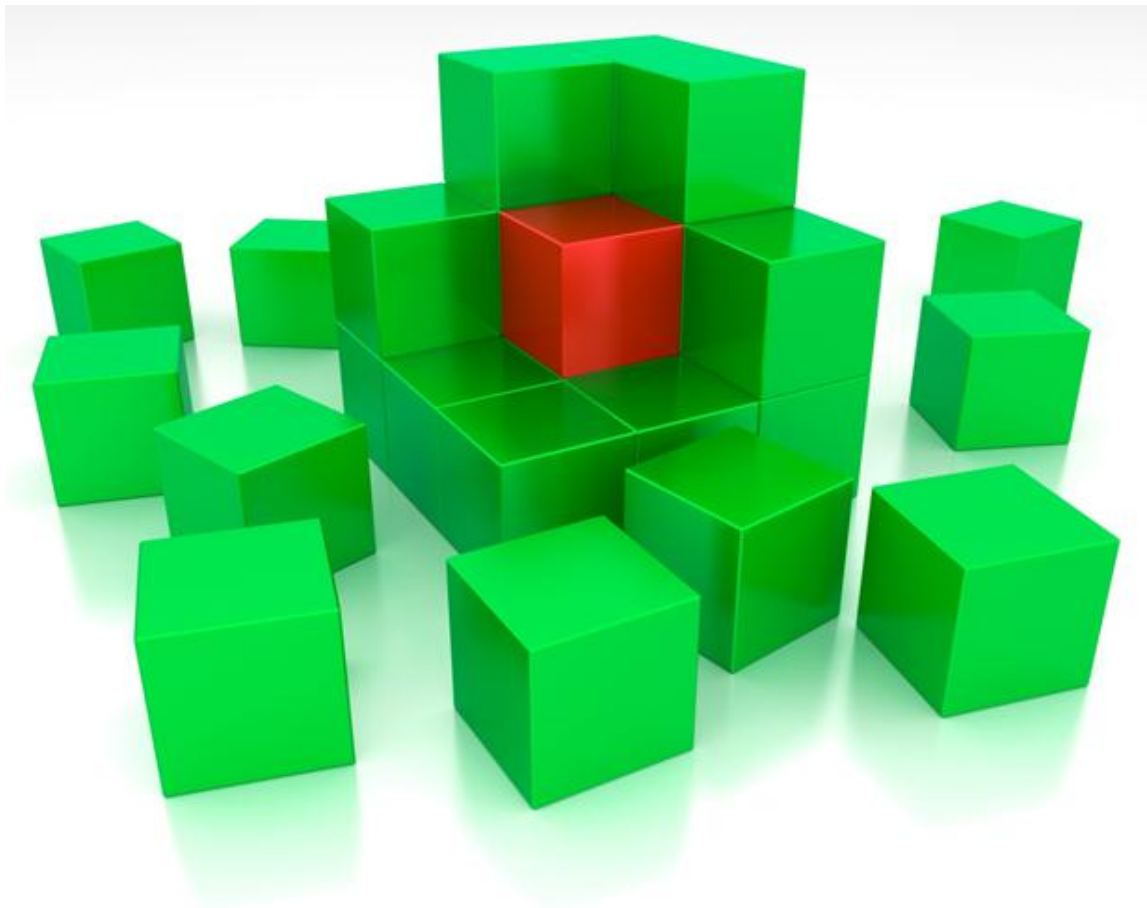




# Pre- Feasibility Study for double circuiting of 400kV RTPS to Guttur Transmission Line

Pre-Feasibility Report- Draft for finalisation



**Submitted By**  
**Deloitte Touche Tohmatsu India Private Limited**

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# 1 Executive Summary

This pre-feasibility study introduces investment opportunity for a transmission package that envisages conversion of existing 400kV Twin Moose single circuit transmission line by Quad Moose double circuit line.

The report outlines the project cost for the key elements of the transmission package based on the available benchmarks for similar projects. A detailed financial feasibility model has been prepared for the package encompassing the project cost assumptions, debt equity structure, O&M estimates and expected returns from the project. Estimation of the Annual Rate of Return (ARR) for the package has been carried out based on the normative parameters provided under the KERC Tariff Regulations 2006. Project viability parameters viz. Project IRR & Equity IRR has been computed based on the ARR of the scheme.

The project operating framework envisages establishment of the package on a PPP route by way of selection of a private developer. The report identifies two PPP models being used in the country for development of transmission projects. This includes the IPTC route adopting the Competitive Bidding Guidelines issued by Ministry of Power, GoI and the Standard Bidding Documents (RFQ, RFP, TSA) framed thereunder. The other approach is the Viability Gap Funding (VGF) model based on the RFP documents issued by Ministry of Finance and associated concession agreements provided therein.

The report identifies the benefits and drawbacks of both the models and gives a glimpse of the adoption of these models for transmission projects across the country. The report also captures the risk elements associated with the commercial framework of the transmission projects. The report finally provides insights on the timelines for the PPP framework and the associated legal and regulatory framework to be considered while adoption of these models.

## 2 Introduction & Scope of Study

### 2.1 Introduction

- KPTCL has proposed a transmission package for implementation. This consists of 'Conversion of existing 400kV Twin moose Guttur-JSW-BTPC-RTPS line by Quad Moose conductor', which is envisaged as an evacuation cum system strengthening scheme for the Yeramarus & Edlapur generating stations which are under implementation.
- The details of work required to be undertaken under the package are detailed in table below:

Package 1 : Conversion of existing 400kV Twin moose Gutur-JSW-BTPC-RTPS line by Quad Moose conductor	Unit
400 kv Bays at BTPS & Guttur	4 No.
400kv Quad Moose D/C Transmission line	300 kms

### 2.2 Objective & Scope of Study

The objective of this feasibility study is to carry out a financial analysis for the aforesaid transmission package to enable investment in this project through PPP route. The scope of the study comprises of estimation of project costs for the package, development of a financial model and identification of project viability parameters. The scope also envisages identifying available PPP models for transmission project and providing information on the key risks envisaged through such PPP routes.

## 3 Project Cost Estimates

### 3.1 Project Cost Break up

- As enumerated in Section 2 of this report, the project comprises of Conversion of existing 400kV Twin moose Guttur-JSW-BTPC-RTPS line by Quad Moose conductor
- Project Cost for the package is estimated as **Rs.542 Cr.** The project cost has been considered based on current cost of construction of bays, putting up sub-station of necessary specifications, transmission line of given configuration, etc.
- The breakup of the proposed cost is summarized in table below:

Conversion of existing 400kV Twin moose Guttur-JSW-BTPC-RTPS line by Quad Moose conductor

Particulars		Cost (Rs. Crs per unit)	Unit	Total Cost (Rs. Crs)
400 kv Bays at BTPS & Guttur	2+2 nos	8.00	per bay	32.00
400kv Quad Moose	300 kms	1.70	per km	510.00
<b>Total Cost</b>				<b>542.00</b>

## 4 Financial Analysis

### 4.1 Project Cost funding

- In line with the KERC Tariff Regulations, the capital funding of the transmission package has been considered as 30% equity and 70% debt. The breakup of funding is detailed in table below:

Particulars	Unit	Amount (Rs. Crs)
Equity	30%	163
Debt	70%	379
<b>Total Hard Cost</b>	<b>100%</b>	<b>542</b>

- Loans are expected to be available at an interest rate of 12% with two year construction period, six month moratorium and repayment over ten years. The repayment of the loan would be made in 40 equal quarterly instalments.

### 4.2 Total Cost including IDC & Financing Cost

- The time frame envisaged for setting up the transmission package is expected to be 24 months. This would include approval of capital scheme from the Regulatory Commission, arrange funds from debt and equity, undertake route survey, acquire land for substation, award EPC, etc. Therefore, a total of 2 years (24 months) has been envisaged for the complete construction and commissioning of the package.
- One time financing charges of 1% has been considered on the loan amount and IDC based on quarterly drawl of loan facility has been considered. Margin money of 30% has been considered for working capital loan purpose. The details of the total project cost is summarized in table below:

Particulars	Amount (Rs. Crs)
Basic or Hard Cost	542.00
Financing Charges	4.18
IDC	43.32
Capital Cost w/o Margin Money	589.50
Margin Money	7.08
<b>Total Capital Cost</b>	<b>596.58</b>

### 4.3 Projections for Cost Elements

- The various cost elements have been projected based on the KERC (Terms and Conditions for Determination of Transmission Tariff) Regulations, 2006.

#### **Operation & Maintenance Cost**

- O&M cost that comprise of employee cost, repairs & maintenance expense and administrative & general expense have been projected considering the norm for O&M expenses per ckt-kms and per bay provided in the KERC Tariff Regulations. The norm for O&M expense as provided in the KERC Tariff Regulations are as follows:

O&M Expenses	FY 09-10 (Rs. in lakh)
Transmission line (per ckt-km)	0.277
Substation (per bay)	34.22

- An escalation factor of 5% has been considered for the purpose of projection of O&M expense for each year.

#### **Interest on Term Loan**

- Interest cost on term loans has been considered as per 12.00% rate of interest. Repayment has been considered in 40 equal quarterly installments.

#### **Interest on Working Capital**

- Interest on Working Capital has been computed based on normative basis as per the Tariff Regulations, 2006. Working capital requirement for each year has been determined considering the following parameters:

O&M Expenses	One month
Maintenance spares	1% of the historical cost of assets
Receivables	Equivalent to two months of transmission charges

- Further, a rate of interest of 14.00% has been considered on the working capital requirement, being the SBI Prime Lending Rate as on 1st April of the respective year. This is in line with the KERC Tariff Regulations, 2006 which states that "Rate of interest on working capital shall be on normative basis and shall be equal to the short-term Prime Lending Rate of State Bank of India as on 1st April of the year."

#### **Return on Equity**



- As per the Tariff Regulations, 2010, the transmission licensee is entitled for a Return on Equity (RoE) of 14% subject to a cap of equity being 30% of the total project cost. The same has been considered in case of computing the return on equity for the transmission project.

#### Taxes on Income

- As per the Regulations, “Taxes on Income, if any, on the income stream of the licensed business of the Transmission Licensee shall be treated as an expense and shall be recoverable through ARR/tariff.” Since tax is a pass through while computing the ARR of any transmission licensee, the same has been computed considering the current income tax rate i.e. 32.45% on the RoE computed for the project.

#### Depreciation

- Depreciation has been calculated on straight line method on the historical cost of assets as per the rate approved in the KERC Tariff Regulations 2006. Also, a residual life of the asset has been considered as 10% and depreciation has been computed up to a maximum of 90% of the capital cost of the asset. The depreciation rates considered for computing the depreciation each year are provided in table below:

Category of Assets	Depreciation Rate
Land	0%
Transmission Lines	2.57%
Substations	3.60%
Transformers	3.60%

## 4.4 Annual Revenue Requirement

- Based on the various expense parameters discussed above the total annual revenue requirement (ARR) of the package has been computed.

Years	Annual Revenue Requirement (Rs. Crs)
Year 1	104.28
Year 2	100.09
Year 3	95.12
Year 4	90.15
Year 5	85.20
Year 6	80.25
Year 7	75.32
Year 8	70.39
Year 9	65.48
Year 10	60.57

Years	Annual Revenue Requirement (Rs. Crs)
Year 11	56.32
Year 12	55.92
Year 13	56.19
Year 14	56.46
Year 15	56.75
Year 16	57.05
Year 17	57.37
Year 18	57.70
Year 19	58.05
Year 20	58.42
Year 21	58.80
Year 22	59.21
Year 23	59.63
Year 24	60.08
Year 25	60.55
...	...
...	...
Year 35	65.46

- The above ARR has been considered as the revenue to be realized from the beneficiaries of the transmission network considering the project life of 35 years.

## 4.5 Financial Analysis

- Based on the above mentioned assumptions for revenue and expenses, the Profit and Loss for the transmission package has been prepared. The respective P&L statement is annexed as Annexure 1 to this report. The P&L statement has been showcased for the first 25 years of the project out of a life span considered of 35 years.

## 4.6 Project & Equity IRR

- The financial results for the base case are indicated in the table below:

Result	Package 1
Project IRR	9.23%
Equity IRR	13.36%

- The base case analysis is primarily based on the assumptions as per the KERC Tariff Regulations 2006. The project IRR is 9.23%, while equity IRR is observed to be 13.36%, respectively.
- In view of the fact that the project would be undertaken by KPTCL which is operating under the regulated environment and earning return on equity of 14%, equity IRR of 13.36%, respectively may be considered as appropriate.

## 4.7 Scenario Analysis

- Since all parameters of the ARR including interest cost, depreciation, interest on working capital, tax, etc. would be considered as per the Transmission Tariff Regulations, the major risk lie at the O&M front. While the KERC Tariff Regulations provide for O&M norms for new transmission substations and lines, there has been no differentiation of the O&M norm for the voltage level (in case of bays) and type of conductor (single/ twin/ triple/ four or more). Also, these norms are low as compared with the CERC approved O&M norms for transmission lines and substations in the CERC (Terms and Conditions of Tariff) Regulations, 2009. A comparison of the CERC norms with the KERC norms is provided in table below:

### Comparison of CERC & KERC O&M Norms for Transmission Lines and Sub-stations

Particulars	As per CERC (2009-10)	As per KERC (2009-10)
<b>Transmission Lines</b>	<b>Rs. Lakh per km</b>	<b>Rs. lakh per km</b>
Single Circuit (Bundled conductor with four or more sub-conductors)	0.537	0.277
Single Circuit (Twin & Triple Conductor)	0.358	0.277
Single Circuit (Single Conductor)	0.179	0.277
Double Circuit (Bundled conductor with four or more sub-conductors)	0.940	0.277
Double Circuit (Twin & Triple Conductor)	0.627	0.277
Double Circuit (Single Conductor)	0.269	0.277
<b>Sub-stations</b>	<b>Rs. Lakh/bay</b>	<b>Rs. Lakh/bay</b>
765 kV	73.36	34.22
400 kV	52.40	34.22
220 kV	36.68	34.22
132 kV and below	26.20	34.22

- Therefore, in order to assess the impact of the higher than approved O&M expense a scenario analysis has been undertaken considering the actual O&M expense in line with the CERC norms. The impact on Project/ Equity IRR are summarized in table below:

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Result	Package 1
Project IRR	7.52%
Equity IRR	9.63%

As observed from the above table, any adverse change in O&M expense would result in reducing the returns from the project and make the project completely unviable

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## 5 Legal & Regulatory Framework

### 5.1 KERC Tariff Regulations 2006

The Karnataka Electricity Regulatory Commission (Terms and Conditions for Determination of Transmission Tariff) Regulations 2006 provide for adoption of tariff determined through transparent process of bidding in accordance with the guidelines issued by the Central Govt. The tariff adopted by the Commission (KERC) shall therefore essentially be determined through the PPP framework established by the MoP, Gol. This entails adoption of the Tariff Based Competitive bidding guidelines for transmission service issued by MoP and conducting a competitive bid process based on the Standard Bidding Guidelines issued under the ambit of the bidding guidelines.

### 5.2 Tariff based Competitive-bidding Guidelines for Transmission Service

Tariff based Competitive Bidding Guidelines for Transmission Service and Guidelines for encouraging competition in Development of Transmission Projects (both referred to as 'Bidding Guidelines' or 'Guidelines' henceforth) have been framed under the above provisions of section 63 of the Act ('The Electricity Act 2003').

Unlike generation projects, transmission investment and addition is planned largely under the National Transmission Plan with network plans finalized by CTU/STU. Unlike in the case of competitive bidding in generation, distribution beneficiaries do not plan for their transmission needs or solicit transmission investments. The Guidelines therefore provide for an apex structure to coordinate private participation in transmission and solicit investments. This is termed as the Empowered Committee, which can nominate a Bid Process Coordinator to conduct the bid process.

In the case of inter-state projects, the Empowered Committee identified PFC Ltd and REC Ltd as the two Bid Process Coordinators to run the bid process for a first set of 14 identified new build transmission projects. This approach has also been enumerated by other states to identify private participation under the PPP framework for augmentation and strengthening of the state transmission networks.

The structure of the tariff bids for these projects is as follows.

- Bidders to quote in terms of Escalable and Non-Escalable Transmission Charges for each year over the term of the Transmission Service Agreement (TSA)
- Ratio of minimum and maximum Quoted Transmission Charges during the term of TSA shall not be less than 0.7

The quoted tariffs are levelised over the term of the TSA and the pre-qualified bidder quoting the lowest tariff is selected as the Successful Bidder to Build, Own, Operate and Maintain (BOOM) the project over the term of the TSA.

### 5.3 Guidelines for Financial Support to PPP in Infrastructure

A different approach to PPP projects in transmission is to adopt the Viability Gap Funding model with the objective of making the PPP project commercially viable. This is based on the Scheme for Financial Support to infrastructure projects that are to be undertaken through PPPs notified by Ministry of Finance, Gol and are applicable to state support schemes. This approach is based on the 'Grant/Premium' way of allocating the project. The revenue stream to the developer is fixed upfront with a tentative cost estimate being provided to all the bidders. The bidder quoting lowest grant/highest premium is the selected developer. This scheme is however based on Build, Own, Operate and Transfer (BOOT) approach. This approach has been used by Haryana to award the Jhajjar transmission evacuation project.

## 6 Operating Framework

### 6.1 PPP operating framework

- As mentioned in Section 5, there are essentially two (2) models for awarding project to private players under a competitive bidding framework viz. Award of transmission projects under IPTC approach notified by MoP and Viability Gap Funding Model based on the guidelines issued by MoF.
- The IPTC approach notified by MoP has been extensively used at the central level for almost eight (8) inter-state IPTC transmission projects and adopted by states like Rajasthan, UP for their transmission schemes.
- The outcomes of the bid process for some of the inter-state IPTC projects, beginning with the Successful Bidder for each project and its associated lowest levelized tariff quote is annexed as Annexure 2 of this report for information.
- There are a few similarities in both the models. Under both these models, the private investor arranges financial resources and undertakes construction, maintenance and operation of the transmission line for an annual transmission charge paid by the beneficiary. This implies that all project related risks are taken by the private investor. However, in terms of eligibility requirement there is a difference in the way both the models treat interested private investors. While, the Ministry of Power does not consider experience in the transmission space to be one of the requirements, the Planning Commission model provides benefit to private investors who have experience in the transmission space. In terms of scope of activities to be undertaken by both the parties, both models are on similar ground – besides the development of the project, the models also provide that private investor would be responsible for the operation and maintenance of the project. The operation and maintenance of the project can be undertaken by the private investor or can be undertaken by any of the third parties hired by the project developer.
- For information, the comparison of both the models is summarized below:

Parameters	Development Models	
	Ministry of Finance/ Planning Commission	Ministry of Power
Project Cost	Estimated project cost is indicated by the bid coordinator. This primarily indicates that it is not a pure competitive bidding.	Project cost indication is not provided. Bidder is free to decide upon the project cost and quote transmission charges accordingly.
Regulatory Approval	Prior regulatory approval required, as the model sets an upfront tariff for the transmission project.	No prior approval required if the MoP provided standard bidding documents have been used. Regulatory approval may be sought only if deviations are taken from standard bidding

		documents.
Viability Gap Funding	Viability Gap Funding (VGF) based on grant, if sought. The grant may be in the form of equity and/or O&M expenses.	Requires project cost and the operation and maintenance cost to be completely borne by the private developer.
Asset Ownership	At the end of the concession period the asset is transferred to the Utility. Project is developed under DBFOT (Design, Build, Finance, Operate, Transfer) Model.	There is no provision for transfer of the asset. The asset is always owned by the project company. Project is developed under the BOOM (Build, Own, Operate, Maintain) model.
Selection Criteria	Bid parameter is the lowest financial grant (Viability Gap Funding) required by bidders for the project or the highest premium offered by the bidder.	Levelized Annual transmission charges quoted by the bidders to the project. This Annual transmission charges is inclusive of project capital cost and the operation and maintenance cost for the project life.  Bidders have the option of quoting the transmission charges split in to partly variable and partly fixed cost.
Eligibility	A natural person, single entities or group of entities in consortium can bid for the project	Company or a Consortium of Companies can bid for the project
Number of bidders	Not more than 6 bidders are to be considered	There is no restriction on maximum number of bidders. Minimum number of bidders prescribed for ensuring competitiveness is two.

## 6.2 Key Challenges

- In either of the two approaches, there are a few inherent challenges faced by the project proponents and the project developers. These are tabulated below for reference.

Risk Element	Particulars
Approvals	Private developers are responsible for obtaining all approvals and clearance related to the project. Since transmission projects transverse long distances each tower location could be considered as one specific project (specifically in the Indian context). Further, forest clearances take long time. Any delay in approval leads to cost escalation.
Right of Way	Transmission lines per se do not need any land acquisition. However, it requires that Right of Way be obtained for constructing/laying the tower. As per

	<p>the Telegraphic Act, only crop compensation is to be paid to the farmers for RoW and no additional payouts are envisaged. In practice though, obtaining RoW involves not just crop compensation but additional payments to the land owner to enlist his cooperation in ensuring the towers are installed in time.</p> <p>For almost all developers the cost attached to right of way is impossible to estimate accurately and varies widely depending on the negotiations at the local level.</p>
Cost Escalation	<p>Cost escalation is not a pass through for private developers. This is always a concern since most of the project could be delayed on account of lack of approvals within the permitted time and also lack of right of way for laying the transmission towers.</p> <p>Transmission projects are structured under a competitive tariff bidding route. Bidders are entitled to an agreed tariff over the period of the project. At the time of bid submission the bidders assume certain level of capital expenditure. However, there are high probabilities of escalation in cost owing to delays in approvals related to the project. Besides, volatilities in the cost of input materials cannot be predicted with precision. The bidder therefore has to be prepared to bear cost escalation in the project cost. The bidding framework does not provide for any cost pass through – in-fact the bidding framework does not require any disclosure of project cost assumed by the developer.</p>
Financial Closure	<p>With fuel side issues affecting certain generation projects, transmission projects which are linked to evacuation of power from such generation projects are viewed as risky and have been affected.</p>
Payment Risk	<p>With the onset of the 'point of connection' regime there has been a structural change in the modalities of Transmission Charges and its routing to the transmission service provider.</p> <p>Point of Connection regime provides for generation companies, who haven't identified their procurers to also be a beneficiary under the TSA and take on obligations for payment of transmission charges.</p> <p>While PGCIL obtains a deposit from all private generation players, as part of the application process for connection to the inter-state grid, this security is not available to Transmission Service Providers.</p> <p>Private players bidding for transmission projects have represented for enhancement in the security obtained by PGCIL and to allow for this to be passed on to the Transmission Service Provider in case of defaults in timely execution of generation projects by the private developer.</p>



## 7 Way Ahead

### 7.1 PPP Implementation

- The transmission package identified in this report may be awarded under either of the two PPP approaches discussed in Section 6. The implementation steps for a PPP project, irrespective of the model being used, are enumerated as under:

(a) Completion of preparatory works

In case of VGF approach, the key project proponent shall be the amount of budgetary support required to be created for addressing the requirement of any grant. The amount of budgetary support can be determined on the basis of the ARR of the project computed on the basis of the estimated project cost. The budgetary support shall however be an derived figure and accordingly variation to the extent of plus/minus 10% should be allowed to address any contingency.

In addition, a specified Unitary Charge shall be required to be computed under the VGF approach. This Unitary Charge shall be the fixed revenue for the bidder for each year and shall be required to be mentioned in the bid document. The base unitary charge shall be escalated/reduced as per the provisions of the bid document.

For both the approaches, preparatory works also include formation of a project monitoring committee, bid process co-ordinator and bid evaluation committee.

(b) Finalization of bid documents

Bid documents viz. RFQ, RFP, Concession Agreement/TSA etc. need to be formulated based on the available standard bidding documents available under both the models

(c) Invitation of bids

Bids need to be invited based on the timelines as provided under the bidding guidelines. Bids are invited by the bid process co-ordinator. The timelines for both the approaches are more or less similar, 210 days for VGF model and 240 days for IPTC model. In case of VGF model, the approval of grant from concerned PPP cell may require an additional 30 days. These timelines are for a two stage process comprising of RFQ and RFP bids. A single stage process under the IPTC route can be completed in just 180 days.

(d) Pre-bid conference

Pre-bid conference is required to address the bidder's queries at each stage of bid process. Depending upon the complexity of the projects, number of pre-bid conference can be more than one.

(e) Evaluation of Bids

Bid evaluation is usually done by a bid evaluation committee and the report submitted by the evaluation committee completes the evaluation process resulting in award of letter of

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award to the successful developer. In case of IPTC model, the selected transmission charges need to be adopted by the appropriate regulatory commission for award of transmission license.

(f) Signing of Agreement

The selected developer has to sign the concession agreement/TSA with the beneficiary within the specified timeframe from the issuance of Letter of Award.

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## 8 Annexures

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## 8.1 Annexure 1: P&L Statement

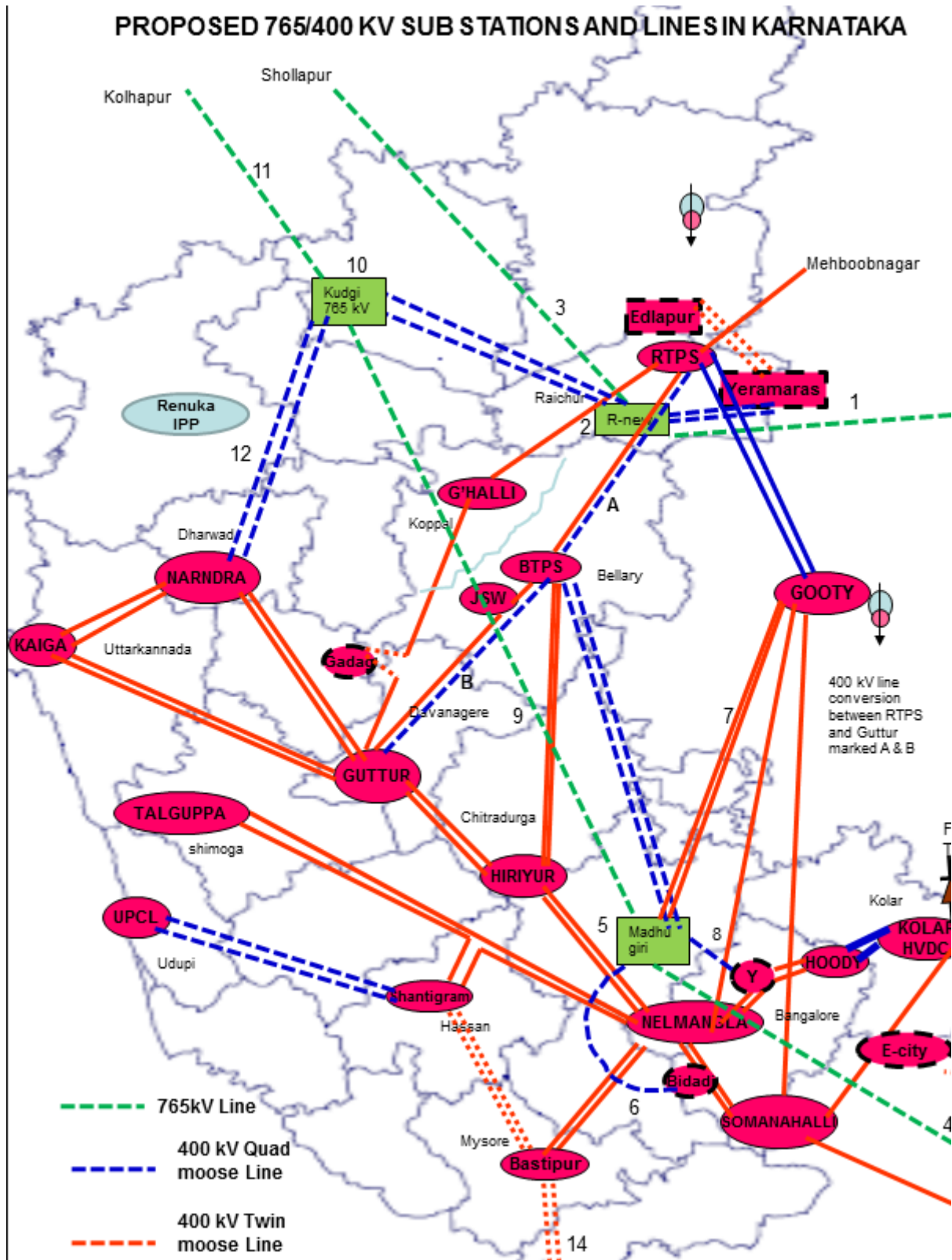
### Profit & Loss Statement

Particulars	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20	Year 21	Year 22	Year 23	Year 24	Year 25	
<b>Total Income</b>	<b>104.28</b>	<b>100.09</b>	<b>95.12</b>	<b>90.15</b>	<b>85.20</b>	<b>80.25</b>	<b>75.32</b>	<b>70.39</b>	<b>65.48</b>	<b>60.57</b>	<b>56.32</b>	<b>55.92</b>	<b>56.19</b>	<b>56.46</b>	<b>56.75</b>	<b>57.05</b>	<b>57.37</b>	<b>57.70</b>	<b>58.05</b>	<b>58.42</b>	<b>58.80</b>	<b>59.21</b>	<b>59.63</b>	<b>60.08</b>	<b>60.55</b>	
Operating Expenses																										
OM Cost	2.94	3.10	3.25	3.41	3.58	3.76	3.95	4.15	4.36	4.57	4.80	5.04	5.29	5.56	5.84	6.13	6.43	6.76	7.09	7.45	7.82	8.21	8.62	9.05	9.51	
Total Operating Expenses	2.94	3.10	3.25	3.41	3.58	3.76	3.95	4.15	4.36	4.57	4.80	5.04	5.29	5.56	5.84	6.13	6.43	6.76	7.09	7.45	7.82	8.21	8.62	9.05	9.51	
<b>PBDIT</b>	<b>101.34</b>	<b>96.99</b>	<b>91.87</b>	<b>86.74</b>	<b>81.62</b>	<b>76.49</b>	<b>71.37</b>	<b>66.24</b>	<b>61.12</b>	<b>56.00</b>	<b>51.52</b>	<b>50.88</b>	<b>50.89</b>	<b>50.90</b>	<b>50.91</b>	<b>50.92</b>	<b>50.93</b>	<b>50.94</b>	<b>50.96</b>	<b>50.97</b>	<b>50.98</b>	<b>51.00</b>	<b>51.01</b>	<b>51.03</b>	<b>51.04</b>	
Depreciation	15.47	15.51	15.51	15.51	15.51	15.51	15.51	15.51	15.51	15.51	15.51	15.51	15.51	15.51	15.51	15.51	15.51	15.51	15.51	15.51	15.51	15.51	15.51	15.51	15.51	
<b>PBIT</b>	<b>85.87</b>	<b>81.48</b>	<b>76.36</b>	<b>71.23</b>	<b>66.11</b>	<b>60.98</b>	<b>55.86</b>	<b>50.74</b>	<b>45.61</b>	<b>40.49</b>	<b>36.01</b>	<b>35.37</b>	<b>35.38</b>	<b>35.39</b>	<b>35.40</b>	<b>35.41</b>	<b>35.42</b>	<b>35.44</b>	<b>35.45</b>	<b>35.46</b>	<b>35.47</b>	<b>35.49</b>	<b>35.50</b>	<b>35.52</b>	<b>35.53</b>	
Interest on WC	3.29	3.20	3.08	2.97	2.86	2.74	2.63	2.52	2.40	2.29	2.20	2.19	2.20	2.21	2.22	2.23	2.24	2.25	2.26	2.28	2.29	2.30	2.32	2.33	2.35	
Interest on Term Loan	49.49	45.10	40.09	35.08	30.07	25.06	20.04	15.03	10.02	5.01	0.63	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
<b>PBT</b>	<b>33.09</b>	<b>33.19</b>	<b>33.19</b>	<b>33.19</b>	<b>33.19</b>	<b>33.19</b>	<b>33.19</b>	<b>33.19</b>	<b>33.19</b>	<b>33.19</b>	<b>33.19</b>	<b>33.19</b>	<b>33.19</b>	<b>33.19</b>	<b>33.19</b>	<b>33.19</b>	<b>33.19</b>	<b>33.19</b>	<b>33.19</b>	<b>33.19</b>	<b>33.19</b>	<b>33.19</b>	<b>33.19</b>	<b>33.19</b>	<b>33.19</b>	
Tax	8.11	8.13	8.13	8.13	8.13	8.13	8.13	8.13	8.13	8.13	8.13	8.13	8.13	8.13	8.13	8.13	8.13	8.13	8.13	8.13	8.13	8.13	8.13	8.13	8.13	
<b>PAT</b>	<b>24.99</b>	<b>25.06</b>	<b>25.06</b>	<b>25.06</b>	<b>25.06</b>	<b>25.06</b>	<b>25.06</b>	<b>25.06</b>	<b>25.06</b>	<b>25.06</b>	<b>25.06</b>	<b>25.06</b>	<b>25.06</b>	<b>25.06</b>	<b>25.06</b>	<b>25.06</b>	<b>25.06</b>	<b>25.06</b>	<b>25.06</b>	<b>25.06</b>	<b>25.06</b>	<b>25.06</b>	<b>25.06</b>	<b>25.06</b>	<b>25.06</b>	
Profit Margin	24%	25%	26%	28%	29%	31%	33%	36%	38%	41%	44%	45%	45%	44%	44%	44%	44%	43%	43%	43%	43%	42%	42%	42%	41%	

## 8.2 Annexure 2: Select IPTC bids

Project	Award Year	Bidder	Levelised Tariff (Rs. Mn./year)	Est. Project Cost (Rs. mn)
East North Interconnection Company Ltd.	October 2006	<ul style="list-style-type: none"> <li>• Sterlite Technologies</li> <li>• Lanco Deepak Consortium</li> <li>• Reliance Power Transmission Limited</li> </ul>	<ul style="list-style-type: none"> <li>• 1188.00</li> <li>• 1676.90</li> <li>• 2400.00</li> </ul>	8,000
Talcher II Transmission Lines	April 2010	<ul style="list-style-type: none"> <li>• Reliance Power Transmission</li> <li>• L&amp;T Transco Pvt. Ltd</li> <li>• L3</li> <li>• Sterlite Technologies</li> </ul>	<ul style="list-style-type: none"> <li>• 1440.00</li> <li>• 2094.00</li> <li>• 2510.00</li> <li>• 2279.90</li> </ul>	14,000
North Karanpura	May 2010	<ul style="list-style-type: none"> <li>• Reliance Power Transmission</li> <li>• Lanco Deepak Consortium</li> <li>• L&amp;T Transco Pvt. Ltd.</li> <li>• Sterlite Technologies</li> </ul>	<ul style="list-style-type: none"> <li>• 2580.00</li> <li>• 3831.00</li> <li>• 4432.00</li> <li>• 5376.00</li> </ul>	27,000
Raichur Sholapur Transmission Co. Ltd.	Jan 2011	<ul style="list-style-type: none"> <li>• Patel, Simplex &amp; BS Transcomm</li> <li>• Lanco Infratech</li> <li>• Sterlite Transmission Projects Ltd.</li> <li>• Reliance Power Transmission Ltd.</li> </ul>	<ul style="list-style-type: none"> <li>• 294.00</li> <li>• 315.90</li> <li>• 367.20</li> <li>• 479.90</li> </ul>	3,000
Bhopal Dhule Transmission Co. Ltd.	Feb 2011	<ul style="list-style-type: none"> <li>• Sterlite Transmission Projects</li> <li>• Ashoka ICOMM Consortium</li> <li>• Lanco Infratech</li> <li>• Soma Enterprises</li> <li>• L&amp;T Transco</li> </ul>	<ul style="list-style-type: none"> <li>• 1995.30</li> <li>• 2184.80</li> <li>• 2448.90</li> <li>• 2590.20</li> <li>• 2807.50</li> </ul>	9,000
Nagapattinam Cuddalore	Mar 2012	<ul style="list-style-type: none"> <li>• PGCIL</li> <li>• L2</li> <li>• L3</li> <li>• L4</li> <li>• L5</li> </ul>	<ul style="list-style-type: none"> <li>• 987.02</li> <li>• 1529.44</li> <li>• 2082.51</li> <li>• 2085.92</li> <li>• 2389.54</li> </ul>	11,000

### 8.3 Annexure 3: Line Diagram of proposed 400kV line





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