Dam : 2454 m
Maximum height : 57.90 m
FRL : 45.72 m
MDDL : 41.15 m
Gross Capacity : 194.60 TMC
Live Capacity : 75.20 TMC

Spillway

Length : 1128.40 m
No. of Gates : 48 Nos.
Size of Gates : 16 m x 20 m

Design Flood (Cumec)

a. Dam : 1,41,435 cumecs
(49.93 lakh cusecs)

Irrigation (Ha)

Right Main canal : 1,62,691 Ha
Left Main canal : 2,16,197 Ha

POLAVARAM HYDRO ELECTRIC PROJECT

- 1 **Name** : Polavaram Hydro Electric Project (12X80 MW)
- 2 **Location** : The power scheme is proposed at the location of "D" hill on the left side of the earth cum rock fill dam across river Godavari East Godavari District of Andhra Pradesh
- Longitude / Latitude : 81°-46' E / 17° - 13' N
- 3 **Power Potential**

	1st Year	35th Year
Gross Energy	: 2308.41MU	431.27 MU
Net Energy	: 2285.33 MU	426.96 MU

Major Civil Components of the project

- 1 **Approach Channel** :

Discharge Capacity	: 3972 Cumecs
Length	: 206m
Width	: 294 m
Bed Level	: (+) 35.00
- 2 **Intake Pool**

Bed Level	: (+) 35.00
Level at End	: (+) 13.85
Width	: 294 m
Length	: 64 m
Section	: Lined
- 3 **Intake Structure**

Bottom Level	: (+) 13.85 / 20.0
Top Level	: (+) 48.22
Length	: 294 m
- 4 **Intake Tunnels** :

Number of tunnels	: 12 Nos.
Discharging capacity	: 331 Cumecs/each Unit
Length of tunnel	: 115 m
Diameter of Tunnel	: 9 Metres (Finished), Circular

5	Intake Gates	:
	Number of gates.	: 12 Nos.
	Size of gates	: 6.50 m x 11.90 m
	No of Stop log gates	: 3
	Size of gates	: 6.5X11.9
6	Power House	:
	Size of Power House	: 365 x 26 m (Main machine hall - 300X26)
	Service bay floor level	: (+) 26.00 m
	Unloading bay floor level	: (+) 35.00 m
	Distance between Units	: 24 m
7	DT Structure	:
	No of DT gates	: 24
	Bottom Level	: (-) 3.00
	Top level of DT gates	: (+) 35.00 m
	Clear vent size	: 8.75X8.75 (24 Nos)
8	Tailrace Pool	:
	Section	: Lined
	Bed Level at Start	: (-) 3.00 m
	Bed level at end	: (+) 12.39
9	Tailrace Channel	:
	Length	: 1130 m
	Slope	: 1 in 3000
	Discharging Capacity	: 3972 Cumecs
	Section	: LINED
	Bed Width	: 254.32
	Bed Level at Start	: (+) 12.39 m
10	Land for PHEP	:
	Patta land & Govt Land	: 121.615 Hectares

Major Electrical & Mechanical Components of the project

1	Turbines	:
	Type	: Vertical Kaplan, Semi Spiral turbines
	Design head	: 27 m.
	Runner diameter	: 6150 mm
	Trbine Speed	: 115.38 rpm
	Design discharge	: 331 Cumecs
2	Generators	:
	Type	: Synchronous vertical Generator
	Rated Voltage	: 11 ± 10 %
	Rated KVA	: 88888
	Type of Winding	: Wave Winding
	Insulation Class	: Class F
	No of Poles	: 52
3	Generator Transformers	:
	Location	: 26m
	No of Transformers	: 12 Nos
	Rating	: 11KV/400 KV,100MVA
4	Switch yard	:
	Type	: Indoor GIS
	No of Buses	: 2 Nos
	No. of Feeders	: 2 Nos
	Voltage Level	: 400KV
	No. of Bays	: 21 Nos

Summary Sheet

Name of the Company

APGenco

Name of the Power Station :

Polavaram HES

S.No.	Particulars	2019-20	2020-21	2021-22	2022-23	2023-24
1	2	3	4	5	6	7
1.1	Depreciation	-	-	23.60	121.62	179.71
1.2	Return on Capital Employed ¹	-	-	85.16	437.02	631.26
1.3	O & M Expenses	-	-	10.41	53.66	79.28
	Total	-	-	119.17	612.30	890.25

	Form 7
Name of the Company	APGENCO
Name of the Power Station	960MW Polavaram
Particulars	Package1
1	2
Source of Loans	REC 4112037
Currency	INDIAN Rs
Amount of Loan sanctioned	3965.11
Amount of Gross Loan drawn Upto 31.03.19	977.96
Interest Type	Floating
Fixed Interest Rate, if applicable	-
Base Rate, if Floating Interest	11.40%
Margin, if Floating Interest	
Are there any Caps/Floor	-
If above is yes, specify caps/floor	-
Moratorium Period	82 Months
Moratorium efective from	6-Jan-18
Repayment Period	20 Years
Repayment efective from	30-Mar-25
Repayment Frequency	Quarterly
Repayment Instalment	80
Base ExchangeRate	-

Statement of Depreciation

Name of the Company

APGENCO

Name of the Power Station

Polavaram HES

Financial Year	Upto 2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
1	2	3	4	5	6	7
Depreciation on Capital Cost	-	-	-	294.88	294.88	294.88
Depreciation recovered during the Year	-	-	-	23.6	121.62	179.71
Depreciation & Advance against Depreciation recovered during the year	-	-	-	23.6	121.62	179.71
Cumulative Depreciation & Advance against Depreciation recovered upto the year	-	-	-	23.6	145.22	324.93

(Rs in Crs)

Form 13									
Name of the Company			APGENCO						
Name of the Power Station			960MW Polavaram						
S.No	Particulars		Existing 18-19	19-20	20-21	21-22	22-23	23-24	
1	2		3	4	5	6	7	8	
1	Loan 1 - REC 4112037								
	Gross Loan - Openig		617.25	977.96	1177.96	1777.96	2277.96	3277.96	
	Cumulative Repayment of Loans upto Current Year		0.00	0.00	0.00	0.00	0.00	0.00	
	Net Loan - Opening		617.25	977.96	1177.96	1777.96	2277.96	3277.96	
	Add: Drawals during the Year		360.71	200.00	600.00	500.00	1000.00	565.11	
	Less: Repayment of the Loans during the year		0.00	0.00	0.00	0.00	0.00	0.00	
	Net Loan - Closnig		977.96	1177.96	1777.96	2277.96	3277.96	3843.07	
	Average Net Loan		977.96	1177.96	1777.96	2277.96	3277.96	3843.07	
	Rate of Interest on Loan		11.40%	11.40%	11.40%	11.40%	11.40%	11.40%	

Calculation of Return on Capital Employed

Name of the Company APGENCO
Name of the Power Station Polavarm HES

Particulars 1	(Amount in crs)					
	2019-20 2	2020-21 3	2021-22 4	2022-23 5	2023-24 6	
Regulated Rate Base ¹	-	-	11.8%	11.8%	11.8%	
WACC ¹	-	-	721.73	3703.58	5349.63	
RoCE	-	-	85.16	437.02	631.26	

Petitioner

**PART-I
FORM- 14**

Working Capital

Name of the Company

APGENCO

Name of the Power Station

Polavaram HES

Sl. No.		Particulars	(Amount in Crs)				
1	2	3	4	5	6	7	
1	O & M expenses	-	-	6.67	7.12	7.59	
2	Maintenance Spares	-	-	53.39	55.53	57.75	
3	Recievables	-	-	152.79	153.27	151.85	
	Total Working Capital	-	-	212.85	215.92	217.19	

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