



NO. NEPRA/2015/15

Dated: December 21, 2015

MR. SYED SAFEER HUSSAIN  
REGISTRAR  
NEPRA  
ISLAMABAD.

Subject: SUBMISSION OF TARIFF PETITION BY SINDH TRANSMISSION & DISPATCH COMPANY (PVT.) LIMITED FOR 132 KV TRANSMISSION LINE FROM SINDH NOORIABAD POWER COMPANY LIMITED (SNPC & SNPC II) TO K-ELECTRIC KDA-33 GRID STATION, KARACHI.


The company, Sindh Transmission & Dispatch Company (Pvt.) Limited (STDC) by virtue of its Board Resolution dated 15<sup>th</sup> July, 2015, is pleased to submit the subject Tariff Petition in respect of its 132 KV Transmission Line from SNPC & SNPC II to K-Electric KDA-33 Grid Station, Karachi, Sindh, Pakistan.

Kindly accept the Company's Tariff Petition along with such fee as determined by the Authority, NEPRA, for kind consideration and favorable approval by the Authority in accordance with, *inter alia*, Section 31 of the Regulation of Generation, Transmission and Distribution of Electric Power Act, 1997, read with rule 3 of the NEPRA Tariff Standards and Procedures Rules, 1998 and other applicable provisions.

Enclosed also is the pay order bearing No. 2046623 dated 21<sup>st</sup> December, 2015 amounting to Rs. 567,136/- (Pak Rupees Five Hundred Sixty Seven Thousand One Hundred Thirty Six only), drawn on NBP New Sindh Secretariat Branch Karachi being the tariff petition/application processing fee.

We are pleased to enclose herewith one (1) original along with two (2) copies of Tariff Petition/Application. This petition is being submitted along with a duly executed affidavit.

Best regards,

  
(REHMAN HAMID)  
CEO, STDC



For my father & M.A.K.  
D/P-I/KAR  
Sub:  
SA(Tech)  
SAT-2V  
LACIA - m/A

cc: chairman  
vc/m/cr,  
m(T)  
m(mde) - m(li)

Registrar  
Dy. No. 13524  
Dated: 28-12-15

Received along with pay order of Rs. 567,136/-



This payment order requires endorsement.



# NBP

## National Bank of Pakistan

NEW SINDH SECRETARIAT, BRANCH, KARACHI.

P.O. No. NPO/A 2046623

EXACTLY Rs. 567,136.00

~~December 24, 2015~~

Pay NATIONAL ELECTRIC POWER REGULATORY AUTHORITY ( NEPRA ) ISLAMABAD or Order

Rupees Five Hundred Sixty-Seven Thousand One Hundred Thirty-Six and Paise  
00 ONLY

for **National Bank of Pakistan**

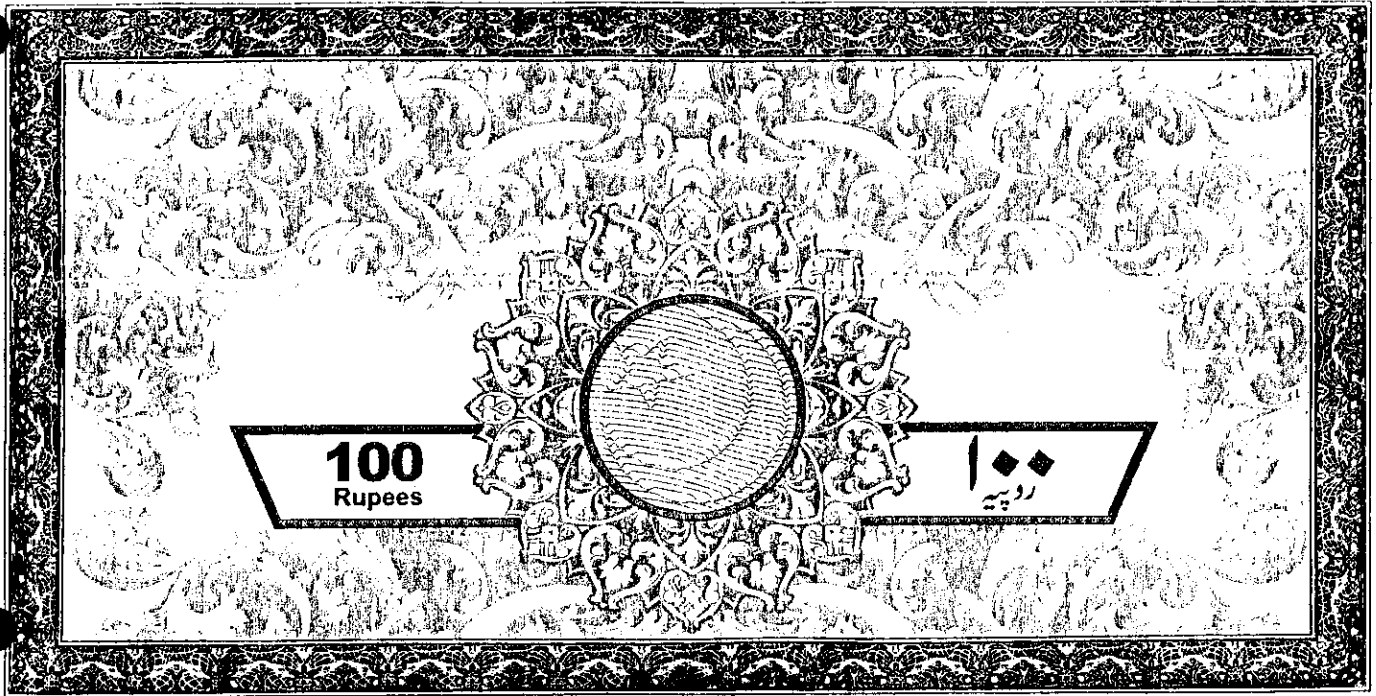
\*\*\*567,136.00

Rs. \_\_\_\_\_

Officer

Op. Manager / Manager

⑈ 2046623⑈0701055⑈0000000000⑈020⑈



KALEEM M. ALI KHAN STAMP VENDOR  
 ence # 02, Shop # 64, New Ruby Centre,  
 Ipaur Road, Boulton Market, Karachi.

DATE.....  
 ED TO WITH ADDRESS IN.....  
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 at Use For Free Will & Divorce P. 10000

08 DEC 2015

Muhammed Khalid Khan (Advocate)  
 KBA No: 1739

### AFFIDAVIT

## BEFORE THE NATIONAL ELECTRIC POWER REGULATORY AUTHORITY (NEPRA)

I, REHAN HAMID, Chief Executive Officer, Sindh Transmission & Dispatch Company (Pvt.) Limited, being the duly authorized representative of Sindh Transmission & Dispatch Company (Pvt.) Limited, do hereby solemnly affirm and declare that the contents of the accompanying tariff petition/application dated 21<sup>st</sup> December, 2015 including all supporting documents are true and correct to the best of my knowledge and belief and that nothing has been concealed.

I also affirm that all further documentation and information to be provided by me in connection with the accompanying tariff petition shall be true to the best of my knowledge and belief.



DEPONENT

Signature

*Rehan Hamid*

Dated: 21<sup>st</sup> of December, 2015.



*[Signature]*  
 MUHAMMAD SHAFIQ

The Deponent is identified by me:

**SINDH TRANSMISSION & DISPATCH COMPANY (PVT.)**  
**LIMITED**


**EXTRACT FROM THE MINUTES OF THE 4<sup>TH</sup> BOARD OF**  
**DIRECTORS MEETING OF THE COMPANY**


**HELD ON 15<sup>TH</sup> JULY 2015 AT 12 NOON**  
**AT ENERGY DEPARTMENT, GOVERNMENT OF SINDH, 3<sup>RD</sup> FLOOR, STATE LIFE**  
**BUILDING NO.3, DR. ZIAUDDIN AHMED ROAD, KARACHI.**

Item-VI: **Power of Attorney to CEO**

Resolved that "the CEO is authorized to apply for transmission license to NEPRA on behalf of the company and to fulfill all formalities as required by them."

I certify that the meeting was duly convened and held as per the Company's Memorandum & Articles of Association on 15th July 2015 at 12 noon at Energy Department, Government of Sindh, 3rd floor, State Life Building No.3, Dr. Ziauddin Ahmed Road, Karachi and the minutes of the meeting have been duly recorded in the minute book of the company.

  
Taha Noman Khan  
Company Secretary



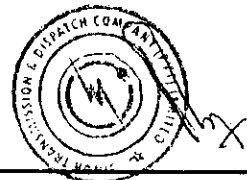
# TARIFF APPLICATION

SUBMITTED TO NATIONAL ELECTRIC POWER  
REGULATORY AUTHORITY (NEPRA)

132 kV DOUBLE CIRCUIT TRANSMISSION LINE FROM  
SINDH NOORIABAD POWER COMPANY LTD. (SNPC &  
SNPC II) TO K-ELECTRIC KDA -33 GRID STATION

A PROJECT OF SINDH TRANSMISSION & DISPATCH COMPANY (PVT.) LTD.

WHOLLY OWNED BY GOVERNMENT OF SINDH

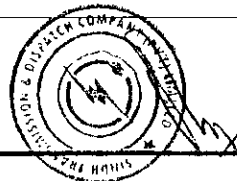


SECTION-1

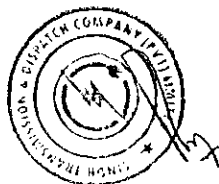
EXECUTIVE SUMMARY

132 kV DOUBLE CIRCUIT TRANSMISSION LINE FROM SINDH NOORIABAD POWER COMPANY LTD. (SNPC & SNPC II) TO K-ELECTRIC KDA -33 GRID STATION

Legal Basis	This tariff petition (the "Petition") is being filed by Sindh Transmission & Dispatch Company (Pvt.) Ltd. under, <i>inter alia</i> , the NEPRA Regulation of Generation, Transmission and Distribution of Electric Power Act, 1997, "the NEPRA Act" NEPRA Tariff Standards and Procedures Rules, 1998, "the NEPRA Tariff Rules" and other applicable provisions of NEPRA laws.
Petitioner	As required under the Section-24 of Act, Sindh Transmission & Dispatch Company (Pvt.) Ltd. is an entity incorporated under the Companies Ordinance, 1984, for the transmission of Electric Power.  The Certificate of incorporation, memorandum and articles of association of the company were earlier submitted to the Authority while applying for grant of Transmission License.
Project	132 KV Double Circuit Transmission Line from Sindh Nooriabad Power Company Limited (SNPC & SNPC II), Nooriabad to K-Electric KDA-33 Grid Station, Karachi, Sindh.
Rule 3 (2) (a)	<b>Petitioner's address &amp; registered office</b> Sindh Transmission & Dispatch Company (Pvt.) Limited Energy Department, Government of Sindh, 3 <sup>rd</sup> Floor, State Life Building No. 3, Dr. Ziauddin Ahmed Road, Karachi.  <b>Petitioner's Representative:</b> Mr. Rehan Hamid, Chief Executive Officer
Rule 3 (2) (a)	<b>Special Purpose Transmission License</b> The petitioner has been issued Transmission License No. SPTL/02/2015
Rule 3 (2) (b)	<b>Grounds</b> The Petition encapsulates the grounds.
Rule 3 (2) (c)	<b>Relief Sought</b> The Petition encapsulates the relief sought from the esteemed Authority.
Rule 3 (2) (d)	Not Applicable.
Rule 3 (2) (e)	Not Applicable.



<p><b>Rule 3 (2) (f)</b></p>	<p><b>Summary of Evidence</b>  <i>(Brief particulars of Data, Facts &amp; Evidence in support of the petition)</i></p> <p>The petition is supported with the pertinent documents. Further additional documents/evidence, if required by the Authority will be duly submitted upon request.</p>
<p><b>Interconnection Study of the Project</b></p>	<p>The Interconnection Study of the Project was earlier submitted to the Authority while applying for grant of Transmission License.</p>
<p><b>Detailed Feasibility Study of the Project</b></p>	<p>The Interconnection Study of the Project was earlier submitted to the Authority while applying for grant of Transmission License.</p>
<p><b>Submission</b></p>	<p>STDC submits herewith a tariff petition before the Authority for approval of <b>Transmission Tariff</b> for the above mentioned project.</p>

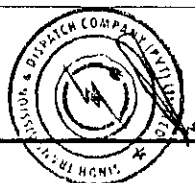


## SECTION-2

## PROJECT SUMMARY

## 132 KV DOUBLE CIRCUIT TRANSMISSION LINE FROM SINDH NOORIABAD POWER COMPANY LTD. (SNPC &amp; SNPC II) TO K-ELECTRIC KDA -33 GRID STATION

Project Company	Sindh Transmission & Dispatch Company (Pvt.) Limited	
Main Sponsors	Government of Sindh	
Project Capacity	132 KV Double Circuit Transmission Line. The power carrying capacity of the line is 200 MW (approx.)	
Project Location	From Sindh Nooriabad Power Company Limited (SNPC & SNPC II) to K-Electric KDA-33 Grid Station, Karachi, Sindh.	
Concession Period	30 years from Commercial Operations Date	
Power Generator	SNPC & SNPC II	
Power Distributor	K-Electric	
EPC Contractor	Technomen Kinetics (Pvt.) Limited	
O & M Contractor	Not decided.	
Currency Conversion	1 USD = PKR 104.5	
Estimated Project Cost	<b>Description</b>	<b>Pak Rupees (in Mln)</b>
	EPC Cost	1,670
	Sindh Sales Tax on services	50.93
	Interest During Construction	35.60
	Pre-COD Insurance	22.55
	Non-EPC Cost	64.30
	Project Development Cost	20.66
	<b>Total Project Cost</b>	<b>1,864.04</b>
Financing Ratio	<b>Description</b>	<b>Pak Rupees (in Mln)</b>
	Debt (70%)	1,305
	Equity (30%)	559
	Total	1,864
Financing	Completely Funded by Government of Sindh.	
Terms of Financing	<b>Equity:</b> Rate: 20% Return on Equity. <b>Debt:</b> Rate: 6% (KIBOR) + 3% (Spread) Loan Period: 10 Years Grace Period: None	
Levelized Tariff in PKR	0.7576 cents/kWh / 0.7917 Rs/kWh	
Legal Counsel	In evaluation process. Will be notified subsequently to NEPRA.	
Concession Documents	<ul style="list-style-type: none"> <li>Power Purchase Agreement (between SNPC &amp; SNPC II and K-Electric) (in process, will be submitted in support of application).</li> <li>Wheeling Agreement (Tri-partite agreement between SNPC &amp; SNPC II, STDC &amp; K-Electric) (in process, will be submitted in support of application).</li> </ul>	
Applicable Policy	Generation, Transmission and Distribution of Electric Power Regulation Act, 1997	





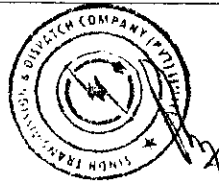
SECTION-3

MILESTONES ACHIEVED

Activity	Status
Tender for procurement of EPC Contractor	Issued
Letter of Interest (LOI)	Issued
Right Of Way	Cleared
Soil Survey	Completed
Geo-Tech Study	Completed
Environmental & Social Impact Assessment (ESIA) Study	Completed
Approval from Environmental Protection Agency Sindh	NOC Issued
Transportation Study	Completed
Topographic Survey	Completed
EPC Contract with Technomen Kinetics Pvt. Ltd.	Signed
Bank Guarantee by EPC Contractor	Submitted
Feasibility Study submitted to NEPRA	Completed
Grid Interconnection Study	Completed
Issuance of Transmission License by NEPRA	Issued

Following are the future milestones:

Activity
Tariff Determination by NEPRA
Insurance
Execution of Wheeling Agreement (Tri-partite agreement between SNPC & SNPC II, STDC & K-Electric)
Achievement of Financial Close and issuance of Notice to commence
Commercial Operation Date (COD)



## SECTION-4

### KEY PROJECT STRENGTHS

The key strengths of the Project are proposed below:

#### a) Executed EPC Contract with a well-recognized leading Engineering Company

Project Company has been able to execute its EPC Contract with Technomen Kinetics (Pvt.) Limited. The Project Company had undergone tender bidding process of Sindh Public Procurement Regulatory Authority (SPPRA) Public Procurement Rules, 2010. Various companies participated in the bid process including North East China International Power Corporation (NEIE), Technomen Kinetics Pvt. Limited, Al-Hussain Traders and ICC Pvt. Limited. Based on the technical evaluation of the proposals, North East China International Power Corporation (NEIE) and Technomen Kinetics Pvt. Limited Project Company qualified for the financial evaluation phase, and finally Technomen Kinetics Pvt. Limited were selected as the EPC Contractor being the lowest bid.

#### b) Definitive contracts

- Lump sum, fixed price and date certain.
- Full scope of work covering EPC phase.
- Sufficient contractor security/performance warranties to ensure completion and performance.

#### c) Improved Technology

STDC's and the EPC contractor's vision is inclined towards using better material by not compromising on quality and using improved technology. The sub-contractors of EPC contractor are also been selected on the basis of providing better quality items. Hence focus is towards better energy transmission with minimum possible losses.

#### d) Strong Project Management Team

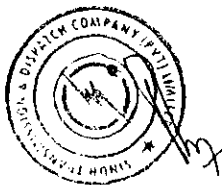
The Project is being managed by a team of professionals, who derive experience of commissioning various power projects throughout the country. Also, the project company's top management team consists of professional having vast transmission line experience.

STDC has employed a team of leading and most reputable local names to act as the consultants to-the Project Company for the development of the Project. The team of consultants brings with it knowledge of best market practices and experience of transmission line, strong grasp of concessionary framework in Pakistan and transaction execution capability. Brief profile of the same are provided below:



**Mr. Shahid Maqsood - Project's Technical Consultant for EPC Company**

An Electrical Engineer by profession completed his Bachelor's and Master's degree from NED University of Engineering & Technology Karachi having vast experience in the field of transmission line project management and implementation. Served in K-Electric for around 20 years and then joined Saudi Electric Company (SEC) since last three years. Currently running his own consultancy firm named EMS Consultancy in Pakistan.



SECTION-5

SPONSORS

The electricity sector of Pakistan is facing acute shortages in supply which have led to power outages on a large scale. The wide fluctuation of international oil prices, higher cost due to gradual phasing out of subsidy, and the circular debt problem have also exacerbated the situation of power supply in the country. The Government of Pakistan is taking diverse measures to circumvent the problem of capacity shortage. These include expansion and refurbishment of existing plants, induction of new power plants - mainly in the private sector, encouragement of renewable energy, development of rental power plants, and acquisition of power from captive power plants. At the end of financial year 2014-15, the total installed generation capacity in the country was 24,953 MW with 16,963 MW of thermal, 7,097 MW of hydro and 787 MW of nuclear. Current estimates indicate that over 90,000 MW of generation capacity will be required in 2030. Even with the current identified potential plants, there will be about a 10,000 MW deficit in 2030.

In this regard Sindh Government has taken initiative to invest in this highly capital intensive industry, to fulfill the provincial requirement of electric power and associated infrastructure (transmission lines and grid stations) contributing Government of Pakistan's national power policy. Sindh Nooriabad Power Company Limited (SNPC & SNPC II), a joint venture of Sindh Government in Public Private Partnership has already been awarded Generation License from NEPRA and Power plant is under construction on fast track. Likewise, Sindh Transmission & Dispatch Company (Pvt.) Limited, wholly owned by Government of Sindh was incorporated to lay transmission lines and has also been issued Special Purpose Transmission Line License from NEPRA, through which STDC will complete the cycle to deliver power to end user through utility-K Electric.



## SECTION-6

### THE PROJECT

#### INTRODUCTION

To cater the needs of electricity, the Energy Department, GOS has established two special purpose companies namely M/s Sindh Nooriabad Power Company Private Ltd (SNPC & SNPC II) for installation of 100 MW Gas power generation facilities. It is in very advance stage and commissioning is expected in early of 2016. To meet the shortage of power in the Country, this 100 MW power shall be inducted in the K-Electric Network via this Transmission Line project.

The project is of overhead transmission line network of about 95 km which will be constructed in between SNPC & SNPC II Nooriabad to K-Electric KDA-33 Grid Station.

Therefore, this project is proposed to execute the transmission of newly build electricity via new transmission line in order to transmit it from source of 100 MWs Nooriabad Power Plant to cater the needs of electricity requirement of the utility consumers.

#### OBJECTIVES

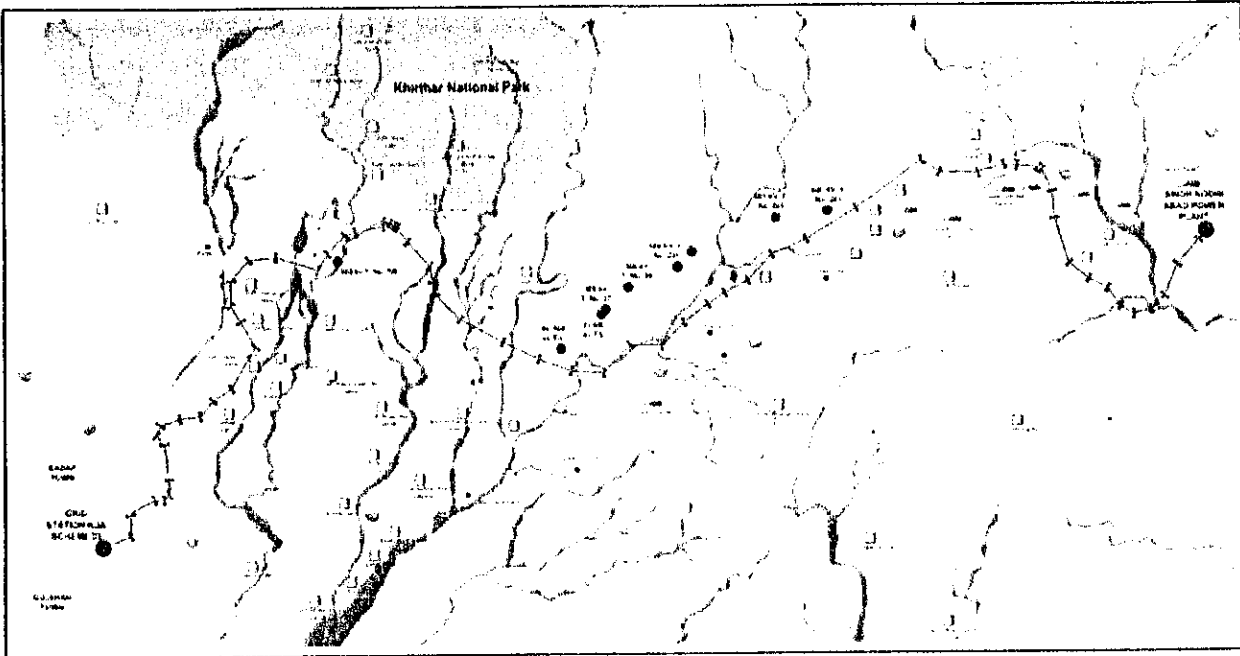
The main objectives of the Project are to:

- Respond to the urgent need to close the yawning gap between power generation and demand.
- Provide an economically viable and environmentally acceptable power transmission system, in view of the wide gap between demand and supply of electricity.
- Ensure stable power transmission system for the Country.
- Respond to the need of improvement in quality of life through sustainable Energy Transmission Network.

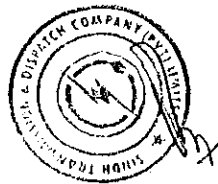
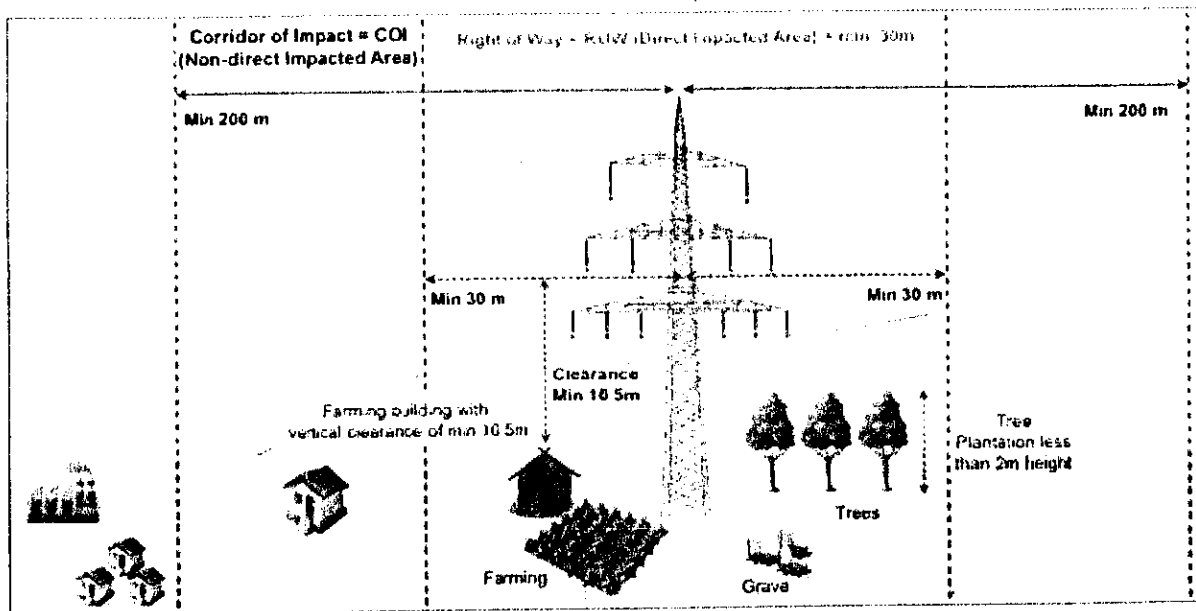
#### RIGHT OF WAY

The line route is planned keeping in mind the less possible right-of-way section for the line. All construction, commissioning and installation will be done according to STDC Technical Procedures. Total 500 approx. lattice steel towers and monopoles will be erected to support the conductor wires.



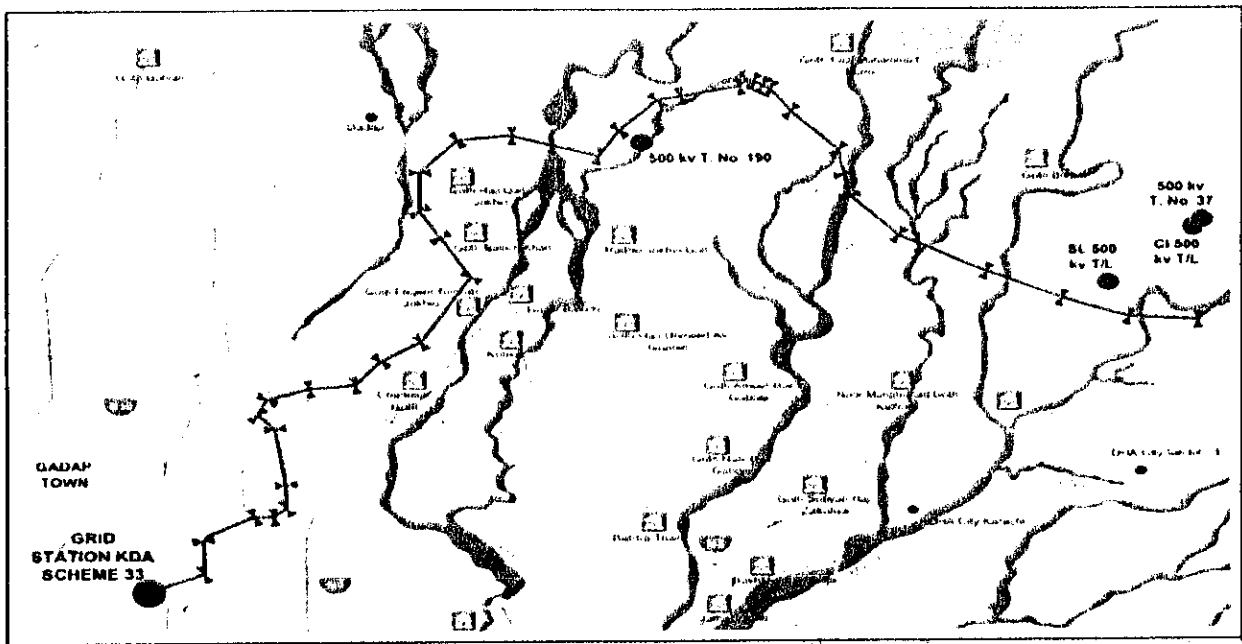
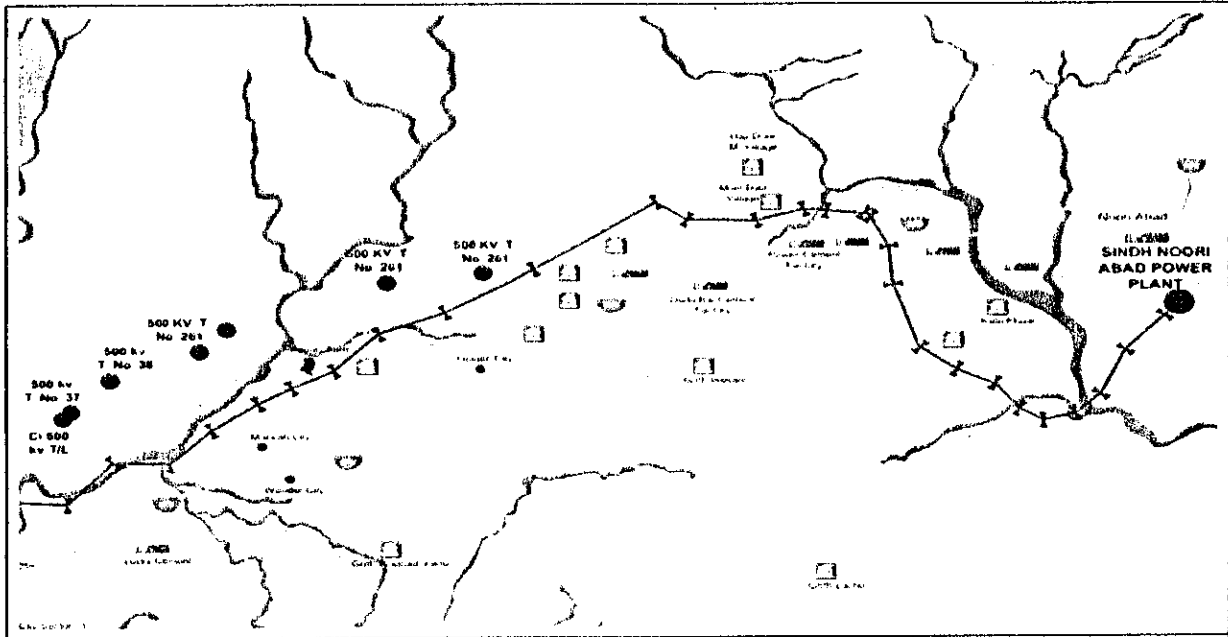


The ROW taken for the proposed transmission line is minimum 30 meters according to the international standards. This area is termed as Direct Impact Area (DIA) where project components could impact the object inside the DIA or vice versa. Alignment of the Transmission Line is made by STDC after discussions with key persons of the area and by avoiding properties and infrastructure to the extent feasible. Following figure shows the DIA (ROW) and Corridor of Impact (COI) of the project area:



### PROJECT LOCATION

The project area proposed for this power transmission line is from Nooriabad Power Plant to K-Electric Grid Station located at KDA Scheme-33 Karachi covering a length of about 95 km. The location map of proposed Transmission Line route is presented in the figures below:

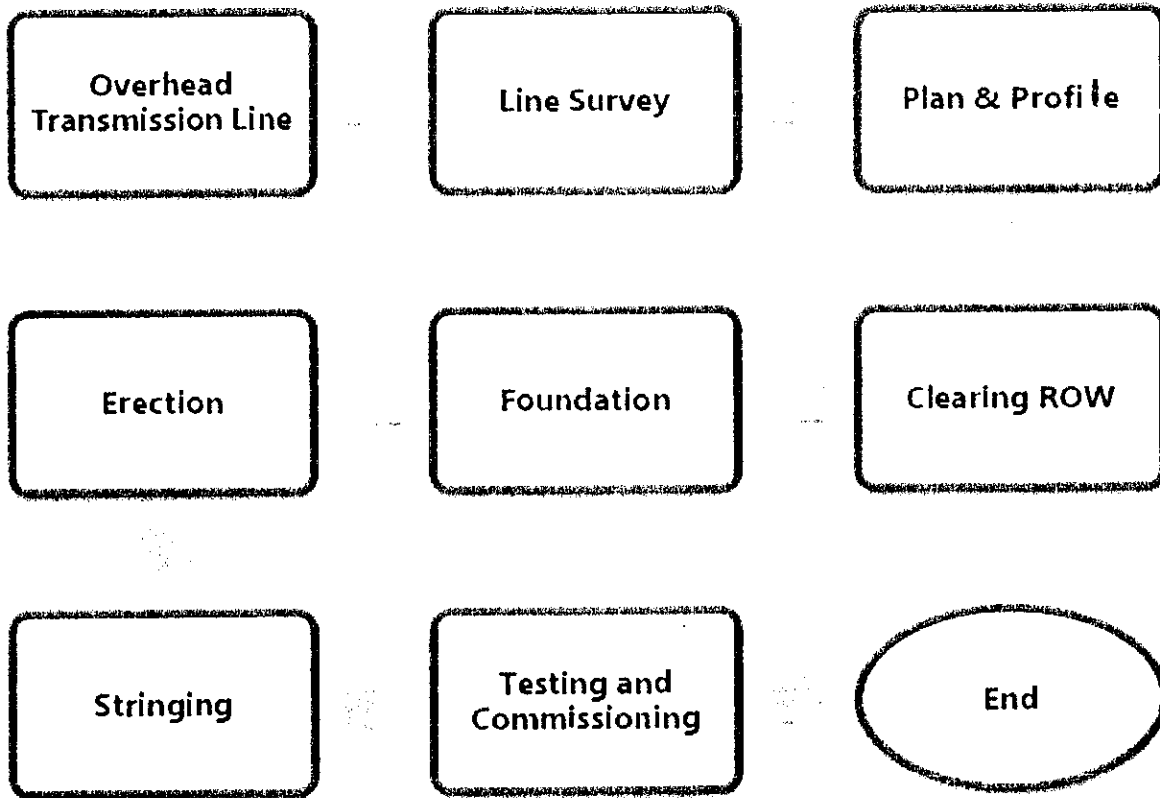


### TECHNICAL DETAILS OF THE PROJECT

An overhead transmission line is a traditional method of supplying electricity from one end to another, in which line is suspended by means of towers and poles. Since this type of transmitting method is low-cost method for transmission sector as compared to underground transmission, therefore large quantities of electric energy is being supplied using this method where air plays an important role in providing most of the insulation to overhead power line. Mostly two types of towers (lattice structure or tubular poles) are used to support the line. Commonly Aluminum made (either plain or reinforced with steel or sometimes composite materials) bare wire conductors are used in the overhead line, but sometimes copper material is also used in the overhead line depending upon the voltage distribution, voltage connections and customer premises.

Electric power will be generated and transmitted through newly build overhead transmission line of about 95 km from 100 MWs Nooriabad Power Plant to KDA Scheme – 33; Karachi. The line route is planned keeping in mind the less possible right-of-way section for the line. All construction, commissioning and installation will be done according to STDC Technical Procedure (TP). 9.9 to 9.11.9.

The Transmission Line Process Diagram is as follows;





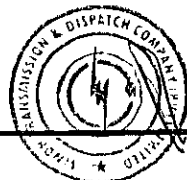
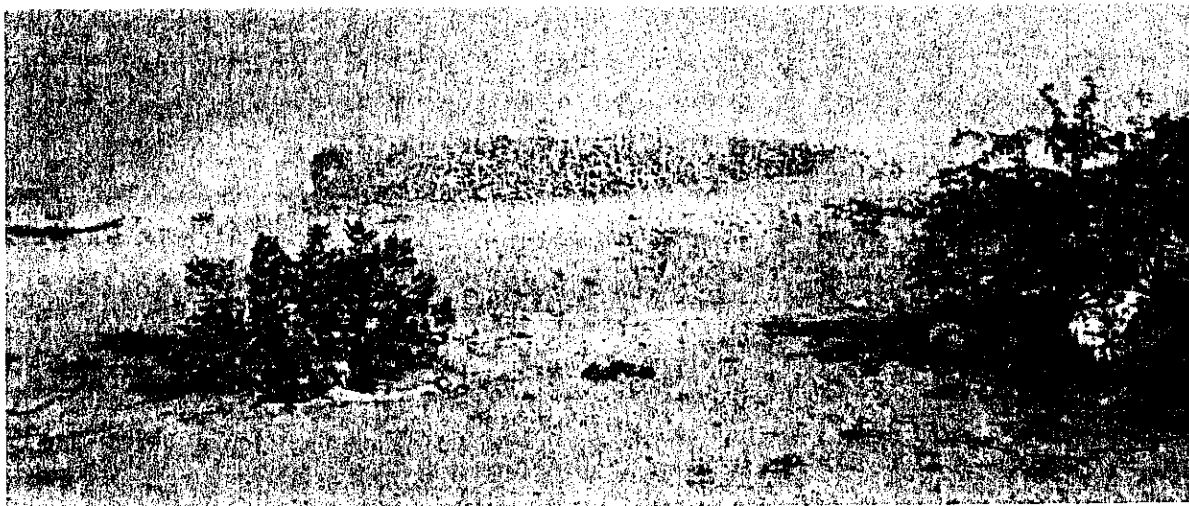
**PROJECT DESIGN STANDARDS**

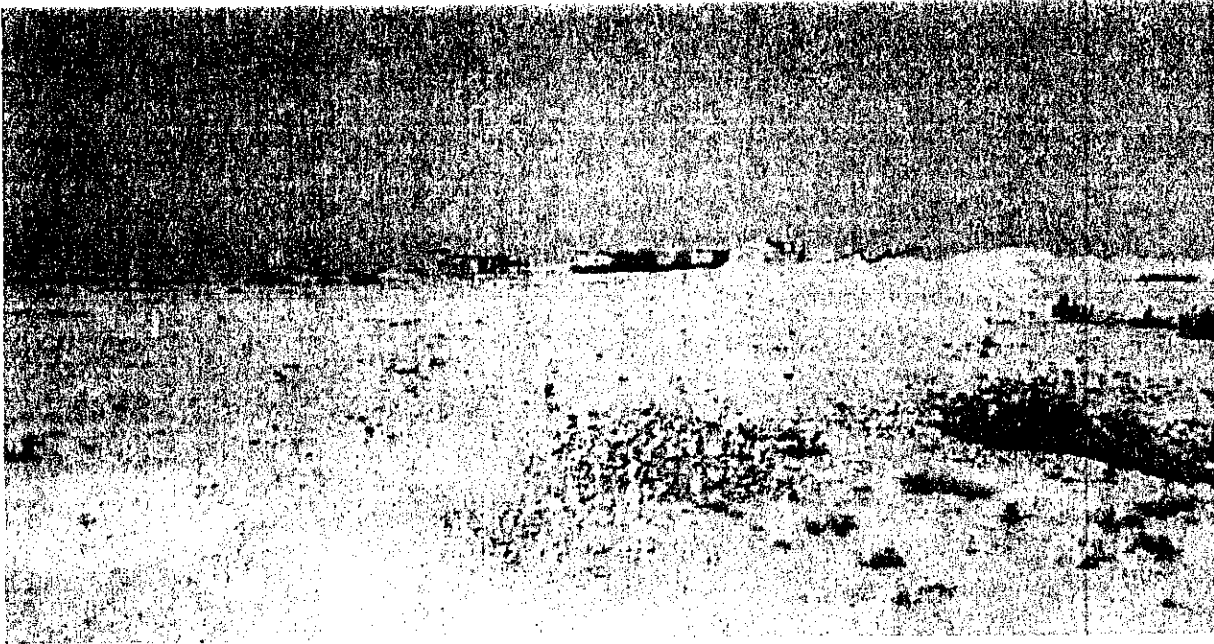
The design standards that are followed for the erection of Transmission Line are shown as follows:

Description	132 kV
Nominal voltage	132 kV
Max. Operation voltage	145 kV
Min. Operation voltage	120 kV
Impulse dry withstand voltage	650 kV
One minute power freq. withstand Voltage	275 kV
Normal frequency	50 Hz
Short Circuit Level	31.5 kA
Duration of short circuit	1 Sec.
Neutral point	Solidly earthed
Minimum air clearance to earth	Shown on tower outlines
Switching over voltage factor	3
Peak of switching over voltage	355 kV
Governing over voltage condition	Lightning Over-voltage
Pollution degree for insulators	Very heavy pollution
Isokraunic level days/annum	9.7
Minimum clearance over open country	8.0 m
Overhead line over road level	10.5 m
Overhead line over rail level	15.0

**ECOLOGY OF THE PROJECT SITE**

The topography of the project area includes low ridges, rocky areas, plain/sandy areas, riparian areas, dried Nallahs, agricultural fields and wastelands. Ridges and ravines are either flat places or soil filled cracks in the rocks. There are no trees found during the ecological survey that may pose a safety hazard to the transmission line and may need to cut down during clearing ROW. Most bushes and small wild plants are found along the ROW.





Project route does not lie inside the protected area or buffer zone of protected area. The nearest Wildlife Protected Area is the Hub Dam wildlife sanctuary which lies at a distance of about 2.5 Km from the proposed project site. The other critical site is the Khirthar National Park also at a distance of about 2.6 km. Mahal Kohistan Wildlife Sanctuary and Surjan Game Reserve are more than 20 and 10 Km away respectively from the proposed project path. No areas of primary forest are found within or adjacent to ROW of the project road. If some trees need to be cut down, compensatory plantation at a ratio of 1:5 (i.e. 5 trees will be planted on account of cutting of 1 tree) will be done in the open land or after consultation with forest department.

The birds during migration fly at elevations between 800 and 2000 m, whereas maximum height of the towers of the transmission lines is less than 40 m. As such, the 132 kV transmission line routes will not cause any obstruction for the flight of migratory birds.

Similarly the transmission line will not intercept Indus Flyway (Green Route) causing any disruption to flight of migratory birds. There are no gazetted archaeological sites located within the close vicinity of proposed alignment.

The proposed Project, when constructed, would be integrated into the concerned microenvironment and will become a friendly component of its macro environment. The nature of Project, it's siting; adoption of adequate measures to minimize health impacts and anti-bird measures during construction as well as operation stages of the project will have residual impact of low significance on the microenvironment and macro environment. Installation and operation and maintenance of proposed Transmission line route is not expected to have unacceptable/significant impact on the aesthetics of the microenvironment and macro environment. Nevertheless, the impact will be mitigated through careful planning, adequate engineering controls and adopting appropriate mitigation measures.



SECTION-7

SELECTION OF EPC CONTRACTOR

The Notice Inviting Tender (NIT) was published in leading newspapers on March 08, 2015 and as well as on SPPRA website. The bid opening date was March 25, 2015.

Following four (04) companies purchased the bidding document:

- M/s North East China International Power Corporation (NEIE).
- M/s Technoman Kinetics (Pvt.) Limited.
- M/s Al-Hussain Traders (Regd.).
- M/s ICC (Pvt.) Limited.

M/s ICC (Pvt.) Ltd. asked to extend date for opening of bid and also asked some queries regarding bidding document. The request for clarification and modification and the extension of bidding document could not be entertained as per SPPRA rule -22 (1) & rule-23.

The remaining three firms participated in the bid opening ceremony and submitted their technical and financial bids. M/s Al-Hussain Traders didn't submit bid security therefore its bid was rejected at first stage and their sealed financial bid envelope was returned.

The prescribed bidding process was two stage bidding process as per SPPRA rule no. 46, the technical bids were opened in-front of representative of the bidders on March 25, 2015. Technical Bid of each firm/bidder was examined as per criteria provided in bidding document for responsiveness of each bid. Northeast China international Electric power corporation (NEIE) China and MS Technomen Kinetics (Pvt.) Limited were technically qualified Bidders after due technical evaluation. Afterwards, financial Bid was opened in the presence of technically qualified bidders. Being the lowest bid, it was recommended that M/S Technomen Kinetics (Pvt.) Limited as a Qualified Bidder for the Installation of Double Circuit 132kV transmission line of STDC.



## SECTION-8

### CONTRACTUAL FRAMEWORK

The contractual framework of the project follows a structure similar to that of a Transmission Line being setup under previous power policies in Pakistan.

#### **Power Purchase Agreement (between SNPC & SNPC II and K-Electric)**

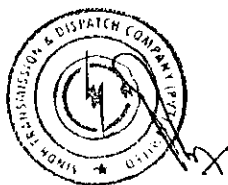
This agreement will be executed between Sindh Nooriabad Power Company Limited (SNPC & SNPC II) and K-Electric under which SNPC & SNPC II will undertake to generate the capacity output and K-Electric will undertake to purchase the capacity output for a continuous period of 30 years. The Power Purchase Agreement (PPA) will describe the terms and conditions, instructions and procedures for the transmission of electricity.

#### **Wheeling Agreement (Tri-partite agreement between SNPC & SNPC II, STDC & K-Electric)**

The company, STDC will enter into a long term tri-partite Energy Wheeling Agreement with Sindh Nooriabad Power Company Limited (SNPC & SNPC II) and K-Electric under which STDC undertakes to transmit the capacity output for a continuous period of 30 years. The wheeling Agreement will describe the terms and conditions, instructions and procedures for the transmission of electricity.

#### **Environmental & Social Impact Assessment**

The petitioner carried out the Environmental & Social Impact Assessment (ESIA) study which was submitted to Environmental Protection Agency, Government of Sindh. There is no significant environmental impact that would prevent or adversely affect the construction of the project. Similarly, EPA Sindh has also accorded approval to the project.



## SECTION-9

### TARIFF STRUCTURE

The Reference Tariff has a typical two-part structure envisioned in the 2002 Power Policy having a Capacity Purchase Price (Rs/kWh) and an Energy Purchase Price (Rs/kWh).

Capacity Purchase Price is derived by adding the yearly (Fixed O&M + Insurance During Operation + ROE + Debt Service) and dividing the sum by the Contract Capacity, i.e., the guaranteed Capacity of the plant at a certain discharge capacity for the year.

The Energy Purchase Price is derived by dividing the sum of the annual Variable O&M cost by the estimated annual energy of the plant.

The payments to the company would be made every month through Capacity Payment (Capacity Purchase Price for the relevant year X the Tested Capacity) plus the Energy Payment (the Energy Purchase Price X actual energy delivered).

The main parts of the Capacity Payment, i.e., the Return on Equity (ROE) and the Debt Service are directly dependent on the Project capital cost while the Fixed O&M and the Insurance During Operation are part of the recurring or running costs.

The Variable Payment's components are also part of the running cost but the actual payments to be made against these heads are dependent on the actual energy (kWh) delivered during a month.



## SECTION-10

### PROJECT CAPITAL COST

#### Introduction

The Project will comprise of installation of total 500 lattice steel towers to support the conductor wires. A total of 66 angle towers (out of 500) will be installed. Project will be constructed under the terms of a fixed-price turnkey contract whereas construction will be completed in a continuous period of 7 months.

Total Project Cost of PKR 1,864 Million has been calculated after thorough analyses, evaluation and understanding of the dynamics that affects the development, construction and operations of a Transmission Line and the Contract has been awarded to the successful contractor in light of SPPRA Rules.

The estimated total Capital Cost includes the following;

- All turnkey engineering, procurement, and construction costs;
- Construction management cost and Project development cost;
- Land and site preparation costs;
- Duties and taxes, including Sindh Sales Tax;
- Insurance costs; and
- Interest cost and related financing charges during construction.

Withholding tax on dividend is 12.5% payable at the time of payment of dividend. Profit of the Project Company is not exempt from corporate tax under the Finance Act 2015 purely because the company is totally owned by Government of Sindh, hence normal corporate tax will apply to STDC. The Project cost is totally financed by Equity provided by Government of Sindh, with a Return on Equity of 20%.

Break up of Project Cost is given in **Annexure-1**.

#### EPC Cost

EPC Contracts are executed on a fixed price, lump sum, date certain basis. With respect to the cost overruns and additional costs incurred following Force Majeure Events, the Company's reasonable restoration costs caused by Pakistan Political Force Majeure Events or a Change in Law will be recovered through supplemental tariff. EPC of the Project is managed through a



separately executed contract. The Project Company has signed legally binding and executable contract with Technomen Kinetics (Pvt.) Limited in line with the bidding document.

The consideration payable to Technomen Kinetics (Pvt.) Limited for supply of equipment is inclusive of all taxes and duties. Sindh Sales tax on all the services provided by the contractor is excluded from the contract amount and will be payable by the Project Company.

#### **Interest During Construction (IDC)**

The financing plan for the project assumes a 70:30 debt equity ratio. The entire debt has been assumed to be a local loan. Interest during Construction (IDC) of PKR 35.60 million has been worked out while using interest rate of 9% per annum (KIBOR @ 6% plus 3% spread) and on the basis of 7 months construction period. Being an essential constituent of project finance and having existence in all tariff determinations, STDC endorses this amount for approval.

#### **Pre-COD Insurance**

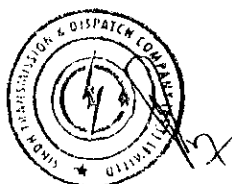
Pre-COD insurance cost covers the insurance cost of Project Company's assets during construction as well as the cost incurred prior to COD. NEPA allows 1.35% of the EPC Cost as Pre-COD Insurance Cost.

Pre-COD Insurance is assumed as 1.35% of EPC Cost.

The minimum insurance amounts and deductibles as per EPC Contract is for:

- The works and materials: Full value of material.
- The loss or damage to Equipment: Full value of the loss/damage.
- The loss or damage to property (except the Works, Materials and Equipment) in connection with Contract: Full value of loss/damage to property.
- For personal injury or death:
  - o Of the contractor's employees: In accordance with such applicable laws in Pakistan.
  - o Of other People: In accordance with such applicable laws in Pakistan.

Costs of all such insurances shall be borne by the contractor, as per EPC contract.



The contractor will effect and keep in force all insurances required under the contract. The project company will not affect any kind of insurance on behalf of this project. The contractor shall also be obliged to place all insurances relating to the contract with either National Insurance Company of Pakistan or any other insurance company operating in Pakistan acceptable to the project company.

### **Working Capital Facility**

The working capital required for the project has also been assumed to be a local loan. Working Capital requirement per year has been worked out by adding all requirements of debt, equity, insurance and O&M and multiplying it at an interest rate of 9% per annum (KIBOR @ 6% plus 3% spread) and 2% WC requirement. Being an essential constituent of project finance and having existence in all tariff determinations, STDC endorses this amount for approval.

### **Duties and Taxes**

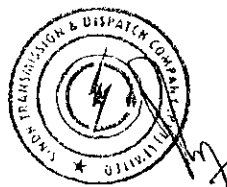
Customs Duty, Special Excise Duty, Sales Tax, Income Tax, Service Tax, other direct and indirect taxes and surcharge of any nature whatsoever by whatever name called whatsoever which is imposed by the Government of Pakistan and/or the Government of Sindh at the time of filing of Tariff application or are applicable or may become applicable hereafter are not being considered in the calculation of Tariff and the same shall be claimed under Tariff as and when paid before COD.

### **Non-EPC Cost**

The Non-EPC Cost includes the cost of items that are not part of the EPC Contractor's scope of work pursuant to the executed EPC Contracts.

#### **A) Fixed Assets**

This includes cost of various instruments, equipment, and other assets (excluding such assets that are supplied under On-shore and Off-shore Contracts) and comprises of such as vehicles, office equipment, furniture, electrical appliances.





**B) Security Arrangement Cost**

Pakistan is going through a tough time with respect to security situation in the country. The Project Company is also concerned about the security of its personnel. Therefore, security arrangement cost becomes one of the important components of the Project Cost. This represents the costs associated with providing security at offices and while travelling. Currently the Project Company has hired the services of a renowned security services firm, Fauji Security Services oversee and monitor the security related matters along with other security staff.

**C) Inter-Connectivity Costs with K-Electric**

In accordance with the requirements, the Project Company will be required to provide connectivity to the Power Purchaser through fiber optic. Total installment cost (including equipment, materials, and installation) has been included under this head.

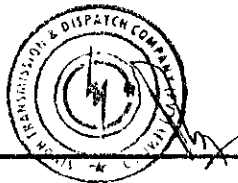
Break Up of Non-EPC Cost is given in **Annexure-2**.

**Project Development Cost**

The Project Development Cost includes the costs incurred for the purpose of project development and includes all cost, fees, and expenses incurred or to be incurred for such purpose. These costs mainly include the following;

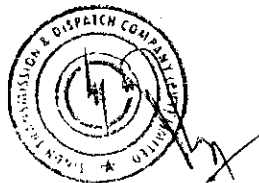
- Feasibility study costs
- Government permits and licenses fees
- Costs incurred or to be incurred for Project Company incorporation and capitalization fee to SECP
- Consultants fees
- Human resources cost
- Cost of travel

Description	Details
Feasibility study	It includes technical feasibility, electrical and grid inter-connection studies, and geotechnical, & topographical studies. It also includes construction supervision engineer during pre-COD period. As per EPC contract, all costs related to this item will be borne by the contractor.
Government permits and License fee	It includes various fees to NEPRA and Environmental Protection Agency, Sindh. It also includes performance guarantee charges.



	As per EPC contract, costs related to EPA Sindh will be borne by the contractor, whereas various fees of NEPRA is the responsibility of Project Company. (Such as fees for transmission line license, fees for tariff petition etc.)
Costs incurred or to be incurred for Project Company incorporation and capitalization	<p>The fees relating to Project Company incorporation and capitalization incurred on registration of authorized capital of the Project Company with the Securities and Exchange Commission of Pakistan (SECP) are included in this cost head.</p> <p>All the pre-incorporation SECP fees and expenses were funded by Government of Sindh and required no reimbursement.</p>
Consultants fees	The technical, financial and legal consultants, and advisors Fees costs to be incurred by the Project Company during the project development phase are included in this cost head.
Human resources cost	<p>The HR costs include salaries, wages, and benefits of all staff as follows;</p> <ul style="list-style-type: none"> <li>• Management executives</li> <li>• Technical and operations department</li> <li>• Commercial and legal affairs department</li> <li>• Finance department</li> <li>• Training and human resource department</li> <li>• Supply and logistic departments</li> </ul> <p>These staff members will be employed by the Project Company.</p>
Cost of travel	<p>The Project Company is incurring and will also incur domestic and international travelling expenses including accommodation cost during development and construction phases of the Project.</p> <p>As per EPC contract, all costs related to the project will be borne by the contractor. Whereas, other travelling related tasks such as travelling to NEPRA headquarters etc. will be the responsibility of the project company.</p>

Breakup of the Project Development Cost is given Annexure-3.



**SECTION-11**

**PROJECT FUNDING**

**Introduction**

Total Capital Cost of the Project is estimated to be approximately PKR 1,455 Mln. The project cost will be totally financed by Government of Sindh and has been assumed to be in following proportion:

Description	Pak Rupees (in Mln)
Debt (70%)	1,305
Equity (30%)	559
<b>Total</b>	<b>1,864</b>

**Equity Structure**

It is assumed that 30% of the total capital cost of the project will be funded by the Government of Sindh in the form of Equity.

Sponsors have already injected equity in the company for meeting all the non-EPC costs and project development costs.

Risk perceptions are high in investing in Pakistan’s energy sector not only because of the security situation of the country but also considering the issue of circular debt. Considering the above, Project Company is filing tariff petition with NEPRA under the Cost-plus regime at a fixed IRR of 20%.

Sponsors also reserve the right to sell certain percentage of shares of the Project Company to other investors in future and also expand the company to a level of Public Limited Company.

**Debt Servicing**

Under the proposed financing structure, Loan will account for 70% of the total Project Cost. Loan disbursements are dependent on actual payments to be made to the EPC Contractor.

**a) Local Currency Loan**

Entire loan has been assumed to be provided by Government of Sindh in Pak Rupees. Interest payments will start after the commencement of operations and will be made on quarterly basis. Interest will be calculated on the basis of actual number of days elapsed in a year of 360 days



on the outstanding principal amount of the Facility. Project Company has taken 9% (i.e. fixed rate of interest) on the loan for calculating interest during construction and interest payments. No grace period has been assumed.

Since interest rate of Loan is fixed throughout the term, therefore no adjustment will be claimed on account of variation of SBP rate during the term of the Loan.

Entire benefit will be passed on to the power purchaser, in case final interest rate is lower than the rate used for the calculation of tariff. Fixed Interest rate will be finalized at the time of Financial Closure.

IDC is an estimated figure; however, IDC is subject to change depending on the fluctuations in KIBOR and exchange rate, draw down schedule and changes in the Project Cost. IDC will be calculated for the period starting from the first draw down of loan after the financial closure based on accrued interest for the outstanding loan on monthly basis.

Interest on loan will not be paid during the construction period and will be part of the Total Project Cost (that is referred as IDC in this application) however, interest and principal repayment will be paid to banks on quarterly basis during the first ten years of operations i.e. Post-COD. Interest to be paid during the Post-COD period is part of the tariff.

Repayment period of Loan will be ten (10) years starting from the COD.

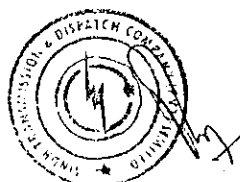
**b) Terms and Conditions**

A summary of key terms and conditions is given below;

Terms & Conditions	Loan
Base Currency	PKR
Amount (in Mln)	1,305
Total Tenor	10 Years
Nature of Interest Rate	Fixed
Benchmark Rate	KIBOR, 6%
Margin over Benchmark Rate	300 bps
Total Interest Rate	9%

**c) Loan Schedule**

Loan schedule is given in Section 14.



## SECTION-12

### O & M COSTS INCLUDING INSURANCE

#### O&M Cost

O&M expenses are one of the major unknowns for the transmission line projects in Pakistan. Furthermore, unexpected components failures have driven up operations and maintenance costs. This is even more critical in Pakistan where the temperatures in the windy months are also very high and machines have to work in almost full capacity in extreme weathers.

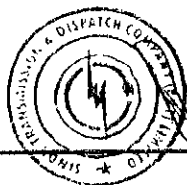
#### Outsource of O&M during Operations

Project Company is in discussion with the current contractor of the Project to provide O&M services during the operations under an O&M Contract. The O&M price includes the costs associated with daily operation, scheduled maintenance, routine maintenance, services required for unscheduled maintenance, and any spare parts and consumables required for carrying out the scheduled and routine maintenance.

#### Other operating cost

O&M Cost also includes the following;

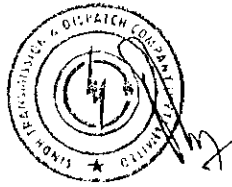
- **Fixed Assets:** This includes cost of vehicles, office equipment, furniture, electrical appliances, and tools required at site.
- **Payroll and Allied Expenses:** Payroll costs include salaries and benefits of corporate office. These staff members will be employed by the Project Company at the site and in Karachi office.
- **Security Arrangement Cost:** Due to volatile law and order situation, security arrangements are very important and a vital subject. The Project will depute a full time security team at its site office. The foreign staff of manufacturers and investors who visits or will visit the Project Site for work will also be provided security cover during their stay in Pakistan.
- **Vehicle Fuel and Maintenance:** This component includes the costs associated with running and maintenance of vehicles at the site offices of the Project Company. The vehicles include vehicles required by the security personnel for securing the site; vehicles required for supervision and coordination of O&M activities, vehicles for administration needs. The vehicles purchased during the construction period will be used for first 5 years of the O&M period. At the start of the 6th year, the old vehicles will retire and new vehicles will be procured by the Project Company in each year as depreciated and worn off vehicles will be laid off.



- **Administration Costs:** This portion of the O&M cost includes costs associated with rents, utilities, travelling, entertainment, audit, legal and financial consultants, technical consultation, transmission license fees, and other allied expenses of running the offices during operations.

#### Insurance

Project has assumed 1.35% of the EPC Price as insurance cost. Insurance cost component of tariff will be adjusted only on account of US \$/PKR exchange rate variation annually, not exceeding the insurance cost actually incurred.



## SECTION-13

### INDEXATIONS, ESCALATIONS AND ADJUSTMENT

#### Indexation

Various components of tariff are adjusted on pre-determined formula and reference parameters. Transmission Line projects are not required to approach NEPRA for tariff indexation. The purpose of indexation is to remove any exposure of investors to cost escalations, over the life of the Project, over which they have no direct control. With that principle in mind, the following sections discuss the proposed indexation for various components of the tariff. Indexation formula have been prepared taking into account the guidelines presented in the Ministry of Water and Power/ Alternate Energy Development Board's, Guidelines for Determination of Consumer End Tariff (methodology and process), 2015, NEPRA Tariff Standards and Procedure Rules, 1988, and other recent determinations and the provisions.

#### Foreign Exchange

A foreign exchange indexation is applied to those cost elements that are dominated in foreign currency. For these items, the investors have no control over cost changes caused by exchange rate fluctuations, and these are therefore passed through to power purchaser. The proposed tariff structure for the Project implies that the following components will be indexed to variations in foreign exchange rate (Rs./ US\$);

- O&M component;
- The insurance component as discussed previously will provide cover on a replacement cost basis, which will be incurred in US dollars. Premium will therefore be constructed on that basis, and insurance cost will therefore fluctuate with exchange rate movements;
- The ROE component that reflects the equity investment.

Indexation for these components will be applied quarterly, on January 1, April 1, July 1, and October 1 on the basis of the TT & OD selling rate. In the event of discontinuation of TT&OD selling rate, NEPRA will be asked to substitute the mechanism with another mechanism thus it does not place the Project Company in a worse position.

#### Foreign Inflation (US CPI)

O&M component is denominated in US Dollars thus will be adjusted with changes in US inflation, United States Consumer Price Index (US. CPI), as published monthly by the department of Labor, United States Government.



**Local Inflation (WPI)**

O&M component is also denominated in PKR thus will be adjusted with changes in Pakistan inflation, Wholesale Price Index (WPI), as published monthly by the Pakistan Bureau of Statistics, Government of Pakistan.

**KIBOR**

Since interest rate is assumed to be fixed throughout the term of the loan, therefore no adjustment will be claimed for the variation in the rate of KIBOR.

A summary of indexation requested is given below; Different components of the tariff are escalated indexed on the following basis:

Energy Payment	Variation In...
Variable O & M (Local)	50% will be indexed with Pakistan WPI
Variable O & M (Foreign)	50% will be indexed with USD/PKR Parity and US CPI
Fixed O & M	Will be indexed with Pakistan WPI
Insurance	Will be indexed with USD/PKR Parity and US CPI
ROE	Will be indexed with USD/PKR Parity
Withholding Tax	Will be indexed with USD/PKR Parity
Technical Losses	Will be indexed with USD/PKR Parity

**Indexation and Adjustment Factors**

Indexations and adjustment factors will be determined by NEPRA from time to time (for each Quarter, Semi-Annual Period or the year, as applicable) and notified in the official gazette by government of Pakistan.

From and after the Commercial Operations Date, indexation formulas as given in the standardized Energy Wheeling Agreement will be applied.





SECTION-14

PROJECT TARIFF

USOC = Variable O&M + Capacity Payment

Capacity Payment = Fixed O&M + Insurance + Principal Payment + Interest + ROE

Project Tariff Table is given in Annexure-4.

KEY ASSUMPTIONS USED IN TARIFF CALCULATIONS

Installed Capacity (MW)	100
Units Produced in a Year / Annual Net Estimated Output(kWh)	864,000,000
EPC Cost (in Millions)	1,670
Interest During Construction (IDC)	35.60
Total Project Cost	1,864.04
Debt to Equity Ratio	70 : 30
Agreement Terms (Years)	30
Total Debt Amount	1,305
Interest Rate including Spread (%)	9.00%
Debt Repayment Period for Loan (Years)	10
Repayment Frequency	Quarterly
Total Equity Amount	559
Equity IRR (%)	20%
Dollar Rate	104.5
Construction Period (Months)	7
NPV Discount Rate (%)	10%

General Assumptions

The Petitioner's proposed tariff has been worked on the basis of following non-exhaustive list of assumptions - any change in relation thereto will require an appropriate adjustment in the proposed tariff:



- Project cost of PKR 1,864 Mln and Loan—Equity ratio of 70-30.
- Annual energy yields for units produced in a year are calculated as 864,000,000 kWh.
- Insurance during construction is 1.35% of EPC Cost (Responsibility of EPC Contractor).
- IRR of 20% is assumed (exclusive of 12.5% withholding tax on dividends) over 30 years.
- Return on Equity for the construction and commissioning period, will be adjusted on IRR basis at the time of COD.
- Exchange Rate (PKR/US\$) is taken @ PKR 104.5 per US\$.
- Taxes (Federal, Provincial, Local or district), stamp duties and levies etc. are not factored in the tariff calculation and will be claimed separately under Tariff thereafter project cost.

#### LOAN REPAYMENT SCHEDULE

Loan Repayment Schedule is given in **Annexure-5**.

#### CALCULATION OF IRR

Calculation of IRR is given in **Annexure-6**.

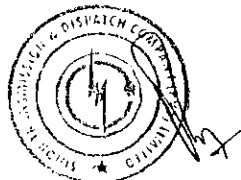
#### ADJUSTMENTS AT COD

NEPRA is requested to allow the adjustments (as set out in this Section (Adjustments at COD)) to the Reference Transmission Tariff at the time of true up at COD;

#### ADJUSTMENTS TO PROJECT COST

It is submitted that the Project Cost be adjusted: at COD for the following assumptions. The adjustments to the Project Cost to be reflected in the relevant tariff component (Return on Equity):

- US\$ / PKR exchange rate variations during the construction period;
- All such Project Cost, which are subject to be adjusted, as per actual
- All local Duties and Taxes paid or withheld;



- Interest during Construction for increase in Project Cost, change in interest base rate (KIBOR), variation in equity draw-downs;
- Return on Equity based on actual equity draw-down.

#### Pass-Through Items

In addition to the pass-through items stipulated in the standardized Wheeling Agreement (with its Schedules) and in the Petition herein, any taxes, duties and levies etc. not factored in the tariff calculation will be treated as part of the Project cost at the time of COD. Any direct and indirect taxes (federal and provincial) taxes currently applicable or impose before and after COD of the Project on the O&M Operator will be considered as Pass Through Item as per the terms of Wheeling Agreement.



SECTION-15

TARIFF SUMMARY

In summation, the Project Company herewith most respectfully submits before NEPRA for its approval the matters set out in this Tariff Petition and further prays for NEPRA to kindly approve the following:

- The Project Costs and related arrangements stated in this Petition be allowed to the Petitioner.
- Energy transmission estimate of 864,000,000 kWh per annum for calculation of the tariff and energy payments.
- Funding of the Project on a 70:30 - Debt: Equity ratio.
- Sharing of any other related revenues subsequently realized, as per the Government of Pakistan policy.
- IRR of 20% (exclusive of 12.5% withholding tax).
- Indexations and adjustments for the individual tariff components.
- The Reference Transmission Tariff provided above along with individual tariff components.
- Adjustments at COD.

The Applicant would be pleased to provide any other information/assistance that the learned Authority may require in the matter of tariff petition.

This Application and its Annexes are being submitted in triplicate.

Furthermore, given the advance stage of the Project, NEPRA is kindly requested to process the Tariff Petition at the earliest thereby enabling the Project Company to proceed further with the development process.

We hope that the information provided above meets your requirements, and we remain available to assist you if you have any further queries.

Respectfully submitted for and on behalf of the Project Company, STDC.



## Annexure-1

### Project Capital Cost

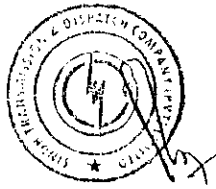
Description	Pak Rupees (in Mln)
EPC Cost	1,670
Sindh Sales Tax on services	50.93
Interest During Construction	35.60
Pre-COD Insurance	22.55
Non-EPC Cost	64.30
Project Development Cost	20.66
<b>Total Project Cost</b>	<b>1,864.04</b>



## Annexure-2

### Non-EPC Cost

Non-EPC Cost	Pak Rupees (in 000's)
Fixed Assets	
Vehicles	12,000
Furniture, Equipment and Computers	1,000
Miscellaneous	500
Security Arrangement Cost	800
Inter-Connectivity Cost with K-Electric	50,000
<b>TOTAL NON-EPC COST</b>	<b>64,300</b>



## Annexure-3

### Project Development Cost

Project Development Cost	Pak Rupees (in 000's)
<b>Permits/License</b>	
Transmission license application fee	210
Tariff application fee	567
Environmental Protection Agency (GoS) fee	-
<b>Total Permits/License Fee</b>	<b>500</b>
<b>Other Costs</b>	
SECP Formation Fee	35
Yearly Audit Fee	50
Legal Fee	500
Administration costs	18,000
HR Costs	600
Travelling Costs	500
Misc. Expenses	200
<b>Total Project Development Costs</b>	<b>20,662</b>



## Annexure-4

### Project Tariff

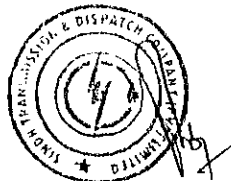
USOC = Variable O&M + Capacity Payment

Capacity Payment = Fixed O&M + Insurance + Principal Payment + Interest + ROE

Year	Debt	Equity	Insurance	O&M	Working Capital	Total	MDI	Fixed Charge		Variable Charge	Total
	Rs. Mill./yr	Rs. Mill./yr	Rs. Mill./yr	Rs. Mill./yr	Rs. Mill./yr	Rs. Mill./yr		Rs./kW/ Month	Rs./kWh	T. Losses Rs/kWh	
1	199	112	23	213	60	607	100	506	0.7022	0.1492	0.8514
2	199	112	23	213	60	607	100	506	0.7022	0.1492	0.8514
3	199	112	23	213	60	607	100	506	0.7022	0.1492	0.8514
4	199	112	23	213	60	607	100	506	0.7022	0.1492	0.8514
5	199	112	23	213	60	607	100	506	0.7022	0.1492	0.8514
6	199	112	23	213	60	607	100	506	0.7022	0.1492	0.8514
7	199	112	23	213	60	607	100	506	0.7022	0.1492	0.8514
8	199	112	23	213	60	607	100	506	0.7022	0.1492	0.8514
9	199	112	23	213	60	607	100	506	0.7022	0.1492	0.8514
10	199	112	23	213	60	607	100	506	0.7022	0.1492	0.8514
11		112	23	213	38	386	100	321	0.4462	0.1492	0.5954
12		112	23	213	38	386	100	321	0.4462	0.1492	0.5954
13		112	23	213	38	386	100	321	0.4462	0.1492	0.5954
14		112	23	213	38	386	100	321	0.4462	0.1492	0.5954
15		112	23	213	38	386	100	321	0.4462	0.1492	0.5954
16		112	23	213	38	386	100	321	0.4462	0.1492	0.5954
17		112	23	213	38	386	100	321	0.4462	0.1492	0.5954
18		112	23	213	38	386	100	321	0.4462	0.1492	0.5954
19		112	23	213	38	386	100	321	0.4462	0.1492	0.5954
20		112	23	213	38	386	100	321	0.4462	0.1492	0.5954
21		112	23	213	38	386	100	321	0.4462	0.1492	0.5954
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25		112	23	213	38	386	100	321	0.4462	0.1492	0.5954
26		112	23	213	38	386	100	321	0.4462	0.1492	0.5954
27		112	23	213	38	386	100	321	0.4462	0.1492	0.5954
28		112	23	213	38	386	100	321	0.4462	0.1492	0.5954
29		112	23	213	38	386	100	321	0.4462	0.1492	0.5954
30		112	23	213	38	386	100	321	0.4462	0.1492	0.5954
Average (1-10)	199	112	23	213	60	607	100	506	0.7022	0.1492	0.8514
Average (1-20)	199	112	23	213	49	496	100	413	0.5742	0.1492	0.7234
Average (1-25)	199	112	23	213	47	474	100	395	0.5486	0.1492	0.6978
Average (1-30)	199	112	23	213	46	459	100	383	0.5316	0.1492	0.6808
Levelized (1-30) in PKR	135	116	23	221	55	550	104	458	0.6367	0.1550	0.7917
US cents											
Levelized (1-30) in US Cents	129	111	22	212	52	526	99	439	0.6093	0.1483	0.7576

1 USD = PKR 104.5 (assumed)

Discount Rate = 10% (assumed)

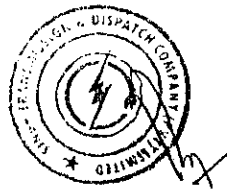




## Annexure-5

### Loan Repayment Schedule

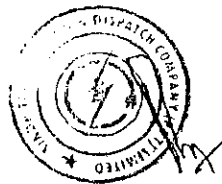
Relevant Quarter	Base Amount (Rs mn)	Principal Repayment	Interest Repayment	Payment	Closing Bal.
1	1,305	20.46	29.36	49.81	1,284.37
2	1,284	20.92	28.90	49.81	1,263.46
3	1,263	21.39	28.43	49.81	1,242.07
4	1,242	21.87	27.95	49.81	1,220.20
5	1,220	22.36	27.45	49.81	1,197.84
6	1,198	22.86	26.95	49.81	1,174.98
7	1,175	23.38	26.44	49.81	1,151.60
8	1,152	23.90	25.91	49.81	1,127.70
9	1,128	24.44	25.37	49.81	1,103.25
10	1,103	24.99	24.82	49.81	1,078.26
11	1,078	25.55	24.26	49.81	1,052.71
12	1,053	26.13	23.69	49.81	1,026.58
13	1,027	26.72	23.10	49.81	999.86
14	1,000	27.32	22.50	49.81	972.54
15	973	27.93	21.88	49.81	944.61
16	945	28.56	21.25	49.81	916.05
17	916	29.20	20.61	49.81	886.85
18	887	29.86	19.95	49.81	856.98
19	857	30.53	19.28	49.81	826.45
20	826	31.22	18.60	49.81	795.23
21	795	31.92	17.89	49.81	763.31
22	763	32.64	17.17	49.81	730.67
23	731	33.37	16.44	49.81	697.29
24	697	34.13	15.69	49.81	663.17
25	663	34.89	14.92	49.81	628.27
26	628	35.68	14.14	49.81	592.60
27	593	36.48	13.33	49.81	556.11
28	556	37.30	12.51	49.81	518.81
29	519	38.14	11.67	49.81	480.67
30	481	39.00	10.82	49.81	441.67
31	442	39.88	9.94	49.81	401.79
32	402	40.77	9.04	49.81	361.02
33	361	41.69	8.12	49.81	319.33
34	319	42.63	7.18	49.81	276.70
35	277	43.59	6.23	49.81	233.11
36	233	44.57	5.24	49.81	188.54
37	189	45.57	4.24	49.81	142.96
38	143	46.60	3.22	49.81	96.37
39	96	47.65	2.17	49.81	48.72
40	49	48.72	1.10	49.81	-



## Annexure-6

### Calculation of IRR

IRR	20%
1	PKR 87.3 Million
2	PKR 87.3 Million
3	PKR 87.3 Million
4	PKR 87.3 Million
5	PKR 87.3 Million
6	PKR 87.3 Million
7	PKR 87.3 Million
8	PKR 87.3 Million
9	PKR 87.3 Million
10	PKR 87.3 Million
11	PKR 87.3 Million
12	PKR 87.3 Million
13	PKR 87.3 Million
14	PKR 87.3 Million
15	PKR 87.3 Million
16	PKR 87.3 Million
17	PKR 87.3 Million
18	PKR 87.3 Million
19	PKR 87.3 Million
20	PKR 87.3 Million
21	PKR 87.3 Million
22	PKR 87.3 Million
23	PKR 87.3 Million
24	PKR 87.3 Million
25	PKR 87.3 Million
26	PKR 87.3 Million
27	PKR 87.3 Million
28	PKR 87.3 Million
29	PKR 87.3 Million
30	PKR 87.3 Million



**NO. NEPRA/2016-047**  
Dated: February 18, 2016

**MR. SYED SAFEER HUSSAIN**  
REGISTRAR  
NEPRA  
ISLAMABAD.

**Subject: SUBMISSION OF TARIFF PETITION BY SINDH TRANSMISSION & DISPATCH COMPANY (PVT.) LIMITED FOR 132 KV TRANSMISSION LINE FROM SINDH NOORIABAD POWER COMPANY LIMITED (SNPC & SNPC II) TO K-ELECTRIC KDA-33 GRID STATION, KARACHI.**

This refers to our application for Tariff vide letter no. NEPRA/2015/15 dated December 21, 2015 and your subsequent enquiry of O & M Contract vide letter no. NEPRA/R/TRF-100 STDC/322 dated January 11, 2016.

We informed vide letter no. NEPRA/2015-016 dated January 15, 2016 that "bids received for O&M are attached and still under review and evaluation process".

As the bid prices we received have already been shared with NEPRA, which have now been evaluated by STDC and found to be on very high side.

In this regard we have to inform you that STDC has decided to manage O & M of the Transmission Line by itself. This will help to meet the O&M budget mentioned in our tariff application i.e PKR 213 million per year.

Please update the information into our submissions, earlier.

Best regards,



**(REHAN HAMID)**  
CEO, STDC  
0320-241-3926 Mobile  
021-99207158 Office  
hamidrehanca@gmail.com

FOR INFORMATION TO W/A D.

SAT-1  
MF  
COPY TO:  
- SAC (Tech)  
- Director

cc: chairman  
- VC/MCCAI  
- MCI  
- MCMTEI  
- MLUC

Registrar	1907
By No.....	1902/2016
Dated.....	19/2/2016

COPY TO: MR. IFTIKHAR ALI KHAN, DEPUTY REGISTRAR, NEPRA.

Adg  
DDT- Ali Ali  
22/2

1580  
20-2-16