

EXECUTIVE SUMMARY

A.1 INTRODUCTION

1. Company Profile

- 1.1. Reliance Infrastructure Limited (herein referred as “RInfra”), a company incorporated under the provisions of Companies Act 1913 is having its registered office at H-Block, 1st Floor, Dhirubhai Ambani Knowledge City (DAKC), Navi Mumbai – 400 071, Maharashtra. The company has two segregated business vertical of Regulated and Non-Regulated Business. RInfra-Distribution, RInfra-Transmission and RInfra-Generation (DTPS) classifies as part of regulated power sector business and govern by the rules and regulations framed by the Government of Maharashtra and the Hon’ble Maharashtra Electricity Regulatory Commission.
- 1.2. Total income of RInfra for FY 2011-12 is Rs 18,615 Crore (US\$ 3.7 Billion) with net profit of Rs 2,000 Crore (US\$ 393.17 Million) and with a net worth of about Rs 18,541 Crore (US\$ 3.6 Billion), it ranks among leading Indian power sector company.
- 1.3. RInfra – G supplies power from its Dahanu Thermal Power Station (DTPS) to RInfra-D through the Intra State Transmission network collectively owned by Maharashtra State Electricity Transmission Company Limited (MSETCL), Reliance Infrastructure Limited - Transmission (RInfra-T) and Tata Power Company – Transmission (TPC-T). The electricity generated at DTPS flows through the network of 220 kV transmission lines and stepped down to 33 kV at the receiving stations of RInfra-T, for further distribution by RInfra-D to end consumers.

2. Legal and Regulatory Framework

- 2.1. Section 62 of the Electricity Act, 2003 requires a generating company to furnish details as may be specified by the Commission for determination of tariff for supply to a distribution licensee.
- 2.2. Hon’ble Commission has notified the MERC (Multi Year Tariff) Regulations 2011, on February 4, 2011 in exercise of powers conferred by Section 45 (2), 61 and 62 read with Section 181 of Electricity Act 2003. These Regulations have been made effective for RInfra from FY 12-13 onwards, vide an Order of the Hon’ble Commission in Case No. 45 of 2011. Regulation 3 of Part A, Regulation 4 – 10 of

- Part B and Regulation 16, 17 and 19 of Part C and respective provisions of Part E and Part F of MERC MYT Regulations, 2011 specify the principles to be employed by the Hon'ble Commission for determination of tariff under the said Regulations. Further, the Regulations also allow the Hon'ble Commission to deviate from the principles so specified therein, if the situation requires such deviations in order to remove difficulties in implementation of the Regulations.
- 2.3. The said MYT Regulations required the generating companies and licensees to submit their Multi-Year Business Plans for the Second Control Period FY 11-12 to FY 15-16, which RInfra-G had submitted under Case No. 156 of 2011. The Hon'ble Commission has uploaded the Order on the said Business Plan Petition on its website on October 29, 2012, though the date of issuance as mentioned in the Order is October 25, 2012.
- 2.4. Regulation 8 of the MYT Regulations provides for submission of forecast of ARR and expected revenue from tariff based on the approved Business Plan for the MYT 2nd control period (i.e. FY 12-13 to FY 15-16)
- 3. Business Plan and Order**
- 3.1. RInfra-G had submitted its Business Plan petition in Case No 156 of 2011 in compliance with Regulation 7.1 of MERC MYT Regulations 2011. RInfra-G in the said petition presented the operational and capital investment plan for the business plan period. RInfra-G also submitted that though the operational parameters for its generating station have been either improving or consistent during past years, however, the sustainability of these parameters in future will depend upon adequate and need based repair & maintenance and timely infusion of capital expenditure to contain any operational deviation of equipments. For forecasting the operational parameters, RInfra-G relied on either the historical performance or relevant regulations as applicable thereupon and wherever the deviations from MERC MYT Regulations 2011 were sought, RInfra-G has requested the Hon'ble Commission to take cognizance of the practical difficulties and industrial norms and accordingly provide relaxation as sought.
- 3.2. The Hon'ble Commission issued an Order on the Business Plan in Case No 156 of 2011 dated October 25, 2012. In its Order the Hon'ble Commission has directed RInfra-G in its order in Case No. 156 of 2012 to submit MYT petition within 60

days from the date of issuance of the Business Plan order. Hence, RInfra-G is filing the present MYT petition.

4. Objective of the Petition

- 4.1. In its Order in Case No 156 of 2011 dated October 25, 2012, the Hon'ble Commission has acknowledged the views on various expenditure and revenue projections as provided by RInfra-G to approve the expenditures projected for different years of the 2nd control period.
- 4.2. In an another tariff proceedings in Case No 122 of 2012, the RInfra-G has submitted for the truing up of FY 11 and FY 12 based on actual audited results of respective years, which is presently under consideration of the Hon'ble Commission. RInfra-G is filing the present MYT petition projecting the expenditure and revenues for the period FY 2012-13 to FY 2015-16. RInfra-G, however, has considered the cumulative revenue gap as arrived at, in the truing up petition in Case No 122 of 2012, while computing the ARR for FY 2012-13.
- 4.3. While submitting the present MYT petition, RInfra-G has abided the norms specified in the MERC MYT Regulations 2011, however, wherever deviations has been sought, the rationale for the same has been duly elucidated in relevant sections. RInfra-G requests the Hon'ble Commission to consider the submissions and grant relaxation in norms under Regulations 99 and 100 of the MERC MYT Regulations 2011.

A.2 PAST PERIOD REVENUE GAP

1. Petition for Truing up of FY 11 and FY 12

- 1.1. RInfra-G has filed petition bearing Case No. 122 of 2012 pertaining to truing up for FY 10-11 and FY 11-12. The proceedings are presently ongoing before the Hon'ble Commission. As part of this petition, RInfra-G has projected an additional expense for FY 09-10 as Rs 1.91 Cr on account of the additional capitalization of FY 09-10, which was apparently missed out by the Hon'ble Commission in its Truing Up Order in Case No 122 of 2011 dated February 27, 2012.
- 1.2. RInfra-G, as part of this petition, has also projected the revenue gap as Rs 2.81 Cr for FY 10-11 and Rs 15.67 Cr for the FY 11-12 based on actual audited accounts. As the revised tariffs under the MYT Control Period would, in all probability, be applicable only from FY 13-14, the revenue gap of FY 09-10, FY 10-11 and FY

11-12 as per the petition in Case No. 122 of 2012 is added to the projected fixed charges for FY 13-14

2. Hon’ble ATE Judgment w.r.t Allowance of Interest on Working Capital

- 2.1. RInfra-G submits that the Hon’ble Commission in its Order, in Case No 99 of 2009 dated September 8, 2010, has held that RInfra-G has managed to meet its working capital by its own operational efficiency and therefore disregarded any actual infusion fund for meeting the working capital requirements. Aggrieved by such directive of the Hon’ble Commission, RInfra-G preferred an appeal against the said order with Hon’ble ATE (Appeal No 202 of 2010). Hon’ble ATE in this respect has conferred a judgment dated September 12, 2012
- 2.2. RInfra-G submits that the directive issued by the Hon’ble ATE is without any ambiguity and mandates that efficiency gains considered by the Hon’ble Commission out of the interest on working capital in the past are required to be restored. RInfra-G submits that the Hon’ble ATE has not gone into the issue of identification of actual working capital deployment and has accepted the contention of RInfra that the formula contained in the Regulations itself gives rise to actual working capital in the concerned business segment, when actual values are inserted in the formula. Based on above, the amounts treated as efficiency gains by MERC for FY 2006-07 to FY 2009-10 are to be reinstated. RInfra-G in its petition in Case No. 122 of 2012 pertaining to truing up of FY 2010-11 and FY 2011-12 has considered the impact of the Hon’ble ATE judgment. The table below indicates the claim w.r.t. efficiency gains of IoWC:

Table E.1: Re-instatement of efficiency gains of IoWC

Truing-up Year	MERC Order	Rs. Crore
FY 2006-07	65 of 2007	2.12
FY 2007-08	120 of 2008	1.93
FY 2008-09	99 of 2009	3.05
FY 2009-10	122 of 2011	3.40
Total		10.50

Based on the same reasoning as given earlier, this additional amount is also added to the fixed charges of FY 13-14 as projected in this petition.

3. Hon'ble ATE Judgment w.r.t Allowance of Carrying Cost

- 3.1. RInfra-G submits that the Hon'ble ATE in its judgment in Appeal No 202 of 2010 dated September 12, 2012, has also ruled on the issue of denial of Carrying Cost entitlement by the Hon'ble Commission on the trued-up revenue gap of a Financial Year from the date of incurrence of expenditure. RInfra-G understands that the said judgment of Hon'ble ATE upholds the view that the utility is entitled to claim carrying cost on the revenue gap of a given financial year from such financial year onwards, irrespective of when such revenue gap is approved by the Hon'ble Commission.
- 3.2. RInfra-G submits that in the aforementioned judgment of the Hon'ble ATE has upheld the view that the any legitimate expense incurred by the utility (as approved during truing up) in excess of the approved figure in the ARR results in a revenue gap which is financed by the utility in the year in which it is incurred whereas truing up is done in subsequent years. The Hon'ble ATE has in one of its judgment in Appeal No 153 of 2009 dated July 30, 2010 has validated his view on carrying cost entitlement. Considering the impact of the judgment pronounced by the Hon'ble ATE, the carrying cost entitlement of RInfra-G on revenue gap of previous years is as in table below:

Table E.2: Carrying Cost on Revenue Gap

Truing-up Year	Case No.	Gap Rs. crore	No. of years for carrying cost	Rs. Crore
FY 2008-09	99 of 2009	-12.81	5	-8.55
FY 2009-10	122 of 2011	1.91	4	1.03
FY 2010-11	122 of 2012	2.81	3	1.15
FY 2011-12	122 of 2012	15.67	2	4.58
Total				-1.79

- 3.3. Carrying cost has been determined from the mid-year of the financial year for which the revenue gap pertains up to the mid-year FY 13-14. The carrying cost has also been worked out on the reinstated claim w.r.t allowance of efficiency gains of IoWC as discussed above. This is as shown in the table below:

Table E.3: Carrying Cost on Efficiency Gain of IoWC

Truing-up Year	MERC Order	IoWC Claim	No. of years for carrying cost	Rs. Crore
FY 2006-07	65 of 2007	2.12	7	1.89

Truing-up Year	MERC Order	IoWC Claim	No. of years for carrying cost	Rs. Crore
FY 2007-08	120 of 2008	1.93	6	1.51
FY 2008-09	99 of 2009	3.05	5	2.04
FY 2009-10	122 of 2011	3.40	4	1.83
Total		10.50		7.27

3.4. Based on the discussion above, the revenue gap of the previous years, along with the carrying cost worked out till FY 13-14 is shown below. The said cumulative revenue gap of the past, including carrying cost is proposed for recovery in the fixed charges of FY 13-14:

Table E. 4: Revenue Gap of Previous Years

Particulars	FY 07	FY 08	FY 09	FY 10	FY 11	FY 12
Reinstated eff. Gains of previous years (up to FY 09-10)	2.12	1.93	3.05	3.40	-	-
Carrying cost on re-instated efficiency gains	1.89	1.51	2.04	1.83		
Carrying cost on approved revenue gap of previous years (from FY 08-09)			-8.55			
Revenue Gap proposed for FY 11 and FY 12 in Case No. 122 of 2012				1.91	2.81	15.67
Carrying cost on proposed revenue gap of FY 11 and FY 12				1.03	1.15	4.58
Total claim of previous years added to Fixed Charges of FY 13-14	4.01	3.44	-3.46	8.17	3.96	20.25
Grand Total						36.37

A.3 PROJECTION OF ENERGY CHARGES

1. Operational Parameters

1.1. Availability, PLF and Generation: RInfra-G as part of its Business plan petition in Case No 156 of 2011 has submitted that for the purpose of projection of various operational parameters, it has relied on the relevant regulations as applicable for the concerned period or on the historical performance or on best industrial practices. In this respect, RInfra-G has proposed the availability of the generating station as 95.90% as against the norm of 85% for each year of the MYT Period, considering an estimated non-availability of 4.10% for regular planned outages and

unforeseen outages, if any. The Hon'ble Commission while issuing the Order in Case No 156 of 2011 has approved the availability same as that submitted for the second MYT Control Period. Accordingly, this ARR and Tariff petition is prepared considering the availability at 95.90%. Based on the Availability and PLF projections and with the capacity of the station being 500 MW, the gross generation in MU for MYT period is projected considering the actual for the period of April-November of FY 12-13 and the same is as under:

Table E.5: Availability, PLF and Gross Generation for 2nd MYT Control Period

Particular	UoM	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
Availability	%	95.89%	95.89%	95.89%	95.90%
PLF	%	95.90%	95.90%	95.90%	95.90%
Gross Generation	MU's	4,429.67	4,200.42	4,200.42	4,211.93

- 1.2. Auxiliary Consumption: RInfra-G, while submitting its Business Plan petition in Case No 156 of 2011, has relied on the respective provisions of the MERC MYT Regulations 2011, while projecting the auxiliary consumption for the conventional thermal power plant equipment. RInfra-G understands that while the MERC MYT Regulations 2011 do not specify any auxiliary consumption norm separately for FGD plant, actual aux. consumption of the FGD plant has been separately allowed by the Hon'ble Commission over and above the normative allowance, in its previous APR Orders. Accordingly RInfra-G has considered the auxiliary consumption of FGD plant as per the actuals of FY 11-12 for each year of the MYT 2nd control period. In addition to above, RInfra-G submits that the generating station has installed a Coarse Ash Grinding Unit (to comply the norm of 100% ash utilization) and such equipment will also have its own auxiliary consumption over and above conventional thermal power plant equipment for which the norm of 8.50% is specified. As this unit's consent to operate has just been received, there is no measure available of its actual auxiliary consumption. However, in order to provide an estimate of auxiliary consumption of the Coarse Ash Grinding Unit, RInfra-G has considered the rated power consumption of the unit, which is 351.20 kW. Hence, a simple computation would suggest that if the CAG unit operates for 16hrs daily matching plant availability then approximately 2 MU will be the auxiliary consumption of the unit at full load. However, the auxiliary consumption for the unit would depend upon hours of operation and loading conditions, which

cannot be estimated at this moment. In view of the same, RInfra-G is requesting the Hon'ble Commission to allow submitting the actual details during mid-term performance review, because by such time, actual full year details will be available. Accordingly, for the purposes of projecting ARR and tariffs in this petition, the auxiliary consumption considered for the second MYT Control Period does not include the projected aux. consumption of CAG Unit. Accordingly, the projected net generation is estimated as shown in the table below:

Table E.6: Auxiliary Consumption & Net Generation for 2nd MYT Control Period

Particular	UoM	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
FGD	MU	55.78	55.78	55.78	55.78
	%	1.40%	1.47%	1.47%	1.47%
Conventional Plant Equipments	MU	376.67	357.04	357.04	358.01
	%	8.50%	8.50%	8.50%	8.50%
Total Aux Consumption of DTSPS	MU	432.30	412.82	412.82	413.79
	%	9.76%	9.83%	9.83%	9.82%
Net Generation	MU	3,997.37	3,787.60	3,787.60	3,798.13

- 1.3. Transit Loss: In accordance with the Regulation 44.6 of the MYT Regulations, 2011, RInfra-G has considered the transit losses in accordance i.e. 0.8% on landed cost of coal for all kind of coal – raw, washed and imported - used by the generating plant.
- 1.4. Specific Oil Consumption: RInfra-G has considered the secondary oil consumption as 1 ml/kWh in accordance with the regulation 44.4 of MERC MYT Regulations 2011.
- 1.5. Station Heat Rate: RInfra-G submits the norms specified for station heat rate for DTSPS are based on its historical performance, which are much tighter compared to the norms specified by the CERC and other SERCs for similar technology and vintage plants. While submitting its Business Plan (Case No. 156 of 2011), RInfra-G made its submissions regarding modifying SHR norms in line with that available to similarly placed generating units across the state/country. However, the Hon'ble Commission while passing the Order in Case No 156 of 2011 has dismissed the submissions and justifications made by RInfra-G. The Hon'ble Commission has ruled that the benchmark has been derived considering the past performance in order to provide motivation to the generating company to run the plant with as

much efficiency as done in the past. Such views of Hon'ble Commission seems to suggest that keeping SHR norms at industry standard of 2500 kCal/kWh or 2450 kCal/kWh and allowing the generating company to retain the efficiency gains based on difference with actual will not provide as much motivation as otherwise. RInfra-G wishes to apprise the Hon'ble Commission that the historical performance of the station on which the norm has been specified in the MYT Regulations are likely to not sustain in future due, in large part, to the quality of coal, which the plant is receiving. RInfra-G is receiving much poorer quality of domestic coal during FY 12-13 as compared to the past. This is mainly due to slippage in coal quality supplied by SECL. Fuel mix can be improved through procurement of higher quantity of imported coal, which, however, would lead to higher input costs. This would translate to higher per unit cost at bus bar and the risk of non-dispatch due to application of the State Merit Order. Hence, due to worsening of coal mix and the fact that the situation is not likely to improve in future, the SHR achieved in the past will be very difficult to sustain in future. In this regard, RInfra-G further submits that even OEM recommended heat rate calculation sheet considering aging factor (the Exhibit F indicates the Ageing factor as guaranteed by M/s BHEL as part of its PG Test for the turbine and boiler supplied by them) is much above the norms fixed by the Hon'ble Commission:

Table E.7: Station Heat Rate Working

DTPS Heat Rate considering Aging factor			
Particulars	UoM	U1	U2
Total Running Hrs since Commissioning	Hrs	142747.1	139447.3
Total Days since Commissioning	Days	5947.794	5810.303
Total Years since Commissioning	Yrs	16.30	15.92
Total Years since Commissioning excluding commissioning year	Yrs	15.30	14.92
Design Heat Rate	kCal/kWh	2208	2208
Aging % for one year excluding commissioning year	%	0.72	0.72
Aging % for 15.30 year excluding commissioning year	%	11.01	10.74
Heat Rate deterioration for 15.30 years	kCal/kWh	243.16	237.17
Actual heat Rate should be after 15.30 years with aging	kCal/kWh	2451.16	2445.17
Aging % for 1 st year after commissioning year	%	1	1
Heat Rate deterioration for 1 st year after commissioning year	kCal/kWh	22.08	22.08
Unit Heat Rate after 16.30 years of operation with aging	kCal/kWh	2473.24	2467.25

RInfra-G further submits that the Hon'ble Commission is the only Electricity Regulatory Commission across the country, which has adopted the approach of tightening the norms based on actual rather than considering the industry benchmark which amounts to discouraging better operational performance. RInfra-G submits that the norms fixed for other similar generating stations in Maharashtra are much milder than the norms fixed for RInfra-G who may not only be deprived of efficiency gains but may also be penalised despite achieving better SHR than its peers for whom much milder norms are prescribed. It will be a paradoxical situation in which an under performer gets incentivized and the better performing RInfra-G gets penalized. RInfra-G further adds that in its various judgments, the Hon'ble ATE has mandated that the norms should be in accordance with the objective of the National Tariff Policy or of the Central Electricity Regulatory Commission in case of Generation and Transmission, wherever, required. The judgments being referred are as below:

- Judgment in Appeal No.41 of 2012 in case of Puducherry Power Corporation Ltd. vs. Joint Electricity Regulation Commission & Ors., has inter-alia held that when norms and parameters have been prescribed by the Central Commission Regulations, the same have to be followed unless it is justified that it is not feasible to follow the regulations of the Central Commission.
- Judgment in Appeal No 8 of 2010 in the case of Sitapuram Power Ltd. vs. Transmission Corporation of Andhra Pradesh Ltd & Ors. has inter-alia mentioned that SERC's cannot negate the intent of Act, Provisions of National Tariff Policy and Regulations of Central Commission.
- Judgment in Appeal No 42 and 43 of 2008 in the case of Haryana Power Generation Corporation Ltd. vs. HERC & Anr. has categorically held that the purpose of normative approach would get defeated if benefits are not given and the party may not remain adequately motivated to work with desired efficiency.

RInfra-G further add that Central Electricity Regulatory Commission (CERC) while formulating the prevailing Tariff Regulations, 2009, in its Statement of Reason (SOR) has clarified that some operational margin must be available for the plants. The relevant extracts are being reproduced herewith:

“.....(a) In respect of existing units, CEA has recommended that existing norms may be allowed to continue. NTPC has also submitted SHR data of its 500 MW units in the stations having mix of 200/210 MW and 500 MW units which averages to 2405 kCal/kWh. However, having regard to actual heat rate data and actual PLF data of NTPC stations for 2004-05 to 2007-08, Commission is of the view that improvement in SHR norm is on account of improved in PLF in year to year basis except few stations. CEA has also recognized that the NTPC units are operating near 100% of their MW rating. Such a performance consistently is really very credit worthy and beneficiaries has gained tremendously with extra generation at nominal incentive plus energy charges effectively reducing their per unit cost. However, sustaining of such high performance level may not be sustained always thus calling for providing some margin for operational flexibility. The present margin for operational flexibility is of the order of 2-3% in respect of coal based stations. As for as 500 MW sets (including those commissioned between 1.4.2004 to 31.3.2009) are concerned, these units are relatively new and are expected to maintain current performance levels, and as such, for these stations there is scope for tightening of SHR norm for 500 MW unit by about 25 kCal/kWh still giving them operational flexibility to deal with variation in fuel quality and fuel supply constraints etc. As such, we are fixing a SHR norm of 2425 kCal/kWh (instead of 2400 kCal/kWh as proposed in draft) for the existing 500 MW units and passing on the benefit of efficiency gain to the beneficiaries. In respect of 200/210/250 MW sets, which are relatively old and near completion of their useful life, the performance level is expected to be lower due to R&M activities, a point made by the NTPC. As such, in respect of 200/210/250 MW sets we are retaining the norms as 2500 kCal/kWh....”

CERC in the same SOR further stated that norms should not be based on actual performance, so as to allow flexibility in operations. The relevant extracts are as below:

“.....In respect of new coal/lignite based thermal generating units, Commission is of the view that the SHR norms could not be set based on the actual performance of high performing units leaving them no scope for operational flexibility...”

RInfra-G submits that the Central Electricity Agency (CEA) has also opined to continue the existing norm of SHR for existing thermal generating station.

It is well established fact that upcoming generating stations supplied by various OEM suppliers have lower design SHR compared to older units and the same happens because of technological advancements in metallurgy and design

processes. Accordingly to CEA and CERC, the norm for such generating units may be tightened as they have greater operational margin available compared to older units.

RInfra-G submits that the prevailing MERC Tariff Regulations 2011 has allowed higher SHR for new generating stations (i.e. who have higher operational margin due to design changes) and poor performing generating units (i.e. relaxation in operational margin on account of poor performance and various reasons cited by other generating units), compared to DTPS, which has been consistently performed better than the norms and provided larger benefits to the consumers of Mumbai by providing higher generation at lower cost. RInfra-G feels that such tightening of SHR norm will affect the motivational level of the employees of DTPS to sustain the best O&M practices and explore opportunities to improve the performance level further.

Further to this, Ministry of Power, Government of India and *Deutsche Gesellschaft fur Technische Zusammenarbeit (GTZ) GmbH* signed an 'implementation agreement' with respect to the Indo-German Energy Programme (IGEN) in the year 2006. Under the IGEN agreement, power plant component is being implemented by the Central Electricity Authority (CEA), in association with the Bureau of Energy Efficiency (BEE), for performance optimization and efficiency improvements of thermal power plants. The programme aims to support and prepare power plant operators for performance reporting as well as implementation of financially attractive and technically viable improvements of power plant net heat rate under the provisions of the Energy Conservation Act. Under the first phase of the programme, GTZ provided support to CEA for creating data base of the older thermal power plants in India. The scope of the work primarily covers the mapping of 85 thermal power generating units. The mapping has been done for two conditions, namely for design parameters and for the actual operating status for the plant parameters gathered from different plant locations. The primary purpose is to provide a database within CEA and broadly identify areas needing attention in the short, medium and long term for improving energy efficiency. The mapping studies revealed that most of the units are being operated under various constraints like poor quality of coal, poor spare and activity planning, turbine and

other equipments, Poor condenser vacuum, high steam consumption, poor housekeeping, operating parameters different from the rated values and obsolete instrumentation. As part of the study, Analysis of important power plant performance indicators namely gross heat rate, turbine heat rate, boiler efficiency and auxiliary power consumption has been carried out for the same size of units. The findings of the reports w.r.t comparable unit size of DTPS are as below:

Table E.8: Mapping of Gross Heat Rate variations by CEA

Capacity range of units	No of Units	Average Design Gross Heat Rate (kCal/kWh)	Average Operating Gross Heat Rate (kCal/kWh)	Average Deviation (%)	Range of Operating GHR (%)
250	5	2300.6	2685.6	16.7	2546-2773

Table E.9: Mapping of Turbine Heat Rate variations by CEA

Capacity range of units	No of Units	Average Design Turbine Heat Rate (kCal/kWh)	Average Operating Turbine Heat Rate (kCal/kWh)	Average Deviation (%)	Range of Operating THR (%)
250	5	2001.2	2239.2	11.9	2179-2274

Table E.10: Mapping of Boiler Efficiency variations by CEA

Capacity range of units	No of Units	Average Design Boiler Efficiency (%)	Average Operating Design Efficiency (%)	Average Deviation (%)	Range of Operating Boiler Efficiency (%)
250	5	87.2	83.4	4.4	82.7-85.6

The report further highlighted the reasons for higher operating heat rates of generating units of various unit sizes and the major reasons identified which can be handled by best O&M practices of the generating units. The table below indicates the various reasons for heat rate deviations and possible O&M or capex measure to curtail the deviations.

Table E.11: Reasons of higher SHR

Reasons for Heat Rate Deviations	Controllable/ Uncontrollable	Remarks
Un-optimised Boiler consumption and High Excess Air	Controllable	Best O&M practices allow adjusting the air-fuel ratio and adjusting the air fuel velocity of the coal burners. Air fuel ratio adjustment is being done during operation by using measurements of oxygen %, CO, total air flow & coal flow. It is maintained at optimum level by daily monitoring of un-burnt carbon in bottom ash & fly ash
Low Turbine Efficiency	Un-controllable	Most of the turbines have isentropic efficiency lower than design, which primarily happens due to high inter stages seal clearance, gland leakages and silica deposits. The reason for the same is ageing effect. However the losses due to afore mentioned defects to some extent are minimised by adjusting flow path during overhaul. Amount of silica deposits are minimised by maintaining proper steam & water chemistry, regular blow downs , operation with CPU & sand blasting during overhaul
Inefficient Soot Blowing of Boiler Tubes	Controllable	Best O&M practices combined with capex intervention in terms of usage of modified LRSB and sonic soot blowers results in better cleaning of boiler tubes and thus higher efficiency
Inefficient Air-Preheaters	Uncontrollable	Worn-out/choked heating elements, Improper seal clearances, damaged sector plates and side sealing plates, air ingress due to damaged expansion bellows improper sealing of inspection holes were observed for the poor air preheater efficiency. Even the best O&M practices without timely and adequate capex will not be able to mitigate the impact on heat rate
Low Condenser Vacuum	Controllable	The condenser vacuum depends upon cooling water quantity, temperature and air ingress in the condenser. The capex intervention in terms of HP/LP bypass system, Debris filter, COLTS, Electro-chlorination system, travelling water

Reasons for Heat Rate Deviations	Controllable/ Uncontrollable	Remarks
		screen, and best O&M and preventive maintenance concept reduces the impact on heat rate.
High Ingress in the Boiler	Un-controllable	Though the boiler is not fully safeguard itself against air ingress from external sources as it operates negative pressure, however, the same is reflected in overloading of ID fan and thus affects boiler efficiency. Best O&M practices and preventive maintenance by doing oxygen mapping results in identification of such ingress and action can be taken accordingly. In spite of taking all such efforts boiler remains prone to air ingress
High Super Heater and Re-Heater Spray	Uncontrollable	The Boiler is designed for almost zero spray at full load with design coal. The spray is very high in some boilers due to poor coal quality. In some boilers reheater temperature is controlled by restricting flue gas qty in that section. This affects to divert more gas in super heater coil side and more heat pick up. To keep the metal temperature and steam temperature within limit usage of heavy attemperation in super heater side is practiced. As the quantity of coal fired changes and qty of flue gas also changes and changes the flame profile. Due to the above variation heat distribution and heat transfer in different sections of boiler tubes changes and lead to rise in metal temperature. In some boiler metal oxide formation in reheater and superheater tubes results in overheating and restricts the heat transfer and lead to boiler tube failure.
Coal Quality not conforming to Design Coal	Uncontrollable	The boiler is designed to burn specified coal linked to a particular source having defined set of values for gross calorific value, volatile matter, moisture and ash content. It is observed that the quality of coal actually received at power plants was vastly different from that of the design coal. The mismatch in design and actual characteristics of coal is the cause of many of the maintenance and operational problems. Many power plants get coal with much lower gross calorific value which in turn is due to high ash content. The high ash content results in lowering boiler efficiency and erosion of boiler tubes leading to high outages and high wear and tear of milling and coal carrying system.

Reasons for Heat Rate Deviations	Controllable/ Uncontrollable	Remarks
		Apart from above higher amount of hydrogen & enhanced surface moisture during monsoon in coal results in lowering of boiler efficiency
Higher Boiler Tube Leakage due to internal erosion	Uncontrollable	Most of the old thermal generating units suffer from higher boiler tube leakages. The major cause of failure is ash erosion, welding joints failures, stress corrosion and poor water chemistry. A Steam Generator has limited opportunity to control the same
Deterioration in insulation of Boiler, Turbine & Auxiliaries	Uncontrollable	The heat loss in a steam generator, heat exchangers, turbine & associated piping, equipment are due to deterioration of insulation material on account of ageing. Replacement of entire insulation is not feasible due to limited opportunities.
Frictional losses in steam & coal piping	Uncontrollable	OEM provides guarantee in efficiency of individual equipments. Where in frictional losses are not accounted. Which contributes significant amount of losses on overall heat rate
Passing in dampers & valves in Air, Water, Flue Gas & Steam cycle	Uncontrollable	Passing through dampers & valves in Air, Water, flue gas & steam circuit is controllable but it cannot be rectified when unit is in operation which contributes significant losses & in some area this cannot be identified due to absence of measurement.
Loss of heat in bottom ash	Uncontrollable	The heat loss in bottom ash hopper due to rise in water temp. is not measurable though it contributes towards reduction in boiler efficiency.
Backing Down by SLDC	Uncontrollable	Many times, SLDC base on the prevailing Merit Order Despatch instructs the generator to either to back down or run at partial load. Such instructions have huge bearing on auxiliary consumption of the plant equipment and thus fuel required for either cold or hot start of the plant. This leads to have higher Station heat rate of the plant.

In view of the various factors affecting Station Heat Rate as highlighted above, RInfra-G requests the Hon'ble Commission to not tighten the targets and expose the unit to risk of under-performance on account of various uncontrollable factors. RInfra-G wishes to

submit that all the above submissions are made in addition to and without prejudice to the submissions already made in respect of revision in SHR norms as part of RInfra-G's previous petitions.

Accordingly, RInfra-G requests the Hon'ble Commission to consider relaxing the SHR norm for the generating station same as 2450 kCal/kWh instead of based on actual average.

2. Fuel Cost and Energy Charges

- 2.1. In the present petition, RInfra-G has made certain modifications to its forecast in the Business Plan based on the actual realised during the current financial year i.e. FY 12-13
- 2.2. Fuel Quality: In the current scenario of uncertainty on Quality of the Coal, year-wise projection of variation in fuel quality would only be theoretical. The generating station has no control on the quality of coal received from CIL. The average of fuel quality (i.e. GCV) of the washed and imported coal, actually received during the period from April to November of FY 12-13 (kindly refer form F 2.2 of the financial model), has been assumed to remain same for each year of the MYT Period, however, in absence of raw coal usage during the aforementioned period, the fuel quality of raw coal as actually received during FY 11-12, has been assumed to remain same for each year of the MYT Period. Accordingly, the business plan projections have been revised so as to consider the actual quality of coal presently being received at present and since it is expected to continue, the same is projected for each year going forward:

Table E.12: Fuel Quality for 2nd MYT Control Period

Particular	UoM	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
Calorific Value of Fuel					
Washed Coal	kCal/kg	3,423.38	3,423.38	3,423.38	3,423.38
F Grade Coal	kCal/kg	2,838.03	2,838.03	2,838.03	2,838.03
Imported Coal	kCal/kg	4,258.13	4,258.13	4,258.13	4,258.13
LDO	kCal/kL	10,745.13	10,745.13	10,745.13	10,745.13

- 2.3. Fuel Prices: The landed cost of coal is affected by various issues such as coal freight is impacted by the price notifications of Ministry of Railways, Royalty rates on coal are impacted by both state and central government notifications and even the basic price of coal is impacted by the price notifications of Coal India Limited issued from time to time. In addition to the same, changes in above mentioned parameters are adhoc and there is no fixed periodicity involved. Therefore, any projection of such variations made by the generating plant for future years may significantly differ from the actual scenario. Further, as has been stated above, the fuel heat value has been assumed to remain same at the level presently being realised during FY 12-13 and since the price depends on GCV of coal received, the projection of basic price should also remain same as actually realised (i.e. average of the basic price of coal during the

period from April to November of FY 12-13). Accordingly, RInfra-G has considered projecting the landed cost of coal based on the following:

- Actual landed cost of each fuel type in Rs./MT as per the average actuals during the period from April to November of FY 12-13 and assumed same for the remaining period of the year;

Thereafter from FY 13-14 onwards:

- Basic Price of Washed Coal for each year of MYT Period considered same as actual of average actuals during the period from April to November of FY 12-13.
- Basic Price of Raw Coal for each year of MYT Period considered same as actual of FY 11-12.
- Freight charges on Coal have been projected considering escalation rate based previous 6 year CAGR of railway freight and same applied on estimated prices of FY 12-13
- Other Charges on Coal considered same as average actuals during the period from April to November of FY 12-13
- Landed cost of Imported coal has been projected at the same rate as average actuals during the period from April to November of FY 12-13
- Landed Cost of Specific Oil (i.e. LDO) has been projected considering average actuals during the period from April to November of FY 12-13 and thereafter, applying escalation rate of 7.12%, which is 3-year CAGR of historic LDO prices. Based on the above discussion, RInfra-G has projected the Energy charges for the second MYT Control Period as shown in table below:

Table E.13: Fuel Cost for 2nd MYT Control Period

Particulars	UoM	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
Fuel Cost	Rs Cr	1,127.30	1,088.59	1,109.10	1,133.63
Energy Charge per unit (ex-bus)	Rs/kWh	2.820	2.874	2.928	2.985

A.4 Projection of Fixed Charges

1. Capital Expenditure and Capitalisation

- 1.1. RInfra-G submits that the generating station would be completing 20 years of operation in 2015. RInfra-G submits that there are various capex schemes that need to

be implemented because either the OEM of respective equipment has withdrawn inventory or service support or the technology has become obsolete and there will be no OEM support in future for such equipment. In such situations if the equipment is not upgraded to existing or upcoming technology, its failure and lack of spares or possibility of repair would mean forced shutdown of the generating station and loss of reliability and availability. RInfra-G submits that all DPRs pertaining to the proposed capital expenditure plan have been submitted to the Hon'ble Commission for In-principle approval. RInfra-G submits that 15 DPRs of various capex schemes having capitalization during the second MYT Control Period have been submitted to the Hon'ble Commission for in-principle approval. RInfra-G submits that there are few capex schemes, which have been identified during recently concluded annual overhaul and therefore the same could not be included in the capex plan submitted during the business plan petition in Case No 156 of 2011.

- *Procurement and Installation of IP and LP turbine Module in Unit # 2 (i.e. RInfra-G DPR/Business Plan/FY 11-12 to FY 15-16/DPR No 14)*
- *Refurbishment of Civil Structure at DTGS based on RLA Study (i.e. RInfra-G DPR/Business Plan/FY 11-12 to FY 15-16/DPR No 15)*

1.2. The Hon'ble Commission has accorded In-principle approval to twelve (12) DPR schemes till date. RInfra-G has included the capitalization for all capex schemes as submitted to the Hon'ble Commission for In-Principle approval, including those which are presently not approved in-principal. This is done in anticipation that the Hon'ble Commission would consider the criticality of the proposed schemes and expedite the process of according in-principal approval so that the same would be available for all schemes by the time MYT Order is issued. Based on the discussion above, a summary of proposed capital expenditure and capitalisation during each year of the MYT Period is as shown below. For the sake of easy understanding of all stakeholders, the capex schemes have been divided into broad categories of – R&M, Reliability Improvement, Compliance related, etc.

Table E.14: Priority based classification of projected Capitalization

Particulars	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
Renovation and Modernisation	48.19	46.46	45.71	80.28
Reliability Improvement	83.13	116.68	49.26	4.85
Safety Enhancement	6.73	18.40	2.13	0.30

Particulars	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
Energy Conservation	5.60	2.40	3.80	0.50
Legal Compliance	8.96	58.93	9.51	5.65
Total	152.61	242.87	110.41	91.58

2. Components of Fixed Charges

RInfra-G has computed various components of Annual Revenue Requirements in accordance with the MERC MYT Regulations, 2011.

2.1. Return on Equity: The capital structure considered for financing is 70:30 (Debt:Equity) as already stated above. In accordance with the same, the Return on Equity is determined at 15.5% on the opening level of equity for each year of the MYT Period. RInfra-G has considered the opening balance of regulatory equity for FY 2012-13 same the closing balance of the same considered by it as per its true-up petition for FY 2010-11 and FY 2011-12. The Hon'ble Commission, in its Order in Case No. 156 of 2011 made an observation about retirement of assets during the MYT Period. While no retirement was projected by RInfra-G in its business plan petition, in the present petition RInfra-G has considered asset retirement same as the actual value of FY 2010-11. RInfra-G submits that it has taken the value of FY 2010-11 and not FY 2011-12 as there was no annual overhaul during the latter year and therefore the asset retirement for FY 11-12 would be lower and un-representative. Accordingly, for the purpose of computing RoE for each year of the Control Period, 30% equivalent value of retired assets is subtracted from the equity eligible for return. Accordingly, the projected RoE for the second MYT control period is per the table below:

Table E.15: RoE for 2nd MYT Control Period (in Rs Cr)

Particular	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
Opening Regulatory Equity	541.95	587.18	659.48	692.04
Equity Portion of Capitalisation	45.78	72.86	33.12	27.47
<i>Less: Equity portion of retired Assets</i>	-0.56	-0.56	-0.56	-0.56
Closing Regulatory Equity	587.18	659.48	692.04	718.96
Total Return on Opening Regulated Equity	84.00	91.01	102.22	107.27

2.2. Operation & Maintenance Expenses: The Hon'ble Commission, in its Order in Case 156 of 2011, has approved O&M expenses for the MYT Control Period in line with the above referred Regulations. RInfra-G submits that even though MYT Regulations,

2011 specify 5.72% as the inflation factor for projecting O&M expenses for future years, the Hon'ble Commission, while carrying out Mid-term performance review / true-up ought to take actual inflation into account as encountered in the year, rather than limiting the allowed inflation to 5.72%. Accordingly, RInfra-G in the present petition has projected the O&M expenses for the second MYT control period based on following:

- Base O&M expenses same as approved by the Hon'ble Commission in Business Plan Order in Case No 156 of 2011 dated October 25, 2012
- Additional repair & maintenance expenses for FGD as Rs 7.50 Cr for each year
- Additional O&M expenses w.r.t. corporate expense allocation, same as submitted for FY 2011-12

Based on the discussion above, the projected RoE for the second MYT control period as in table below:

Table E.16: O&M Expenses for 2nd MYT Control Period (in Rs Cr)

Particular	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
Base O&M Expenses	108.92	115.13	121.72	128.68
Add: Repair & Maintenance Expenses	7.50	7.50	7.50	7.50
Add: Corporate Expense Allocation	8.33	8.33	8.33	8.33
Total O&M Expenses	124.75	130.96	137.55	144.51

2.3. Financial Plan and Interest on Loan Capital: As part of the Business Plan petition in Case No 156 of 2011, RInfra-G submitted that the proposed capital expenditure will be undertaken from the funds available from internal corpus only and there are presently no plans to draw any actual debt to meet capex requirements. However, if any actual external loan is subsequently availed during the course of the MYT Control period, details of the same will be submitted during mid-term review or end of control period review, as the case may be. The capital structure for each year of the MYT Period has been considered as 70:30 (Debt:Equity) in accordance with Regulation 30 of the MYT Regulations, 2011. With regard to the interest rate for loans drawn from FY 11-12 onwards for fresh capital expenditure, RInfra-G has considered an interest rate of 11.50% as per its earlier submissions, which have been approved by the Hon'ble Commission in its Orders in Case Nos. 163 and 156 of 2011. RInfra-G submits that in the present petition, as loans are only normative and not actual, the

repayment amount has been considered same as the available depreciation for the respective year of the MYT Period. In the present petition, RInfra-G has projected the Interest on loan capital for the second MYT control period based on the following:

- Repayment of normative debt same as depreciation during the year as considered by the Hon'ble Commission in Business Plan Order in Case No 156 of 2011 dated October 25, 2012
- Interest rate on all new normative debt corresponding to 70% of the capitalization of each year equal to 11.50%
- Interest rate on all outstanding debt as on April 1, 2011 has been considered same as approved by the Hon'ble Commission in its previous APR Orders of respective years.

Accordingly, the projected Interest on loan capital for the second MYT control period is worked out as shown in table below:

Table E.17: Interest on Loan Capital for 2nd MYT Control Period (in Rs Cr)

Particulars	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
Opening Loan Balance	186.61	265.93	406.10	457.00
Additions during Year	106.83	170.01	77.28	64.11
Repayments during Year	27.50	29.84	26.38	24.59
Closing Loan Balance	265.93	406.10	457.00	496.52
Gross Interest Expenses	20.75	33.90	45.24	50.68
Less: Interest capitalization	-	-	-	-
Net Interest Expenses	20.75	33.90	45.24	50.68

2.4. Interest on Working Capital: RInfra-G in the present petition has projected the Interest on working capital for the second MYT control period based on following:

- Considering the constituents as per MERC MYT Regulations 2011 and not considering receivables in accordance with Regulation 35.1 (d) of the MYT Regulations, 2011 as all power generated by RInfra-G is sold to RInfra-Distribution;
- Fuel Cost based on assumptions made in subsequent sections
- Interest on working capital based on prevailing SBI PLR as 14.50% for FY 12-13 and thereafter for remaining control period envisaging that the RBI will reduce the base rate and in turn will be reflecting the same in SBI PLR

Accordingly, the projected Interest on working capital for the second MYT control period as in table below:

Table E.18: IoWC for 2nd MYT Control Period (in Rs Cr)

Particular	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
Interest on Working Capital	15.03	14.91	15.52	15.99

2.5. **Depreciation:** Depreciation on assets for each year of the MYT Period is determined considering the rates as specified in the MYT Regulations, 2011. RInfa-G understands that the MERC MYT Regulations 2011 with respect to depreciation state that the rates notified under the said Regulations shall apply to assets for depreciation up to 70% of original cost and thereafter, the remaining depreciable value of the assets as on 31st March of the year shall be spread over the 'balance useful life' of the asset. However, the MYT Regulations only provide useful life of Coal/Lignite based thermal generating station as 25 years, while not specifying the useful life of different kind of assets. RInfra-G in the present petition has projected the depreciation for the second MYT control period based on following:

- Depreciation for each year of the Plan Period has been computed on new assets added in a given year, considering mid-year capitalization and rate as per MERC (MYT) Regulations 2011). i.e., depreciation is estimated on both opening balance as well as half of additions during the year
- Useful life of assets other than Plant & Machinery has been considered as defined in Companies Act 1956 as directed by the Hon'ble Commission
- Depreciation as per rates defined in MERC MYT Regulations 2011 has been considered up to 70% and thereafter the balance depreciation is equitably distributed over the balance useful life of the asset

Accordingly, the projected depreciation for the second MYT control period as in table below:

Table E.19: Depreciation for 2nd MYT Control Period (in Rs Cr)

Particular	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
Depreciation	27.50	29.84	26.38	24.59

2.6. **Income Tax:** In its previous petitions, including the Business Plan petition, RInfra-G has made detailed submissions regarding the interpretation of various judgments of the Hon'ble ATE, including Appeal No. 90 of 2007 and 173 and 174 of 2009. However, the Hon'ble Commission, in its Order in Case No. 156 of 2011, did not

consider the said submissions and approved the Income Tax for the MYT Period at the same level as the Income Tax approved for FY 2010-11 in its Order in Case No. 163 of 2011. RInfra-G, being aggrieved by the approach adopted by the Hon'ble Commission, with respect to the Income Tax, preferred an appeal with Hon'ble ATE and the outcome of such Appeal would influence the treatment of the Income Tax when actuals for any year of the MYT Period are considered by the Hon'ble Commission.

RInfra-G has submitted before the Hon'ble ATE that the approach adopted by the Hon'ble Commission in its Orders in Case Nos. 163/167/180 of 2011 is not a correct approach as the Hon'ble Commission has, while determining allowable Income Tax, has not considered the separate segments of RInfra as isolated from one another and has actually merged the taxable income of one segment with that of the other. This has also resulted in the taxable incomes of the regulated and un-regulated segments of the company getting merged with one another, which are otherwise governed by different jurisdictions. For instance, if the adjustments made in the taxable income of the un-regulated segments for the purpose of claiming benefit under some provision of the Income Tax Act, the merging of income with regulated segments implies that such benefit gets passed on the regulated segment, as well. In other words, the approach of the Hon'ble Commission results in the regulated segments of the company subsidizing or getting subsidized by the un-regulated segment.

RInfra-G submits that various judgment awarded by the Hon'ble ATE has specifically prohibited the cross-subsidization of benefits of regulated businesses with un-regulated businesses and vice-versa and categorically mentioned to consider the regulated segments of the business in isolated manner. RInfra-G submits that the judgment of the Hon'ble ATE stating that the utility should not gain or lose on account of Income Tax should be applied on the concerned segment of the utility, which is regulated. In RInfra's opinion, the two opinions of the Hon'ble ATE – one where it has ruled that each regulated compartment should be seen in isolation for the purpose of determining allowable Income Tax and the other where it has ruled that Licensee should not gain or lose on account of Income Tax, can be married only when the Licensed compartment's Income Tax is determined separately in accordance with

the applicable provisions of the Income Tax Act. Consequently, there shall be no gain or loss on such compartment's tax liability.

RInfra-G has, for the purpose of projection of Income Tax, however considered the Income Tax for different years of the MYT control period, same as approved by the Hon'ble Commission in its Business Plan Order in Case No 156 of 2011 dated October 25, 2012. The above submission is without prejudice and contentions raised in appeal pending with Hon'ble ATE and the contentions expressed hereinabove. Accordingly, the projected income tax for the second MYT control period as in table below:

Table E.20: Income Tax for 2nd MYT Control Period (in Rs Cr)

Particular	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
Income Tax	17.80	17.80	17.80	17.80

2.7. Non Tariff Income: RInfra-G in its business plan in Case No 156 of 2011 has submitted that DTPS is not involved in any other business that can yield significant revenue to be considered as NTI (i.e. except the sale of fly ash, Interest on loans given to employees and marginal sale of scrap or obsolete stocks, if any). RInfra-G projects the annual non-tariff income of about Rs 15.91 Cr for each year of the MYT Period. The projection of Non-Tariff Income is based on the following:

- *Considering actual Non tariff income realized during the period from April- November of FY 12-13 and the projecting the same for remaining period of FY 12-13.*
- *NTI for different years of the MYT control period same as of FY 12-13*

Table E.21: NTI for 2nd MYT Control Period (in Rs Cr)

Particular	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
Non Tariff Income	15.91	15.91	15.91	15.91

2.8. Revenue Gap of FY 12-13: RInfra-G submits that in the present petition, the revenue considered for FY 12-13 is based on the Order of the Hon'ble Commission in Case No 99 of 2009 dated September 8, 2010. In addition to this, for the purpose of FAC, the normative rate of energy charge and net generation, has been considered for the period of April to November of FY 12-13, the same has been submitted to the Hon'ble Commission as part of FAC proceedings. For remaining months of the year, both the normative energy charge and generation has been considered same as of

November. RInfra-G submits that in the revenue claim, based on the difference of actual and normative PLF has also been included and the same has been considered for remaining period of FY 12-13 (i.e. the details are being submitted in form F 9 of the financial model). The present petition is being submitted during the course of FY 12-13, when majority of the financial year is already over. In all probability, the MYT Order of the Hon'ble Commission will only become applicable, for the purpose of revised tariffs, from FY 13-14 onwards and during FY 12-13, the current approved energy and fixed charges only will continue. Accordingly, in this petition, RInfra-G has projected the likely revenue gap of FY 12-13 based on the forecast ARR as shown in this petition and the likely revenue to be realized during the year considering present tariffs and energy generation as projected in this petition. As the revenue gap is only provisional at this stage, the same is added to the fixed charges of FY 13-14 without considering any carrying cost. The issue of carrying cost on such revenue gap would be arise when the same is true-up by the Hon'ble Commission during the mid-term performance review and the trued-up approved amount (incremental) is added to the subsequent year's ARR for recovery. The estimated revenue gap of FY 12-13, which will be included in the Fixed Charges of FY 2013-14 is as shown below:

Table E.22: Estimated Revenue Gap of FY 2012-13

Particulars	Amount (Rs. Cr.)
Projected ARR as per the present petition	1,401.22
Estimated Revenue at current tariffs	1,303.67
Estimated Revenue Gap of FY 12-13	97.56

2.9. Fixed Charges: Based on the projection of individual expenses as discussed above, RInfra-G has estimated the fixed charges for the respective years of the second MYT control period as shown in the table below:

Table E.23: Fixed Charges for 2nd MYT Control Period (in Rs Cr)

Particular	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
O&M Expenses	124.75	130.96	137.55	144.51
Depreciation	27.50	29.84	26.38	24.59
Interest on Loan Capital	20.75	33.90	45.24	50.68
Interest on Working Capital	15.03	14.91	15.52	15.99
Return on Equity	84.00	91.01	102.22	107.27
Less: Non Tariff Income	15.91	15.91	15.91	15.91
Fixed Charges	256.13	284.71	310.99	327.12

Particular	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
Income Tax	17.80	17.80	17.80	17.80

Accordingly, the total ARR for each year of the second MYT Control Period is projected as shown in the table below:

Table E.24: ARR for 2nd MYT Control Period (in Rs Cr)

Particulars	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
Fuel Related Expenses	1,127.30	1,088.59	1,109.10	1,133.63
Operation & Maintenance Expenses	124.75	130.96	137.55	144.51
Depreciation	27.50	29.84	26.38	24.59
Interest on Long-term Loan Capital	20.75	33.90	45.24	50.68
Interest on Working Capital	15.03	14.91	15.52	15.99
Income Tax	17.80	17.80	17.80	17.80
Cumulative Revenue Gap till FY 11-12 including Carrying Cost	-	36.37	-	-
Provisional Revenue Gap of FY 12-13 at existing tariff		97.56		
Total Revenue Expenditure	1,333.13	1449.92	1,351.59	1,387.19
Add: Return on Equity Capital	84.06	91.36	103.03	108.08
Less: Other Income	15.91	15.91	15.91	15.91
Aggregate Revenue Requirement	1,401.28	1525.02	1,438.71	1,479.36