

TAY POWERGEN COMPANY (PRIVATE) LIMITED

July 2, 2014

The Registrar

**National Electric Power Regulatory Authority
Islamabad**

Subject: Application for Generation License

Dear Sir:

I, Khawaja Nimr Majid, Director Operations, being the duly authorized representative of TAY Powergen Company (Private) Limited by virtue of Board Resolution / Power of Attorney, dated July 02-2014, hereby apply to the National Electric Power Regulatory Authority for the grant of a Generation License to TAY Powergen Company (Private) Limited pursuant to section 3(1) of the Regulation of Generation, Transmission and Distribution of Electric Power Act, 1997.

I certify that the documents-in-support attached with this application are prepared and submitted in conformity with the provisions of the National Electric Power Regulatory Authority Licensing (Application and Modification Procedure) Regulations, 1999, and undertake to abide by the terms and provisions of the above said regulations. I further undertake and confirm that the information provided in the attached documents-in-support is true and correct to the best of my knowledge and belief.

A Bank Draft in the sum of Rupees 162,410 (One hundred Sixty Two thousand Four hundred Ten only), being the non-refundable license application fee calculated in accordance with schedule II to the National Electric Power Regulatory Authority Licensing (Application and Modification Procedure) Regulations, 1999, is also attached herewith.

Yours truly

For TAY Powergen Company (Pvt) Ltd.



Khawaja Nimr Majid
Director Operation

TAY POWERGEN COMPANY (PRIVATE) LIMITED

TAY Powergen Company (Private) Limited Application for Generation License Annexure A

1. **Regulation # 3(1)** **Authorization from Board Resolution / Power of Attorney**

Enclosed

2. **Regulation # 3(3)** **Application Fee including indexation**

Enclosed

3. **Regulation # 3(4)** **Three copies of Application**

Duly complied

4. **Regulation # 3(5)-A(i)** **Certificate of incorporation**

Enclosed

5. **Regulation # 3(5)-A(ii)** **Memorandum and Articles of Association**

Enclosed

6. **Regulation # 3(5)-A(iii)** **Latest Financial Statements**

TAY Powergen Company (Private) Limited (TPCL) is a special purpose company instituted for the development of 2x15 MW Bagasse fired Cogeneration Power Project. TPCL is a wholly owned subsidiary of Tando Allah Yar Sugar Mills Limited.,

The Financial Statements for the last Three years of Tando Allah Yar Sugar Mills (Pvt.) Limited are therefore enclosed

7. **Regulation # 3(5)-A(iv)** **Location Maps, Site Maps, Land**

Enclosed

8. **Regulation # 3(5)-A(v)** **Type of Technology**

The proposed power plant is employing Boiler-Steam Turbine configuration running on Bagasse

9. **Regulation # 3(5)-A(vi)** **No. of Units, Size/MV**



TAY POWERGEN COMPANY (PRIVATE) LIMITED

The proposed power plant will install two steam turbines of 15 MW each and matching boiler(s), totaling the Plant Installed Capacity of 30 MW.

Total Installed Capacity

The proposed power plant will have a Gross Installed Capacity of 30 MW

10. Regulation # 3(5)-A(vii) Year Make / Model, Operation date and expected remaining life

The Steam Boiler(s), Steam Turbines will be new and unused and will be of 2014-15 model.

The make of the Steam Boiler(s) and Steam Turbine be Descon/HMC (equivalent) and Hongzhou Turbine Company, China (equivalent), respectively

Operation Date

Not Applicable

Expected Remaining Life

Not Applicable

11. Regulation # 3(5)-A(viii) Installed capacity, de-rated capacity, Aux. Consumption, Net Capacity

Installed Capacity

30 MW

De-rated Capacity

30 MW at 40 deg C

Auxiliary Consumption

3 MW

Net Capacity at 40 Deg C

27 MW

12. Regulation # 3(5)-A(ix) Fuel (oil/gas): type, imported/indigenous, supplier, logistics, pipelines etc. In case of Gas fuel, a Gas Sale Agreement (GSA) signed between applicant and Gas Supplier

Fuel

Bagasse

Type

Indigenous

Supplier

Tando Allah Yar Sugar Mills (Pvt.)

Limited

Supplier Logistics

Same Premises

13. Regulation # 3(5)-A(x) Supply Voltage (11 kV/132kV). In case of 132 KV voltage distance and name of nearest grid (single line diagram)

Supply Voltage

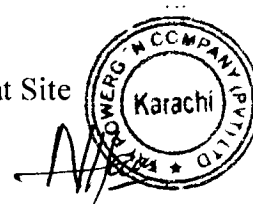
132 kV

Interconnection with HESCO Grid

At Power Plant Site

Single Line Diagram

Enclosed



TAY POWERGEN COMPANY (PRIVATE) LIMITED

Name of Grid Station
Distance to the Grid Station

Tando Allah Yar
7 km

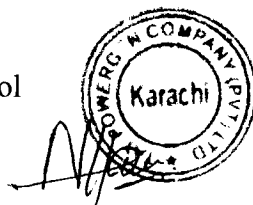
14. **Regulation # 3(5)-A(xi) Plant characteristics: generation voltage, power factor, frequency, automatic generation control, ramping rate, alternative fuel, time(s) required to synchronize to grid**

Plant Characteristics

| | |
|--------------------------------------|---|
| Generation Voltage | 11 kV |
| Frequency | 50 Hz |
| Power Factor | 0.8 |
| Automatic Generation Control | Not Applicable |
| Ramping Rate | 3.3 kW/sec |
| Alternative Fuel | Rice Husk, Agriculture Waste, etc. |
| Time required to Synchronize to Grid | Four (4) hours for Cold Start and 30 sec when in hot condition |

15. **Regulation # 3(5)-A(xii) Provision of metering, instrumentation protection and control arrangement**

Metering
Instrumentation, Protection & Control



Included, details enclosed
See Single Line Diagram



A001799

SECURITIES AND EXCHANGE COMMISSION OF PAKISTAN

COMPANY REGISTRATION OFFICE, KARACHI

CERTIFICATE OF INCORPORATION

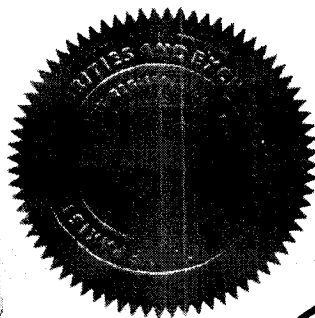
[Under section 32 of the Companies Ordinance, 1984 (XLVII of 1984)]

Corporate Universal Identification No. 0088940

I hereby certify that TAY POWERGEN COMPANY (PVT.) LIMITED is this day incorporated under the Companies Ordinance, 1984 (XLVII of 1984) and that the company is limited by shares.

Given under my hand at Karachi this Twenty Fourth day of June, Two Thousand and Fourteen.

Incorporation fee Rs. 7,000/= only



(Saghir Ahmed Hashmi)
Joint Registrar of Companies
Karachi

Certified to be true copy





01 APR 2014

THE COMPANIES ORDINANCE, 1984

A PRIVATE COMPANY LIMITED BY SHARES

MEMORANDUM

AND

ARTICLES OF ASSOCIATION

OF

TAY POWERGEN COMPANY (PRIVATE) LIMITED

THE COMPANIES ORDINANCE, 1984
(XL VII OF 1984)
A PRIVATE COMPANY LIMITED BY SHARES
MEMORANDUM OF ASSOCIATION
OF
TAY POWERGEN COMPANY (PRIVATE) LIMITED

NAME

- I. The name of the Company is "TAY POWERGEN COMPANY (PRIVATE) LIMITED".

REGISTERED OFFICE

- II. The Registered Office of the Company will be situated the province of Sindh.

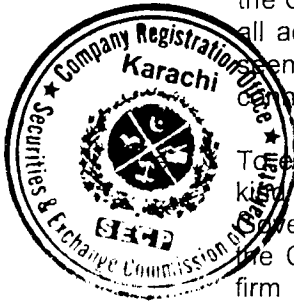
OBJECTS

- III. The Sole Objects for which the company is established are:
1. To set up, establish, operate, manage, generate and run Thermal, Hydel, Gas, Bio Gas, Bagasse, Wind-mills, wind turbines and wind power plants, from different means and sources and to generate and supply electricity to all concerns.
 2. In order to carryout and fulfill the above object, the Company shall be authorized:
 - a. To generate, produce, manufacture, store, sell, export to supply electricity to all concerns, by whatever means including, thermal, hydal, gas, bio gases, bagasses, wind-mills, wind turbines and wind power plants and solar for industrial, commercial and residential use through distribution network and to construct, install, operate and maintain thereon power house, civil and mechanical works and structures, grid stations, transmission towers, power lines, building,



workshops and other facilities as may time to time be necessary for the attainment of the object of the company.

- b. To construct, lay-down, establish, fix, and carry out all necessary power stations, cables, wires, lines, accumulators, and works and to generate accumulate, distribute and supply electricity to cities, towns, streets, docks, markets, theaters, industrial zones, sites, areas and parks, buildings and places public and private.
- c. To carry, on and undertake all civil, electrical and mechanical works related to the aforementioned business, and to generate, accumulate, distribute and such by electricity for the purposes of light, heat, motive power and for all other purposes for which electrical energy can be employed, and to deal in all apparatuses and things required for or cable of being used in connection with the generation with the distribution, supply, accumulation and employment of electricity.
- d. To manufacture, process, buy, sell, exchange, alter improve, otherwise deal in all kinds of electrical plants, machinery, equipments, appliance, energy saving devices, and products, gadgets, components and parts including specialized equipments for the purposes of the business for the Company, and to manufacture, import, export, sell, buy, and deal in all accessories, articles, apparatus, equipment and goods, which may seem calculated to promote or to be capable of being used in connection with the use of electric power supply.
- e. To enter into, make and perform contracts and arrangements of every kind and description with the Central, Provincial government, City Government, or Local Authority or person that may be conducive to the Company's Object and to obtain from any Government Authority, firm or person any rights, privileges, contracts, concessions, exemptions, permissions approvals and grants which the company may think desirable, and to obtain and carry out, exercise and comply with any arrangements, rights, privileges, contracts and concession and dispose of the same or turn into account the same.
- f. To purchase, take on lease or in exchange, or otherwise acquire any lands and buildings in Pakistan or elsewhere, and any estates or interest therein and any rights connected with any such lands and buildings, and to buy, sell, lease, mortgage any such lands, buildings, estates, interests and rights therein, to enter into such arrangements, collaborations, joint ventures or else with local and/or foreign companies for acquiring, undertaking building, and development of power projects in Pakistan and elsewhere.
- g. To manage, improve, develop, buy, sell, exchange, mortgage, charge, hypothecate, pledge, assign, transfer or otherwise deal with all or any part of the property and assets, whether movable or immovable, tangible or intangible, and any right, title and interest of the Company.

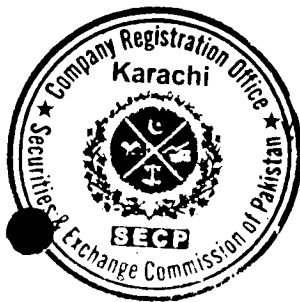


- h. To carry on any other business, which may be deemed to the company capable of being conveniently carried with the above or calculated directly or indirectly to enhance the value or render profitable any of the company's properties or rights, but the company shall not do any unlawful act or business.
- i. To sell or dispose of machinery, plants, equipment, materials and all articles and things belong to the company and also all the products thereof either for immediate or future delivery upon such terms and conditions as may be deemed expedient.
- j. To acquire technical knowledge, know how, process, recipes formulas, engineering and manufacturing data, to appoint consultants and advisers for advice on managerial, financial and technical problems of the company.
- k. To apply for purchase or otherwise acquire and protect and renew in any part of the world any patents, patent rights, trade marks, designs, licenses, concessions and the like conferring any exclusive or limited right to their use, or any secret or other information as to any invention which may seem capable of being used for any of the purposes of the company, or the acquisition of which may seem calculated directly or indirectly to benefit the company, and to use, exercise, develop, or grant license in respect of or otherwise turn to account the property, rights or information so acquired and to expend money in experimenting upon, testing or improving any such patents, inventions or rights.
- l. To purchase, or otherwise acquire, and invest in shares, scrip, stocks, debentures, certificates, bonds or other financial instruments, of any entity, whether listed or non-listed, and public or private, and to receive dividends, profits or mark-up, and/or to sell and dispose of the same as deemed fit.
- m. To takeover, acquire, amalgamate and merge with any other company or spin-off its division, and to sign, execute, arrange, execute, schemes, and contracts relating to such arrangements as deemed expedient or necessary in achieving these objects.
- n. To enter into partnership or into arrangements for sharing profits, cooperation, joint venture, reciprocal concessions with local domestic and/or international foreign companies, for expansion of business, and trade or otherwise with any persons, firms or companies, to carry on any business or transaction which the company is authorized to carry on.
- o. To employ professionals, and other persons well conversant with relevant knowledge, experience and skills, and having all technical expertise as may be deemed necessary or proper for the efficient handling and carrying on the business of the company.
- p. In the event of winding-up, to distribute any of the properties of the company amongst the members in species or kind but in such manner that



no distributing amounting to a reducing of capital be made except with the sanction (if any) for the time required by law.

- q. To adopt such means of making known the articles, goods and products of the company as may seem expedients, and in particulars by advertising in the media, through books, journals, press, films, projectors and cinema houses, television, radio and through circulars, publication of books and periodicals.
- r. To grant donations, make contributions and give financial assistance to charitable and other societies, association, clubs, schools, colleges and universities and other institutions as may be deemed proper.
- s. To open and maintain offices, branches, commercials centers, depots, show rooms, offices, go-downs and to appoint agents, sub-agents, attorneys, representatives, distributors and to establish and run trading and distributorship agencies, factories, laboratories, testing centers, technical institutions on such terms and conditions as may be deemed reasonable and proper.
- t. To sell or dispose of or transfer the business, property, whether movable or immovable, undertaking of the company or any part thereof for such consideration as the company may think fit.
- u. To open account, overdraft accounts and cash credit with or without security, to keep fixed and other deposits with any banks accept/ discount, executes, sign, issue and deal in cheques, bills of exchange, drafts, promissory notes, bill of landing, debentures, bonds, warrants, debenture coupons and other negotiable instruments in connection with the business of this company.



To borrow money in Pakistan as well as in foreign currencies at any time and from time to time for the purpose of the company with or without securities and to avail third party guarantees and collateral, upon such terms as the directors may deem expedients, to take advances from or by cash credit or current or overdraft accounts with any bank, financial institutions, society, company or organizations, including the directors of the company and/or mortgage, hypothecation, charges, pledge or by the issue of debenture charged upon or any of the company's properties (both present and future) or by such other means as the Directors may in their absolute discretion deem fit.

- w. To do such other things as are incidental or conducive in the opinion of the board of Directors to the attainment of the above objects or any of them.
- x. To pay all or any costs, charges and expenses preliminary and incidental to the promotion, formation, establishment and registration, of the company.

It is hereby undertaking that the company shall not engage in banking, finance, leasing or the business of any investment company, or housing finance company, or insurance company or in any other unlawful business and that nothing in the object clauses shall be construed to entitle it to engage in such business. The company shall not launch multi-level marketing & prize schemes.

It is further declared that the company shall not do any kind of pyramid scheme, brokerage & lottery business or such other business through which money from the public can be collected and interest of the public at large is jeopardize.

Notwithstanding anything stated in any object clause, the company shall obtain such other approvals or license from competent authority as may be required under any law for the time being in force, to undertake any such business.

SPECIAL CLAUSE: Notwithstanding anything stated in any object clause, the Company shall obtain such other approval or license from the competent authority, as may be required under any law for the time being in force, to undertake a particular business.

LIBILITIES OF MEMBERS

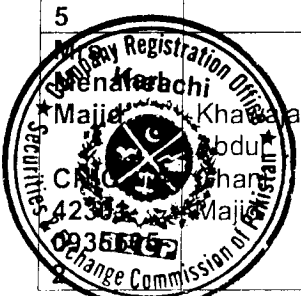
- IV. The liability of member is limited.

CAPITAL

- V. The Authorized Capital of the company is Rs.1,000,000/= (Rupees One Million Only) divided into **10,000** (Ten Thousand) Ordinary Shares of Rs.100/- (Rupees Hundred) each, with power to increase or reduce capital of the company, and from time to time consolidate, such divided or otherwise reorganize the share capital of the company and to issue shares of various classes, and in such denominations with such special rights, privileges and conditions in accordance with the Companies Ordinance, 1984 and its statutory amendments, alternations and modifications for the time being in force and regulations of the Company and to vary, modify or abrogate such rights.



We the several persons, whose names, address and description are hereunder subscribed, are desirous of being formed into a company in pursuance of this Memorandum of Association, and we respectively agree to take the number of shares in the capital of the Company set opposite our respective names:

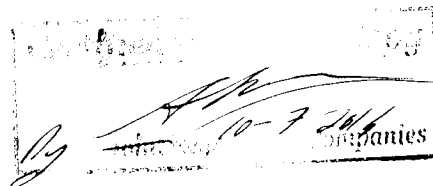
| Name and Surname Present & Former in full | Father's/ Husband in Name full | Nationality With former Nationality | Occupation | Residential Address | Number of hares taken by each subscriber | Signature |
|---|--------------------------------|-------------------------------------|------------|--------------------------------|--|-----------|
| Khawaja Abdul Ghani Majid CNIC # 42301-7764135-5 | Khawaja Anver Majid | Pakistan | Business | 12 Runnymede, Clifton, Karachi | 20 (Twenty only) | |
|  Khawaja Abdul Ghani Majid | Khawaja Anver Majid | Pakistan | Business | 12 Runnymede, Clifton, Karachi | 20 (Twenty only) | |

TOTAL: 40
(Forty only)
=====

Dated this 13th June, 2014.

WITNESSES TO THE ABOVE SIGNATURES

NIFT (PVT) LTD
5th Floor, AWT Tower,
I. I. Chundrigar Road,
Karachi.



THE COMPANIES ORDINANCE, 1984

COMPANY LIMITED BY SHARES

ARTICLES OF ASSOCIATION

OF

TAY POWERGEN COMPANY (PRIVATE) LIMITED

PRELIMINARY

Table "A-" excluded

1. The regulations contained in Table "A" in the First Schedule to the Companies Ordinance, 1984, shall not apply to the company except in so far as they are repeated or contained in these Articles.

Interpretation

2. The chapter headings shall not affect the construction hereof, and in these Articles unless there is something in the subject or context inconsistent therewith.

Articles

"The Articles" mean the Articles of Association, as originally framed or as altered from time to time or the Company acting at a meeting or pursuant to unanimous written consent.

Books and Papers etc.

"Book and Paper", "Book or Paper", or "Books of Account" includes accounts, deeds, vouchers, registers, writings and documents.

Company

"The Company" means TAY POWERGEN COMPANY (PRIVATE) LIMITED.

Chief Executive

"The Chief Executive" means the Chief Executive appointed from time to time by the company pursuant to these Articles.

Directors

"The Directors" mean the directors of the Company appointed from time to time pursuant to these Articles.

Debenture

"Debenture" includes stock, bonds, term finance certificate and any other security or instrument in writing other than the shares of the company whether constituting a charge on the assets of the company or not.

Documents

"Documents" include summon, notice, requisition, order, other legal process, vouchers and register.



(2)

Dividend

"Dividend" means the distribution of profits of the company to its members, and includes bonus.

Holding Company

"Holding Company" shall have the meaning assigned to it by section 3.

Member

"Member" means a member of the company within the meaning of the provision of Section 2(1) (21).

Month

"Month" means as calendar month according to the English calendar.

Ordinance

"The Ordinance" means the Companies Ordinance, 1984 as amended and any amendment or re-enactment thereof for the time being in force.

Office

"Office" means the registered office of the Company.

Participatory Redeemable Capital

"Participatory redeemable capital" means such redeemable capital as is entitled to participate in the profit and loss of the company.

Proxy

"Proxy" includes attorney duly constituted under a Power of Attorney.

Investor

"Investor" means a corporation, a company incorporated under the Ordinance, financial institution, Federal Government, Provincial Government or such other body which holds shares in the company.

Register

"The Register" means the register of members to be kept pursuant to Section 147 of the Ordinance.

Redeemable Capital

"Redeemable capital" has the meaning assigned to it by section 2(1)(30A).

Share

"Share" means share in the capital of the company.

Secretary

"Secretary" means any individual appointed to perform the secretarial, administrative or other duties ordinarily performed by the Secretary.

Section

"Section" means section of the Ordinance.



(3)

Security

"Security" has the meaning assigned to it by section 2(1) (34).

S.E.C.P.

"S.E.C.P." means Securities and Exchange Commission of Pakistan.

Special Resolution

"Special resolution" has the meaning assigned to it by Section 2(1) (36).

Seal

"The Seal" means the common seal adopted by the company.

In Writing and Written

"In writing" and "Written" includes printings, lithography and in writing and other modes of representing or reproducing words in a visible written form.

Word importing the singular number includes the plural number and vice versa.

Word importing the masculine gender only includes the feminine gender.

Words importing persons includes bodies corporate.

PRIVATE COMPANY

Private- Company

3. The Company is a private company within the meaning of Clause 28 of Section 2(1) of the Companies Ordinance, 1984 and accordingly:

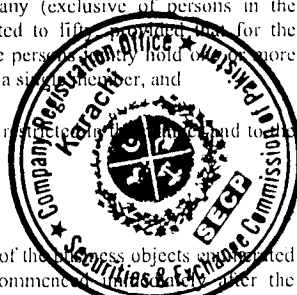
- (a) No invitation shall be issued to the public to subscribe for any shares, debentures or debenture stock of the Company.
- (b) The number of the members of the Company (exclusive of persons in the employment of the Company) shall be limited to fifty, provided that for the purposes of this provision where two or more persons jointly hold or more shares in the Company they shall be treated as a single member, and
- (c) The right to transfer shares in the company is restricted to the extent hereinafter appearing.

Business

4. The business of the Company shall include all or any of the business objects specified in the Memorandum of Association and can be commenced after the incorporation of the Company as the Directors may think fit, not withstanding that part of the capital has been subscribed.

Place of Business

5. The business of the Company shall be carried at Karachi or at such place in the whole of Pakistan or elsewhere as the Directors may deem proper or, advisable from time to time.



(4)

CAPITAL

Capital

6. The authorized Capital of the Company is **Rs. 1,000,000** (Rupees One Million) divided into **10,000** (Ten Thousand Only) Ordinary Shares of Rs. 100/- each with powers to increase or reduce the capital, to divide the shares in the capital for the time being into several classes and to attach to them rights, privileges, conditions, and to vary, modify or abrogate any of such rights, privileges, conditions, as are required or permitted by the Companies Ordinance, 1984 and its statutory amendments, alterations and modifications for the time being in force.

Increase of Capital

7. Where at any time the Board decides to increase the issued capital of the company by issuing any further shares, then subject to any direction to the contrary that may be given by the company in general meeting, such shares shall be offered to the members in proportion to the existing shares held by each member, and such offers shall be made by notice specifying the number of shares to which the member is entitled and limiting a time within which the offer, if not accepted, will be deemed to be declined and after the expiration of such time, or on receipt of an intimation from the members to whom such notice is given that he declines to accept the shares offered, the Board may dispose off the same in such manners as they think most beneficial to the company. The notice shall be accompanied by the circular required under section 86.

Shares at the Disposal of Directors

8. The shares shall be under the control of the Directors who may allot or otherwise dispose of the same to such persons, firms or corporations, on such terms and conditions and at such time as may be thought fit.

Allotment of Shares

9. The Shares in the capital of the Company may be issued or allotted in payment or part-payment of any property, land, building, machinery, goodwill or goods supplied or any services rendered or likely to be rendered to the Company in promotion and establishment of the Company or conduct of its business and any shares so allotted may be issued as fully paid-up shares.

Consolidation or Sub-division of Shares

10. If and whenever as a result of an issue of new shares or any consolidation or subdivision of shares any member becomes entitled to hold shares in fractions, the Board shall not be required to issue such fractional shares and shall be entitled to sell whole shares at a reasonable price and pay and distribute to and amongst the members entitled to such fractional shares in due proportion with the net proceeds of the sale thereof. For the purpose of giving effect to any such sale the Board may authorize any person to transfer the shares sold, to the purchaser thereof, and the purchaser shall be registered as the holder of the shares comprised in any such transfer and he shall not be entitled to see the application of the purchase money nor shall his title to the shares be affected by any irregularity or invalidity in the proceedings in reference to the sale.

Issue of Convertible Securities

11. The company may issue ordinary shares or grant option to convert into ordinary shares the outstanding balance of any loans, advances or credit, as defined in the banking companies ordinance, 1962 (L VII of 1962) or other non-interest bearing securities and obligations in accordance with the provisions of section 87.



12. The company may issue to one or more schedule banks, financial institutions or such other persons, as are specified for the purpose by the Federal Government by notification in the official gazette, any investment in the nature of redeemable capital in any or several form in accordance with the provisions of section 120.

Shares for Consideration Other than Cash

13. Subject to the provision of the Ordinance and these Articles, the Board may allot and issue Shares in the capital of the company as payment for any property sold or transferred, goods or machinery supplied, or for services rendered to the company in the conduct of its business or affairs and any shares which may be so allotted may be issued as fully paid up shares and if so issued, shall be deemed to be fully paid up shares.
14. Any application or subscription signed by or on behalf of an applicant or Subscriber for shares in the company, followed by an allotment of any shares therein, shall be an acceptance of shares, within the meaning of these Articles, and every person who thus or otherwise accepts any shares and whose name is entered on the register shall for the purpose of these Articles be a member.
15. The money (if any) which the Board shall on the allotment of any shares being made by it require or direct to be paid shall immediately on the insertion of the name of the allottee in the register of members as the holder of such Shares, become a debt due to and recoverable by the company from the allottee thereof, and shall be paid by him accordingly.

Right of ownership of Shares

16. Save as herein otherwise provided the company shall be entity to treat the person whose name appears on the register of members as the holder of any shares as the absolute owner thereof, and accordingly shall not (except as ordered by a court of competent jurisdiction or as required by law) be bound to recognize any trust or equity or benami, equitable, contingent or other claim to or interest in such shares, on the part of any other person whether or not it shall have express or implied notice thereof.

UNDERWRITING, COMMISSION AND BROKERAGE

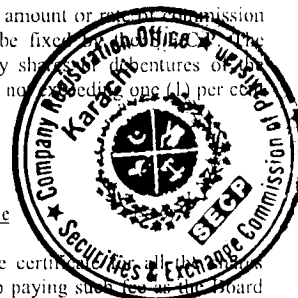
Brokerage

17. The Company may at any time pay a commission to any person for subscribing or agreeing to subscribe (whether absolutely or conditionally), for any shares or debentures or procuring or agreeing to procure, subscriptions, whether absolute or conditional, for, any shares or debentures of the company, but so that the amount or rate of commission shall not exceed the rate per cent of amount as may be fixed by the Board. The commission may be paid or satisfied in cash or in any share or debentures of the company. The company may also pay the usual brokerage not exceeding one (1) per cent in respect of any subscription for shares or debentures.

CERTIFICATES

Members Entitled to Share Certificate

18. Every member shall be entitled without payment to one certificate for all the shares registered in his name, or if the Board so approved (upon paying such fee as the Board may from time to time determine), to several certificates, each for one or more shares. Every certificate of shares shall specify the number and denoting numbers of the shares in respect of which it is issued and the amount paid



(6)

thereon, such certificate shall be issued under seal and bear the signature of one Director and shall be countersigned by the Secretary or by a second Director or by some other person appointed for that purpose by the Board.

Renewal of Certificate

19. If any certificate is worn out, defaced or rendered useless, then upon production thereof to the Board, it may order the same to be cancelled and may issue a new certificate in lieu thereof and if any certificate is lost or destroyed, then on proof thereof, to the satisfaction of the Board and on such indemnity as the board deems adequate being given, a new certificate thereof shall be given to the party entitled to such lost or destroyed certificate.
20. The company shall, within ninety (90) days after the allotment and within forty five (45) days after the application for the registration of the transfer of any share, complete and have ready for delivery the certificates for shares and unless sent by post or delivered to the persons entitled thereto, within that period, shall give notice of the fact to the shareholder immediately thereafter.

A duplicate of a certificate of shares, shall be issued within forty-five (45) days from the date of application.

6

TRANSFER AND TRANSMISSION

Register of Transfer



The company shall keep a book to be called the "Register of Transfer" and therein shall be clearly and distinctly entered the particulars of any transfer and transmission of any share.

The instrument of transfer of any share shall be in writing in the usual common form or in the following form or as near thereto as circumstances will admit:

I, TAY POWERGEN COMPANY (PRIVATE) LIMITED being

being _____ National, in

Consideration of the sum of Rs. _____

(Rupees _____)

Paid to me by _____ S/O _____

of _____ National _____

Hereinafter called "The Transferee") do hereby transfer to the _____ Ordinary Share(s) numbered in the undertaking called **TAY POWERGEN COMPANY (PRIVATE) LIMITED** to hold the same into the said Transferee, his (or her) executors, administrators and assigns subject to the several conditions on which I held the same immediately before the execution hereof, and I, the Transferee, do hereby agree to take the said share(s) subject to the said conditions aforesaid. As witness etc.

The Board may from time to time alter or vary the transfer form.

(7)

Condition for Transfer

23. The share shall be transferred subject to following restrictions:
- (a) the shares shall in the first instance be offered to the exiting shareholders.
 - (b) if the exiting shareholders are not willing to accept the shares the Board shall approved transfer of shares, subject to the consent of all exiting shareholders, to other persons.
 - (c) the shares shall be sold at a market value to be determined by the Auditors of the company with other experts of the company; if necessary.

No Transfer to an Infant

24. No shares in any circumstances shall be transferred to an infant, an Infant insolvent or person of unsound mind.

Closure of Transfer Books

25. The Board shall have power to close the register of transfer *for* such period or periods of time not exceeding thirty days at a time and 45 days in a year.

Right of Nomination

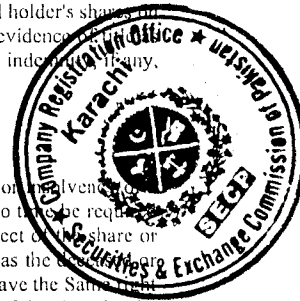
26. A person may on acquiring interest in the company as a member, nomination represented by shares, at any time after acquisition of such interest deposit with the company a nomination conferring on one or more persons the right to acquire interest in the shares specified therein in the event of his death.

Transmission of Shares

27. In the case of death of shareholders the survivor where the deceased was a joint holder, and (subject as hereinafter provided), where the deceased was a sole or only surviving holder, the executor or administrators of the deceased holding a grant of probate or letters of administration effective in Pakistan, shall be the only persons recognized by the company as having any title to the shares, but nothing herein contained shall release the estate of a deceased holder (whether sole or joint), *from* any liability (whether sole or joint), in respect of any share solely or jointly held by him. In any case in which such a grant of probate or letters of administration to the estate of a deceased sole or only surviving holder has not been obtained, the Board may, but shall not be bound to, recognize the title of any person claiming to be entitled to the deceased holder's shares on production by such claimant of a succession certificate or such other evidence as the Board may deem sufficient, and upon the claimant furnishing such indemnity as the Board may require.

Right of persons becoming entitled to share

28. Any person becoming entitled to a share in consequence of the death or insolvency of a member shall, upon such evidence being produced as may *from* time to time be required by the Board, have the right either to be registered as member in respect of the share or instead of being registered himself, to make such transfer of the share as the deceased or insolvent person could have made but the Board shall, in either cases have the same right to decline registration as they would have had in the case of a transfer of the share by the deceased or insolvent person the death or insolvency.
29. A person becoming entitled to a share by reason at the death or insolvency of the holder shall subject to Article 28 above, be entitled to the same dividends and other advantages to which he would be entitled if he was the registered holder of the



share, except that he shall not before being register as a member in respect of the share, be entitled in respect of it to exercise any rights conferred by membership in relation to meeting of the company.

30. The company shall incur no liability whatsoever in consequence of its registering or giving effect to any transfer of shares made or purporting to be made by any apparent legal owner thereof (as shown or appearing in the register) to the prejudice of persons having or claiming any equitable right, title or interest to or in the same shares, notwithstanding that the company may have had notice of such equitable right, title or interest or notice prohibiting registration of such transfer, and the company shall not be bound or required to regard or attend or give effect to any notice which may be given to it of any equitable right, title or interest, or be under any liability whatsoever for refusing or neglecting so to do, but the company shall nevertheless be at liberty to regard and attend any such notice and give affect thereto, if the Board shall so thinks fit.

ALTERATION OF CAPITAL

Increase of Capital

31. The company may by a Resolution increase its Authorized Share Capital comprising of any class and denomination.



except and so far as otherwise provided by the conditions of issued or by these Articles, capital raised by the creation of new shares shall be considered part of the Authorized Capital and shall be subject to the provisions herein contained with reference to transfer and transmission, voting and otherwise.

Reduction of Share Capital

33. The company may by special resolution reduce its share capital in any manner and with subject to any incident authorized and consent required by law.

34. The company may in general meeting by Resolution alter the conditions of its memorandum as follows:

Consolidation and Division of Share

- (a) Consolidate and divide all or any of its share capital into shares of larger amount than its existing shares;
- (b) Sub-divide shares or any of them into shares of smaller amounts than originally fixed by the memorandum and subject nevertheless to the provisions of the Ordinance in that behalf;
- (c) Cancel shares which at the date of such General Meeting have not been taken or agreed to be taken by any person, and diminish the amount of its share capital by the amount of the shares so canceled.

Variation of Rights

35. The variation in the right of shareholders shall be made in the manner provided by Section 108.

BORROWING POWERS

Powers to Borrow

36. The Directors may from time to time at their discretion borrow or secure the payment of any sum or sums of money for the purposes of the Company from any persons.

firms or companies, banks, or investment corporation, government or semi-government institutions or any other source whatsoever (expressly including any member of the Company) and may themselves but to the Company any such sum or sums on security or otherwise.

Condition on which money may be borrowed.

37. The Directors may borrow or secure the payment of such sum or sums of money in such manner and upon such terms and conditions in all respect as they think fit, either by creation of any mortgage, hypothecation as charge on the whole or any part of the property of the Company and in particular by the issue of the debentures or debenture-stock of the Company charged upon the whole or any part of the property of the Company both present and future.

Assignment of Securities

38. The debenture, debenture-stock or other securities may be made assignable free from any equities between the company and the person to whom the same may be issued.

Issue at Discount etc.

39. Any bonds, debentures or other securities may be issued at a discount, premium or otherwise and with any special privileges as to redemption, surrender, drawings, Convertibility into shares, attending and voting at general Meeting of that company, appointment of Directors and otherwise, provided that debentures with the right to vote or be converted into shares shall not be issued without the consent of the company in General Meeting.

Liability for payment of sum due from the Company

40. If the Directors or any of them or any other person shall become personally liable for the payment of any sum primarily due from the company, the Board may execute or cause to be executed any mortgage, charge or security over or affecting the whole or any part of the assets of the company by way of indemnity to secure the Directors or person becoming liable as aforesaid from any loss in respect of such liability.

GENERAL MEETING

General Meeting

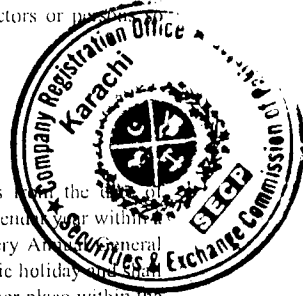
41. An Annual General Meeting shall be held within eighteen months from the date of incorporation of the Company, and thereafter once at least in every calendar year within a period of four months following the close of its financial year. Every Annual General Meeting shall be called during business hours on a day that is not Public holiday and shall be held either at the Registered Office of the Company or at some other place within the City, town or village in which Registered Office of the Company is situated and the notice calling the meeting shall specify it as the Annual General Meeting.

Extra-ordinary General Meeting

42. The Board may call an Extraordinary General Meeting whenever it shall think fit. An Extraordinary General Meeting may also be convened on the requisition of the members in accordance with the provision of Section 159.

Notice of Meeting

43. At least twenty-one days notice specifying the place, the day and the hour of the general meeting and in case of special business, the general nature of such business,



shall be given to the members in the manner hereinafter mentioned, or in *such* other manner as may be prescribed by the Company in General Meeting but accidental omission to give such notice to or non-receipt of such notice by any member shall not invalidate the proceeding of the General Meeting, subject to the provisions of the Ordinance. The Directors may whenever they think fit, and shall on requisition in accordance with the ordinance proceed to convene of Extraordinary General Meeting.

Quorum

44. No business shall be transacted at any General Meeting unless a quorum of members is present, two members present, in person who represent twenty-five percent of the total voting power of the company either of their own account or as proxies shall be a quorum for a General Meeting.

45. If within half an hour of the time appointed for the holding of a general meeting a quorum be not present, the meeting may be adjourned on the requisition of shareholders, shall be dissolved and if every shareholder present at the adjourned meeting shall be present at the same day in the next week, at time and place as was appointed for holding the general meeting and if as such adjourned meeting the quorum is not present within fifteen minutes from the time appointed for holding the meeting, the members present being not less two shall be a quorum.

PROCEEDINGS AT GENERAL MEETINGS

Chairman to Preside

46. The Chairman of the Board of Directors shall preside at every general meeting but if at any meeting he may not be present within 15 minutes after the time appointed for holding the same or is unwilling to preside, members present shall choose some Director or if no Director be present or if the Directors present decline to take chair, the members shall choose some member to be the Chairman of the meeting.

Power of Chairman to Adjourn

47. The Chairman with the consent of the meeting may adjourn any meeting from time to time and from place to place, but no business shall be transacted at any adjourned meeting other than business which might have been transacted at the meeting from which the adjournment took place. The resolution at an adjourned meeting shall for all purposes, be treated as having been passed on the date on which it was in fact passed and shall not be deemed to have been passed on any earlier dates.

Carrying of Resolution

48. At any General Meeting a resolution put to the vote of the Meeting shall be decided on a show of hands unless poll is (before or on the declaration of the result of the show of hands) demanded by one Member having right to vote on the resolution and present in person or by proxy, if not more than seven members are personally present, and by two such members present in person or by proxy if more than seven such members are personally present or by the Chairman of the Meeting or any member or members present or by proxy and holding or representing not less than one - tenth of the issued capital carrying voting rights, and unless a poll is so demanded, as declaration by the chairman then a resolution has been carried or carried unanimously or by a particular majority or lost, and an entry to that effect in the books of the proceedings of the company, shall be conclusive evidence of the fact without further proof of the number or proportion of the votes recorded in favour of or against such resolution.

(11)

Demand for Poll

49. If a poll is demanded as aforesaid it shall be taken in such manner as the Chairman of the meeting directs, and either at once or after an interval or adjournment, and the results of the poll shall be deemed to be the resolution of the meeting at which the poll was demanded. The demand for a poll may be withdrawn at anytime by the person or persons who made the demand.

Time for taking poll

50. Any poll duly demanded on the election of a Chairman of a Meeting or on any question of adjournment shall be taken forthwith and without adjournment and a poll demanded on any other question shall be taken at such time, not more than fourteen days from the day on which it was demanded, as the chairman of the meeting may direct.

Business may proceed notwithstanding demand of poll

51. The demand for a poll shall not prevent the continuation of meeting for the transaction of any business other than the question on which the poll was demanded.

Minutes

52. Minutes shall be made in book provided for the purpose of all resolutions and proceedings at General Meetings, and such minutes if signed by any person purporting to have been the Chairman of the Meeting to which it relates or by the Chairman of the Board shall be receivable as evidence of the facts therein stated without further proof.

Minutes Book

53. The books containing minutes of proceedings of General Meetings of the company shall be kept at the registered office of the company and shall during business hours (subject to reasonable restrictions as the Board may from time to time impose but so that not less than two hours each day is allowed for inspection) be open to the inspection of any member without charge.

VOTES OF MEMBERS

2

Votes

54. Upon a show of hands every member entitled to vote and present in person or by proxy shall have one vote, and upon a poll every member entitled to vote and present in person or by proxy shall have one vote for every share conferring voting rights as aforesaid by him.

Right to Vote

55. Any person entitled under the Transmission Clause to Transfer any shares may vote at any General Meeting in respect thereof as if he was the registered holder of such shares provided that at least 48 hours before the time of holding the meeting and adjournment meeting as the case may be at which he proposes to vote he shall satisfy the Directors of his right to transfer such shares unless the Director shall have previously admitted his right to vote at such meeting in respect thereof.

Appointment of Proxy

56. No person shall be appointed a proxy who is not a member of the company and qualified to vote, save that a corporation or a company being a member of the company may appoint as proxy or as its representative any person though not a



member of the company, and the person so appointed shall be entitled to exercise the same powers on behalf of the corporation which he represents, as that corporation could exercise if it were an individual member of the company. Any such appointment shall be authorized by a resolution of Directors of that company or corporation.

Proxy in Writing

57. Every proxy shall be appointed in writing under the hand of the appointer or by an agent duly authorized under a power of Attorney or if such appointer is a company or corporation under the common seal of the company or corporation or the hand of its Attorney who may be the appointer.

Irrevocable Proxy

58. Any proxy declared expressly on its face to be irrevocable shall not be revoked or be deemed revoked by the member giving such proxy whether by attendant at any General Meeting held during the period of such proxy or by any other action on his part whatsoever, or otherwise during the term of such proxy if such proxy is furnished to and filed with the records of the company, and the company shall be bound to recognize and give effect to such proxy in accordance with the terms thereof.

Validity of Proxy

59. No person shall act as proxy unless the instrument of his appointment and the Power of Attorney, if any, under which it is signed shall be deposited at the office of the company at least forty eight hours before the time for holding the meeting at which he proposes to

Form of Proxy



Instrument of proxy may be in the following form, or in any other form which the Directors, shall approve or in the form contained in Table "A" of the First Schedule of the

POWERGEN COMPANY (PRIVATE) LIMITED "I
of _____ in the
district of _____ being a member of _____
hereby appoint _____ as my proxy
to vote for me and on my behalf at the Ordinary/Extraordinary (as the case may be)
General Meeting of the Company to be held on the _____ day of
_____ and at any adjournment thereof."

Validity of Vote

61. A vote given in accordance with the terms of an instrument of proxy shall be valid notwithstanding the previous death of the principal or revocation of the proxy or of any power of attorney under which such proxy was signed provided that no intimation in writing of the death or revocation shall have been received at the office before the meeting.
62. No objection shall be made to the validity of any vote except at the meeting or at the poll at which such vote shall be tendered and every vote whether given personally or by proxy not disallowed at such meeting or poll shall be deemed valid for all purposes of such meeting or poll.

(13)

63. If question is raised, the Chairman of the Meeting shall decide on the validity of every vote tendered at such meeting in accordance with these Articles.

DIRECTORS

Number of Directors

64. (a) There shall be not less than two Directors of the company. The Directors shall fix the number of elected Directors of the company not later than thirty five (35) days before the convening of the General Meeting at which directors are to be elected, and the number so fixed shall not be changed except with the prior approval of the General Meeting of the Company.
- (b) The following shall be the first directors of the Company.
1. KHAWAJA ABDUL GHANI MAJID
 2. MRS. MENAHIL MAJID



Term of Directors

The first Directors shall hold office until the election of in the First Annual General Meeting. The Directors elected shall hold office for a period of three years unless he becomes disqualified or otherwise ceases to hold office. The Director so continuing to perform his function until his successor is elected.

Delegation of Power

66. The Directors may delegate either powers to committees consisting of such member or members as they think fit.
67. Any committee so formed shall in the exercise of the powers so delegated conform to any regulations that may be imposed on them by the directors.

Remuneration of Directors

68. Until otherwise determined by the company in General Meeting, each Director shall be entitled to be paid as remuneration for his services a fee at the rate of Rs. 2500/- per meeting.
69. Any director who serves on any committee or who devotes special attention to the business of the company or who otherwise performs services which, in the opinion of the Board are outside the scope of the ordinary duties of a director may be paid such extra remuneration by way of salary or allowance as the company in General Meeting may determine.

Share Qualification of Director

70. A director shall be required to hold at least one qualification share subject to Section 187.

Nomination by Directors

71. The investor, shall have powers to nominate such number of directors in the Board of Directors of the Company, as are proportionate to its holding in the paid up capital of the company. The Directors so nominated shall not be subject to the provisions of these Articles and Ordinance relating to the eligibility for appointment, election, retirement, removal, filling of casual vacancy and vacation of office etc.

POWERS AND DUTIES OF DIRECTORS

Management of Business

72. The control of the company shall be vested in the Board and the business of the company shall be managed by the Board, which may pay all expenses incurred in forming and registering the company, and may exercise all such powers of the company as are not by Ordinance or by these Articles required to be exercised by the company in General Meeting, subject nevertheless to the regulations of these Articles, to the provisions of the Ordinance and such regulations (not inconsistent with the aforesaid regulations or provisions), as may be prescribed by the company in General Meeting but no regulation made by the company in General Meeting shall invalidate any prior act of the board which have been valid if the regulation had not been made.

Power of Board

73. The Board may exercise all the powers of the company to borrow money and to mortgage or charge its undertakings, property and assets (both present and future), and to issue debentures and other securities whether out right or as collateral security for any debt, liability or obligation of the company, or of any third party.

Books to keep

74. The Board shall cause minutes to be made in books provided for the purpose;
- (a) of the name of Director present at each meeting of the Board and of any Committee of Directors;
 - (b) of all resolutions and proceedings at all meetings of the company and of the Board and of committee of Directors.

Any such minutes of any meeting of Board or of a Committee of Directors or of the company, if signed or purporting to be signed by the Chairman of such meeting, or of the next succeeding meeting, shall be receivable as evidence of the matters stated in such minutes. The books containing minutes of General Meeting shall be kept at the registered office of company and shall be open to inspection as required by Section 173.

Payment of Retirement Benefits

75. The Board may pay and agree to pay pension or other retirement, superannuation, death or disability benefits or allowances to any person in respect of any Director or former Director who may hold or may have held any executive office or position under the company, or any subsidiary company of the company, or any holding company of any), and for the purpose of providing any such pensions or benefits or allowances may contribute to any scheme or fund and may make payments towards or towards or towards in respect of such persons.

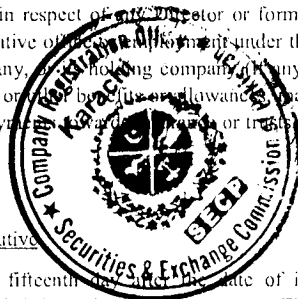
CHIEF EXECUTIVE

Appointment of Chief Executive

76. The Directors as from a date not later than the fifteenth day after the date of its incorporation, appoint any individual to be the Chief Executive of the company. The Chief Executive shall be deemed to be its Director and be entitled to all the rights and privileges and subject to all the liabilities of that office.

Chief Executive to hold office till First Annual General Meeting

77. The Chief Executive shall, unless he earlier resigns or otherwise ceases to hold office, hold up to the First Annual General Meeting or, if a shorter period is fixed by the Directors at the time of his appointment, for such period.



Eligibility for Appointment

78. No person who is ineligible to become a director of the company shall be appointed or continue as the Chief Executive.

Term of office of Subsequent Chief Executive

79. Within fourteen days from the date of election of Directors or the office of the Chief Executive falling vacant, as the case may be the Directors shall appoint any person, including an elected Director, to be the Chief Executive, but such appointment shall not be for a period exceeding three years from the date of appointment.

Eligibility of Re-appointment

80. On the expiry of his term of office under Article 78 & 79 the Chief Executive shall be eligible for reappointment.
81. The Chief Executive retiring under Article 78 & 79 shall continue to perform his functions until his successor is appointed unless non-appointment of his successor is due to any fault on his part or his office is expressly terminated.

Removal of Chief Executive

82. The Directors by resolution passed by not less than three-fourths of the total number of Directors for the time being, or the company by a special resolution, may remove a Chief Executive before the expiration of his term of office notwithstanding anything contained in these articles or in any agreement between the company and such Chief Executive.

Remuneration of Chief Executive

83. The Chief Executive shall receive such remuneration (Whether by way of salary, commission, participation in profits, allowances perquisites, etc., or partly in one way and partly in another) as the Board may fix.

Power of Chief Executive

84. The Director may entrust to and confer upon the Chief Executive of the power exercisable by them upon such terms and conditions and with such restrictions as they may think fit, and either collateral with or to the exclusion of their own powers, and may from time to time revoke, withdraw, alter or vary all or any of such powers.

DISQUALIFICATION AND VACATION OF OFFICE OF DIRECTORS

Qualification of Directors

85. No person shall be appointed as a Director of the company if he is ineligible to be appointed as Director under any of the provisions of the Ordinance or any other law for the time being in force.

86. The office of a Director shall be vacated if:

Vacation of office of Directors

- (a) he becomes ineligible to be appointed a director on anyone or more of the grounds enumerated in clauses (a) to (h) of section 187;

Absent from Meeting

- (b) he absents himself from three consecutive meetings of the Directors or from all the meetings of the Directors for a continuous period of three months, whichever is the longer, without leave of absence from the Directors;

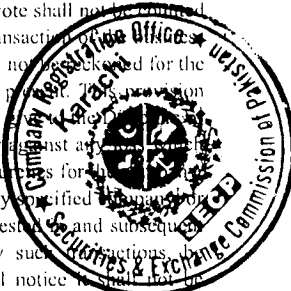


- (c) he or any firm of which he is a partner or any private company of which he is a Director:
 - (i) without the sanction of the company in General Meeting excepts or holds any office of profit under the Company other than that of Chief Executive or a legal or technical adviser or a banker; or
 - (ii) accepts a loan or guarantee from the Company in contravention of Section 195.
- (d) he suspends payment to or compounds with his creditors; or
- (e) he resigns office by notice in writing addressed to the Company or to the Directors; or
- (f) he is removed from his office by the Company in General Meeting; or
- (g) he is convicted by a court in Pakistan of any offence and is sentenced in respect thereof to imprisonment for not less than six months or is convicted by a court in Pakistan of any offence involving moral turpitude; or
- (h) he acts in contravention of section 214

The appointment of an Alternate Director under these Articles shall constitute leave of absence to the Director for whom such an alternate is appointed during such Directors absence.

Directors Contract with the Company

87. Subject to the provisions of Section 214 of the Ordinance the Directors shall not be disqualified from contracting with the company either as vendor purchaser or otherwise nor shall any such contract or arrangement entered into by or on behalf of the company with any company or partnership of or in which any director shall be a member or so interested be liable to account the company for any profit realized by any such contract or arrangement by reasons of such Director holding that office or of the fiduciary relation thereby established but the nature of his interest must be disclosed by him at the meeting of the Directors at which the contract or arrangement is determined on if the interest then exists, or in any other case at the meeting of the Directors after the acquisition of the interest. Provided nevertheless that no Directors shall take part in the discussion of such contract or arrangement or Vote as a Director in respect of any contract or arrangement in which he is so interested as aforesaid and if he does so vote his vote shall not be counted but he shall be entitled to be present at the meeting during the transaction of business in relation to which he is precluded from voting although he shall not be reckoned for the purpose of ascertaining whether there is a quorum of directors present. This provision shall not apply to any contract by or on behalf of the company to indemnify any director or any loss which they or any of advanced or by way of indemnity against any loss which they or any of them may suffer by reason of becoming or being successors for the company. A general notice that any Director is a director or a member of any specified firm or is a member of any specified firm and is to be regarded as interested in and subsequently transaction with such firm or company shall, as regards any such transactions, be sufficient disclosures under this Article, and after such general notice it shall not be necessary to give any special notice relating to any particular transaction with such firm or company. Any such general notice shall expire at the end of the financial year in which it is given, but may be renewed for further period of one financial year in which it would otherwise expire. No such general notice, and no renewal thereof, shall be of effect unless it is given at the meeting of the Directors, or the Directors concerned take reasonable step to ensure that it is brought up and read at the first meeting of the Directors after it is given.



Register of Directors Contract

88. A register shall be kept by the Director in which shall be entered particulars of all contracts or arrangement to which Article 87 applies.

Loan to Directors

89. The Company shall not, directly or indirectly make any loan to, or give any guarantee or provide any security in connection with a loan made by any other person to, or to any other person by such persons as are specified in and to the extent permitted by section 195.

ROTATION, ELECTION AND REMOVAL OF DIRECTORS

Election of Directors

90. Any person who seeks to contest an election to the office of Director shall, whether he is a retiring Director or otherwise, file, with the company, not later than fourteen days before the date of the meeting at which election are to be held, a notice of his intention to offer himself or election as Director. The notice shall be transmitted by the company to the members not later than seven days before the date of the meeting.

Manner of Election of Director

The Director shall be elected by the members of the company in General Meeting in the following manner namely:

- (a) a member shall have such number of votes as is equal to the product of the number of voting shares held by him and the number of Directors to be elected;
- (b) a member may given all his votes to a single candidate or divide them between more than one of the candidates in such manner as he may choose and the candidate who gets the highest number of votes shall be declared elected as Director and then the candidate who gets the next highest number of votes shall be so declared and so on until the total number of Directors to be elected.

Casual Vacancy

92. Any casual vacancy occurring among the Directors may be fill up by the Directors and the person so appointed shall hold office for the remainder of the term of the Director in whose place he is appointed.

Removal of Directors

93. A resolution for removing a Director elected in the manner provided for in Article 91 or for reducing the number of Directors shall not be deemed to have been passed if the number of votes against it is equal to election of a Director at the immediately preceding annual election of Director in the aforesaid manner.

PROCEEDINGS OF DIRECTORS

Meeting of Directors

94. The directors may meet together for the dispatch of business, adjourn and otherwise regulate meetings of the Board as they think fit. The Chairman or the Chief Executive if any may at time and shall on the written requisition of two Directors at and time summons a meeting of the Board. At least Ten clear days notice must be given to all Directors to summon a meeting of the Board and such notice shall set forth the purpose or purposes for which such meeting is Summoned. However with the consent of all Directors entitled to receive notice of a meeting or to attend and vote at any such meeting, a meeting of the Board may be convened by shorter notice than specified in this Article.



Quorum

95. A meeting of the board for the time being at which a quorum is present shall be competent to exercise all or any of authorities, persons and discretions by or under these Articles vested in or exercisable by the Board generally. Two Directors personally present shall constitute a quorum.

Election of Chairman

96. The Chairman shall whenever present preside as Chairman at each meeting of the Board but if at any meeting the Chairman is present and not willing to act or is absent beyond ten minutes after the time fixed for holding the same, the Vice Chairman shall act as Chairman, in the absence of both the Chairman and the Vice Chairman or in the event of the unwillingness of both to act, the directors present shall within fifteen minutes of the time fixed for the meeting choose one of their members to be Chairman of such meeting.

When Act of Directors or Committee valid notwithstanding defective appointment etc.

97. All acts done by meeting of the Board or of a Committee of Directors, or by any person acting as a Director or Alternate Director shall, notwithstanding that it be afterwards discovered that there was some defect in the appointment of any such Directors or persons acting as aforesaid, or that they or any of them were disqualified, be as valid as if every such Director or person had been duly appointed and was qualified to act.

Resolution in Writing

98. A resolution in writing, except for the matter specified in section 196, signed by all Directors present in Pakistan shall be effective as if such resolution had been passed at a meeting of the Directors. Any director may waive notice of the time, place and purpose of any meeting either before, at or after such meeting.

ALTERNATE DIRECTORS

Alternate Director

99. Any Director not permanently resident in Pakistan and any Director so resident but intending to be absent there from for a period of not less than three months may appoint any person acceptable to the Board to be an Alternate Director of the Company to act for him. Every such appointment shall be in writing under the hand of the Director making the appointment. An Alternate Director so appointed shall not be entitled to appoint another Alternate Director, but shall otherwise be subject to the provisions of these Articles with regard to Directors, except that he shall require no share qualification. An Alternate Director shall be entitled to receive notices of all meetings of the Board and to attend and vote as a director at any such meeting at which the Director appointing him is not personally present, and generally to such appointed An Alternate Director shall *facto* cease to be as Alternate Director if his appointer for any reason ceases to be a Director or if and when his appointer returns to Pakistan, or removes his appointment from office by notice in writing under the hand of the appointer.



DIVIDENDS AND RESERVES

Declaration of Dividend

100. The company in General Meeting may declare dividends, but no dividends shall exceed the amount recommended by the Board.

Payment of Interim Dividend

101. The Board may from time to time pay to the members such interim dividend as appear to be justified by the profits of the company.

No Dividend Except out of profit

102. No dividends shall be paid otherwise than out of profits of the year or of any other undistributed profits from prior years or in contravention of section 235 and 248.
103. Subject to the right of any person entitled to shares with rights as to dividends the profits distributed as dividends shall be distributed among the shareholders and all such dividends shall be declared and paid according to the amounts paid on the shares. If any shares are issued on term that it shall rank for dividend as from a particular date, such share shall rank for dividend accordingly.

Creation of Reserve

104. The Board may, before recommending any dividend, set aside out of the profits of the company such sums as they think proper reserve as a reserve or reserves, which shall, at the discretion of the Board, be applicable for meeting contingencies, or for equalizing dividends, or for any other purpose to which the profits of the company may be properly applied and pending such application may, at the like discretion, either be employed in the business of the company or be invested in such investments subject to the provisions of section 208, or any other provisions of the Ordinance (other than shares of the company) as the Board may from time to time think fit.



Payment of Dividend to Joint Holders

If several persons are registered as joint holders of any share, anyone of them may give effectual receipts for any dividends payable on the share.

Dividend shall bear no Interest

106. No dividend shall bear interest against the company.

Mode of payment of Dividend

107. (a) Any dividend may be paid by cheque or warrant sent through the registered post to the registered address of the member or person entitled thereto, or in the case of joint holders to anyone of such joint holders at his registered address or to such person and at such address as the member or person entitled or such joint holders, as the case may be direct. No dividend shall be paid by the company in respect of any share therein except to the registered holder or to his order or to his banker or to a financial institution nominated by him for the purpose and the payment shall be made within thirty (30) days of the declaration.
- (b) Dividends unclaimed for one year may be invested or otherwise used by the Board for the benefit of the company until claimed.

CAPITALIZATION

Capitalization of Reserves

108. Any General Meeting may, upon recommendation of the Board resolve that any undivided profits of the company (including profits carried and standing to the credit of any reserve or reserves or other Special accounts or representing premiums received on the issue of shares and standing to the credit of the share premium account), not required for paying the Dividends on any shares issued be capitalized.

Such capitalized undivided profits shall be distributed amongst such of the shareholders as would be entitled thereto as capital. All or any part of such capitalized fund may be applied on behalf of such shareholders for payment in full or in part either at par or at such premium as the resolution may provide, for any unissued share or debentures of the company which shall be distributed accordingly, or for outwards payment of uncalled liability on any issued debentures and that such distribution or payment shall be accepted by such shareholders in full satisfaction of their interest in the said capitalized sum.

ACCOUNTS

Books of Account

109. The Board shall cause to be kept proper books of accounts as required under section 230.

Keeping of Books of Account

110. The books of account shall be kept at the registered office or at such other place as the Board shall think fit in accordance section 230.

Inspection of Books of Account

2

111. The Board shall from time to time determine whether and to what extent and at what times and places and under what conditions or regulations the accounts and books of the company or any of them shall be open to inspection of members and no member shall have any right of inspecting any account or books or document of the company except as conferred by Laws or authorized by the Board or by special resolution of the company in General Meeting.

Laying Account before the Annual General Meeting

112. Within eighteen months of the incorporation of the company, and subsequently once in every Calendar year, within a period of four months following the close of its financial year and not more than fifteen months after the holding of its last preceding Annual General Meeting, the Director shall lay before the company in General Meeting a balance sheet and profit and loss account, both made up in accordance with the Ordinance. Every such balance sheet shall be accompanied by auditor's report and the Director's report, in accordance with the provisions of the Ordinance in that behalf.

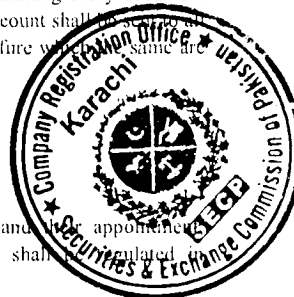
Dispatch of Accounts & Directors Report to Members

113. A copy of the report of the Directors and of the balance sheet (including every document required by law to be annexed thereto) and of the profit and loss account shall be sent to members along with the notice convening the General Meeting before which the same are required to be laid.

AUDIT

Auditors

114. Auditors shall be appointed at each Annual General Meeting and their appointment, qualification, removal, casual vacancy, powers and duties etc. shall be regulated in accordance with sections 252 to 255.
115. The Auditors report shall be read before the company in general meeting and shall be open to inspection by any member.



NOTICE

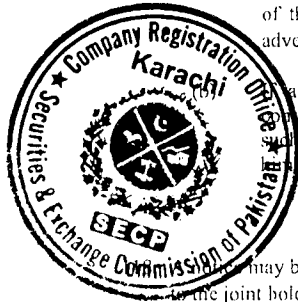
Dispatch of Notices to Members and Directors

116.

- (a) A notice may be given by the company to any member either personally or by sending it by post to him at his registered address or (if he has not registered address in Pakistan), to the address, if any, within Pakistan supplied by him to the company for the giving of notices to him.
- (b) Where a notice is sent by post, services of the notice shall be deemed to be effective by properly addressing, prepaying and posting a letter containing the notice, and unless the contrary is proved to have been effected at the time at the letter would be delivered in the ordinary course of post.

117.

- (a) If a member has no registered address in Pakistan and has not supplied to the company an address within Pakistan for the giving of notice to him, a notice advertised in a newspaper circulating in the neighborhood of the registered office of the company shall be deemed to duly given to him on the day which the advertisement appears.



If a member has supplied an address to the company within Pakistan as contemplated by sub-clause (a) above, the company, in addition, shall furnish to such members notice at an address outside Pakistan which has been supplied by him to the company.

Notice to Joint Holders

Notice may be given by the company to the joint holders of shares by giving the notice to the joint holder named first in the register in respect of the shares.

Notice at death of a member

- 119. A notice may be given by the company to the persons entitled to a share in consequence of the death or insolvency of a member by sending it through the post in a prepaid letter addressed to them by name, or by the title of letter addressed to them by name, or by the title of representative of the deceased, or assignee of the insolvent, or by any like description, at the address (if any) in Pakistan supplied for the purpose by the persons claiming to be so entitled, or (until such an address has been supplied) by giving the notice in any manner in which the same might have been given if the death or insolvency had not occurred.

Notice of General Meeting

120. Notice of every general meeting shall be given in some manner here in before authorized to:

- (a) Every member of the company;
- (b) Every person entitled to a share in consequence of the death or insolvency of a member; and
- (c) The auditors of the company;

SECRETARY

Secretary

- 121. A secretary shall be appointed by Directors at such remuneration and upon such terms and conditions as they may think fit and any secretary so appointed may be removed by them. The Secretary shall be responsible to ensure compliance with the secretarial formalities under the Ordinance.

THE SEAL

Affixing of Seal

122. The Board shall provide for the safe custody of the Seal, and the seal shall never be used except by the authority of the Board or a Committee of Directors previously given, and one Director at least shall sign every instrument to which the seal is affixed provided, nevertheless, that any instrument bearing the seal of the company and issued for valuable consideration shall be binding on the company notwithstanding any irregularity touching any authority to issue the same.

SECRECY

Secrecy

123. Every Director, Chief Executive, Manager, Auditor, Trustee member of a committee, officer, servant, agent, accountant or other person employed in the business of the company shall, if so required by the Board before entering upon his duties, sign a declaration in the form approved by the Board pledging himself to observe strict secrecy respecting all transaction of the company its customers and the statement of accounts with individuals and in matters relating thereto, and shall by declaration pledge himself not to reveal any of the matters which come to his knowledge in the discharge of his duties except when required so to do by the Board or by any general meeting, or by a court of law, and except as may be necessary in order to comply with any provisions in these presents contained.

Entitlement to enter the property of the Company

124. No member or other person (not being a Director), shall be entitled to enter the property of the company, without permission of the Board or the, Chief Executive and to require disclosure of any information respecting any detail of the company's trading, or any matter which is or may be in the nature over trade secret, mystery of trade, or secret process or of any matter whatsoever which may relate to the conduct of the business of the company and which in the opinion of the Board or the Chief Executive, if any, will be inexpedient in the interest of the members to communicate.

WINDING UP

Distribution of Assets

125. If the company shall be wound up (whether voluntarily or otherwise) the Board or may, with the sanction of a Special Resolution, divide among the members in specie a part of the assets of the company in trustees upon such trust for the benefit of the members as liquidator shall think fit.

INDEMNITY

Indemnity of Directors and Officers

126. Every Director, Chief Executive, Manager or Officer of the company or other person (whether an officer of the company or not), employed by the Company as Auditor or Advisor shall be indemnified out of the funds of the company against any liability incurred by him, as such Director, Chief Executive, Manager, Officer, Auditor or Advisor, in defending any proceedings, whether civil or criminal, in which judgment is given or in which he is acquitted, or in connection with any application under Section 488 in which relief to him by court.



127. No Director, Chief Executive, or other Officer of the company will be liable for the acts, receipts, neglects or defaults of any other Director or any Officer or for joining in any receipt of other act for Conformity, or for any loss or expense happening to the company through the insufficiency or deficiency of title to any property acquired by order of the Directors, Chief Executive, or other Officer for or on behalf of the company, or for inefficiency or deficiency of any security in or upon which any of the monies of the company shall be invested or for any loss or damage arising from the bankruptcy, insolvency or tortious act of any person with whom any monies, securities or effects shall be deposited, or for any loss occasioned by an error of judgment or oversight on his part, or for any other loss, damage or misfortune whatever which shall happen in the execution of the duties of his office or in relation thereto, unless the same happens through his own dishonesty.



We, the several persons, whose names and addresses are hereunder subscribed, are desirous of being formed into a company, in pursuance of these Articles of Association and we respectively agree to take the number of shares into the Capital of the Company set opposite our respective names:

| Name and Surname (Present and Former) in full (in Block Letters) | Father's / Husband's Name in full | Nationality with former Nationality | Occupation | Residential address | Number of shares taken by each subscriber | Signature |
|--|--------------------------------------|---|------------|-------------------------------------|--|-----------|
| KHAWAJA ABDUL GHANI MAJID 42301-7764135-5 | KHAWAJA ANVER MAJID | Pakistani | Business | 12, Runnymede, Clifton, Karachi | 20 Twenty Only | |
| MRS. MENAHEL MAJID 42301-0935605-2 | KHAWAJA ABDUL GHANI MAJID | Pakistani | Business | 12, Runnymede, Clifton, Karachi. | 20 Twenty Only 40 Forty only | |

KARACHI: Dated 13th day of June 2014

Witness to the above signatures:

NIFT (PVT) LTD
5th Floor, AWT Tower,
I. I. Chundrigar Road,
Karachi.



[Handwritten signature]
10-7-2014

2426

TAY POWERGEN COMPANY (PVT.) LIMITED

**COMPANY PROSPECTUS
FOR THE DEVELOPMENT OF
2x15 MW BAGASSE BASED COGENERATION POWER
PROJECT**

AT

TANDO ALLH YAR SUGAR MILLS LIMITED

In response to the recently announced Sugar Mills Cogeneration Policy by the Ministry of Water & Power, government of Pakistan, Tando Allah Yar Sugar Mills (Pvt.) Limited has instituted a wholly owned special purpose company in the name and style of TAY Powergen Company (Pvt.) Limited (TPCL) to undertake 2x15 MW Bagasse based Cogeneration Power Plant at Tando Allah Yar Sugar Mills Limited. TPCL is pleased to provide the following information to Energy Department, Government of Sindh:

Omni Group comprise of the several companies having a combined annual turnover in excess of PKR 10 billion. The Financial Statements of parent company Tando Allah Yar Sugar Mills are enclosed as Annexure A. The group is focused on developing sugar, polypropylene, power generation, Ethanol refining, Tractor and Passenger Car Assembly and other allied businesses. The group companies are listed as follows:

- Ansari Sugar Mills (Pvt) Ltd
- New Dadu Sugar Mills (Pvt) Ltd
- Omni (Pvt) Ltd Rice Mills
- Naudero Sugar Mills (Pvt) Ltd
- Chambar Sugar Mills (Pvt) Ltd
- Bawany Sugar Mills
- Tando Allah Yar Sugar Mills (Pvt) Ltd
- Khoski Sugar Mills (Pvt) Ltd
- Thatta Sugar Mills (Pvt) Ltd
- Larr Sugar Mills (Pvt) Ltd
- Pak Ethanol (Pvt) Ltd
- Omni Power (Pvt) Ltd
- Dadu Energy (Pvt) Ltd
- Shikarpur Power(Pvt) Ltd
- Nuadero Energy (Pvt) Ltd
- Omni Polymer Packages (Pvt) Ltd
- Orient Automotives (Pvt) Ltd

Historically, Omni Group has been active in sugar and allied businesses, however recently the Group has embarked upon the development of several New Captive Power Projects under the policy for New Captive Power Projects (N-CPP) announced by the Ministry of Water & Power, Government of Pakistan. The policy encourages industries to develop captive power projects based on indigenous fuels such as natural gas, local coal, biogas, bagasse, etc., satisfying their own demand and sell surplus power to the relevant distribution company. The details of the power projects, configuration, fuel, installed capacity and Capital investments are listed as follows:

| Name of the Plant | Configuration | Fuel | Installed Capacity | Capital Investment |
|---------------------------------------|--------------------------|-------------|---------------------------|---------------------------|
| Ansari Sugar Mills (Pvt) Ltd | Boiler and Steam Turbine | Bagasse | 6 MW | USD 6.5 Million |
| New Dadu Sugar Mills (Pvt) Ltd | Boiler and Steam Turbine | Bagasse | 3 MW | USD 4 Million |
| Naudero Sugar Mills (Pvt) Ltd | Boiler and Steam Turbine | Bagasse | 2 MW | USD 2.5 Million |
| Chambar Sugar Mills (Pvt) Ltd | Boiler and Steam Turbine | Bagasse | 4 MW | USD 5 Million |
| Bawani Sugar Mills | Boiler and Steam Turbine | Bagasse | 6 MW | USD 6.5 Million |
| Tando Allah Yar Sugar Mills (Pvt) Ltd | Boiler and Steam Turbine | Bagasse | 9 MW | USD 10 Million |
| Khoski Sugar Mills (Pvt) Ltd | Boiler and Steam Turbine | Bagasse | 4 MW | USD 4.5 Million |
| Omni Power (Pvt) Ltd | Reciprocating Engines | Natural Gas | 13.2 MW | USD 11 Million |
| Dadu Energy (Pvt) Ltd | Reciprocating Engines | Natural Gas | 19.8 MW | USD 17 Million |
| Shikarpur Energy (Pvt) Ltd | Reciprocating Engines | Natural Gas | 13.2 MW | USD 11 Million |
| Naudero Energy (Pvt) Ltd | Reciprocating Engines | Natural Gas | 13.2 MW | USD 11 Million |

The aforementioned power generation facilities boast an installed capacity of 100 MW at capital investment of more than USD 100 Million. This is one of the largest installed power generation capacities in the industrial sector. The Omni Group has a knack of arranging financing for the present and future projects. The recently concluded projects are estimated to arrange more than USD 50 million in debt funding which has been successfully arranged through consortium of local and international banks, including OEKB (Austrian EXIM Bank), National Bank of Pakistan, Pak Libya Holding Company, Summit Bank, Sindh Bank, Bank of Punjab, Bank of Khyber, Habib Bank, Bank Alfalah and others.

It is optimistically estimated that funding for the proposed cogeneration power project based on Bagasse at Tando Allah Yar Sugar Mills will also be arranged successfully as the Group intends to avail EXIM financing from China Development Bank (CDB), the application has already been submitted.

Although a number of technical and financial personnel are employed by the Group, however the Group has philosophy to outsource specialist services such as technical and financial consulting

services, EPC contract and Operations and Maintenance contract for the development of power projects.

The aforementioned list of power projects already developed and under implementation is an ample proof of the corporate experience of the Project Sponsors. Besides, Omni Group employs several high qualified and experience personnel including able and experienced management team.

The project is located within the boundaries of Tando Allah Yar Sugar Mills. The proposed bagasse based power project will also be located within this complex.

The proposed bagasse power project is a Renewable Energy project as it is a residue after cane crushing. Therefore it is environmental friendly and will not add any more pollutant to the environment.

As it is mentioned above, the resource required for cogeneration power plant is the residue left after cane crushing for sugar making operations. The availability of resource is contingent upon the operation of the sugar mill. Since Omni Group owns number of sugar mills and has access to bagasse from other sugar mills, the availability of bagasse is in plenty for the number of operating days more than the days characterized as sugar season. Due to this advantage, the project has very favorable economics.

In the first phase the installed capacity will be 30 MW which after utilizing for auxiliary consumption will have a net capacity of 27 MW. Based on 140 days of operation, the project will generate 100 million kWh annually.

The proposed project will install the following key plant and equipment:

- High Pressure Bagasse fired Boilers with extraction and condensing features
- Steam Turbine, Generator and Condenser
- Balance of Plant for bagasse feeding, water and steam system, etc.
- Bagasse storage and logistics
- 132 kV Transformer and Switchyard
- Auxiliaries for the plant

The implementation plan is as follows:

Letter of Intent (LOI)
Feasibility Study
EPC Proposal
Generation License and Feed-in-Tariff Acceptance
Signing of PPA

July 2014
September 2014
October 2014
October 2014
December 2014

| | |
|---------------------------------|---------------|
| Issuance of Letter of Support | December 2014 |
| Signing of O&M Contract | December 2014 |
| Financial Close | March 2015 |
| Construction Start | April 2015 |
| Commercial Operation Date (COD) | October 2016 |

Tentative Financial Structure

| | |
|--------------------|----------------|
| Total Project Cost | USD 30 million |
| Debt | 80% |
| Equity | 20% |
| | USD 24 million |
| | USD 6 million |

Debt will be secured through a consortium of CDB, local commercial banks and Development Financial Institution (DFI).

As mentioned above, the location of the proposed bagasse power project will be in the proximity of already existing 9 MW Tando Allah Yar Sugar Mills selling electricity to HESCO under Policy for Surplus Power, the 11 kV transmission line is extended to the doorstep of the proposed project. HESCO is already planning to lay a 132 kV Transmission Line to Tnado Allah Yar Sugar Mills which will be available for the proposed project. The distance to the Tando Allah Yar Grid station is about 3 kilometer from the proposed location.

The land is owned by Tando Allah Yar Sugar Mills Limited the parent company of TPCL. The land of 5 acres is adequate and readily available for implementation of the proposed project. The land will be transferred to TPCL.

TAY POWERGEN COMPANY (PRIVATE) LIMITED

TAY Powergen Company (Private) Limited Application for Generation License Annexure B

1. **Regulation # 3(1)** **Authorization from Board Resolution / Power of Attorney**

Enclosed

2. **Regulation # 3(3)** **Application Fee including indexation**

Enclosed

3. **Regulation # 3(4)** **Three copies of Application**

Duly complied

4. **Regulation # 3(5)-A (i)** **Certificate of incorporation**

Enclosed

5. **Regulation # 3(5)-A (ii)** **Memorandum and Articles of Association**

Enclosed

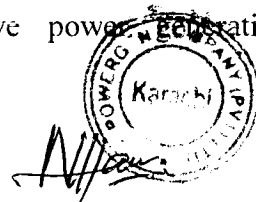
6. **Regulation # 3(5)-a (iii)** **Annual Return statement or in lieu thereof**

TAY Powergen Company (Private) Limited (TPCL) is a special purpose company instituted for the development of 2x15 MW Bagasse fired Cogeneration Power Project. TPCL is a wholly owned subsidiary of Tando Allah Yar Sugar Mills (Pvt.) Limited..

The Financial Statements for the last Three years of Tando Allah Yar Sugar Mills (Pvt.) Limited are therefore enclosed

7. **Regulation # 3(5)(b)** **Profile of experience of applicant its management, staff and its members in power sector**

Omni Group of Companies include several sugar mills, one distillery, several power plants and other industrial units. All the sugar mills and distillery have their own cogeneration power plants and management has extensive power cogeneration experience.



TAY POWERGEN COMPANY (PRIVATE) LIMITD

The details of technical staff employed is enclosed

8. **Regulation # 3(5)© CVs of applicant's Senior Management and Technical professionals**

Enclosed

9. **Regulation # 3(5)(d) Adequate evidence of financial and technical resources**

Bank's reference letter enclosed.

Detail of technical persons employed is enclosed.

10. **Regulation # 3(5)(d)(i) Cash balance and bank certificate**

Enclosed

11. **Regulation # 3(5)(d)(ii) Expression of Interest to provide credit of financing along with sources thereof**

EOI of bank is enclosed

| | | |
|---------------------------|--|-----------------------|
| Total Project Cost | | USD 30 Million |
|---------------------------|--|-----------------------|

| | | |
|-------------|------------|-----------------------|
| Debt | 80% | USD 24 Million |
|-------------|------------|-----------------------|

| | | |
|---------------|------------|----------------------|
| Equity | 20% | USD 6 Million |
|---------------|------------|----------------------|

12. **Regulation # 3(5)(d)(iii) Latest financial statements**

Enclosed

13. **Regulation # 3(5)(d)(iv) Employment record of Engineers and Technical Staff**

Details enclosed

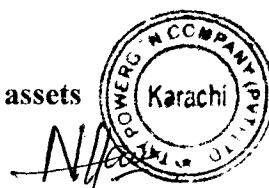
14. **Regulation # 3(5)(d)(v) Profile of sub-contractors**

Enclosed

15. **Regulation # 3(5)(d)(vi) Verified reference w.r.t. experience of applicant and its sub-contractors**

Enclosed

16. **Regulation # 3(5)(e) Encumbrance on assets**



TAY POWERGEN COMPANY (PRIVATE) LIMITD

None

17. Regulation # 3(5)(f) Operation, maintenance, planning and development of the generation facility

The power plant is being developed through Technical Consultant, EPC contractor and O&M contractor. The profiles of them are enclosed.

18. Regulation # 3(5)(g)(a) Type of Technology

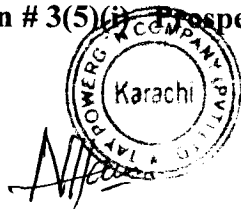
Already provided

19. Regulation # 3(5)(h) Feasibility Report

Enclosed

20. Regulation # 3(5)(i) Prospectus

Enclosed



TAY POWERGEN COMPANY (PRIVATE) LIMITD

June 26, 2014

Mr. Agha Wasif Abbas
Secretary Energy Department
Government of Sindh
7th Floor, Lakson Square Building No. 3
Sattar Shaheed Road
Karachi

Subject: 2x15 MW Bagasse Based Cogeneration Power Project at Tando Allah Yar
Sugar Mills Limited – Issuance of Letter of Intent

Dear Mr. Abbas:

Please refer to the Policy for Bagasse based Cogeneration Power Policy announced by the Government of Pakistan, we are pleased to submit our Project Proposal for the development of 2x15 MW Cogeneration Power Project based on Bagasse.

We request you to please issue Letter of Intent (LOI) and inform Alternative Energy Development Board accordingly. Please also let us know the requisite processing fees and amount of Performance Guarantee TAY Powergen Company (Pvt.) Limited is required to provide.

We hope that the information provided will be satisfactory and Energy Department, GoS will issue an LOI enabling us to develop the proposed project in an expeditious manner.

With best regards,

Yours truly,

For TAY POWERGEN COMPANY (PVT) LTD

ASLAM MASOOD
COMPANY SECRETARY



1st Floor Hockey Club of Pakistan Stadium Liaquat Barracks
Block-3
Karachi

Tel. No. : +92 213 5655131-4
Fax No. : +92 213 5680533
Email: taypowergenco@omnigroup.com.pk



Ph: 021-99206448

NO. DAE/Gen/2014/83
GOVERNMENT OF SINDH
Directorate of Alternative Energy
ENERGY DEPARTMENT
Karachi, dated: July 1st, 2014

To,

The Chief Executive Officer
Alternative Energy Development Board
2nd Floor, OPF Building, G-5/2
Islamabad.

Subject: **APPLICATION FOR LOIs UNDER FRAMEWORK FOR POWER CO-GENERATION 2013 (BAGGASSE/BIOMASS)**

I am directed to refer to the subject noted above and to enclose, herewith, following three applications along with proposals of Baggasse based cogeneration power projects in Standard Format for issuance of LOI as per applicable policy:

- I. 2X15MW Baggasse based Cogeneration Power Project at Bandhi Sugar Mills Limited
- II. 2X15MW Baggasse based Cogeneration Power Project at Tando Allah Yar Sugar Mills Limited
- III. 2X15MW Baggasse based Cogeneration Power Project at Ansari Sugar Mills Limited.

2. It is requested that the proposals may be processed under the Framework for Power Co-Generation 2013 (Baggasse/Biomass) with intimation to this department.

Encl: As above.


(MEHFOOZ AHMED QAZI)
Director, Alternative Energy

Copy for kind information

- i) PS to Secretary, Energy Department Govt of Sindh, Karachi.
- ii) Company Secretary, Ansari Powergen Company (Pvt) Ltd.
- iii) Company Secretary, Bandhi Powergen Company (Pvt) Ltd.
- iv) Company Secretary, Tay Powergen Company (Pvt) Ltd.

IN MEMORY OF SHAHEED MOHTARMA BENAZIR BHUTTO



POWER TO THE PEOPLE

Date: June 27, 2014

TO WHOM IT MAY CONCERN

**Financing Facility for 2x15 MW Bagasse Fired Cogeneration Power Plant for TAY
Powergen Company (Pvt.) Limited**

This is with reference to the request letter dated June 26, 2014 from Ansari Powergen Company (Pvt) Ltd, a wholly owned company of Tando Allah Yar Sugar Mills Ltd which is part of the Omni group of companies, for the Financing Facility for 2x15 MW Bagasse Fired Cogeneration Power Plant.

Based on our successful track record with the Power Companies in general & Omni Group in particular, we are willing in principle to consider extending financing for the subject project, subject to formation of syndicate and satisfactory review of the feasibility study, all the required Regulatory Approvals as well as the approval from the Board of Directors of Sindh Bank Ltd.

For Sindh Bank Ltd.

Authorized Signatory

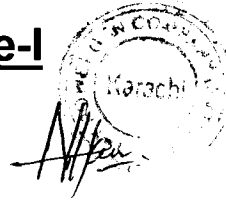
Authorized Signatory

TAY POWERGEN COMPANY (PRIVATE) LIMITD

Information

for

Schedule-I



1st Floor Hockey Club of Pakistan Stadium Liaqat Barracks
Block-3
Karachi

Tel. No. : +92 213 5655131-4
Fax No. : +92 213 5680533
Email: taypowergenco@omnigroup.com.pk

TAY POWERGEN COMPANY (PRIVATE) LIMITD

Plant Details

A. General Information

| | | |
|--------|-----------------------------|---|
| (i). | Name of Applicant | TAY Powergen Company (Pvt.) Limited |
| (ii). | Registered /Business Office | First Floor, Block 3, Hockey Club of Pakistan Stadium, Liaquat Barracks, Karachi, Pakistan. |
| (iii). | Plant Location | Matli, Sindh |
| (iv). | Type of Generation Facility | Bagasse Fired Thermal Power Station. |

- i) **Plant Configuration** **Steam Boiler:** Steam Boilers manufactured and supplied by M/s. Heavy Mechanical Complex (HMC) Taxila, Pakistan or Descon, Pakistan.
Capacity: 02X100 TON/HR
- ii) **Steam Turbine:** Steam Turbine is manufactured by M/s. Hongzhou Turbine Company, China or equivalent

B.

| | | | | | |
|--------|---|--|-------------------|------------|------------|
| (i). | Plant Size Installed Capacity (Gross ISO) | 30 MW | | | |
| (ii). | Type of Technology | Conventional Steam Turbine (Extraction Condensing) | | | |
| (iii). | Number of Units/Size (MW) | Unit No. 1 | Unit No. 2 | Unit No. 3 | Unit No. 4 |
| | | 15 MW | 15 MW | | |
| (iv). | Unit Make & Model | Unit No. 1 | Unit No. 2 | Unit No. 3 | Unit No. 4 |
| | | HTC or equivalent | HTC or equivalent | | |



TAY POWERGEN COMPANY (PRIVATE) LIMITED

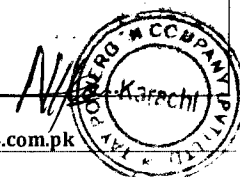
| | | | | | |
|--------|--|-----------|-----------|--|--|
| (v). | Commissioning/ Commercial Operation date of each Unit | Nov. 2015 | Nov. 2015 | | |
| (vi). | Expected Life of the Facility from Commercial Operation/ Commissioning Date | 40 Years | | | |
| (vii). | Expected Remaining useful Life of the Facility at the time of grant of Generation Licence (based on the latest commissioned unit) | 40Years | | | |

C. Fuel/Raw Material Details

| | | | |
|---------|--------------------------------------|---|---|
| (i). | Primary Fuel | Bagasse | |
| (ii). | Alternate Fuel | Bagasse | |
| (iii). | Start Up Fuel | Furnace Oil (FO) | |
| (iv). | Fuel Source (Imported/Indigenous) | Primary Fuel | Alternative Fuel |
| | | Indigenous | Indigenous |
| (v). | Fuel Supplier | Primary Fuel | Alternative Fuel |
| | | Tando Allah Yar Sugar Mills (Pvt.) Limited | Tando Allah Yar Sugar Mills (Pvt.) Limited |
| (vi). | Supply Arrangement | Primary Fuel | Alternative Fuel |
| | | Through Conveyor Belts/Loading Trucks/Tractor Trolleys etc | Through Conveyor Belts/Loading Trucks/Tractor Trolleys etc |
| (vii). | Sugarcane Crushing Capacity | 9,000 Ton Crushing Per Day | |
| (viii). | Bagasse Generat on Capacity | 2,700 Tons per day | |

1st Floor Hockey Club of Pakistan Stadium Liaqat Barracks
Block-3
Karachi

Tel. No. : +92 213 5655131-4
Fax No. : +92 213 5680533
Email: taypowergenco@omnigroup.com.pk



TAY POWERGEN COMPANY (PRIVATE) LIMITED

| | | | |
|-------|--------------------------------|--------------------------|------------------|
| (ix). | Fuel Storage facilities | Bagasse | FO (For Startup) |
| | | Bulk Storage | 1 Tank |
| (x). | Capacity of Storage facilities | Bagasse | FO |
| | | 25,000 Tons Bulk Storage | 300 Tons |
| (xi). | Gross Storage Capacity | Bagasse | FO |
| | | 25,000 Tons Bulk Storage | 300 Tons |

D. Emission Values

| | | Primary Fuel | Alternative Fuel |
|--------|---------------------------------------|------------------------|------------------------|
| (i). | SO _x (mg/Nm ³) | < 400mg/m ³ | < 400mg/m ³ |
| (ii). | NO _x (mg/Nm ³) | < 400mg/m ³ | < 400mg/m ³ |
| (iii). | CO ₂ | 12% ~ 13% | 12% ~ 13% |
| (iv). | CO (mg/Nm ³) | < 3% | < 3% |
| (v). | PM ₁₀ | 0.107mg/m ³ | 0.107mg/m ³ |

E. Cooling System

| | | |
|------|----------------------------|--|
| (i). | Cooling Water Source/Cycle | Condensate Water, Ground Water Turbine with Cooling Tower/Closed Loop Cycle |
|------|----------------------------|--|

F. Plant Characteristics

| | | |
|--------|--------------------|------------|
| (i). | Generation Voltage | 11 KV |
| (ii). | Frequency | 50 Hz |
| (iii). | Power Factor | 0.8 ~ 0.95 |

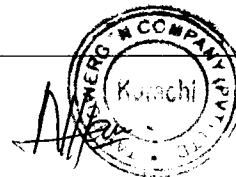
1st Floor Hockey Club of Pakistan Stadium Liaqat Barracks
Block-3
Karachi

Tel. No. : +92 213 5655131-4
Fax No. : +92 213 5680533
Email: taypowergenco@omnigroup.com.pk



TAY POWERGEN COMPANY (PRIVATE) LIMITED

| | | |
|-------|--|---|
| (iv). | Automatic Generation Control (AGC) | Yes |
| (v). | Ramping Rate | 3.3 kW per second |
| (vi). | Time required to Synchronize to Grid and loading the complex to full load. | 4 Hours for Cold start and 30 seconds to synchronize with Grid. |



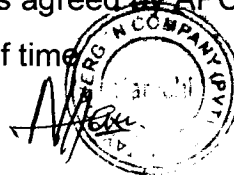
TAY POWERGEN COMPANY (PRIVATE) LIMITED

INTERCONNECTION/TRANSMISSION ARRANGEMENT FOR THE DISPERSAL OF POWER FROM THE POWER PLANT

The Power generated by TAY Powergen Company (Pvt.) Limited (TPCL) from its Bagasse based Thermal Power Generation facility shall be dispersed to the Load Center of Hyderabad Electricity Supply Company Limited (HESCO).

The Interconnection/Transmission Arrangement for the above mentioned facilities will be at 132 kV Voltage connecting the generation facility of TPCL.

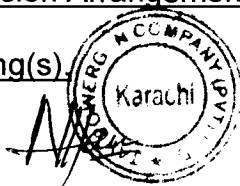
Any change in the final Interconnection and Transmission Arrangement(s), for the dispersal of power other than the above, as agreed by APCL and HESCO shall be communicated to NEPRA in due course of time.



TAY POWERGEN COMPANY (PRIVATE) LIMITED

List of Drawings

1. Location Map
2. Plant Layout
3. Single Line diagram (Electrical)
4. Interconnection/Transmission Arrangement for the Dispersal Of Power From The Power Plant.
5. Any other relevant Drawing(s).



TAY POWERGEN COMPANY (PRIVATE) LIMITED

Information

For

Schedule-II



1st Floor Hockey Club of Pakistan Stadium Liaqat Barracks
Block-3
Karachi

Tel. No. : +92 213 555 31-4
Fax No. : +92 213 555 33
Email: taypowergen@omnigroup.com.pk

TAY POWERGEN COMPANY (PRIVATE) LIMITED

SCHEDULE-II*

| | | |
|----|---|----------|
| 1. | Total Gross Installed Capacity (2 x 6.00 MW) | 30.00 MW |
| 2. | De-rated Capacity at Mean Site Conditions | 30.00 MW |
| 3. | Auxiliary Consumption | 3.00 MW |
| 4. | Net Capacity of the Plant at Mean Site Conditions | 27.00 MW |



* As provided by the applicant

1st Floor Hockey Club of Pakistan Stadium Liaqat Barracks
Block-3
Karachi

Tel. No. : +92 213 5655131-4
Fax No. : +92 213 5680533
Email: taypowergenco@omnigroup.com.pk



Reference No: EPA/

5/2014/06/17/IEE/38/11

ENVIRONMENTAL PROTECTION AGENCY

GOVERNMENT OF SINDH

Plot # ST-2/1, Sector 23, KIA, Karachi-74900

Ph: 5065950, 5065598, 5065637

5065532, 5065946, 5065621

epasindh@cyber.net.pk

Facsimile: 5065940

Dated: 3rd July, 2014

SUBJECT: DECISION ON INITIAL ENVIRONMENTAL EXAMINATION (IEE).

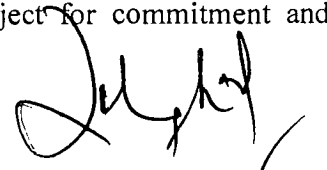
1. **Name and Address of Proponent:** Mr. Khawaja M. Salman Younis
Group Chief Operating Officer,
TAY Powergen Company (Pvt)
Limited
2. **Description of Project:** 36 MW Bagasse Fired Steam Boiler
from TAY powergen company and sold
to HESCO.
3. **Location of Project:** Tando Allayar, Sindh.
4. **Date of Filing of IEE:** 12-06-2014

5. After careful review of the Initial Environmental Examination (IEE) report, the Environmental Protection Agency (EPA), Sindh, has accord its approval subject to the following conditions:-

- (i) The TAY Powergen Company Pvt Limited hereinafter referred as proponent shall comply National Environmental Quality Standards (NEQS) air emission from the power plant.
- (ii) Mitigation measures recommended in the IEE report must be strictly adhered to in minimizing any negative environmental effect on the natural ecology.
- (iii) National Environmental Quality Standards for noise levels shall be implemented in order to minimize noise impact of the proposed project. For dust emission/Particulate matter purpose an appropriate buffer shall be kept across the boundary of the project for the purpose of extensive plantation.
- (iv) A comprehensive waste management plan shall be developed for effective disposal of waste. Unusable waste shall be recycled; all remaining waste shall be disposed off at designated landfill. Proper solid waste containers of suitable size shall be provided for daily collection and disposal. Sewage waste will be treated in sewage treatment plant before disposal.
- (v) Damage to natural vegetation will be minimized. Firewood, woody plants and shrubs will not be used as fuel during construction.
- (vi) A complete code of Health, Safety and Environment (HSE) shall be developed, which should include efficient parameters at specific work place.

For this purpose HSE setup should be established and supervised by a designated HSE officer at the senior level with sufficient administrative and technical authority to perform the designated functions. Proponent will make sure that the operating instructions and emergency actions are made available to every worker/labor/commuter at the site.

- (vii) The proponent will ensure that an independent environmental monitoring consultant is engaged to monitor hazards, dust emissions, road obstructions, traffic jams, sound and noise level(s) and other environmental damages due to construction of plant.
 - (viii) The Proponent will carry out self-monitoring and reporting and will submit report to EPA, Sindh for the recommended parameters with their appropriate frequencies as listed in Self-Monitoring & Reporting Rules.
 - (ix) Monitoring of ambient air quality at the plant boundary and 500 meter radius shall be conducted on monthly basis for CO and NOx parameters during operation of the plant, in order to observe incremental impact of the plant. The result shall be annexed with the quarterly monitoring reports.
6. This approval and any considerations thereof shall be treated as null and void if the conditions, mentioned in para-5 above, are not complied with.
 7. The proponent shall be liable for compliance of section 13, 14, 17 and 18 of EIA/IEE Regulations, 2000, which direct for condition for approval, confirmation of compliance, entry, inspection and monitoring.
 8. This approval does not absolve the proponent of the duty to obtain any other approval or consent that may be required under any law in force.
 9. The approval is accorded only for the project activity described in the IEE Report. Proponent shall submit separate EIA or IEE as required under regulation for any enhancement or change in the design of project.
 10. Implementation Report of all the mitigation measures and EMP laid down in the IEE Report shall be submitted to this office on monthly basis. No violation of any regulations, rules, instruction and provision of SEP Act, 2014, shall be made and in case of any such violation of the rules/laws in the approval shall stand cancelled without any further notice.
 11. All the environmental conditions of this approval shall be incorporated in the terms and conditions of tender document of the project for commitment and compliance.


Naeem Ahmed Mughal
Director General

TAY POWERGEN COMPANY PRIVATE LIMITED

**36 MW POWER PLANT
AT TANDO ALLAHYAR, SINDH, PAKISTAN**

INITIAL ENVIRONMENTAL EXAMINATION (IEE)

MEConsult (Private) Limited
98-B, Muhammad Ali Society, Karachi, Pakistan
Tel: 92-21-453 5042, 453 6853, 454 5214
Fax: 92-21-453 9571
Email: meconsult@gmail.com, meconsult@consultant.com
Website: www.meconsultonline.com

TABLE OF CONTENTS

| | |
|---|----|
| 1.0 BACKGROUND..... | 4 |
| 1.1 ENVIRONMENTAL ISSUES..... | 4 |
| 1.1.1 INSTITUTIONAL FRAMEWORK ON ENVIRONMENTAL ISSUES IN PAKISTAN | 4 |
| 1.1.1.1 FEDERAL GOVERNMENT..... | 4 |
| 1.1.1.2 PROVINCIAL GOVERNMENT INSTITUTIONS..... | 5 |
| 1.1.2 ENVIRONMENTAL POLICY IN PAKISTAN..... | 6 |
| 1.1.2.1 THE NATIONAL POLICY..... | 6 |
| 1.1.3 LAW RELEVANT TO THE ENVIRONMENTAL ISSUES IN PAKISTAN..... | 7 |
| 1.1.3.1 PAKISTAN ENVIRONMENTAL PROTECTION ACT, 1997 (PEPA '97)..... | 7 |
| 1.1.3.2 PAKISTAN ENVIRONMENTAL PROTECTION AGENCY REVIEW OF IEE AND EIA REGULATIONS, 2000 | 9 |
| Table 1.1 Schedule I List of Projects Requiring an IEE (Energy Sector)..... | 9 |
| Table 1.2 Schedule II List of Projects Requiring an EIA (Energy sector and Environmentally sensitive areas)..... | 10 |
| 1.1.3.3 NATIONAL ENVIRONMENTAL QUALITY STANDARDS, 2000 (NEQS, 2000)..... | 11 |
| 1.1.3.4 SINDH WILDLIFE PROTECTION ORDINANCE, 1972..... | 12 |
| 1.1.4 NECESSITY OF ENVIRONMENTAL IMPACT ASSESSMENT IN THIS PROPOSED PROJECT..... | 14 |
| 1.1.5 GUIDELINES FOR CONFIRMATION OF ENVIRONMENTAL AND SOCIAL CONSIDERATIONS..... | 15 |
| 1.1.5.1 OBJECTIVES OF GUIDELINES FOR CONFIRMATION OF ENVIRONMENTAL AND SOCIAL CONSIDERATIONS..... | 15 |
| 1.1.5.2 BASIC PRINCIPLES REGARDING CONFIRMATION OF ENVIRONMENTAL AND SOCIAL CONSIDERATIONS..... | 15 |
| 1.2 ENVIRONMENT OF THE PROPOSED PROJECT SITE..... | 17 |
| 1.2.1 WILDLIFE..... | 17 |
| 1.2.1.1 PROTECTED AREAS..... | 17 |
| 1.2.1.2 WILDLIFE..... | 17 |
| Table 1.3 Endangered Animals in Sindh Province..... | 17 |
| 1.2.1.3 BIRDS..... | 20 |
| Table 1.4 Important Migratory Birds of Indus Flyway..... | 21 |
| Table 1.5 Important Migratory Birds Observed in the Vicinity of the Proposed Project Site..... | 21 |
| 1.2.2 SOCIAL ENVIRONMENT OF THE PROPOSED PROJECT SITE..... | 23 |
| 1.2.2.1 ADMINISTRATIVE DIVISION, POPULATION AND LIFE..... | 23 |
| Table 1.6 Population and Average Household Size of Tando Allahyar District..... | 23 |
| 1.2.2.2 INDUSTRIES IN TANDO ALLAHYAR DISTRICT..... | 23 |
| Table 1.7 Main Crops, Vegetables and Fruits, Industry and Livestock in Tando Allahyar | 24 |
| 1.3 ENVIRONMENTAL ISSUES..... | 24 |
| 1.3.1 INVESTIGATION ON THE ENVIRONMENTAL ISSUES..... | 24 |
| 1.3.2 CONFIRMATION OF ENVIRONMENTAL ISSUES..... | 24 |
| Table 1.8 Components of the Proposed Steam Cycle Power Plant..... | 24 |

| | | |
|-----------|--|----|
| 1.3.2.1 | POLLUTION..... | 25 |
| 1) | Waste Disposal..... | 25 |
| 2) | Noise | 26 |
| 1.3.2.2 | Natural Environment | 26 |
| 1) | Wildlife..... | 26 |
| 2) | Birds..... | 27 |
| 3) | Hydrology | 28 |
| 1.3.2.3 | SOCIO ECONOMY | 28 |
| 1) | Land Acquisition | 28 |
| 2) | Life and Livelihood | 29 |
| 3) | Cultural Heritage | 29 |
| 1.3.2.5 | EFFECTS OF CONSTRUCTION ACTIVITY | 29 |
| 1) | Dust..... | 29 |
| 2) | Turbid Water | 30 |
| 3) | Traffic | 30 |
| 1.4 | ENVIRONMENTAL EFFECTS DUE TO THE PROJECT IMPLEMENTATION..... | 31 |
| 1.4.1 | Emission and its impacts..... | 31 |
| 1.4.1.1 | Gaseous Emission..... | 31 |
| 1.4.1.2 | Liquid Effluent..... | 32 |
| 1.4.1.3 | DEFINITION OF THE PROJECT BOUNDARY..... | 32 |
| 1.4.2 | Outlines of the full blown Environmental Impact Assessment and Social Soundness Study..... | 31 |
| 1.4.2.1 | Environmental Impact | 33 |
| 1.4.2.1.1 | Project Location and descriptions..... | 33 |
| 1.4.2.1.2 | Natural Environment | 33 |
| 1.4.2.2 | Socio Economic Environment..... | 33 |
| 1.4.2.2.1 | Health Facility..... | 34 |
| 1.4.2.2.2 | Education | 34 |
| 1.4.2.2.3 | Health and Safety..... | 34 |
| | Appendix 1 Potential Negative Impacts VS Specific Mitigation Measures | 35 |

1.0 BACKGROUND

Tando Allahyar Sugar Mills Private Limited (TASML) has established a wholly owned subsidiary in the name and style of TAY Powergen Company (Pvt.) Limited (TPCL) and this company is currently installing a 2x18 MW Power Plant using bagasse for its own use and will sell surplus electricity to HESCO. The electricity produced will be utilized for meeting its own requirement and the remaining will be sold to HESCO.

This Initial Environmental Examination (IEE) study is conducted to assess the environment and social aspects due to the institution of this project.

1.1 ENVIRONMENTAL ISSUES

1.1.1 INSTITUTIONAL FRAMEWORK ON ENVIRONMENTAL ISSUES IN PAKISTAN

1.1.1.1 FEDERAL GOVERNMENT

The Ministry of Environment deals with environment and wildlife issues at the federal level. Within the ministry, the department of administration on the Pakistan National Conservation Strategy (NCS) is established, and is responsible for implementation of the Strategy and coordination with the departments of the provincial government.

Pakistan Environment Protection Council, PEPC

PEPC, which is chaired by the Prime Minister, is the supreme organization for determining environmental policy on the national level. PEPC consists of 35 members as shown below;

- Minister in charge of the Ministry or Division dealing with the subject of environment as vice chairperson

MEConsult (Private) Limited
98-B, Muhammad Ali Society, Karachi, Pakistan
Tel: 92-21-453 5042, 453 6853, 454 5214
Fax: 92-21-453 9571
Email: meconsult@gmail.com, meconsult@consultant.com
Website: www.meconsultonline.com

- Chief Ministers of the Provinces
- Ministers in charge of environment issues in the provinces
- Five representatives of the Chambers of Commerce and Industry and Industrial Associations and one or more representatives of the Chambers of Agriculture, the medical and legal professions, trade unions, and non-governmental organizations concerned with the environment and development, and scientists, technical experts and educators.

Moreover, the PEPC oversees the functioning of the Pak-EPA.

Pakistan Environment Protection Agency, Pak-EPA

The Pak-EPA is responsible for ensuring compliance with the National Environment Quality Standards, NEQS, establishment of monitoring and evaluation systems and related legislation as an executing agency.

1.1.1.2 PROVINCIAL GOVERNMENT INSTITUTIONS

Each provincial government has its own environmental protection agency, which is responsible for environmental issues on the provincial level. The provincial environmental protection agencies are delegated powers by Pak-EPA and their functions are as shown below.

- Enforcement of the National Environment Quality Standard, NEQS
- Review of IEE and EIA reports on development projects and issuance of Non Objection Certificate, NOC, based on the review
- Advice and coordination with the government, semi-government organizations and NGOs on preventive measures for abatement of pollution
- Coordination on environmental policies and plans

MEConsult (Private) Limited
98-B, Muhammad Ali Society, Karachi, Pakistan
Tel: 92-21-453 5042, 453 6853, 454 5214
Fax: 92-21-453 9571

Email: meconsult@gmail.com, meconsult@consultant.com
Website: www.meconsultonline.com

- Monitoring of industries under a self-reporting mechanism

The provincial government of Sindh has established a forest department and a wildlife department. The functions of each department are shown below.

| Department | Functions |
|---------------------|---|
| Forest department | Protection and management of existing forests, irrigated Plantations, mangroves forest and ran elands |
| Wildlife department | Management of wildlife and habitats on scientific lines |

1.1.2 ENVIRONMENTAL POLICY IN PAKISTAN

1.1.2.1 THE NATIONAL POLICY

The National Environmental Policy provides an overall framework for addressing the environmental issues facing Pakistan, particularly pollution of freshwater bodies and coastal waters, air pollution, lack of proper waste management, deforestation, loss of biodiversity, desertification, natural disasters and climate change. It also gives directions for addressing cross-sectoral issues as well as underlying causes of environmental degradation and meeting international obligations.

The National Environmental Policy aims to improve the quality of life of people of Pakistan through conservation, protection and improvement of the country's environment and effective cooperation among government agencies, civil society, the private sector and other stakeholders.

The objectives of the Policy are as follows

- a) Secure a clean and healthy environment for the people of Pakistan

- b) Attain sustainable economic and social development with due regard to protecting the resource base and the environment of the country.
- c) Ensure effective management of the country's environment through active participation of all stakeholders.
- d) Conservation, restoration and efficient management of environmental resources
- e) Integration of environmental considerations in policy making and planning processes
- f) Capacity building of government agencies and other stakeholders at all levels for better environmental management
- g) Meeting international obligations effectively in line with national aspirations
- h) Creation of a demand for environment through mass awareness and community mobilization

Though guidelines in nine fields are described in the National Environmental Policy, the following subjects, which are related to this proposed project, are described.

- a) Climate Change and Ozone Depletion
- b) Principle of equitable access to environmental resources.
- c) Integration of environment into planning and implementation of policies, programs and projects.
- d) Improving efficiency with which environmental resources are used.
- e) Extensive participation of communities, stakeholders and the public.

1.1.3 LAW RELEVANT TO THE ENVIRONMENTAL ISSUES IN PAKISTAN

MEConsult (Private) Limited
98-B, Muhammad Ali Society, Karachi, Pakistan
Tel: 92-21-453 5042, 453 6853, 454 5214
Fax: 92-21-453 9571
Email: meconsult@gmail.com, meconsult@consultant.com
Website: www.meconsultonline.com

The law, regulations, standards and so on, which are relevant to this proposed project, are shown below.

1.1.3.1 PAKISTAN ENVIRONMENTAL PROTECTION ACT, 1997 (PEPA '97)

The objectives of PEPA'97 are to encourage the protection, preservation, restoration and improvement of the environment, and the prevention and control of pollution and sustainable development in Pakistan.

The important provisions of the law that may have a direct bearing on the proposed project are as follows

- 1) Section 11(1) states that "Subject to the provisions of this Act and the rules and regulations made thereunder, no person shall discharge or emit, or allow the discharge or emission of, any effluent or waste or air pollutant or noise in an amount, concentration or level which is in excess of the National Environmental Quality Standards." NEQS has been published by The Pak-EPA.
- 2) Section 12(1) requires that "No proponent of a project shall commence construction or operation unless he has filed with the Federal Agency an initial environmental examination or, where the project is likely to cause an adverse environmental effect, an environmental impact assessment, and has obtained from the Federal Agency approval in respect thereof."
- 3) Section 14 requires that "Subject to the provisions of this Act, no person shall generate, collect, consign, transport, treat, dispose of, store, handle or import an hazardous substance except; (a) under a license issued by the Federal Agency and in such manner as may be prescribed; or (b) in accordance with the provisions of any other law for the time being in force, or of any international treaty,

MEConsult (Private) Limited
98-B, Muhammad Ali Society, Karachi, Pakistan
Tel: 92-21-453 5042, 453 6853, 454 5214
Fax: 92-21-453 9571

Email: meconsult@gmail.com, meconsult@consultant.com
Website: www.meconsultonline.com

convent, protocol, code, standard, agreement or other instrument to which Pakistan is a party."

- 4) Section 15 requires that "Subject to the provisions of this Act and the rules and regulations made thereunder, no person shall operate a motor vehicle from which air pollutants or noise are being emitted in an amount, concentration or level which is in excess of the National Environmental Quality Standards."

1.1.3.3 PAKISTAN ENVIRONMENTAL PROTECTION AGENCY REVIEW OF IEE AND EIA REGULATIONS, 2000

The Pakistan Environmental Protection Agency Review of IEE and EIA Regulations, 2000 prepared by the Pak-EPA under the powers conferred upon it by the PEPA'97 provide the necessary details on the preparation, submission, and review of the IEE and the EIA.

Projects are classified based on expected degree of adverse environmental impact. Project types listed in Schedule II are designated as potentially seriously damaging to the environment, and those listed in Schedule I as having potentially less adverse effects.

Table 1.1 Schedule I List of Projects Requiring an IEE (Energy Sector)

| |
|--|
| <u>B. Energy</u> |
| 1. Hydroelectric power generation less than 50 MW. |
| 2. Thermal power generation less than 200 MW. |
| 3. Transmission lines less than 11 kV and large distribution projects. |
| 4. Oil and as transmission systems. |
| 5. Oil and gas extraction projects including exploration, production, gathering systems, Separation and storage. |
| 6. Waste-to-energy generation projects. |
| <u>J. Other Projects</u> |

Any other project for which filing of an IEE is required by the Federal Agency under sub-regulation (2) of regulation 5.

Source Pakistan Environmental Protection Agency Review of Initial Environmental Examination and Environmental Impact Assessment Regulations, 2000 Schedule I

MEConsult (Private) Limited
98-B, Muhammad Ali Society, Karachi, Pakistan
Tel: 92-21-453 5042, 453 6853, 454 5214
Fax: 92-21-453 9571
Email: meconsult@gmail.com, meconsult@consultant.com
Website: www.meconsultonline.com

Table 1.2 Schedule II List of Projects Requiring an EIA (Energy sector and Environmentally sensitive areas)

| |
|---|
| A. Energy |
| 1. Hydroelectric power generation over 50MW |
| 2. Thermal power generation over 200MW |
| 3. Transmission lines (11kV and above) and grid stations. |
| 4. Nuclear power plants. |
| 5. Petroleum refineries. |
| I. Environmentally sensitive areas |
| 1. Any other project for which filing of an EIA is required by the Federal Agency under sub-regulation (2) of regulation 5. |
| 2. Any other project likely to cause an adverse environmental effect. |

Source Pakistan Environmental Protection Agency Review of Initial Environmental Examination and Environmental Impact Assessment Regulations, 2000 Schedule II

Other issues of the IEE-EIA Regulations, 2000 relevant to this proposed project are shown below.

- 1) The EIA shall be submitted to the Provincial EPA accompanied by an application in the format prescribed in Schedule IV of the IEE-EIA Regulations, 2000 and copy of receipt showing payment of the review fee.
- 2) Provincial EPA bound to conduct a preliminary scrutiny, which is shown below, and reply within 10 days of submission of the report.
 - a) Confirming the completeness of IEE and EIA
 - b) Asking for additional information, if required
 - c) Returning the IEE or EIA to the proponent for revision requesting additional studies and discussion, if necessary
- 3) Provincial EPA shall make every effort to conduct its review of the IEE within 45 days and of the EIA within 90 days of the issue of confirmation of completeness.

MEConsult (Private) Limited
98-B, Muhammad Ali Society, Karachi, Pakistan
Tel: 92-21-453 5042, 453 6853, 454 5214
Fax: 92-21-453 9571

Email: meconsult@gmail.com, meconsult@consultant.com
Website: www.meconsultonline.com

- 4) If the Provincial EPA accords its approval subject to certain conditions
 - a) Before commencing construction of the project, the project proponent is required to submit an undertaking accepting the conditions by executing an undertaking in the form set out in Schedule VII.
 - b) Before commencing operation of the project, the project proponent is required to obtain from the provincial EPA a written confirmation of compliance with the approval conditions and requirements of the IEE and EIA.
- 5) It is required that Environmental Management Plan shall be submitted with a request for obtaining the confirmation of compliance.
- 6) The provincial EPA is required to issue confirmation of compliance within 15 days of the receipt of a request and complete documentation.
- 7) The approval accorded shall be valid for commencement of construction for a period of three years from the date of issue.

1.1.3.3 NATIONAL ENVIRONMENTAL QUALITY STANDARDS, 2000 (NEQS, 2000)

The National Environmental Quality Standards (NEQS) were first promulgated in 1993 and were amended in 2000. The revised National Environmental Quality Standards were promulgated in 2001. The following standards are specified in the NEQS.

- 1) Maximum allowable concentration of pollutants (32 parameters) in municipal and liquid industrial effluents discharged to inland

MEConsult (Private) Limited

98-B, Muhammad Ali Society, Karachi, Pakistan

Tel: 92-21-453 5042, 453 6853, 454 5214

Fax: 92-21-453 9571

Email: meconsult@gmail.com, meconsult@consultant.com

Website: www.meconsultonline.com

waters, sewage treatment facilities, and the sea (three separate sets of numbers)

- 2) Maximum allowable concentration of pollutants (16 parameters) in gaseous emissions from industrial sources
- 3) The following are ruled for oil and coal fired power plants
 - Maximum allowable emission and increment of sulfur dioxide, SO₂, in ambient air
 - Maximum allowable increment of sulfur dioxide, SO₂
 - Maximum allowable concentration of nitrogen oxides, NO_x
 - Maximum allowable emission of nitrogen oxides, NO_x for steam generators as a function of heat input
- 4) Maximum allowable concentration of pollutants (2 parameters) in gaseous emissions from vehicle exhaust and noise emission from vehicles.

1.1.3.4 SINDH WILDLIFE PROTECTION ORDINANCE, 1972

Sindh Wildlife Protection Ordinance, 1972, was legislated to protect the wildlife resources in Sindh Province and surrounding natural resources. The outline of this ordinance is shown below.

- 1) Classification of wildlife (Section 7)
 - a) Protected animals, which shall not be hunted in any case
 - b) Game animals, which may be hunted in accordance with the provisions of this Ordinance or the rules
 - c) Wild animals, concerning which means of hunting are restricted

- 2) Restriction on the hunting and trading of wild animals dead or alive, trophies or meat of protected animals (Section 10, 11, 12, 13)

The hunting, possession, gift, import and export, transaction of stuffed animals, horns, skin and meat of protected animals is prohibited.

- 3) Designation of special protected area

a) National Park

The followings are prohibited in the national park:

- Hunting, shooting, trapping, killing or capture of any wild animals in a national park or within three miles radius of its boundary
- Firing any gun or doing any other act which may disturb any animal or bird or doing any act which interferes with breeding places
- Felling, tapping, burning or in any way damaging or destroying, taking, collecting or removing any plant or tree there-from
- Clearing or breaking up any land for cultivation, mining or for any other purpose
- Polluting water flowing in and through the national park without permission

b) Wildlife Sanctuaries

The following are prohibited in wildlife sanctuaries

- Entry or residing

MEConsult (Private) Limited
98-B, Muhammad Ali Society, Karachi, Pakistan
Tel: 92-21-453 5042, 453 6853, 454 5214
Fax: 92-21-453 9571

Email: meconsult@gmail.com, meconsult@consultant.com
Website: www.meconsultonline.com

- Cultivation of any land
- Damage or destruction of any vegetation
- Hunting, killing or capture of any wild animals
- Introduction of any exotic species of animals or plants,
- Introduction of any domestic animals or allowing them to stray,
- Causing any fire and pollution of water

c) Game Reserves

The hunting and shooting of wild animals are not allowed except for permitted locations, times and species

1.1.4 NECESSITY OF ENVIRONMENTAL IMPACT ASSESSMENT IN THIS PROPOSED PROJECT

Initial Environment Examination (IEE) and Environment Impact Assessment (EIA) in Pakistan are required in accordance with "Pakistan Environmental Protection Agency Review of IEE and EIA Regulations, 2000 (IEE/EIA Review)" based on the Pakistan Environment Protection Act 1997.

The Pakistan Environmental Protection Agency Review of initial Environmental Examination and Environmental Impact Assessment Regulations, 2000, issued under the Pakistan Environmental Protection Act, 1997, requires that an IEE be conducted for oil and gas exploration and production projects.

- a) IEE or any other project for which filing of an IEE is required by the Federal Agency

- b) EIA or any other project for which filing of an EIA is required by the Federal Agency or any other project that is likely to cause an adverse environmental effect.

In case of this proposed project, transmission lines of 132 kV and grid stations of 45 MVA in this proposed project does not require filing of an IEE and EIA. It is supposed that the proposed steam cycle power project does not require filing of an IEE and EIA due to the following reasons. However, the Pak-EPA will determine the necessity of EIA finally in consultation with the Sindh Environmental Protection Agency SEPA.

- a) It is supposed that the construction of the 36 MW steam cycle power project may not cause impacts on the environment at the site.

- Land area, approximately 5 acres will be required to construct proposed steam cycle power plant.
- Scenery is not much affected by the installations of boilers and steam turbines at the proposed site.
- Flora and fauna, which inhabit in the vicinity of the proposed project site, may not be affected.

1.1.5 GUIDELINES FOR CONFIRMATION OF ENVIRONMENTAL AND SOCIAL CONSIDERATIONS

1.1.5.3 OBJECTIVES OF GUIDELINES FOR CONFIRMATION OF ENVIRONMENTAL AND SOCIAL CONSIDERATIONS

The objective of the Guidelines for Confirmation of Environmental and Social Considerations (Guidelines), which were formulated in April 2002, is to encourage project sponsors to implement appropriate environmental and social considerations in accordance with the Guidelines, by making clear their procedures (both before and after funding decisions are made), criteria for decision-making and requirements that projects subject to funding are to meet.

MEConsult (Private) Limited
98-B, Muhammad Ali Society, Karachi, Pakistan
Tel: 92-21-453 5042, 453 6853, 454 5214
Fax: 92-21-453 9571

Email: meconsult@gmail.com, meconsult@consultant.com
Website: www.meconsultonline.com

1.1.5.2 BASIC PRINCIPLES REGARDING CONFIRMATION OF ENVIRONMENTAL AND SOCIAL CONSIDERATIONS

1) Parties Responsible for Environmental and Social Considerations

The project sponsors are responsible for environmental and social considerations for the proposed project. The project sponsors are required to undertake appropriate environmental and social considerations in accordance with the nature of the project.

2) Confirmation of Environmental and Social Considerations by TPCL

Environmental and social considerations by TPCL will be confirmed as shown below.

- a) Classifies the project
- b) Conducts a review of environmental and social considerations to confirm that the requirements are duly satisfied
- c) Conducts monitoring and follow-up after decision has been made on funding

3) Standards for Confirmation of Appropriateness of Environmental and Social Considerations

It is ascertained whether a project complies with environmental laws and standards, of the host national and local governments concerned as well as their environmental policies and plans.

1.2 ENVIRONMENT OF THE PROPOSED PROJECT SITE

1.2.1 WILDLIFE

1.2.1.1 PROTECTED AREAS

There are several protected areas of wildlife in Sindh Province as shown in Figure 1.1. These protected areas are administrated by laws and contribute to the conservation and preservation of the biodiversity, natural and relevant cultural resources.

The proposed project site is not designated as National Park, Wildlife Sanctuary or Game Reserve.

Protected Areas of Pakistan

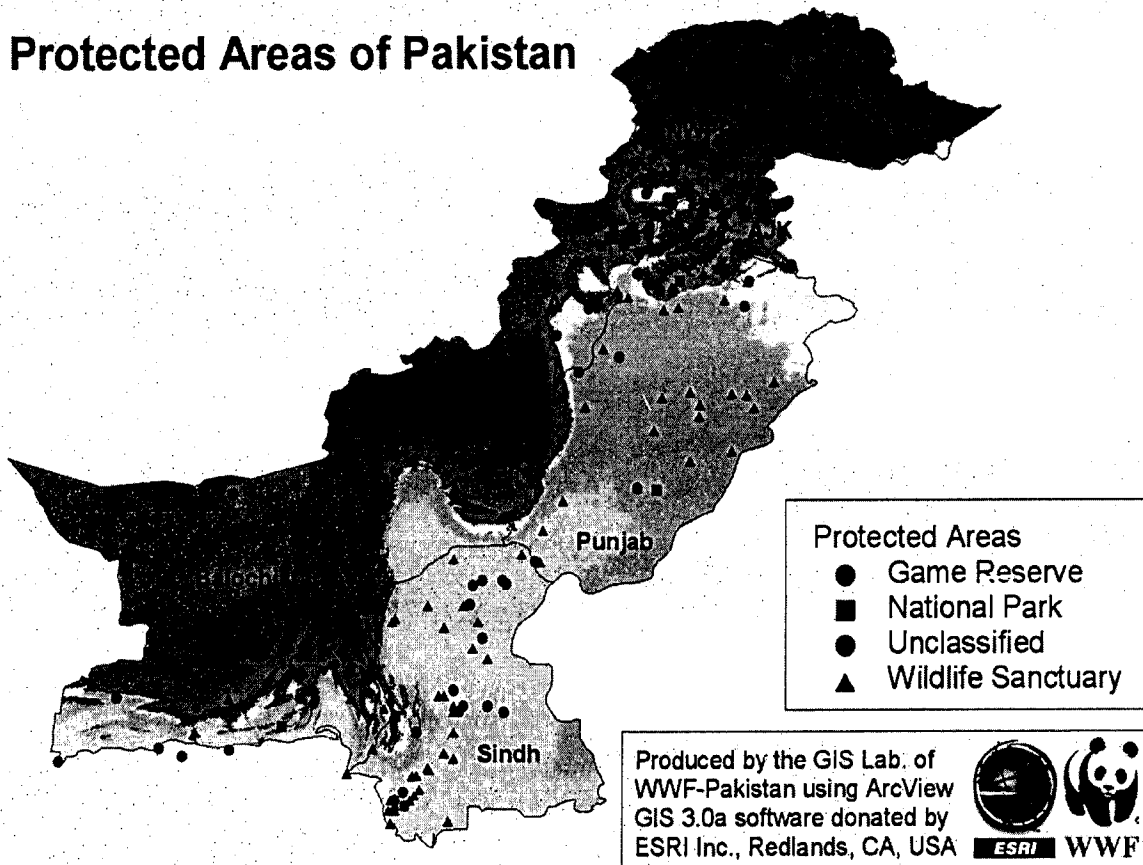


Figure 1.1 National Park, Wildlife Sanctuaries and Game Reserves in Sindh Province

Source Sindh State of Environment & Development

1.2.1.2 WILDLIFE

Historically, the province of Sindh was known for its diverse range of habitats, ecosystems and several unique species of wildlife. However, specified wildlife tends to reduce due to the development of mountains, forests and rivers, and hunting. The province of Sindh has made efforts to protect the wildlife by establishing Sindh Wildlife Protection Act in 1972. Table 10.3 shows the major endangered animals in Sindh Province.

MEConsult (Private) Limited
98-B, Muhammad Ali Society, Karachi, Pakistan
Tel: 92-21-453 5042, 453 6853, 454 5214
Fax: 92-21-453 9571
Email: meconsult@gmail.com, meconsult@consultant.com
Website: www.meconsultonline.com

Table 1.3 Endangered Animals in Sindh Province

| Endangered animals ^{*1} | | Main habitats |
|----------------------------------|----------------------|--|
| Mammals | Sindh Ibex | Kirthar National Park and Game Reserve ^{*2} |
| | Gazelle | Kirthar National Park and Game Reserve ^{*2} |
| | Indus Dolphin | Dolphin Reserve (Guddu to Sukkur Barrage), Sukkur to Kotri Barrage ^{*2} |
| | Red Fox | Jati ^{*3} |
| | Indian Wild Ass | Runn of Kutch ^{*2} |
| | Ho Deer | Upstream of Indus River northward H Hyderabad ^{*3} |
| Reptiles | Marsh Crocodile | Deh Akro, Nara Canal and Haleji lake ^{*2} |
| | Indus Gavial | Sukkur ^{*4} |
| Birds | Houbara Bustard | Hudero Lake ^{*6} |
| | Great Indian Bustard | Desert regions in Cholistan and in the Thar desert ^{*5} |
| | Greater Flamingo | Clifton Beach in Karachi ^{*4} |
| | Cotton Teal | Hub Dam ^{*4} |
| | Painted Snipe | Lungh h Lake, Drigh h Lake ^{*6} |
| | Indian Peafowl | Thar District ^{*5} |
| | Marbled Teal | Drigh Lake ^{*6} , Nawabshah District ^{*5} |
| | Sot Bill Duck | Hudero Lake ^{*6} |
| | Painted Sand grouse | Kirthar National Park ^{*2} |

- *1 Sindh Environmental Protection Agency
- *2 <http://www.sindhwildlife.com.pk/>
- *3 Sindh State of Environment & Development Map 13.2
- *4 Sindh State of Environment & Development Appendix 10.1
- *5 Sindh State of Environment & Development
- *6 http://www.sindhwildlife.com.pk/protectedareas/santuarities_page.html

1.2.1.3 BIRDS

Indus Flyway, which is known as the international migratory bird route, Pakistan and it also passes over Sindh Province¹.

The water birds, which breed in the northern area during summer, leave their nesting grounds accompanying their baby birds and fly southwards thousands of kilometers away. The water birds come to Indus Delta, which is warm throughout the year and offers abundant food, from mostly Russia, Central Asia and China and a few come from Kashmir and the southern slopes of the Himalayas. Though climate affects the migratory season, a lot of migratory birds come in November for feeding, resting and nesting and fly to the northern area in March.

There are Kinjhar Lake and Haleji Lake in the vicinity of the proposed project site. They are designated under the Ramsar Convention, which provides the framework for national action and international cooperation for the conservation and wise use of wetlands and their resources. In addition to the above-mentioned two lakes, many migratory birds are observed in Hudero Lake (Figure 1.2).

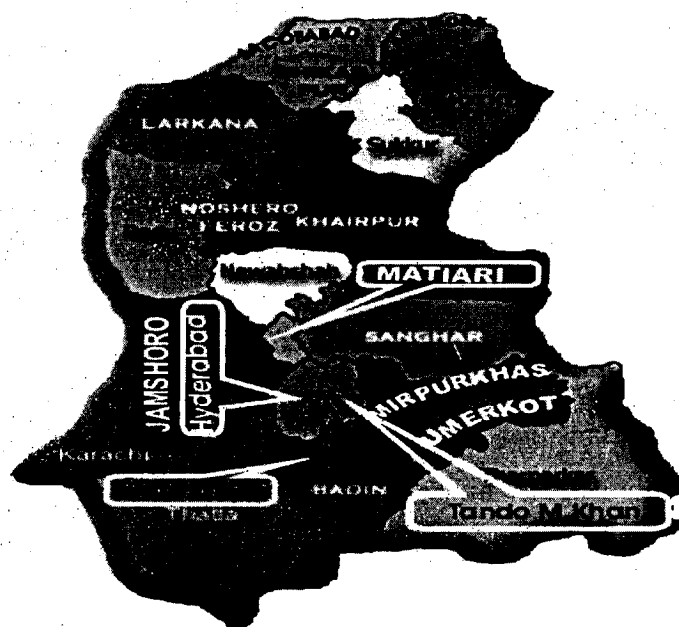


Figure 1.2 Wetlands in the Vicinity of the Proposed Project. Site

MEConsult (Private) Limited
98-B, Muhammad Ali Society, Karachi, Pakistan
Tel: 92-21-453 5042, 453 6853, 454 5214
Fax: 92-21-453 9571
Email: meconsult@gmail.com, meconsult@consultant.com
Website: www.meconsultonline.com

Important migratory birds that fly over Indus Flyway are shown in Table 1.4, and major migratory birds that are observed at the above-mentioned three lakes are shown in Table 1.5.

Table 1.4 Important Migratory Birds of Indus Flyway


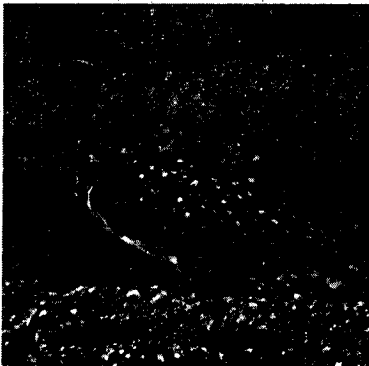
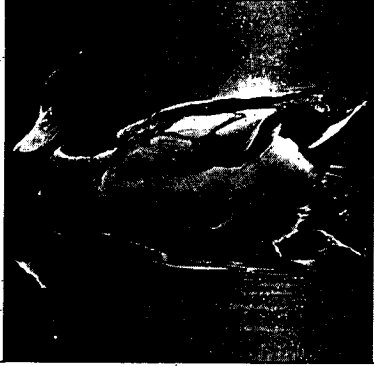
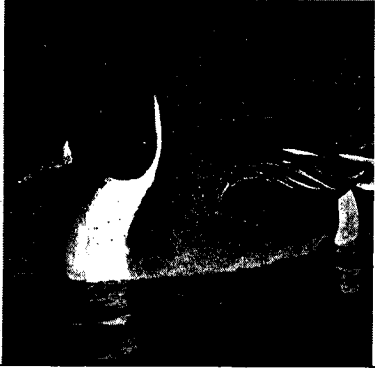

| Migratory Birds | Characteristics |
|--|---|
| <p style="text-align: center;">Siberian Crane</p>  | <ul style="list-style-type: none"> - Length 140cm - Marshes, jheel - Breed in a tundra of Siberia - Fly to Kazakhstan, Uzbekistan, Turkmenistan, Afghaistan and Pakistan. - Stopover at Tengiz Lake in Kazakhstan and Naurzum wetland |
| <p style="text-align: center;">Houbara Bustard</p>  | <ul style="list-style-type: none"> - Length 60cm - Breed mainly in Kizil Kum Desert region southeast of Aral Sea in Central Asia and migrate in Winter. Many fly to Cholistan and Thar Desert . Also winter in parts of Iran, Afghanistan, India and Arabian Desert |

Table 1.5 Important Migratory Birds Observed in the Vicinity of the Proposed Project Site

| Migratory Birds | Characteristics |
|--|---|
| <p style="text-align: center;">Mallard</p> | <ul style="list-style-type: none"> - Length 60cm - Wetlands including fresh and saline waters - Largely distributed in Europe and West Asia - Breed between N40 and N65 of Russia |

| | |
|--|---|
|  | and in Central Asia. Migrate southwards in winter. |
| <p>Pintail</p>  | <ul style="list-style-type: none">- Length 60cm- Lagoons- Largely distributed from the west of Eurasia and Northern part of Africa to the equator, and West Asia. and Arabian Peninsula- Breed in a tundra of Siberia and migrate to the temperate regions and tropical regions in winter. |
| <p>Common Shelduck</p>  | <ul style="list-style-type: none">- Length 60cm- Lagoons and salt-water lakes- Mainly distributed in Northern Europe , the North Sea, Mediterranean, Central Asia and China- Breed in above mentioned areas and migrate to North Africa, Arabian Peninsula and West Asia in Winter |
| <p>Black Crowned Night Heron</p> | <ul style="list-style-type: none">- Length 60cm- Largely breed and distributed in tropical and temperate regions of Eurasia, Africa and Southern and Northern America- One species breeds in temperate regions of northern hemisphere and migrates southwards. |



MEConsult (Private) Limited

98-B, Muhammad Ali Society, Karachi, Pakistan

Tel: 92-21-453 5042, 453 6853, 454 5214

Fax: 92-21-453 9571

Email: meconsult@gmail.com, meconsult@consultant.comWebsite: www.meconsultonline.com

| | |
|---|---|
|  | |
| <p style="text-align: center;">Gadwall</p>  | <ul style="list-style-type: none"> - Length 50cm - Jheels and marshes - Largely distributed in northern America and Eurasia (1) Breed in northern areas and migrates southwards in winter |

1.2.2 SOCIAL ENVIRONMENT OF THE PROPOSED PROJECT SITE

1.2.2.1 ADMINISTRATIVE DIVISION, POPULATION AND LIFE

The proposed project site is located close to the city of Tando Allahyar in the Tando Allahyar district, province of Sindh.

Population data of Tando Allahyar District and the relevant administrative division are shown in Table 1.6

Table 1.6 Population and Average Household Size of Tando Allahyar District

| | Population | Average Household Size |
|-------------------------|------------|------------------------|
| Tando Allahyar District | 576,000 | 6.3 |

Source 2010 District Census Report of Tando Allahyar, Population Census Organization Statistics Division GOP

1.2.2.2 INDUSTRIES IN TANDO ALLAHYAR DISTRICT

Major farm products, industry and livestock in Tando Allahyar District are shown in Table 1.7.

MEConsult (Private) Limited
98-B, Muhammad Ali Society, Karachi, Pakistan
Tel: 92-21-453 5042, 453 6853, 454 5214
Fax: 92-21-453 9571
Email: meconsult@gmail.com, meconsult@consultant.com
Website: www.meconsultonline.com

**Table 1.7 Main Crops, Vegetables and Fruits, Industry and Livestock in Tando
Allahyar District**

| | |
|----------------------|--|
| Crops | Sugar Cane, Wheat, Cotton |
| Vegetable And Fruits | Banana, Onion, Peas, Mango |
| Industry | Sugar Industry |
| Livestock | Cattle, Buffalo, Cow, Sheep, Donkey, Camel |

Source 2010 District Census Report of Tando Allahyar District, Population Census Organization Statistics Division GOP

1.3 ENVIRONMENTAL ISSUES

1.3.1 INVESTIGATION ON THE ENVIRONMENTAL ISSUES

Investigation on the environmental issues regarding the proposed steam cycle power project was conducted and reports of other similar projects as shown below.

- 1) Studying the expected degree of environmental effect regarding the several environmental factors that are identified
- 2) Confirming the importance of environmental factors taking into account environmental issues, laws and technical aspects. If adverse impacts are anticipated, the appropriate measures such as avoidance, minimization, repair, restoration and rehabilitation will be suggested.

1.3.2 CONFIRMATION OF ENVIRONMENTAL ISSUES

Components of the proposed steam cycle power plant are shown in Table 1.8.

Table 1.8 Components of the Proposed Steam Cycle Power Plant

| Components | Descriptions |
|------------|--------------|
|------------|--------------|

| | |
|--|--|
| Steam Boiler and Steam Turbine supplied by HMC, DESCON Pakistan or equivalent and Shinko, Japan, HTC or equivalent, respectively | <p>i) Steam Boiler : High Pressure Steam Boilers manufactured and supplied by M/s. Heavy Mechanical Complex (HMC) Taxila, Pakistan or DESCON Engineering, Lahore, Pakistan or equivalent Capacity: 2X125 TON/HR</p> <p>ii) Steam Turbine: Steam Turbine is manufactured by M/s. SHINKO INDUSTRIES LTD, Japan or HTC, China or equivalent</p> <p>iii) Fuel: Bagasse, Furnace Oil for start up</p> |
| Transmission Line | Capacity : 132 kV, 2 circuits, each having capacity of 25 MVA |
| Sub-station | Transformation Ratio (H/L):132/11 kV |

Expected environmental influences due to the proposed steam cycle power project, and issues confirmed and suggestions are described below.

1.3.2.1 POLLUTION

1) Waste Disposal

Influences:

Waste materials, which will be generated due to the construction and decommission, should be properly disposed.

Issues confirmed and suggestions:

Steam cycle power project will generate wastes during operation. Supposing that waste materials will be generated in construction and commission, the proper disposing plan for reuse and disposing at the disposal plant shall be made.

MEConsult (Private) Limited
98-B, Muhammad Ali Society, Karachi, Pakistan
Tel: 92-21-453 5042, 453 6853, 454 5214
Fax: 92-21-453 9571

Email: meconsult@gmail.com, meconsult@consultant.com
Website: www.meconsultonline.com

Residual materials in construction and wastes in commission should be confirmed in compliance with NEQS and relevant rules.

3) Noise

Influences:

Noise from steam boiler and steam turbine operation and from other plant equipment will be generated.

Issues confirmed and suggestions:

No houses were found in the vicinity of the proposed project site in the site reconnaissance carried out.

1.3.2.2 Natural Environment

1) Wildlife

Influences:

36 MW steam cycle power facilities will not disturb the wildlife that lives in the proposed project site.

Issues confirmed and suggestions:

The proposed project site is not designated as a national park, wildlife sanctuary or Ramsar site. Wildlife such as endangered animals is protected in national park and wildlife sanctuaries and by wildlife protection projects. Although information that there were endangered and rare animals in the vicinity of the proposed project site could not be obtained in the site reconnaissance, the following measures will be needed during construction and operation in addition to the detailed investigation in IEE or EIA prior to the project implementation.

- Education on environmental awareness to project staffs will be conducted.
- A "no-hunting, no-trapping, no-harassing wildlife" policy will be strictly observed.
- Off-road driving will not be allowed.
- Safe driving practices will be observed so that the accidental killing of any reptiles or small mammals crossing the road can be avoided.
- Minimizing of changes in the natural landform

2) Birds

Influences:

Steam cycle power plant operation is not likely to affect the birds.

Issues confirmed and suggestions:

The proposed project site is not designated as a national park, wildlife sanctuary or Ramsar site. Indus Flyway, which is internationally known as bird migratory route, passes through Sindh Province. Although it was not confirmed whether migratory birds would fly just above the proposed project site or not, it was reported that migratory birds flew from Russia, Central Asia, China, Kashmir and the Himalayas to wetlands in the Indus delta. Large numbers of migratory birds are observed in Kinjhar Lake, Haleji Lake and Hudero Lake around the proposed project site. The proposed project site is not located on the line between starting points of migratory birds and above-mentioned three lakes as shown in Figure 1.2. Moreover, it is reported in many studies that birds can detect the existence of stacks and change their courses to avoid them³. Taking into account the above-mentioned points, it is supposed that the proposed power project will not cause significant impact on birds.

- Eggs and chicks will not be taken from their nests during breeding seasons.
- The project staffs will be prohibited to hunt and trap endangered birds and important birds.

3) Hydrology

Influences:

Construction activity, particularly on slopes, can change hydrological regimes, surface watercourses and drainage patterns, thus affecting water quality and quantity.

Issues confirmed and suggestions:

In the site reconnaissance and the view of the topographic map, river and slopes, which might affect the hydrology of the proposed project site, could not be found. Therefore, it is supposed that the power facilities cannot change hydrological regimes and surface watercourses.

1.3.2.3 SOCIO ECONOMY

1) Land Acquisition

Influences:

If land taken by the steam cycle power plant will be private land, conflict may be caused with the landowner. If people live in the proposed project site, a change of residence may be caused.

Issues confirmed:

The land acquisition is being worked by TPCL. And it was confirmed that the required land is already owned by the sponsoring company

2) Life and Livelihood

Influences:

Impacts on the lives of residents in the vicinity of the proposed project site due to the project are a concern.

Issues confirmed:

The project will create temporary / permanent job opportunities during the construction period. This can contribute to the livelihood of residents in the vicinity of the proposed project site.

3) Cultural Heritage

Influences:

Construction and development work on or near archaeological sites can damage such sites.

Issues confirmed:

There is no archaeological site near the proposed steam cycle power plant.

1.3.2.5 EFFECTS OF CONSTRUCTION ACTIVITY

1) Dust

Influences:

Traffic of machinery and cars for the construction and transportation could result in the emission of dust.

Issues confirmed and suggestions:

MEConsult (Private) Limited
98-B, Muhammad Ali Society, Karachi, Pakistan
Tel: 92-21-453 5042, 453 6853, 454 5214
Fax: 92-21-453 9571
Email: meconsult@gmail.com, meconsult@consultant.com
Website: www.meconsultonline.com

Topographic map shows that there are a small number of houses along the access road to the site. Therefore, it shall be required to confirm the site conditions and relevant rules such as NEQS before the construction activity. Proper measures will be implemented if necessary.

2) Turbid Water

Influences:

Effluent from the construction work will be emitted. In the construction of the transmission line, turbid water from exposed surface soil of embankments and excavated slopes will flow into the river.

Issues confirmed and suggestions:

It is supposed that the influence of turbid water caused by the construction activity is not at all existent. The following measures may be required.

- Installation of a turbid water settling pit
- Settling mud out of water
- Proper disposal of settled mud

With respect to the exposed surface soil, proper measures such as the protection of topsoil will be required.

3) Traffic

Influences:

Passage of trailers, crane trucks and large-sized cars for transportation and construction of the power plant equipment and so on could influence public traffic.

Issues confirmed and suggestions:

Passage of large-sized cars will have an impact on public traffic. It is supposed that the following measures will be required concerning the passage of large-sized cars.

- a) Avoiding influence on public traffic by traveling during night when the volume of traffic is less.
- b) Compile a proper transporting plan that complies with the relevant laws. For example, give prior notification to the road administrator and mark long materials that are over car lengths.
- c) Build housing colony at site so that less transportation is required

1.4 ENVIRONMENTAL EFFECTS DUE TO THE PROJECT IMPLEMENTATION

1.4.1 Emission and its impacts

In this section impacts of gaseous and liquid effluent will be discussed.

1.4.1.1 Gaseous Emission

Sources of continuous emission from the operations of proposed steam cycle power equipment including steam boiler/turbine is tabulated in table below:

Steam Boiler and Steam Turbine

| Source | Steam Boiler/Turbine |
|--|-------------------------|
| Fuel type | Fuel Bagasse |
| Sox (ppm H ₂ S) | 0 |
| CO (mg/ Nm ³) | 500 |
| NOx (mg/ Nm ³) | 200 |
| Exhaust Particulate Matters (mg/ Nm ³) | 100 |

MEConsult (Private) Limited
98-B, Muhammad Ali Society, Karachi, Pakistan
Tel: 92-21-453 5042, 453 6853, 454 5214
Fax: 92-21-453 9571
Email: meconsult@gmail.com, meconsult@consultant.com
Website: www.meconsultonline.com

| | |
|--|-----|
| Exhaust Stack Temperature (⁰ C) (after air preheater and economizer) | 150 |
|--|-----|

The magnitude of emissions is reflected in fuel quality. Bagasse has no sulfur, low fuel-bound nitrogen, and impurities than other fuels thus having lower emissions. Proposed steam cycle power project when firing bagasse is a green and renewable energy project would not exceed World Bank, USEPA, and IFC ambient air quality guidelines for NO, SO₂, or PM. Bagasse has lower emissions of NO_x, SO, and PM than fuel oil; therefore, the impacts when using bagasse, which is the primary fuel, would be lower than those from fuel oil.

The projected noise impacts for the facility will be less than the World Bank guidelines.

Additionally, the site location is not in the proximity of any areas that may be sensitive to noise impacts [i.e., residential areas, schools, hospitals, etc. (excluding the workers colony)].

1.4.1.2 Liquid Effluent

The liquid effluent generated by the cooling tower and boiler is sent to a drain, by means of a collection tank and, from this point.. Effluents produced sporadically (e.g. effluent resulting from washing resins in the water demineralization system) will be collected in the non-continuous wastewater sump via a pipeline. The effluent collected in the non-continuous wastewater sump will be gradually drained off.

1.4.1.2 DEFINITION OF THE PROJECT BOUNDARY

It is assumed this proposed steam cycle power plant generated electricity will be connected to the 132 kV grid line provided by HESCO.

MEConsult (Private) Limited
98-B, Muhammad Ali Society, Karachi, Pakistan
Tel: 92-21-453 5042, 453 6853, 454 5214
Fax: 92-21-453 9571
Email: meconsult@gmail.com, meconsult@consultant.com
Website: www.meconsultonline.com

1.4.2 Outlines of the full blown Environmental Impact Assessment and Social Soundness Study

1.4.2.1 Environmental Impact

Environmental and social soundness assessment (ESSA) of the proposed facility study will consider the impacts of the proposed facility to the physical, ecological, and socioeconomic environments, if required. The assessment also identified mitigation and monitoring activities required to minimize any potential impacts of the facility. The impact analysis compared the potential impacts from the proposed facility to the World Bank's 1988 environmental guidelines, the IFC's guidelines, and Government of Pakistan (GOP) standards and guidelines.

1.4.2.1.1 Project Location and descriptions

The proposed steam cycle power plant is located in the Tando Allahyar District of the province of Sindh. The project area is part of the Indus alluvial plains, and has a uniform and predominantly flat topography.

1.4.2.1.2 Natural Environment

District Tando Allahyar is a medium hot climate conditions with temperatures soaring high from April to August. The average rainfall ranges from 31 mm to 67 mm during the year. The minimum rainfall recorded in the month of November is 1.2 mm where as the maximum rainfall recorded in the month of July is 29 mm.

The project area is phyto-sociologically a part of the Saharo-Sindian region, which has sparse and poor floral diversity about 9.1% of the total flora of Pakistan. About 90% of the area is under cultivation and no natural flora exists there.

Given the high level of human disturbance and the absence of suitable habitats, the area has very little native wildlife. As a consequence, the animals found there are predominantly common species that are highly adaptable and able to co-exist with people.

1.4.2.2 Socio Economic Environment

Irrigated agriculture is one of the major economic activities in the proposed project area. The land is highly suitable for irrigated agriculture, being capable of producing relatively high yields of sugar cane. The land in the project area falls under one of two categories: privately owned and state owned. The privately owned land forms a large proportion of the total land area.

Alternate means of income for the settlements surrounding the project area include people employed in education, irrigation, police, and road departments. TASML and its associated companies in the region have also hired skilled and unskilled labor from the area. People of the area also work in the sugar mills. Besides the above mentioned sources of livelihood, the bricks kilns (bathas) in several villages are source of income in the project area.

1.4.2.2.1 Health Facility

No formal health facility is available in and around the villages and settlements surveyed.

1.4.2.2.2 Education

Educational facilities in the project area consist of primary and higher secondary schools for boys and girls. There are some colleges for boys and girls also in the site surroundings.

1.4.2.2.3 Health and Safety

The impacts on occupational health and safety are typical of medium scale construction project. No adverse health conditions or critical worker safety conditions are expected during the completion of the proposed steam cycle power project.

| APPENDIX I | | |
|--|---|---|
| TABLE 4 | | |
| TAY POWERGEN COMPANY PRIVATE LIMITED | | |
| Potential Negative Impacts VS Specific Mitigation Measures | | |
| S. No. | Potential Negative Impacts | Specific Mitigation Measures |
| 1 | Air emission effects to human health, agriculture, and native wildlife and vegetation | The facility is away from the population areas and wild life sanctuaries |
| | | The plant is using bagasse and contains no sulfur |
| | | No SO ₂ present therefore no mitigation measure is required |
| 2 | Increased noise and vibration | The steam boiler/turbine are placed on rigid foundations therefore there will be structure borne noise and vibrations which will be minimized by enclosing within the insulated walls |
| | | The steam boiler/turbine are placed in RCC structure building and air circulation system therefore noise to outside is minimum |
| | | The Power plant is sufficiently distanced from the nearby human population |
| 3 | Change in surface water and ground water quality | The blow down from boiler and cooling towers will be collected in a settling tank and chemicals residues are then disposed safely |
| | | Ground water will be used for makeup water in cooling towers |
| | | No surface water will be used |
| | | No contaminated water will be disposed off in the surface water reservoirs |
| 4 | Toxic effects of chemical discharges and spills | No Chemicals discharges and spills are anticipated |
| | | No Toxic chemicals are disposed improperly |
| 5 | Thermal shock to aquatic organisms | Closed loop cooling cycle |
| | | Dilute thermal condition by discharging water into larger receiving water body |

| | | |
|----|--|--|
| | | The discharge water from cooling towers will be collected in the settling tank to reduce temperature close to ambient |
| | | Proposed Power Plant is a Steam Cycle / Cogeneration Power Plant with heat recovery for air and water preheating going to the boiler |
| 6 | Entrainment and impingement of aquatic organisms | Ground water will be used for cooling therefore no significant effect to aquatic organism |
| 7 | Change in surface water and groundwater quantity | Blowdown water from cooling towers will be allowed to settle in a settling tank and after removal of chemicals and filtration it will be recycled to minimize the use of fresh water |
| 8 | Change in surface water flow and discharge | Not applicable |
| 9 | Vegetation removal and habitat loss | No significant vegetation at the power plant site |
| 10 | Dredging and filling of wetlands | Not applicable |
| 11 | Avian hazards from stacks, towers, and transmission lines | Site stacks and tower are away from flyways Deflectors, lights, and other visible features will be installed on the stacks |
| 12 | Human population displacement | No displacement of human population as the power plant is located within Tando Allahyar Sugar Mills (Pvt.) Limited |
| 13 | Disruption of traffic | All operating workers are going to be located within the boundaries of TASML and no commuting will be involved There will be traffic increase during the construction period for which traffic plan will be developed and heavy traffic (trailers and trucks) will only be allowed to ply on the highways during night time |
| 14 | Modification of historically or archaeologically significant structure or lands (e.g., churches, temples, mosques, cemeteries) | No such modification is anticipated The plant is located within the existing boundaries of an industry and an operating industry is existing at site |

| | | |
|----|---|--|
| 15 | Visual impact on historical, archeological, and cultural resources and on landscapes | Not applicable |
| 16 | Worker exposure to dust from ash and coal | Dust will only be present during construction activities and all proper measures will be taken to lessen the negative effects by sprinkling in and around the site |
| | | Dust levels < 10 mg/m ³ will be observed |
| | | Bagasse power plant is being implemented, therefore no coal |
| | | Dust masks to construction workers and visiting personnel will be provided |
| 17 | Worker exposure to toxic gases leaking from boilers | Not applicable |
| 18 | Worker exposure to excessive noise | 85 dBA at 1 m distance will be observed, ear protection will be provided in areas where noise level exceeds this limit |
| 19 | Induced secondary development including increased demands on infrastructure. | Infrastructure plan in the shape of approach roads and living facilities will be provided at power plant site |
| 20 | Changes in demographic patterns and disruption of social and cultural values and patterns | Proper training to workers both during construction and operations will be provided |