



April 17th, 2014

The Registrar
National Electric Power Regulatory Authority
2nd FLOOR, OPF Building
G-5/2, Islamabad

Subject: Application for a new Generation License of M/s RYK Mills Limited.

Dear Sir

I, Mr. Muhammad Mudassir Iqbal, Head - Energy Business being the authorized representative of M/S RYK MILLS LIMITED by virtue of Board Resolution dated 06th March 2014, hereby apply to National Electric Power Regulatory Authority for a grant of Generation license to the M/S RYK MILLS LIMITED pursuant to section (3) of the Regulation of Generation, Transmission and Distribution of Electric Power Act, 1997.

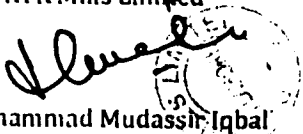
I certify that the documents-in-support attached with this application are prepared and submitted in conformity with the provision of the National Electric Power Regulatory Authority Licensing (Application and Modification Procedure) Regulations, 1999, and undertake to abide by the terms and provisions 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 numbered BBB 10234193 dated 14 April 2014 in the sum of Rupees PKR 264,960/- (Pak Rupees Two Hundred Sixty Four Thousand Nine Hundred Sixty Only), being the non-refundable license application fee calculated in accordance with the schedule II to the National Electric Power Regulatory Authority Licensing (Application and Modification Procedure) Regulations, 1999, is also attached herewith.

We shall be pleased to provide any further information you may require.

We request an early action in this matter.

Thanking You.
For RYK Mills Limited


Muhammad Mudassir Iqbal
Head - Energy Business

HEAD OFFICE

75/4-D, Sarfraz Rafiqi Road, Lahore Cantt, Pakistan. Ph: +92-42-36601381-4
Fax: +92-42-36601385, Email: info@rykmills.com.pk

OPERATIONS:

Rukanabad (Janpur), Tehsil Liaquatpur, District Rahimyar Khan-Pakistan
Ph: +92-68-5044229, 5000606 Fax: +92-68-5570739

CERTIFIED TRUE COPY OF THE RESOLUTION PASSED IN THE MEETING OF BOARD OF DIRECTORS HELD ON 06th MARCH, 2014 AT 11:30 A.M. AT ITS REGISTERED OFFICE 08-SHAMI ROAD, LAHORE CANTT, LAHORE.

"RESOLVED THAT" the management of the company intends to install two additional high pressure steam turbines having capacity of 15 MW each.

"FURTHER RESOLVED THAT" Mr. Muhammad Mudassir Iqbal (Head - Energy Business) of the company, be and is hereby authorized and empowered on behalf of the company to deal with the National Electric Power Regulatory Authority ("NEPRA") and Multan Electric Power Company ("MEPCO") in connection with issuance of license, tariff and all related matters to sign and execute all the documents, and do and take all necessary acts, which may be required by NEPRA and MEPCO from time to time and to do all other incidental and ancillary acts, things and deeds.

"FURTHER RESOLVED THAT" A copy of this resolution be provided to the NEPRA and MEPCO with the seal/stamp duly affixed thereon for their information and record.



MAKHDUM OMER SHERYAR
Managing Director



MUNIR HUSSAIN
Company Secretary

AD OFFICE

4-D, Sarfraz Rafiqui Road, Lahore Cantt, Pakistan. Ph: +92-42-36601381-4
+92-42-36601385, Email: info@rykmills.com.pk

OPERATIONS:

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Ph: +92-68-5044229, 5000606 Fax: +92-68-5570739

on-line



SECURITIES AND EXCHANGE COMMISSION OF PAKISTAN

CERTIFICATE OF INCORPORATION

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

Company Registration No. **00000018183/20070602**

I hereby certify that "RYK MILLS 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 LAHORE on 11th day of June, 2007 (Two Thousand and Seven.)

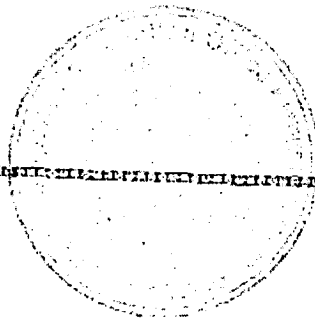
Fee **Rs.7,000/=**



Mahboob Ahmad
(MAHBOOB AHMAD)
JOINT REGISTRAR OF COMPANIES

NO. ARL/ 25233

DATED:- 7/6/07



CERTIFIED TO BE TRUE COPY

Zulhijah

17/07/14

DEPUTY REGISTRAR OF COMPANIES
COMPANY REGISTRATION OFFICE
LAHORE

THE COMPANIES ORDINANCE, 1984

-- : 0 : --

COMPANY LIMITED BY SHARES

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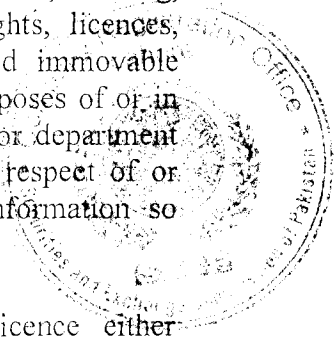
Memorandum of Association
of

RYK MILLS LIMITED

- I. The name of the Company is "RYK MILLS LIMITED".
- II. The Registered Office of the Company will be situated in the Province of the Punjab.
- III. The OBJECTS for which the Company is established are all or any of the following and in construing the following sub-clauses, the scope of no one of such sub-clauses shall be deemed to limit or affect the scope of any other or such sub-clauses.
 1. To purchase, manufacture, refine, produce, prepare, market, import, export or deal in sugar, gur, sugar-cane, sugar-beets, sugar-cubes, molasses, glucose and other allied products, and to set-up and establish production and re-finishing plants thereof.
 2. To carry on in Pakistan or elsewhere all or any business in all its respective branches of sugar manufactures and to purchase, produce, boil, refine, import, export, sell and generally deal in sugar, sugar cane, sugar candy, jaggery, sugar beet, molasses, syrups and all sugar products including confectionary, glucose, canned fruit, golden syrup, aerated water and / or by products thereof such as belty alcohol, acetone, carbon dioxide, hydrogen, potash, cane-wax, fertilizers and food products generally and in connection therewith to acquire, construct and operate factories for the manufacture of sugar or any of its products and by products and / or to acquire plant, machinery and equipment for any of the above purpose.
 3. To carry on the business of sale, purchase, import, export, and generally deal in sugar, sugar-cane, sugar candy, jaggery, sugar-beet molasses, and all sugar products including confectionary, glucose, canned fruit, golden syrup and aerated waters and / or by-products thereof such as methyl, acetone, carbon-dioxide, hydrogen, potash, cane-wax, fertilizers, and food products generally and in connection therewith, to acquire, construct to acquire plant, machinery and equipment for any of the above purpose.

4. To buy, sell, grow, plant, cultivate, or otherwise acquire sugar-cane, sugar-beet, fruits, vegetables and cereals of any variety on varieties on the Company's own lands or on lands of others on such terms and conditions as the Company may deem fit from time to time and advance moneys and loans to growers, farmers, land-owners and contractors and provide them with seeds, manure, tools, machinery and / or other facilities, on such terms and conditions as the Company may deem fit and to consume all such grown, owned or acquired sugar-cane, sugar-beet, fruits, vegetable or corn, in Company's own undertakings or to dispose of, supply, export or sell all or any of these commodities to any dealers, distributors, manufacturers, exporters, and others on such terms and conditions as the Company may deem proper.
5. To take land on lease and cultivate the same for any purpose and particularly for sugar-cane.
6. To receive goods on consignment, from any company, firm, association of persons, body, whether incorporated or not, individuals, Government, Semi-Government or any local authority and sell the same as agents or on principal to principal basis.
7. To carry on the business of importers and exporters of all kinds of goods, articles and things whether manufactured, semi-manufactured or raw materials and to carry on the business of sales representatives either on commission or on profit sharing basis of all kinds of goods and materials.
8. To carry on the business of general order suppliers including Government, Semi-Government Agencies, Armed Forces, Army, Military or Defence and commission agents, indentors, traders and as general merchants, wholesalers, retailers, dealers, distributors, stockiest agents, sub-agent in any goods or products within the scope of the object of the Company, subject to any permission required under the law.
9. To carry on and undertake trading business of legally permissible and to act as indentors, importers, exporters, traders, suppliers, manufacturers and commission agents and retailers of products, commodities and materials in any form or shape manufactured or supplied by any company, firm, association of persons, body, whether incorporated or not, individuals, Government, Semi-Government or any local authority.
10. To carry on in or outside Pakistan the business of manufacturers, importers, exporters, indentors, transporters, dealers in all articles and commodities akin to or connected with any of the business of the Company capable of being conveniently carried on or necessary for the promotion of the objects herein contained, as permissible, under law.

11. To carry on business and obtain licences for shipping agents, clearing and forwarding agents, purchasing and indenting agents, selling agents, (except managing agent) on such terms and conditions as the Company may think proper subject to any permission as required under the law.
12. To carry on agency business (except managing agency) and to acquire and hold selling agencies and to act as selling agents, commission agents, manufacturers' representatives and distributing agents of and for the distribution of all kinds of merchandise, goods, commodities, products, materials, substances, articles and things whether finished, semi-finished, raw, under process, refined, treated or otherwise pertaining to trade and commerce and for that purpose to remunerate them and to open and maintain depots and branches.
13. To purchase, take on lease or in exchange, hire, apply for or otherwise acquire and hold for any interest, any rights, privileges, lands, building, easements, trade marks, patents, patent rights, copyrights, licences, machinery, plants, stock-in-trade and any movable and immovable property of any kind necessary or convenient for the purposes of or in connection with the Company's business or any branch or department thereof and to use, exercise, develop, grant licences in respect of or otherwise turn to account any property, rights, and information so acquired, subject to any permission required under the law.
14. To acquire by concession, grant, purchase, barter, licence either absolutely or conditionally and either solely or jointly with others any lands, buildings, machinery, plants, equipments, privileges, rights, licences, trade marks, patents, and other movable and immovable property of any description which the Company may deem necessary or which may seem to the Company capable of being turned to account, subject to any permission as required under the law.
15. To act as representatives, for any person, firm or company and to undertake and perform sub-contracts, and also act in the business of the Company through or by means of agents, sub-contractors and to do all or any of the things mentioned herein in any part of the world and either alone or in collaboration with others and by or through agents, sub-contractors, or otherwise.
16. To go in for, buy or otherwise acquire and use any patent design, copyright, licence, concession, convenience, innovation, invention, trade marks, or process, rights, privileges, plants, tools or machinery and the like in Pakistan or elsewhere, which may for the time being appear to be useful or valuable for adding to the efficiency or productivity of the Company's work or business, as permissible under the law.



17. To acquire and carry on all or any part of the business or property of any person, firm, association or company suitable for any of the purposes of the Company or carrying on any business which this Company is authorized to carry on and in consideration for the same, to pay cash or to issue shares of the Company and to undertake the liabilities of associated undertakings.
18. To enter into arrangements with the government or authority (supreme, municipal, local or otherwise) or any corporation, company, or persons that may seem conducive to the Company's objects or any of them and to obtain from any such government, authority, corporation, company or person any charters, contracts, rights, privileges and commission which the Company may think desirable and to carry on exercise and comply with any such charters, contracts, decrees, rights, privileges and concessions.
19. To enter into partnership, to amalgamate, or merge movable with immovable and / or to buy on all interests, assets, liabilities, stocks, or to make any arrangement for sharing profits, union of interests, co-operation, joint-venture, reciprocal concession or otherwise with any person, firm or company carrying on or proposing to carry on any business which this Company is authorized to carry on or which is capable of being conducted so as directly or indirectly to benefit this Company and to have foreign collaborations and to pay royalties / technical fees to collaborators subject to the provisions of the Companies Ordinance, 1984.
20. To establish, promote or assist in establishing or promoting and subscribe to or become a member of any other company, association or club whose objects are similar or in part similar to the objects of this Company or the establishment or promotion of which may be beneficial to the Company, as permissible under the law.
21. To open accounts with any Bank or Banks and to draw, make, accept, endorse, execute, issue, negotiate and discount cheques, promissory notes, bills of exchange, bills of lading, warrants, deposit notes, debentures, letter of credit and other negotiable instruments and securities.
22. To arrange local and foreign currency loans from scheduled banks, industrial banks and financial institutions for the purpose of purchase, manufacture, market, supply, export and import of machinery, construction of factory, building and for the purpose of working capital or for any other purpose.

23. To sell or otherwise dispose of the whole or any part of the undertaking of the Company, either together or in portions for such consideration as the Company may think fit and in particular, for shares, debenture-stock or securities of any Company purchasing the same.
24. To borrow or raise money by means of loans or other legal arrangements from banks, or sister concerns, or other financial institutions, or Directors in such manner as the Company may think fit and in particular by issue of debentures, debenture stock, perpetual or otherwise convertible into shares and to mortgage, or charge the whole or any part of the property, assets of the Company, present or future, by special assignment or to transfer or convey the same absolutely or in trust as may seem expedient and to purchase, redeem or pay off any such securities.
25. To pay all costs, charges, and expenses preliminary or incidental incurred in formation or about the promotion and establishment of the Company and to remunerate any person, firm or company for services rendered or to be rendered in or about the formation or promotion of the Company or the conduct of its business.
26. To give any servant or employee of the Company commission in the profits of the Company's business or any branch thereof and for the purpose to enter into any agreement or scheme of arrangement as the Company may deem fit and to procure any servants or employees of the Company to be insured against risk of accident in the course of their employment by the Company.
27. To establish and support or aid in the establishment and support of associations, institutions, funds, and conveniences calculated to benefit persons who are or have been Directors of or who have been employed by or who are serving or have served the Company or any other Company which is a subsidiary or associate of the Company or the dependents or connection of such persons and to grant pensions, gratuities, allowances, relief and payments in any other manner calculated to benefit the persons described herein.
28. To distribute any of the Company's property and assets among the members in specie or in any manner whatsoever in case of winding up of the Company.
29. To maintain offices, branch offices, subsidiaries, agencies all over the world in such manner as required under the law.
30. To guarantee the performance of contracts, agreements, obligations or discharge of any debt of the company or on behalf of any associate company or person in relation to the payment of any financial facility including but not limited to loan, advance, letter of credit or other obligations through creation of all types of mortgages, charges, pledges, hypothecation, on execution of the usual banking documents/instruments

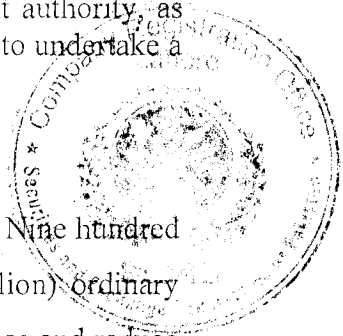
or otherwise encumbrance on any or all of the movable and immovable properties of the company, either present or future or both and issuance of any other securities or sureties by any other means in favour of banks, Non-Banking Finance Companies or any financial institutions and to borrow money for purposes of the company on such terms and conditions as may be considered proper.

31. To carry out joint venture agreements with other companies or countries within the scope of the objects of the Company.
32. To cause the Company to be registered or recognised in any foreign country.
33. To do and perform all other acts and things as are incidental or conducive to the attainment of the above objects or any of them.
34. To carry on the business of power generation in all its forms to meet the electricity/energy requirements of the company and to sell, supply and distribute the excess / surplus power not being used by the company, and for that purpose to do all things, acts or deeds as may be necessary or incidental to the business of power generation including without limitation obtaining all requisite licenses/approvals / permissions from National Electricity Power Regulatory Authority and from any other Government authority/ department to enter into off-take / power purchase agreements with third parties, and to design, finance, acquire, own, construct, maintain and operate all kinds of power plants and complexes (including without limitation cogeneration power plants).
35. To carry on business of agricultural farming, dairy farming and provision of agricultural and farming services, in all forms and perspectives and for that purpose to do all such acts, deeds or things as would be required for effective discharge of these objects.
36. To make use of the by-products, derived from sugar manufacturing, agricultural farming, and other business activities mentioned herein in any manner including, without limitation preparation of ethanol, alcohol, manure, fertilizer, bio-gas and any other feasible use thereof subject to obtaining all requisite licenses/ approvals/ permissions from relevant Government authority / department and for that purpose to do all such acts, deeds and things as would be required for effective discharge of these objects.
37. To subscribe or contribute or otherwise to assist or to donate money to charitable, benevolent, religious, scientific, technical, national, public, or any other institutions, for its objects or purposes or for any exhibition.

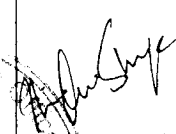
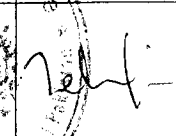
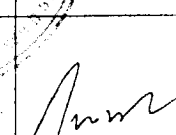
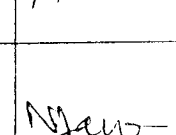
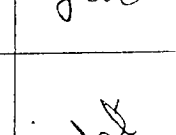
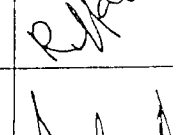
38. To take such actions as are considered necessary to raise the status or to promote the efficiency of the company.
39. It is further declared that notwithstanding anything contained in the foregoing object clauses of this Memorandum, nothing therein shall construe any power upon the Company to undertake or indulge in banking business, directly or indirectly, business of an investment company, Insurance Company, or managing agency business, as restricted under law or any other unlawful business.
40. Notwithstanding anything stated in any object clause, the Company shall obtain such other approval or licence from the competent authority, as may be required under any law for the time being in force to undertake a particular business.

IV. The liability of the members is limited.

- V. The share capital of the Company is Rs. 950,000,000/- (Rupees Nine hundred fifty Million only) divided into 95,000,000 (ninety five million) ordinary shares of Rs. 10/- (Rupees Ten only) each with power to increase and reduce the capital of the company and to divide the shares in the capital for the time being into several classes in accordance with the provisions of the Companies Ordinance, 1984.



We the several persons, whose names and addresses are subscribed below are desirous of being formed into a Company in pursuance of the *Memorandum of Association* and we respectively agree to take the number of shares in the capital of the Company set opposite our respective names:-

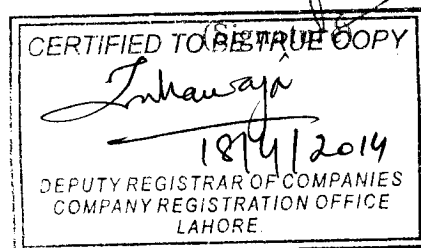
Name and Surname (present & former) in full (in Block Letters)	NIC No. (in case of foreigner, Passport No)	Father's/ Husband's Name in full	Nationality with any former Nationality	Occupation	Residential Address in full	Number of shares taken by each subscriber	Signatures
Makhdom Umar Sheryar	42301-9725732-7	S/O Makhdom Rukan -Ud- Din	Pakistani	Business Executive	117/2/1, Khayabane-e-Bukhari DHA-VI, Karachi	2,500	
Sehmina Sadiq Javaid	42301-3018474-8	W/O Makhdom Umar Sheryar	Pakistani	Business Executive	117/2/1, Khayabane-e-Bukhari DHA-VI, Karachi	2,500	
Makhdom Hashim Jawan Bakht	42301-6961134-1	S/O Makhdom Ruqan -Ud- Din	Pakistani	Business Executive	117/2/1, Khayabane-e-Bukhari DHA-VI, Karachi	2,500	
Mrs. Naseem Javaid.	35202-5649424-0	W/O M. Sadiq Javed	Pakistani	Business Executive	House # 5-Q/A, Gulberg-II, Lahore	2,500	
Riffat Zamani Begum	31303-7349097-2	W/O Makhdom Rukan-ud- Din	Pakistani	Business Executive	Mianwali Qureshian, P.O Khas, Teh & Distt Rahim Yar Khan	2,500	
Makhdom Rukan-ud- Din	31303-2813835-9	S/O Makhdom M Karam Shah	Pakistani	Business Executive	Mianwali Qureshian, P.O Khas, Teh & Distt Rahim Yar Khan	2,500	

Total number of Shares Taken 15,000
Fifteen Thousand (only)

Dated the 30th day of May 2007.

Witness to above signatures

Mr. Qazi Fazal ul Rehman S/O Qazi M. Akhtar
Bearing CNIC # 35201-1503108-7 Of H. # 11,
Mohallah Hussain Road, Lahore Cantt
Worked as Accountant



THE COMPANIES ORDINANCE, 1984

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COMPANY LIMITED BY SHARES

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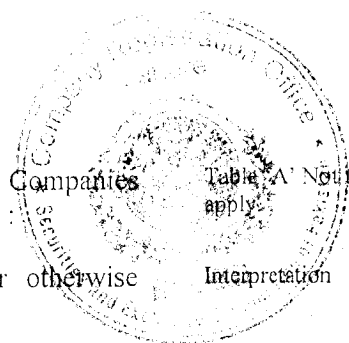
Articles of Association
of
RYK MILLS LIMITED

PRELIMINARY

1. The regulations in Table "A" in the First Schedule to the Companies Ordinance, 1984 shall not apply to the Company except as reproduced herein :

2. In these Articles, unless the context or the subject matter otherwise requires :

- (a) "Articles" means these Articles as originally framed or as from time to time altered in accordance with law.
- (b) "Board" means a meeting of the Directors duly called and constituted or as the case may be, the Directors assembled at a Board.
- (c) "Company" means "RYK MILLS LIMITED".
- (d) "Directors" means the Directors for the time being of the Company or as the case may be, the Directors assembled at a Board.
- (e) "Month" means calendar month according to the English Calendar.
- (f) "Office" means the Registered Office for the time being of the Company.
- (g) "Ordinance" means the Companies Ordinance, 1984 or any modification or re-enactment thereof for the time being in force.
- (h) "Register" means, unless the context otherwise requires, the register of members to be kept pursuant to Section 147 of the Ordinance.
- (i) "Seal" means the common or official Seal of the Company.
- (j) "Section" means Section of the Ordinance.
- (k) "Special Resolution" means the special resolution of the Company as



defined in Section (2)(1)(36) of the Ordinance.

- (l) Words importing masculine gender include the feminine gender.
- (m) Words importing singular number include the plural number and vice versa.
- (n) Expression referring to writing shall, unless the contrary intention appears, be construed as including references to printing, lithography, photography and other modes of representing or reproducing words in a visible form.
- (o) Words importing persons shall include bodies corporate.
- (p) The head notes are inserted for convenience and shall not affect the construction of these Articles.
- (q) Unless the context otherwise requires words or expressions contained in these Articles shall bear the same meaning as in the Ordinance.

PUBLIC COMPANY

Public Company

3. The Company is a Public Company within the meanings of Section 2(1)(30) of the Companies Ordinance, 1984.

CAPITAL

Capital

4. The Authorized Capital of the Company is ~~Rs. 950,000,000/-~~ (Rupees Nine Hundred fifty Million only) divided into 95,000,000 ordinary shares of ~~Rs. 10/-~~ (Rupees Ten only) each. The Company shall have power to increase, reduce or alter the capital in accordance with law.

Allotment of
Shares

5. The Directors shall, as regards any allotment of shares duly comply with such of the Provisions of Section 68 to 73 as may be applicable to the Company. The minimum subscription upon which the Directors may proceed to make the first allotment has been fixed as Rs. 100,000/-.

Shares
Certificates

6. Every person whose name is entered as a member in the Register shall, without payment, be entitled to receive within ninety days after allotment or within forty-five days of the application for registration of transfer, a certificate under the Seal specifying the share or shares held by him and the amount paid up thereon. Provided that, in respect of a share or shares held jointly by several persons, the Company shall not be bound to issue more than one certificate, and delivery of a certificate for a share to one of several joint holders shall be sufficient delivery to all.

Issuance of new
Certificates

7. If a Share Certificate is defaced, lost or destroyed, it may be renewed on payment of such fee, if any, not exceeding one rupee, and on such terms, if any, as to evidence and indemnity any payment of expenses incurred by the Company in investigating title as the Directors think fit.

Bar on use of
Company Funds

8. Except to the extent and in the manner allowed by Section 95, no part of the funds of the Company shall be employed in the purchase of, or in loans upon the

security of, the Company's shares.

TRANSFER OF SHARES

9. The instrument of transfer of any share in the Company shall be executed both by the transferor and transferee and the transferor shall be deemed to remain holder of the share until the name of the transferee is entered in the Register in respect thereof.

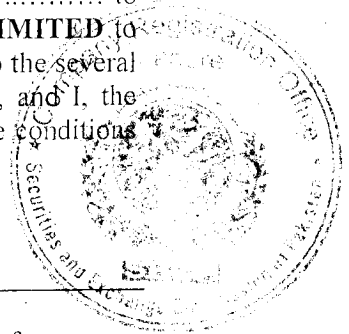
Transfer

10. Shares in the Company shall be transferred, without fee, in the following form, or in any usual or common form which the Directors shall approve ;

Form of Transfer

RYK MILLS LIMITED

I.....of..... in consideration of the sum of Rs.....Paid to me by..... of.....(hereinafter called the "Transferee") do hereby transfer to the Transferee.....the share(s) numbered..... toinclusive, in **RYK MILLS LIMITED** to hold into the transferee, his executors, Administrators and assigns, subject to the several conditions on which I held the same at the time of the execution hereof, and I, the Transferee, do hereby agree to take the said share (or shares) subject to the conditions aforesaid.



As witness our hands this.....day of.....20

Transferor

Transferee

Signature

Signature

WITNESSES :

1. _____

2. _____

(Signature)

(Signature)

Full Address : _____

Full Address of _____

11. The Directors shall not refuse to transfer any fully paid shares unless the transfer deed is defective or invalid. The Directors may also suspend the registration of transfer prior to the determination of entitlement or rights of the shareholders by giving seven days previous notice in the manner provided in the Ordinance. The Directors may decline to recognize any instrument of transfer unless the duly stamped instrument of transfer is accompanied by the certificate of the shares to which it relates, and such other evidence as the Directors may reasonably require to show the right of the transferor to make the transfer.

Non-refusal of
Transfer of Shares

Notice in case of
Refusal

12. If the Directors refuse to register a transfer of shares, they shall within thirty (30) days after the date on which the transfer deed was lodged with the Company send to the transferee and the transferor notice of the refusal indicating the defect or invalidity to the transferee, who, shall, after removal of such defect or invalidity be entitled to re-lodge the transfer deed with the Company. The transferor or transferee or the person who gave intimation of the transmission by operation of law, as the case may be, may appeal to the commission against any refusal of the Company to register the transfer or transmission or against any failure on its parts within period as specified in Section 78 for which Section 78/A will be applicable.

TRANSMISSION OF SHARES

Transmission

13. The executors, administrators, heirs, or nominees as the case may be, of a deceased sole holder of a share shall be the only persons recognized by the Company as having any title to the shares. In the case of a share registered in the names of two or more holders, the survivor or survivors, or executors, or administrators of the deceased survivor shall be the only persons recognized by the Company as having any title to the share.

Election to
Register or
Transfer

14. 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 Directors, have the right, either to be registered as a 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 Directors shall, in either case have the same right to decline or suspend registration as they would have had in the case of a transfer of the share by the deceased or insolvent person before the death or insolvency.

Rights of Person
entitled by
Transmission

15. A person becoming entitled to a share by reason of the death or insolvency of the holder shall be entitled to the same dividends and other advantages to which he would be entitled if he were the registered holder of the share, except that he shall not, before being registered as a member in respect of the share be entitled in respect of it to exercise any right conferred by membership in relation to meetings by the Company.

ALTERATION OF CAPITAL

Power to
Increase Capital

16. The Company may from time to time, by special resolution increase the share capital by such sum, to be divided into shares of such amount, as the resolution shall prescribe.

Offer to existing
Members

17. Subject to the Provisions of the Ordinance, all new shares shall, before issue be offered to such persons as at the date of the offer are entitled to receive notices from the Company of General Meetings in proportion, as nearly as the circumstances admit, to the amount of the existing shares to which they are entitled. The offer shall be made by notice specifying the number of shares offered, and limiting a time within which the offer if not accepted, will be deemed to be declined and after the expiration of that time, or on the receipt of an intimation from the person to whom the offer is made that he declines to accept the shares offered, the Directors may dispose of the same in such manner as they think most beneficial to the Company. The Directors may likewise so dispose of any new shares which (by reason of the ratio which the new shares bear to shares held by persons entitled to an offer of new shares) cannot, in the opinion of the Directors, be conveniently offered under this regulation.

18. Subject to the provisions of Section 87 of the Ordinance, the Company may issue ordinary shares or grant option to convert into ordinary shares the outstanding balance of any loans advances or credit or other non-interest bearing securities and obligations or having a term of not less than three years in the manner provided in any contract with any scheduled bank or financial institution to the extent of twenty per cent (20%) of such balance.

Conversion of Loan
to Ordinary shares

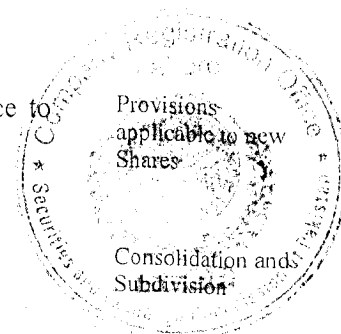
19. The new shares shall be subject to the same provisions with reference to transfer, transmission and otherwise as the shares in the original share capital.

20. The Company may, by ordinary resolution :

- (a) Consolidate and divide its share capital into shares of larger amount than its existing shares ;
- (b) sub-divide its existing shares or any of them into shares of smaller amount than is fixed by the Company's Memorandum of Association, subject, nevertheless, to the provisions to clause (d) of sub-section (1) of Section (92).
- (c) Cancel any shares which at the date of passing of the resolution have not been taken or agreed to be taken by any person.

21. The Company may, by Special Resolution, reduce its share capital in any manner and with, and subject to any incident authorized and consent required by law.

Reduction of Share
Capital



GENERAL MEETINGS

22. The Statutory General Meeting of the Company shall be held within the period required by Section 157.

Statutory Meeting

23. A General Meeting to be called Annual General Meeting, shall be held in accordance with provisions of Section 158, once at least 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 as may be determined by the Directors.

Annual General Meeting

24. All General Meetings of the Company other than the Annual General Meeting shall be called Extraordinary General Meetings.

Other Meetings

Extraordinary Meeting

25. The Directors may whenever they think fit, call an Extraordinary General Meeting, and Extraordinary General Meetings shall also be called on such requisition, or in default, may be called by such requisitionists, as is provided by Section 159. If at any time there are not within Pakistan sufficient Directors capable of acting to form a quorum, any Director of the Company may call an Extraordinary General Meeting in the same manner as nearly as possible as that in which Meetings may be called by the Directors.

NOTICE AND PROCEEDINGS OF GENERAL MEETINGS

Notice of Meeting

26. Twenty one days notice at least (exclusive of the day on which the notice is served or deemed to be served, but inclusive of the day for which notice is given) specifying the place, the day and the hour of Meeting and, in case of special business, the general nature of that business, shall be given in the manner provided by the Ordinance for the General Meeting, to such persons as are, under the Ordinance or the regulations of the Company, entitled to receive such notices from the Company ; but the accidental omission to give notice to, or the non-receipt of notice by, any member shall not invalidate the proceedings at any General Meeting.

Special Business

27. All business shall be deemed special that is transacted at an Extraordinary General Meeting, and also all that is transacted at an Annual General Meeting, with the exception of declaring a dividend, the consideration of the accounts, balance sheet and the reports of the Directors and auditors, the election of Directors, the appointment of and the fixing, of the remuneration of the auditors.

Quorum

28. No business shall be transacted at any General Meeting unless a Quorum of members is present at that time when the meeting proceeds to business. Two members present personally who represent not less than twenty five per cent of the total voting power, either on their own account or as proxies shall be a quorum.

Effect of
Quorum Not
being present

29. If within half an hour from the time appointed for the meeting a quorum is not present, the meeting, if called upon the requisition of members, shall be dissolved : in any other case, it shall stand adjourned to the same day in the next week at the same time and place, and, if at the adjourned meeting a quorum is not present within half an hour from the time appointed for the meeting, the members present, being not less than two, shall be a quorum.

Chairman of
Meeting

30. The Chairman of the Board of Directors, if any, shall preside as Chairman at every General Meeting of the Company, but if there is no such Chairman, or if at any meeting he is not present within fifteen minutes after the time appointed for the meeting, or is unwilling to act as Chairman, any one of the Directors present may be elected to be Chairman, and if none of the Directors is present, or willing to act as Chairman, the members present shall choose one of their member to be Chairman.

Adjournment

31. The Chairman may, with the consent of any meeting at which a Quorum is present (and shall if so directed by the meeting), adjourn the meeting from time to time but no business shall be transacted at any adjourned meeting other than the business left unfinished at the meeting.

32. At any General Meeting a resolution put to the vote of the meeting shall be decided on a show of hands unless a poll is (before or on the declaration of the result of the show of hands) demanded. Unless a poll is so demanded, a declaration by the Chairman that a resolution has, on a show of hands, been carried, or carried unanimously, or by a particular majority, or lost, and an entry to that effect in the book of the proceedings of the Company shall be conclusive evidence of the fact, without proof of the number or proportion or the votes recorded in favour of, or against, that resolution.

Voting

33. A Poll may be demanded only in accordance with the provisions of Section 167.

34. If a Poll is duly demanded it shall be taken in accordance with the manner laid down in Section 168 and the result of the Poll shall be deemed to be the resolution of the meeting at which the Poll was demanded.

Demand for Poll

Manner of taking
Poll

35. A Poll demanded on the election of Chairman or on a question of adjournment shall be taken at once.

Time of taking Poll

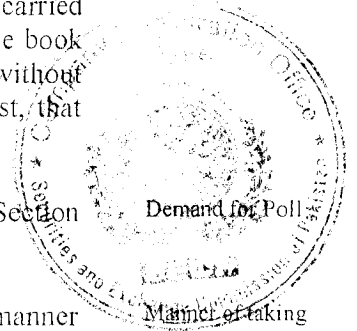
36. In the case of an equality of Votes, whether on a show of hands or on a poll, the Chairman of the meeting at which the show of hands takes place, or at which the Poll is demanded, shall have and exercise a second or Casting Vote.

Casting Vote

VOTES OF MEMBERS

37. On a show of hands every member present in person shall have one Vote except for election of Directors in which case the provisions of Section 178 shall apply. On a Poll every member shall have voting rights as laid down in Section 160.

Right to Vote



38. In case of Joint holders, the Vote of the senior who tenders a Vote, whether in person or by proxy, shall be accepted to the exclusion of the Votes of the other Joint holders ; and for this purpose seniority shall be determined by the order in which the names stand in the register.

Voting by Joint
Holders

39. A member of unsound mind, or in respect of whom an order has been made by any Court having jurisdiction in lunacy, may vote, whether on show of hands or on a poll, by his committee or other legal guardian, and any such committee or guardian, on a poll vote by proxy.

Member of
Unsound Mind

40. On a poll vote may be given either personally or by proxy. Provided that nobody corporate shall vote by proxy as long as a resolution of its Directors in accordance with the provisions of Section 162 is in force.

Voting by
Corporation
Representations

41. The instrument appointing a Proxy shall be in writing under the hand of the appointer or of his attorney duly authorized in writing. A Proxy must be a member of the Company.

Proxy to be in
Writing

Instrument
appointing
Proxy to be
deposited

42. The Instrument appointing a Proxy and the power of attorney or other authority (if any) under which it is signed, or a notarially certified copy of that power or authority, shall be deposited at the Registered Office not less than forty eight hours before the time for holding the meeting at which the person named in the instrument proposes to vote and in default the instrument of proxy shall not be treated as valid.

43. An instrument appointing a proxy may be in the following form, or a form as near thereto as may be.

RYK MILLS LIMITED

Form of Proxy

44 I/We of
(full address) being the member(s) of **RYK MILLS LIMITED** hereby appoint Mr.
/ Mrs. / Miss of
..... (who is also member of the
Company vide Registered Folio No. (being member of
Company) as my / our Proxy to attend at and vote for my / us and on my / our behalf at
the Annual / Extra Ordinary General Meeting of the Company
to be held at on at
..... and at any adjournment thereof.

Revocation of
Authority

45. A vote given in accordance with the terms of an instrument of proxy shall be valid notwithstanding the previous death or insanity of the principal or revocation of the proxy or of the authority under which the proxy was executed, or the transfer of the share in respect of which the proxy is given, provided that no intimation in writing of such death, insanity, revocation or transfer as aforesaid shall have been received by the Company at the office before the commencement of the meeting or adjourned meeting at which the proxy is used.

DIRECTORS

Number of
Directors

46. Unless otherwise determined by the Company in General Meeting the number of Directors shall not be less than three and if the Company applies for listing on Stock Exchanges, then the number of Directors shall not be less than seven.

First Directors

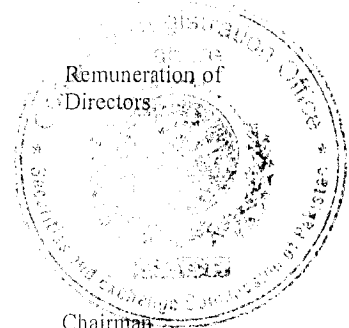
47. The following are the First Directors of the Company who shall hold office till the first Annual General Meeting.

1. Makhdum Omar Shehryar
2. Makhdum Hashim Jawan Bakht
3. Tehmina Sadiq Javed
4. Mrs. Dr. Naseem javed
5. Riffat Zamani Begum
6. Makhdum Rukan-Ud-Din

Qualification of
Directors

48. Save as provided in Section 187, no person shall be appointed as a Director unless he is a member of the Company and holds shares of the minimum value of Rs. 5,000/- in his own name relaxable in the case of Directors representing interest holding shares.

49. The remuneration of a Director for performing extra services, including holding of the office of Chairman, and the remuneration to be paid to any Director for attending the meetings of the Directors or a committee of Directors shall from time to time be determined by the Board of Directors in accordance with law.



CHAIRMAN

50. The Directors may from time to time appoint one of their members to be the Chairman of the Company for a period not exceeding three years on such terms and conditions as they deem fit. The Chairman shall preside over the meetings of the Board of Directors and members of the Company. In his absence, the Directors may elect one of them to preside over the Board Meeting. The questions arising at the meeting of the Directors shall be decided by a majority of votes. In the case of equality of votes, the Chairman, or the Director presiding over the meeting, as the case may be, shall have a casting vote.

CHIEF EXECUTIVE

51. The first Chief Executive of the Company will be appointed by the Board of Directors within fifteen days from the date of incorporation of the Company who shall hold office till the first Annual General Meeting.

Chief Executive

POWERS AND DUTIES OF DIRECTORS

52. The business of the Company shall be managed by the Directors, who may pay all expenses incurred in promoting and registering the Company, and may exercise all such powers of the Company as are not by the Ordinance or any statutory modification thereof for the time being in force, or by these regulations, required to be exercised by the Company in General Meeting, subject nevertheless to the provisions of the Ordinance or to any of these regulations, and such regulations being not inconsistent with the aforesaid 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 Directors which would have been valid if that regulation had not been made.

General
Management
Powers

BORROWING POWERS

53. The Board may from time to time borrow any money for the purposes of the Company from its members or from any other person, firms, companies, corporations, Government Agencies, institutions or the Directors may themselves lend moneys to the Company.

Borrowing Powers
and giving of
Securities

54. The Board may raise and secure payment of such sums of money in such manner and upon such terms and conditions in all respects as it may think fit, and in particular by the issue of TFC's bonds, perpetual or redeemable debentures or by mortgage or charge or other security on the whole or any part of the property, assets and rights of the Company (both present and future), of the Company.

Raising Moneys

Condition of
Bond/Securities

55. Any TFC's, bonds, debentures or other securities issued or to be issued by the Company shall be under the control of the Board which may issue them upon such terms and conditions and in such manner and for such consideration as shall be considered to be for the benefit of the Company.

Special Powers
to Issue
Securities

56. Any TFC's, bonds, debentures or other securities may be issued with any special privileges as to redemption, surrender, drawing, convertibility into shares, attending and voting at General Meetings of the Company, appointment of Directors, and otherwise, provided that debentures with the right to vote or to be converted into shares shall be issued with the consent of the Company in General Meeting in terms of Section 114 of the Ordinance.

Power to
appoint
Attorney

57. The Directors may from time to time, by Power of Attorney under the Company's seal, appoint any person or persons to be the Attorneys of the Company for such purposes and with such powers, authorities, and discretions (not exceeding those vested in, or exercisable by, the Directors under these presents) and for such period and subject to such conditions as the Directors may from time to time think fit. Any such attorney(s) may, if authorised by the Directors, delegate all or any of the powers vested in him/them.

Duties of
Directors

58. The Directors shall duly comply with the provisions of the Ordinance and in particular with the provisions in regard to the registration of the particulars of mortgages and charges affecting the property of the Company or created by it, to the

keeping of a register of the Directors, and to the sending to the Registrar of an annual list of members and a summary of particulars relating thereto and notice of any consolidation or increase of share capital, or sub-division of shares, and copies of Special Resolutions and a copy of the register of Directors and notifications of any changes therein.

Minutes Books

59. The Director shall cause minutes to be made in books provided for the purpose of :-

- (a) all appointments of officers made by the Directors ;
- (b) the names of the Directors present at each meeting of the Directors and of any Committee of the Directors ;
- (c) all resolutions and proceedings at all meetings of the Company and of the Directors and of Committees of Directors ;
- (d) and every Director present at any meeting or Directors of Committee of Directors shall sign his name in a book to be kept for that purpose.

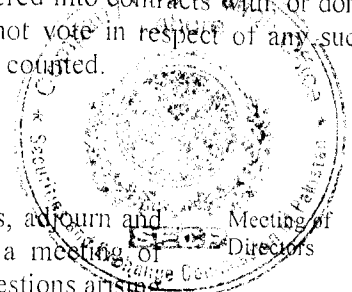
DISQUALIFICATION OF DIRECTORS

Disqualification
of Directors

60. No person shall become a Director of the Company if he suffers from any of the disabilities or disqualifications mentioned in Section 187 and, if already a Director, shall cease to hold such office from the date he so becomes disqualified or disabled or provided, however, that no Director shall vacate his office by reason only of his being a member of any company which has entered into contracts with or done any work for the Company but such Director shall not vote in respect of any such contract or work, and if he does so his vote shall not be counted.

PROCEEDINGS OF DIRECTORS

61. The Directors may meet together for the despatch of business, adjourn and otherwise regulate their meetings, as they think fit. The quorum for a meeting of Directors shall not be less than one-third or two, whichever is greater. Questions arising at any meeting shall be decided by a majority of votes. In case of an equality of votes, the Chairman shall have and exercise a second or casting vote. A Director may, and the secretary on the requisition of a Director shall, at any time, summon a meeting of Directors. It shall not be necessary to give notice of a meeting of Directors to any Director for the time being absent from Pakistan.



62. The Directors may elect a Chairman of their meetings and determine the period for which he is to hold office but, if no such Chairman is elected, or if at any meeting the Chairman is not present within ten minutes after the time appointed for holding the same or is unwilling to act as Chairman, the Directors present may choose one of their number to be Chairman of the meeting.

Chairman of
Directors Meetings

63. The Directors may delegate any of their powers not required to be exercised in their meeting to Committees consisting of such member or members of their body as they think fit. Any Committee so formed shall, in the exercise of the powers so

Committee

delegated, conform to any restrictions that may be imposed on them by the Directors.

64. A Committee may elect a Chairman of its meetings, but, if no such Chairman is elected, or if at any meeting the Chairman is not present within ten minutes after the time appointed for holding the same or is unwilling to act as Chairman, the members present may choose one of their number to be Chairman of the meeting.

Chairman of
Committee
Members

65. A Committee may meet and adjourn as it thinks proper. Questions arising at any meetings shall be determined by a majority of votes of the members present. In case of an equality of votes, the Chairman shall have and exercise a second or casting vote.

Proceedings of
Committee
Members

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

Validity of
Directors Acts

67. A resolution in writing circulated to all the Directors signed by all the Directors or affirmed by them through telex or telegram shall be as valid and effectual as if it had been passed at a meeting of the Directors duly convened and held.

Resolution in
Writing

ELECTION AND REMOVAL OF DIRECTORS

68. At the first Annual General Meeting of the Company, all the Directors shall stand retired from office, and thereafter shall be re-elected in their place in accordance with Section 178 for a term of three years.

Election & Term of
Directors

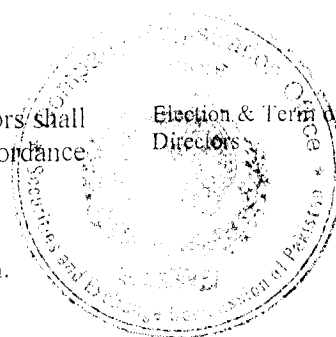
Eligibility for
Re-election

69. A retiring Director shall be eligible for re-election.

Mode of
Election

70. The Directors of the Company, unless the number of persons who offer themselves to be elected is not more than the number of Directors fixed by the Board of Directors, shall be elected to office by the members in General Meeting in the following manner :-

- (a) A member shall have such number of votes as is equal to the product of the number of voting shares or securities held by him and the number of Directors to be elected.
- (b) A member may give all his votes to a single candidate or divide them between more than one of the candidates in such manner as he may choose.
- (c) 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 has been so elected.



Change in
number of
Directors

71. Subject to the provisions of the Ordinance, the Company may from time to time in General Meeting increase or decrease the number of Directors.

Filling of Casual
Vacancy

72. Any Casual vacancy occurring on the Board of Directors may be filled up by the Directors, but the person so chosen shall be subject to retirement at the same time as if he had become a Director on the day on which the Director in whose place he is chosen was last elected as Director.

Removal of
Director

73. The Company may remove a Director but only in accordance with the provisions of the Ordinance.

NOMINEE DIRECTOR

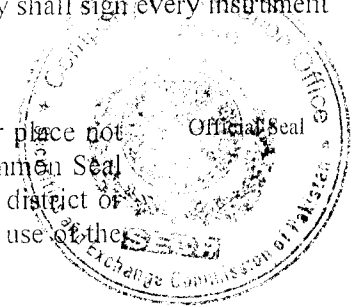
74. In addition to the elected Directors, the Financial Institutions shall be entitled, during the currency of their respective loan(s) to the Company, to appoint one person on the Board of Directors of the Company to be called Nominee Director and to recall and/or replace such a person from time to time. Such Nominee Director on the Board of Directors of the Company may not be holder of Share(s) in the Capital of the Company and the Articles 67 to 72 and other regulations and or rules pertaining to the election, retirement, qualification and / or disqualification of the Director shall not apply to him.

THE SEAL

Common Seal

75. The Directors shall provide a Common Seal of the Company which shall not be affixed to any instrument except by the authority of a resolution of the Board or by a committee of Directors authorised in that behalf by the Directors, and two Directors of one Director and the secretary of the Company shall sign every instrument to which the Common Seal is affixed.

76. The Directors may provide for the use in any territory, district or place not situated in Pakistan, of an Official Seal which shall be a facsimile of the Common Seal of the Company, with the addition on its face of the name of every territory, district or place where it is to be used. The provisions of Section 213 shall apply to the use of the Official Seal.



DIVIDENDS AND RESERVES

77. The Company in General Meeting may declare dividends but no dividend shall exceed the amount recommended by the Directors.

Declaration of
Dividends

78. The Directors may from time to time pay to the members such interim dividends as appear to the Directors to be justified by the profits of the Company.

Interim Dividends

79. No dividend shall be paid otherwise than out of profits of the year or any other undistributed profits.

Dividends Payable
out of Profits

80. Subject to the rights of persons (if any) entitled to shares, all dividends shall be declared and paid according to the amounts paid on the shares, but if and so long as

Dividends Payable
on Amount Paid on

nothing is paid upon any of the shares in the Company, dividends may be declared and paid according to the amounts of the shares.

Shares

81. The Directors may, before recommending any dividend set aside out of the profits of the Company such sums as they think proper as a reserve or reserves which shall, at the discretion of the Directors, 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 (other than shares of the Company) as the Directors may, subject to the provisions of the Ordinance, from time to time think fit.

Reserve Fund

82. The Directors may carry forward any profits which they may think prudent not to distribute, without setting them aside as a reserve.

Profit carried Forward

83. Any General Meeting may resolve that any moneys, investments, or other assets forming part of the undivided profits of the Company standing to the credit of any reserve or other fund or in the hands of the Company and available for dividend (or representing premiums received on the issue of shares and standing to the credit of the shares premium account) be capitalized and distributed amongst such of the shareholders as would be entitled to receive the same if distributed by way of dividend and in the same proportions on the footing that they become entitled thereto as capital and that all or any part of such capitalized fund be applied on behalf of such shareholders in paying up in full, any unissued shares, debentures or debenture-stock of the Company which shall be distributed accordingly and that such distribution or payment shall be accepted by such shareholders in full satisfaction of their interest in the said capitalized sum.

Capitalization of Reserve

Effect of Transfer

84. A transfer of shares shall not pass the right to any dividend declared thereon before the registration of the transfer.

Dividends to Joint Holders

85. If several persons are registered as joint holders of any share, any one of them may give effectual receipt for any dividend payable on the shares.

Notice of Dividend

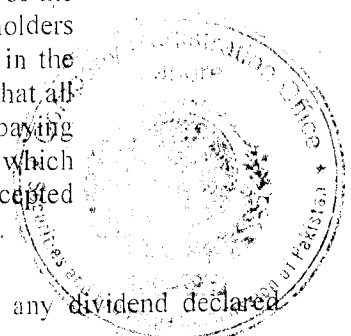
86. Notice of any dividend that may have been declared shall be given in the manner hereinafter mentioned to the persons entitled to share therein.

Period for Payment of Dividend

87. The dividend shall be paid within the period laid down in Section 251.

Unclaimed Dividends

88. All dividends unclaimed for six years after having been declared shall be kept in trust by the Company but may be invested or otherwise made use of by the Directors for the benefit of the Company until claimed.



ACCOUNTS

Books of
Account

89. The Directors shall cause to be kept proper Books of Account as required under Section 230.

Place where
Books kept

90. The Books of Account shall be kept at the Registered Office of the Company or at such other place as the Directors shall think fit and shall be open to inspection by the Directors during business hours.

Inspection by
Members

91. The Directors shall from time to time determine whether and to what extent and at what time and places and under what conditions or regulations the accounts and books or papers of the Company or any of them shall be open to the inspection of members not being Directors, and no member (not being a Director) shall have any right of inspecting any Account and Book or papers of the Company except as conferred by law or authorised by the Directors or by the Company in General Meeting.

Annual
Accounts

92. The Directors shall as required by Sections 233 and 236 cause to be prepared and to be laid before the Company in General Meeting such Profit and Loss Accounts and Balance Sheets and reports as are referred to in those sections.

Balance Sheet
and Profit and
Loss Account

93. A Balance Sheet, Profit and Loss Account, and other reports referred to in the preceding Article shall be made out in every year and laid before the Company in the Annual General Meeting made up to a date not more than six months before such meeting. The Balance Sheet and Profit and Loss Account shall be accompanied by a report of the auditors of the Company and the report of Directors.

Copy of
Accounts to be
sent to Members

94. A copy of the Balance Sheet and Profit and Loss Account and reports of Directors and auditors shall, at least twenty one days preceding the meeting, be sent to the persons entitled to receive notices of General Meetings in the manner in which notices are to be given as hereinafter provided.

95. Every Account of the Directors when audited and approved by a General Meeting shall be conclusive except as regards any errors discovered therein within three months next after the approval thereof. Whenever any such error is discovered within that period the account shall forthwith be corrected and thenceforth shall be conclusive.

When Accounts
Settled

96. The Directors shall in all respect comply with the provisions of Sections 230 to 236.

Compliance with
Ordinance

AUDIT

97. Once at least every year the accounts of the Company shall be audited and the correctness of Profit and Loss Account and Balance Sheet ascertained by one or more Auditors. The Auditors shall be appointed and their duties regulated in accordance with Sections 252 to 255 of the Companies Ordinance 1984.

Audits

SECRETARY

98. The Board may appoint a Secretary of the Company who shall perform such functions and duties as are required in these Articles, or as may be directed by the Board.

Secretary

NOTICES

99. Notices shall be given by the Company to Members and Auditors of the Company and other persons entitled to receive notices in accordance with Section 50.

Notice to Members
etc.

SECRECY

100. Every Director, Manager, Adviser, 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 Directors, before entering upon his duties, sign a declaration pledging himself to observe a strict secrecy respecting all transactions of the Company with its customers and the state of accounts with individuals and in matters relating thereto, and shall by such declaration pledge himself not to reveal any of the matters which may come to his knowledge in the discharge of his duties except when required to do so by the Directors or by any General Meeting or by any Court of Law and except so far as may be necessary in order to comply with any of the provisions in these presents.

Secrecy

101. No member or other person (not being a Director) shall be entitled to enter upon the property of the Company or examine the Company's premises or properties without the permission of the Directors, and to require discovery of or any information respecting any detail of the Company's trading or any matter which is or may be in the nature of a 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 Directors will be inexpedient, in the interest of the members of the Company to communicate.

Members access to
Company premises

RECONSTRUCTION

102. On any sale of the undertakings of the Company the Directors or the liquidators on a winding up may, if authorised by a Special Resolution, accept fully paid shares, debentures or securities of any other company, either then existing or to be formed for the purchase in whole or in part of the property of the Company, and the Directors (if the profits of the Company permit), or the liquidators (in a winding up), may distribute such shares or securities, or any other properties of the Company

Reconstruction

amongst the members without realization, or vest the same in trustees for them and any Special Resolution may provide for the distribution or appropriation of the cash, shares or other securities, benefits or property, otherwise than in accordance with the strict legal rights of the members or contributories of the Company for the valuation of any such securities or property, at such price and in such manner as the meeting may approve and all holders of shares shall be bound to accept and shall be bound by any valuation or distribution so authorised and waive all rights in relation thereto save only such statutory rights (if any) as are, in case the Company is proposed to be or in the course of being wound up, incapable of being varied or excluded by these presents.

WINDING UP

Division and
Distribution of
Assets upon
Dissolution

103. If the Company is wound up, the liquidator may, with the sanction of a Special Resolution of the Company and any other sanction required by Ordinance, divide amongst the members in specie or kind the whole or any part of the assets of the Company (whether they consist of property of same kind or not) and may, for such purpose, set such value as he deems fair upon any property to be divided as aforesaid and may determine how such division shall be carried out as between the members or different classes of members. The liquidator may, with the like sanction, vest the

whole or any part of such assets in trustees upon such trust for the benefit of the contributories, as the liquidator with the like sanction, shall think fit, but so that no member shall be compelled to accept any shares or other securities whereon there is any liability.

INDEMNITY

Indemnification

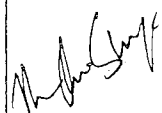
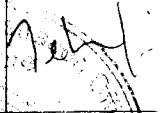
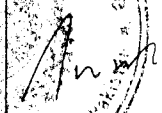
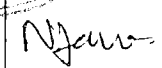
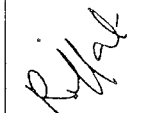

104. Every officer or agent for the time being of the Company may be indemnified out of the assets of the Company against any liability incurred by him in defending any proceedings, whether civil or criminal, arising out of his dealings in relation to the affairs of the Company, except those brought by the Company against him, in which judgement is given in his favour or in which he is acquitted, or in connection with any application under Section 488 in which relief is granted to him by the Court.

ARBITRATION

Difference to be
Referred to
Arbitrator(s)

105. Whenever any difference arises between the Company on the one hand and any of the members, their executors, administrators or assignees on the other hand, touching the true intent or construction, or the incident or consequences of these Articles or of the statutes or touching anything there or thereafter done, executed, omitted or suffered in pursuance of these Articles or of the statutes or touching any breach or alleged breach of these Articles, or any claim on account of any such breach or alleged breach, or otherwise relating to the premises, or to these Articles, or to any statute affecting the Company or to any of the affairs of the Company, every such difference shall, as a condition precedent to any other action at law be referred in conformity with the Arbitration Act, 1940, or any statutory modification thereof and any rules made there under, to the decision of an Arbitrator to be appointed by the parties in difference or if they cannot agree upon a single Arbitrator to the decision of two Arbitrators of whom one shall be appointed by each of the parties in difference, or in the event of the two Arbitrators not agreeing, then of an umpire to be appointed by the two Arbitrators, in writing, before proceeding on the reference, and such decision shall be final and binding on the parties.

We the several persons, whose names and addresses are subscribed below are desirous of being formed into a Company in pursuance of the *Article of Association* and we respectively agree to take the number of shares in the capital of the Company set opposite our respective names:-

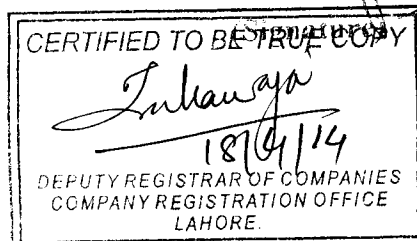
Name and surname (present & former) in full (in Block Letters)	NIC No. (in case of foreigner, Passport No)	Father's/ Husband's Name in full	Nationality with any former Nationality	Occupation	Residential Address in full	Number of shares taken by each subscriber	Signature
Makhdom Umar Sheryar	42301-9725732-7	S/O Makhdom Rukan-Ud-Din	Pakistani	Business Executive	117/2/1, Khayabane-e-Bukhari DHA-VI, Karachi	2,500	
Tehmina Sadiq Javaid	42301-3018474-8	W/O Makhdom Umar Sheryar	Pakistani	Business Executive	117/2/1, Khayabane-e-Bukhari DHA-VI Karachi	2,500	
Makhdom Hashim Jawan Bakhit	42301-6961134-1	S/O Makhdom Ruqan-Ud-Din	Pakistani	Business Executive	117/2/1, Khayabane-e-Bukhari DHA-VI Karachi	2,500	
Mrs. Naseem Javaid.	35202-5649424-0	W/O M. Sadiq Javed	Pakistani	Business Executive	House # 5-Q/A, Gulberg-II, Lahore	2,500	
Fat Zamani Begum	31303-7349097-2	W/O Makhdom Rukan-ud-Din	Pakistani	Business Executive	Mianwali Qureshian, P.O Khas, Teh & Distt Rahim Yar Khan	2,500	
Makhdom Rukan-ud-Din	31303-2813835-9	S/O Makhdom M Karam Shah	Pakistani	Business Executive	Mianwali Qureshian, P.O Khas, Teh & Distt Rahim Yar Khan	2,500	

Total number of Shares Taken 15,000
Fifteen Thousand (only)

Dated the 30th day of May 2007.

Witness to above signatures

Mr. Qazi Fazal ul Rehman S/O Qazi M. Akhtar
Bearing CNIC # 35201-1503108-7 Of H. # 11,
Mohallah Hussain Road, Lahore Cantt
Worked as Accountant



4

THIRD SCHEDULE

(See section 156)

FORM A - ANNUAL RETURN OF COMPANY HAVING SHARE CAPITAL

1. Registration No. 0061422

2. Name of the Company RYK MILLS LIMITED

3. Form A made upto (Day/Month/Year) 31/01/2014

4. Date of AGM (Day/Month/Year) 31/01/2014

PART - A

5. Registered Office Address H.NO.8, SHAMI ROAD, LAHORE CANTT.

6. Email Address INFO@RYKMILLS.COM

7. Office Tel. No. 042-6601381-4

8. Office Fax No. 042-6601385

9. Nature of Business SUGAR AND ALLIED

10. Authorized Share Capital

Type of Shares	No. of Shares	Amount	Face Value
Ordinary Shares		950,000,000.00	

11. Paid up Share Capital

Type of Shares	No. of Shares	Amount	Issue Price
Ordinary Shares		750,025,000.00	

12. Amount of indebtedness on the date upto which form A is made in respect of all Mortgages/Charges 0.00

13. Particulars of the holding company

Name

Registration No. % Shares Held

14. Chief Executive

Name MAKHDUM OMAR SHERYAR NIC 4230197257327

Address 117/2/1, KHAYABAN-E-BUKHARI DHA-VI, KARACHI

Next Page

Name of Director	Address	Nationality	NIC (Passport No. if Foreigner)
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Next Page

20. List of members & debenture holders on the date upto which this Form A is made

[Previous Page](#)

Next Page

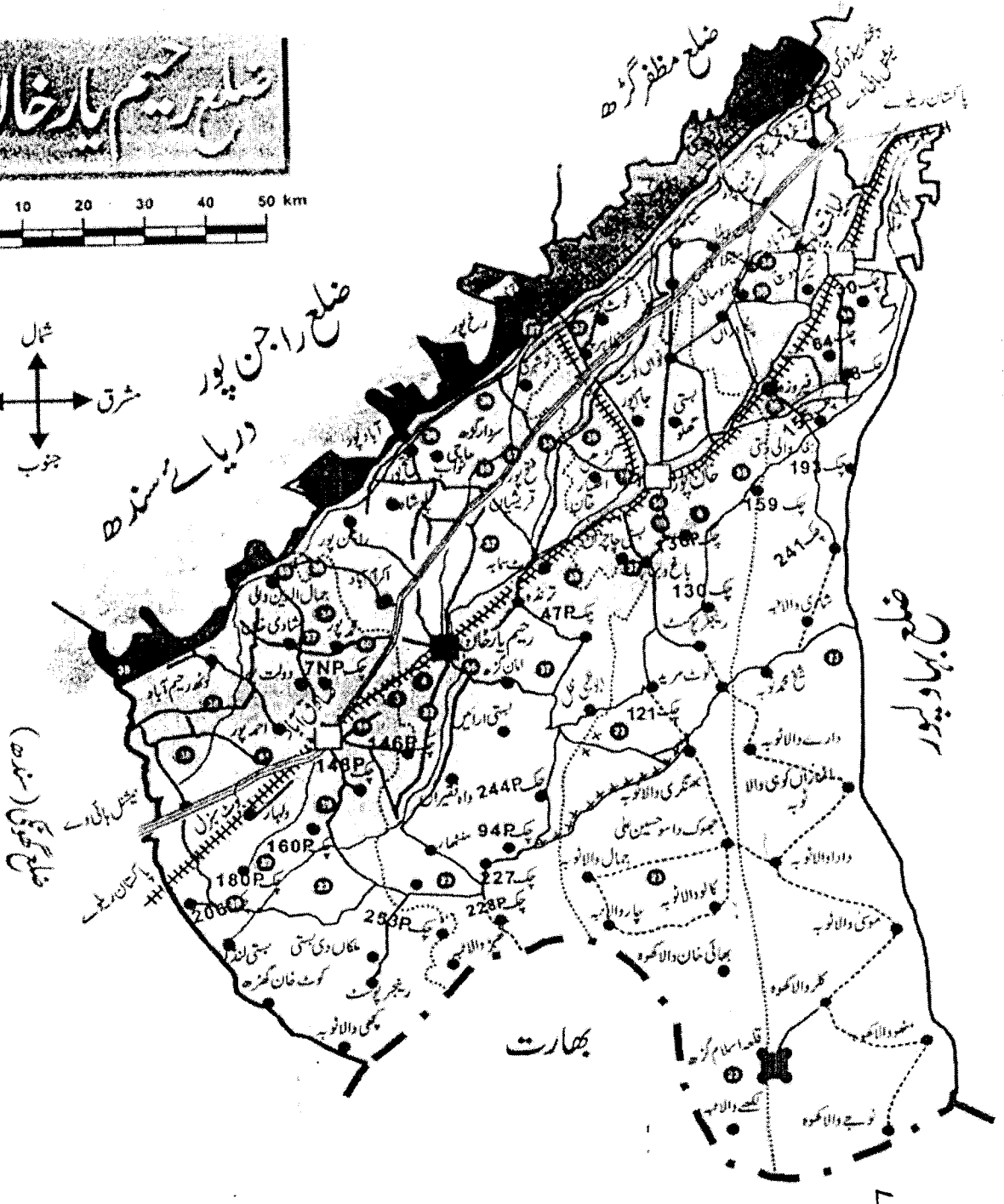
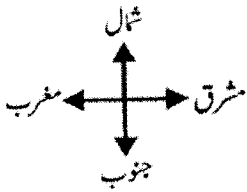
Schedule-1

The Location, Size (capacity in MW), Type of Technology, Interconnection Arrangements, Technical Limits, Technical/Functional Specifications and other details specific to the Generation Facilities of the Licensee are described in this Schedule.

[Handwritten Signature]


ضلع رحیم یار خان

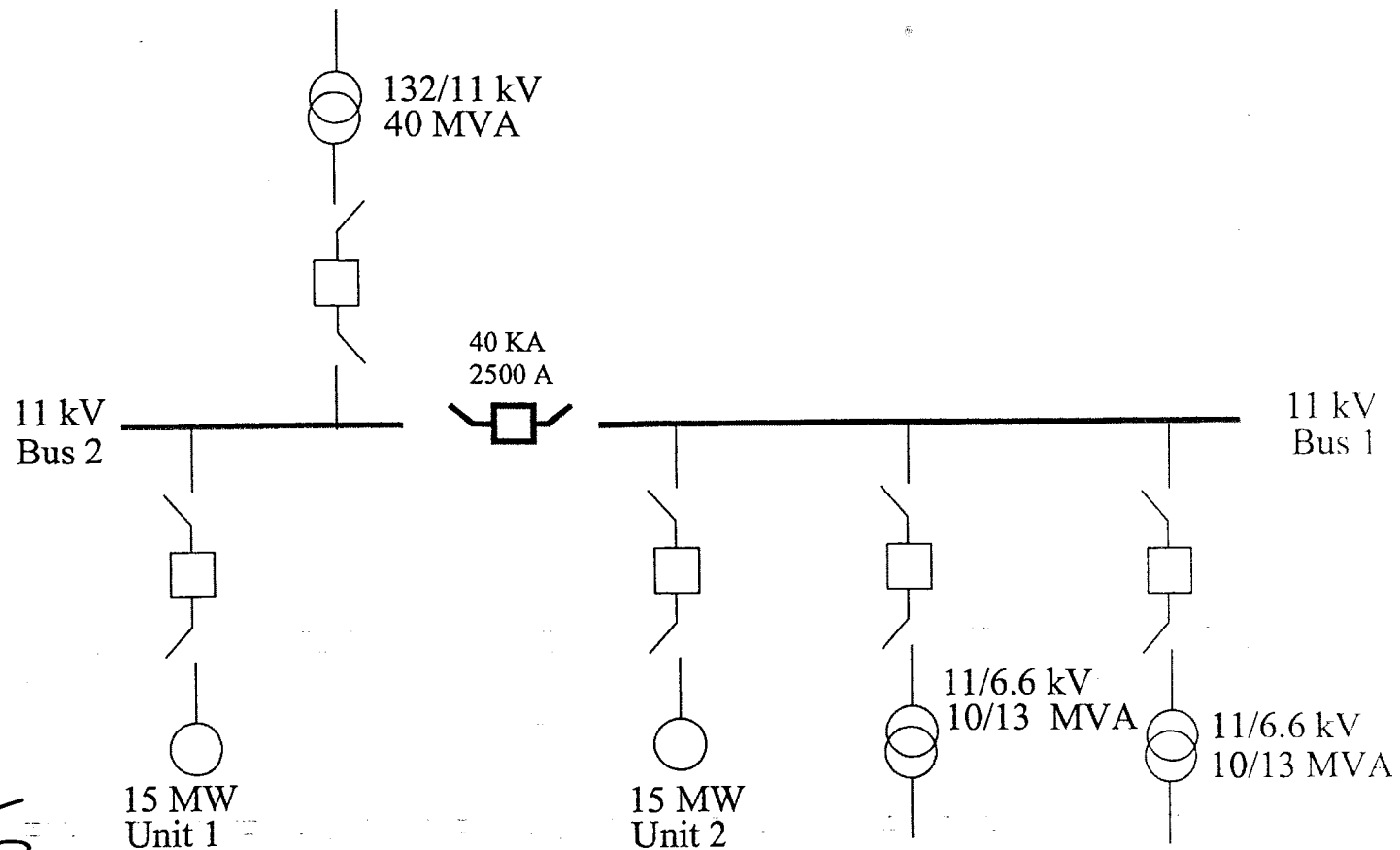
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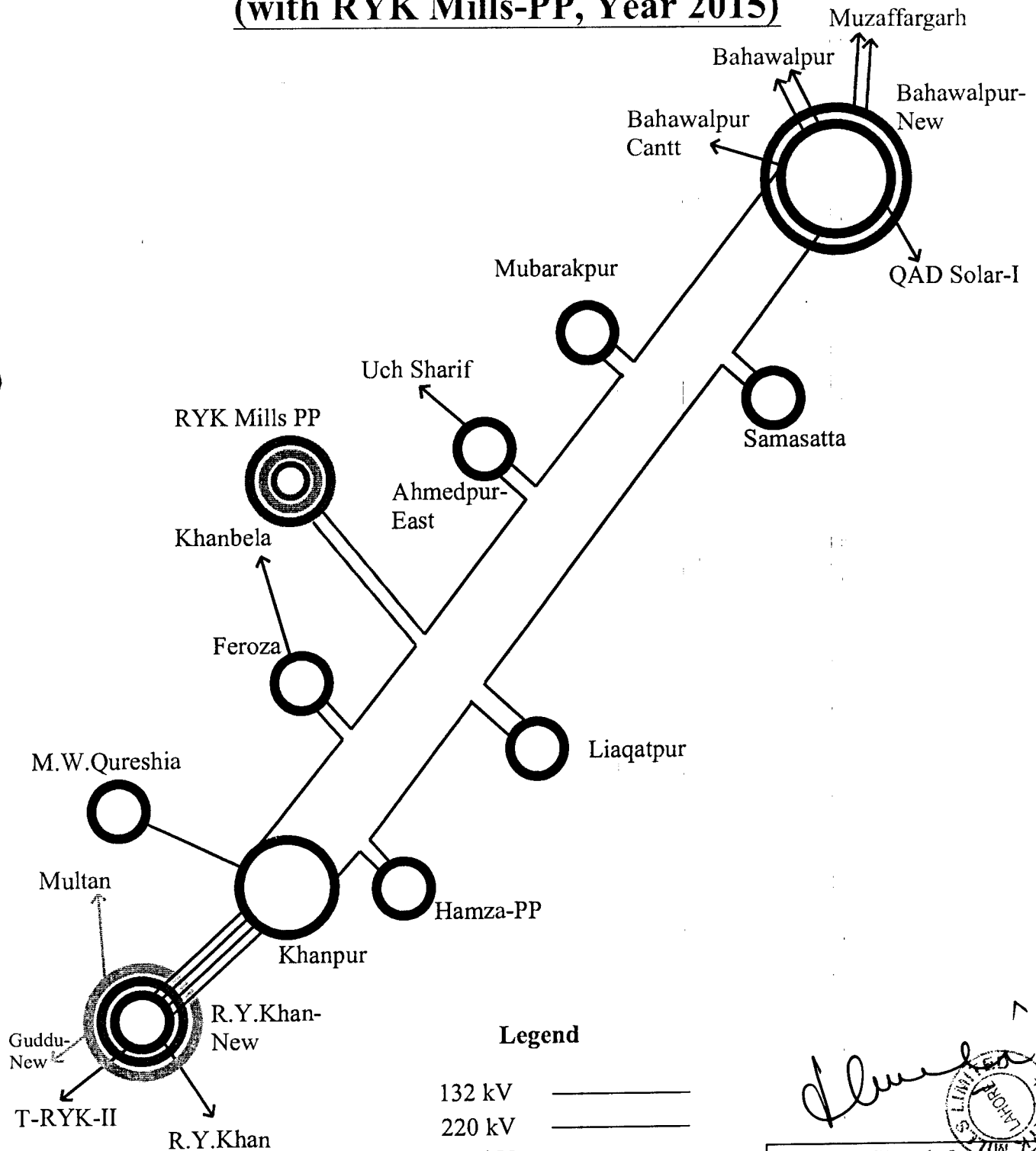


Single Line Diagram of 11 kV Busbars at RYK-PP



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SLD-1			
Interconnection Study of 30 MW RYK Mills			
Power Planners International			
DATE	SHEET	DRG NO.	REV
2013	1	RYK SLD-LOWG	1

Network Around Proposed Site of RYK Mills Ltd. PP**(with R.Y.Khan 500/220/132 kV G/S)****(with RYK Mills-PP, Year 2015)**

[Signature]

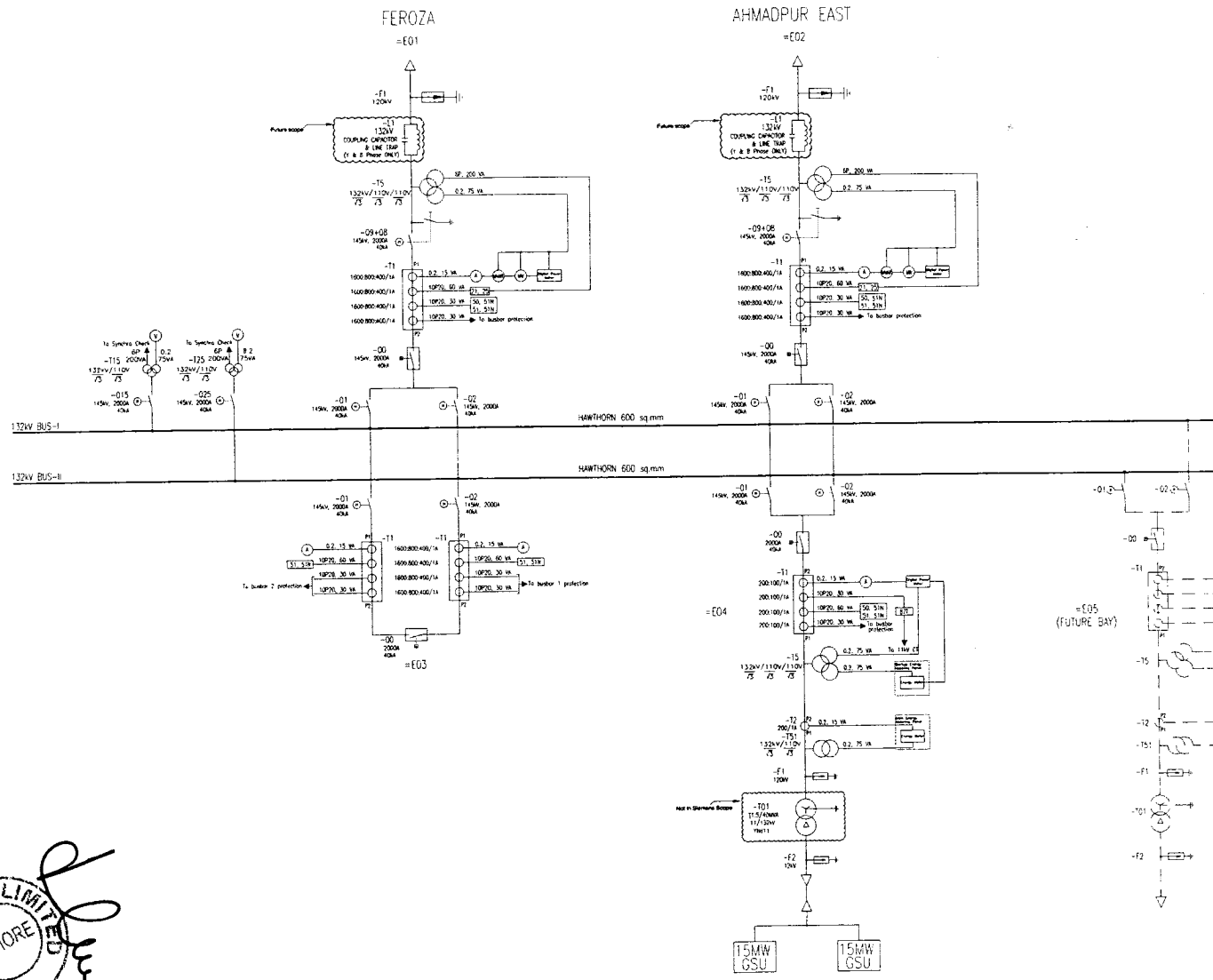
[Circular Stamp: RYK MILLS LIMITED]

Sketch-2Interconnection Study of
30MW RYK Mills PP

Power Planners International

DATE	SHEET	DWG NO.	REV
2013	1	RYK-PP Sketch-2.DWG	

Symbol	Designation	Device
	-01	115V/2000A
	-02	115V/2000A
	-03	115V/2000A
	-04	115V/2000A
	-05	115V/2000A
	-06	115V/2000A
	-07	115V/2000A
	-08	115V/2000A
	-09	115V/2000A
	-10	115V/2000A
	-11	115V/2000A
	-12	115V/2000A
	-13	115V/2000A
	-14	115V/2000A
	-15	115V/2000A
	-16	115V/2000A
	-17	115V/2000A
	-18	115V/2000A
	-19	115V/2000A
	-20	115V/2000A



Generation License
RYK MILLS LIMITED
 75/4 D, Sarfraz Rafique Road,
 Lahore Cantt.

RYK MILLS LIMITED
 LAHORE

132KV Switchgear at RYK Mills Ltd. Lahore Cantt.

Page 5 of 9 of Schedule I



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**INTERCONNECTION / TRANSACTION ARRANGEMENT FOR THE
DISPERSAL OF POWER FROM THE POWER PLANT**

The Power generated by R.Y.K Mills Limited (RYKML) from its Bagasse based Thermal Power Generation facility shall be dispersed to the Load center of Multan Power Company Limited (MEPCO).

The Interconnection/Transmission Arrangement for the above mentioned facilities will be at 132 KV voltage under the Framework for Power Co-generation, 2013 (Bagasse/Biomass) approved by the ECC of the cabinet in March 2013.

The final Interconnection and Transmission Arrangement(s), for the dispersal of power, as agreed by RYKML and MEPCO' shall be communicated to NEPRA in due course of time.

Plant Details*

General Information

1	Name of Applicant	RYK Mills Limited
2	Registered/Business Office	75/4 D- Sarfraz Rafiqi Road, Lahore Cantt
3	Plant Location	Janpur, Tehsil Liaquat pur, District Rahimyar Khan, Punjab
4	Type of Generation Facility	Bagasse Fired Thermal Power Station

Plant Configuration

1	Plant Size Installed Capacity (Gross ISO)	30.00 MW	
2	Type of Technology	Steam Turbine	
3	Number of Units/Size (MW)	Unit 1	Unit 2
		15.00 MW	15.00 MW
4	Unit Make & Model	Unit 1	Unit 2
		Hangzhou Steam Turbine Power Company Limited	Hangzhou Steam Turbine Power Company Limited
5	Commissioning/Commercial Operation Date	Unit 1	Unit 2
		November 30, 2014	November 30, 2014
6	Expected Life of the Units of Facility from Commercial Operation/Commissioning Date	Unit 1	Unit 2
		30 years	30 years
7	Expected Remaining useful Life of the Units of the Facility	Unit 1	Unit 2
		30 years	30 years



Fuel/Raw Material Details

1	Primary Fuel	Bagasse		
2	Alternate Fuel	Furnace Oil (FO)		
3	Fuel Source (Imported/Indigenous)	Primary Fuel	Alternate Fuel	
		Indigenous	Imported/Indigenous	
4	Fuel Supplier	Primary Fuel	Alternate Fuel	
		RYK Mills Limited	Shell Pakistan Ltd/PSO	
5	Supply Arrangement	Primary Fuel	Alternate Fuel	
		Through Conveyor Belts / Loading Trucks / Tractor / Trolleys etc	Through Oil Tankers	
6	Sugarcane Crushing Capacity	12000 Tons/Day		
7	Bagasse Generation Capacity	3600 Tons/Day		
8	Bagasse Storage Capacity	150000 Tons Bagasse		
9	No. Of Storage Tanks	Bagasse	FO	
		Bulk Storage	2	
10	Storage Capacity of Each Tank (Tons)	Bagasse	FO	
		Bulk Storage	Tank-1	Tank-2
			500	40
11	Gross Storage (Tons)	Bagasse	FO	
		Bulk Storage	540	

Emission Values

1	SO _x	Bagasse	FO
		0 %	To be provided later
2	NO _x	Bagasse	FO
		2 ~ 5 %	To be provided later
3	CO ₂	Bagasse	FO
		12 % ~ 13 %	To be provided later
4	CO	Bagasse	FO
		2 % ~ 3 %	To be provided later
5	PM ₁₀	Bagasse	FO
		Nil	To be provided later

SCHEDULE II

The Installed/ISO Capacity (MW), De-Rated Capacity at Mean Site Conditions (MW), Auxiliary Consumption (MW) and the Net Capacity at Mean Site Conditions (MW) of the Generation Facilities of Licensee is given in this Schedule.

Hamid

A circular stamp with the text "RYK MILLS LIMITED" around the top half and "LAHORE" around the bottom half, with a small star on the right side.

SCHEDULE-II

1	Installed Capacity Gross ISO	30 MW
2	De-rated capacity	27.6 MW
3	Auxiliary Consumption	4.2 MW
4	Net Capacity of the Plant	23.4 MW

Note

All the above figures are indicative as provided by the license. The Net Capacity available to MEPCO for dispatch will be determined through procedure(s) contained in the Bi-lateral Agreement(s), Grid code or any other applicable document(s).

[Handwritten Signature]



Cooling System

1	Cooling Water Source/Cycle	Condensate water of Ground Water Turbine installed at plant site / Closed Loop
---	----------------------------	--

Plant Characteristics

		Unit 1	Unit 2
1	Generation Voltage	11 KV	11 KV
2	Frequency	50 Hz	50 Hz
3	Power Factor	0.8 Lagging - 0.9 Leading	0.8 Lagging - 0.9 Leading
4	Automatic Generation Control(AGC)	Yes	Yes
5	Ramping Rate	5 KW / Sec	4 KW / Sec
6	Time required to synchronizing to Grid and Loading the Complex to full load.	5 Hrs for cold start / 30 seconds for synchronizing to Grid	5Hrs for cold start / 30 seconds for synchronizing to Grid

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RYK MILLS LIMITED

PROFILE OF EXPERIENCE

RYKML is a public (unlisted) limited company located at Janpur in district Rahim Yar Khan which owns and operates 12,000 TCD sugar mill with 18MW power house. The Company is engaged in the manufacturing and sale of sugar (including by-products such as molasses), and generation and sale of electricity. The Company is amongst the leading sugar mills in Pakistan in terms of sugar production and sucrose recovery. the Company is in process of setting up a 67 Bar 30MW bagasse fired cogeneration power plant under the Framework for Power Cogeneration 2013 for Bagasse / Biomass to include bagasse/biomass under the ambit of the Renewable Energy Policy, 2006.

The project will be situated adjacent to the company's sugar mill at Janpur, Tehsil Liaqatpur, District Rahim Yar Khan, Province of Punjab. The Project is based on the Rankine Cycle¹ and shall utilize the Company's self-generated bagasse as the sole fuel. Bagasse shall be fired in high pressure boiler to produce steam to generate electricity by deploying two high pressure steam turbines. In addition to meeting its captive energy requirements, the cogeneration capacity shall allow the Company to sell up to 19MW to the national grid.

RYK Mills Limited is an existing license holder and has an installed capacity of 18 MW which it uses to meets its internal requirements and also sells surplus to MEPCO under a 10 year 8.5MW PPA.

A handwritten signature in black ink is written over a circular stamp. The stamp contains the text "RYK MILLS LIMITED" around the top edge and "LAHORE" in the center, with a small star on the left side.

¹Rankine cycle is the prime technology for sugar mill cogeneration for conversion of fuel into electricity



Government of Pakistan
Alternative Energy Development Board (AEDB)
Ministry of Water & Power
2nd Floor, OPF Building, Sector G-5/2, Islamabad
Tel: 051- 9222360-63, Fax: 051- 9222364



B/3/21/2013/WTE/RYK

November , 2013

Muhammad Mudassir Iqbal
Head-Energy Business,
RYK Mills Limited (RYKML)
75/4-D, Sarfraz Rafiqui Road, Lahore Cantt,
Lahore.
Tel: 042-36601381-4
Fax: 042-36601385

Subject: **LETTER OF INTENT UNDER THE FRAMEWORK FOR POWER COGENERATION 2013 (BAGASSE/BIOMASS) TO M/S RYK MILLS LIMITED FOR DEVELOPING A 19 MW (SPILL OVER TO THE GRID) HIGH PRESSURE BAGASSE BASED CO-GENERATION POWER PLANT AT RYK MILLS, RUKANABAD (JANPUR), TEHSIL LIAQATPUR, DISTRICT, RAHIM YAR KHAN.**

Reference: Your proposal No. Nil, dated September 24, 2013.

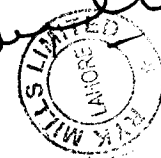
Alternative Energy Development Board ("AEDB") hereby confirms its interest in your proposal for establishing an approximately 19 MW (Gross) bagasse to power generation project at RYK Mills, Rukanabad (Janpur), Tehsil Liaqatpur, District Rahim Yar Khan, Punjab ("Project") under the Framework for Power Co-Generation 2013. AEDB acknowledges receipt of the Bank Guarantee furnished by the Sponsor(s) dated October 29, 2013 to the tune of U.S \$ 9,500/-.

2. The Sponsor(s) is required to achieve the milestones listed at the Annex to this LOI ("LOI Milestones") for the subject project, at no risk and at no cost to, and without any obligation on the part of the AEDB, the Government of Pakistan, any Provincial Government or their respective agencies, within a period of 12 calendar months from the date of issuance of this Letter of Intent ("LOI").

3. The Sponsor(s) is required to carry out grid interconnection studies and environmental study. The Sponsor is also advised to liaise with the power purchaser while determining the sub-station design and layout, the transmission line, interconnection arrangements, and other related matters.

4. The validity of this LOI is 12 calendar months from the date of its issue, where after it will automatically lapse immediately (unless extended pursuant to clauses 5 or 6), being the October 28, 2014 (the "Expiry Date"). Issuance of this LOI or the lapsing of its validity, cannot form the basis of any claim for compensation or damages by the Sponsor(s) or the project company or any party claiming through or under them against the Government of Pakistan, the Provincial Government, AEDB or any of their agencies, employees or consultants on any grounds whatsoever, during or after the expiry of the validity of the LOI.

ATTESTED
TO BE TRUE COPY



5. The Sponsor(s) is therefore required to achieve the LOI Milestones for the subject project within the validity of this LOI. The Sponsor(s) is also required to submit monthly progress reports. Provided the Sponsor(s) continues to pursue the project diligently, the Expiry Date of this LOI shall be extended on a day-for-day basis for the number of days of delay by which the approval or review by the relevant public sector entity listed in the LOI Milestones is delayed beyond the corresponding period stated in the LOI Milestones. In case there is a delay in achieving milestones within the validity of this LOI for reasons not attributable to a public sector entity, a one-time extension may be granted up to a maximum period of 90 days if AEDB is satisfied with the progress, provided that the Sponsor(s) enhance the amount of the bank guarantee to twice its original amount and extend its validity for a period of 06 months beyond the extended Expiry Date.

6. The Sponsor(s) shall apply to NEPRA for award of Upfront tariff within the period of validity of this LOI. Upon Upfront tariff being given, the Sponsor(s) shall forthwith submit a new Performance Guarantee in the sum of US\$ 47,500/- and obtain the Letter of Support ("LOS") from AEDB within the validity period of this LOI, provided, if the award of the Upfront tariff is delayed beyond the initial validity of the LOI, the Sponsor(s) shall extend the bank guarantee for a further period of 06 months and the Expiry Date shall be extended *ipso facto* for a further period of 03 months, and the Sponsor(s) shall obtain the LOS and submit the Performance Guarantee within the extended period afore-said.

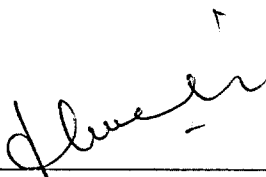
7. In case the Sponsor(s) fails to meet the LOI Milestones or perform any other obligations set forth in the Policy and this LOI, including the extension of the date of expiry of bank guarantee as provided herein, AEDB will terminate this LOI and encash the bank guarantee.

8. M/s RYK Mills Limited and its majority shareholders as of the date of this LOI shall be the Main Sponsors of the Project.

9. Arrangement of land and fuel (Biomass/Bagasse) will be the responsibility of Sponsor.

10. This LOI is not assignable and non-transferable. This LOI shall be void upon any actual or purported assignment or transfer hereof without the prior written consent of AEDB.

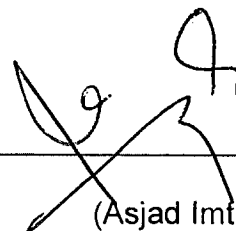
11. This LOI is issued in duplicate on the date hereof, and it shall come into effect when one copy is received by AEDB after being duly countersigned by you. Nevertheless, this LOI shall lapse if the countersigned copy is not received at AEDB within 07 days of its issuance.



(Mr. Muhammad Mudassir Iqbal)

Head-Energy Business

M/s RYK Mills Limited.



(Asjad Imtiaz Ali)

Chief Executive Officer

Alternative Energy Development Board

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S.No.	Activity	Maximum Time
1	Power Producers to submit request for Letter of Intent (LOI) with Standard proposal document and Bank Guarantee to AEDB.	
2	Issuance of Standard LOI by AEDB.	i) 7 days for sugar mills ii) 30 days for other entities as per procedure described in Renewable Energy Policy 2006.
3	Generation License to be issued by NEPRA.	10 days
4	Acceptance of Upfront tariff to the project.	10 days
5	Power Purchaser to approve Grid Interconnection Study.	30 days after submission of Grid Interconnection Study to the relevant agency by the Power Producer.
6	Issuance of LOS by AEDB upon submission of Performance Guarantee by Power Producer.	15 days
7	Energy Purchase Agreement finalization.	30 days
8	Signing of Implementation Agreement.	15 days

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ATTESTED
TO BE TRUE COPY



September, 30, 2013

Mr. Makhdum Omar Shehryar
RYK Mills Limited
75/4-D, Sarfraz Rafiqui Road
Lahore Cantt

Subject: Proposal for arranging Syndicated Term Finance Facility of up to Pak Rupee 1,880 Million (exclusive of a green shoe option of PKR 420 Mn) for RYK Mills Limited

Dear Sir

This is with reference to the captioned subject and our earlier term sheet dated September 19, 2013.

We understand that RYK Mills Limited (hereinafter referred to as "RYKML" or the "Company") requires financing of PKR 1,880 million to finance the installation of 30 MW high pressure Co-generation Power unit (to be increased from 18MW to 48MW). Expansion in Co-generation Power unit will be referred to as "Project".

In this regard, MCB Bank Limited ("MCB") (Hereinafter referred to as "Financial Lead Advisors and Arrangers") is pleased to submit the revised preliminary proposal for arranging up to PKR 1,880 Million (exclusive of a green shoe option of PKR 420 Mn) through Syndicated Term Finance Facility (hereinafter referred to as the "Facility" or the "Transaction") on the terms and conditions detailed in attached Indicative Term Sheet. This letter and the attached term sheet are collectively referred to as the "Indicative Offer" or the "Offer".

We believe that the financing requirements are accurately outlined in the Proposal Documents. While we feel that the structure of the Transaction has been designed according to RYKML's current financial requirements, we would be pleased to discuss any particular aspect of the proposal in detail at the Company's convenience.

This Proposal can be treated as an Expression of Interest by the Financial Lead Advisor and Arranger to arrange the subject Facility. Please note that this Offer is indicative for discussion purpose only and is subject to the internal credit approvals of the Financial Lead Advisor & Arranger.

This Proposal is neither an offer to sell nor the solicitation of an offer to enter into the Transaction. The Financial Lead Advisor and Arranger and their affiliates may act as principal or agent in similar transactions or in transactions with respect to instruments underlying the proposed Transaction. The delivery of the commitment is subject to, among other things, internal credit approvals and to the satisfaction of the Financial Lead Advisor and Arranger with the results of its due diligence. Furthermore, and as more fully described in the "Market Flex" section of the Indicative Term Sheet, the terms and conditions of this Proposal, including the amounts, profit rates, amortization and fees, may be modified or supplemented by the Financial Lead Advisor and Arranger from time to time during the course of their due diligence or as a result of changed market conditions or otherwise.

By accepting delivery of these Proposal Documents, you agree that these Proposal Documents are for your confidential use only and that neither their existence nor the terms hereof will be disclosed by you to any person other than your officers, directors, employees, accountants, legal counsel and other advisors, and then only on a "need to know" basis in connection with the Transaction contemplated hereby and on a confidential basis (except that, notwithstanding the foregoing, you may make such public disclosures as you are required by law, in the opinion of your legal counsel). Your



Bank for Life

obligations hereunder with respect to confidentiality shall survive the expiration or termination of these Proposal Documents.

Please note that these Proposal Documents constitute a proposal for discussion purposes only; they do not in any way constitute a commitment or an undertaking by the Financial Lead Advisor & Arranger to deliver such a commitment by it or third parties.

If this proposal represents a basis satisfactory for you to proceed further, please indicate your acceptance of the provisions hereof, by signing the enclosed copy of Proposal Documents and returning it to the undersigned. This Offer is open for your acceptance till **October 01, 2013** after which it may be extended at our discretion.

We look forward to working with you to a successful conclusion of this transaction. Should you have any queries please do not hesitate to contact any of the undersigned.

Yours truly,

For and on behalf of the Financial Lead Advisor and Arranger

MCB Bank Limited
Mobin Akhtar
VP- Senior Manager- DCM and Syndications
Investment Banking Group
Ph: (+9221)-32641518
Fax: (+9221- 32270105

MCB Bank Limited
Amna Hasan
SVP- Head Project Finance, DCM &
Syndications
Investment Banking Group
Ph: (+9221)-32642067
Ph: (+9221)-32270073
Fax: (+9221- 32270105

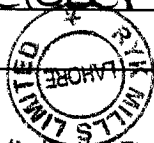
Accepted, for and on behalf of RYKML

Name: MAKHDUM OMAR SHETTRYAR

Designation: CEO

Date: 10 October 2013

Stamp: _____



Encl: Annexure A (Indicative Terms & Conditions of the Transaction)

ANNEXURE A
SUMMARY OF INDICATIVE TERMS & CONDITIONS
SYNDICATED TERM FINANCE FACILITY OF PKR 1,880 MILLION (EXCLUSIVE OF A GREEN SHOE OPTION OF PKR 420 Mn) RYK MILLS LIMITED

The terms set forth herein are intended for discussion purposes only and subject to the final expression of the terms of the Transaction as set forth in definitive agreements and / or confirmations. The Terms & Conditions outlined herein are indicative and not comprehensive. Detailed terms & conditions will be set out in the Facility Agreements to be executed by RYK Mills Limited and Lenders.

TRANSACTION / FACILITY	Syndicated Term Finance Facility ("Facility" or "STFF")												
CURRENCY	Pak Rupees												
BORROWER	RYK Mills Limited (hereinafter "RYKML" or "Company"), a non-listed Public Limited Company with its registered office at 8 Shami Road, Lahore Cantt and whose principal activity is the manufacturing & sale of Sugar / Molasses and generation / sale of Power												
SPONSORS	Majority shareholding of RYKML is with following individuals, collectively referred to as "Sponsors": 1. Mr. Makhdoom Omar Shehryar- CEO 2. Ms. Tahmina Sadiq Javed 3. Mr. Mazhar Abbas- and 4. Mr. Munir Hussain												
PURPOSE	To finance the installation of 30 MW high pressure Bagasse based Co-generation Power Unit (to be increased from 18MW to 48 MW). (Hereinafter referred to as "Project"). The proceeds from the Facility will be used in the following manner: ○ To retire the LCs for the import of Turbines/ equipment for the Project for upto PKR 800 Mn ○ Settlement of Bridge Facility of up to PKR 700 Mn ○ To partially finance the local and foreign procurements, construction and civil works of the Project;												
FINANCIAL PLAN/ PROJECT COST	The overall Project Cost is estimated at PKR 2,350 - 2,875 million, which is to be financed with a combination of Debt: Equity in a proportion of 80:20. The details of the same are as follows: <table><tr><th>Capital Structure</th><th>Amount (PKR Million)</th><th>% of project Cost</th></tr><tr><td>Sponsor's Equity (Internal Cash Generation/ Fresh Equity)</td><td>470- (PKR 575 Mn in case of exercising green shoe option*)</td><td>20%</td></tr><tr><td>Long Term Loan</td><td>1,880 (with a green shoe option of PKR 420 Mn*)</td><td>80%</td></tr><tr><td>Total</td><td>2,350- 2,875</td><td>100%</td></tr></table> <p>*Please note that green shoe option will be exercised for steam efficiency processes and subject</p>	Capital Structure	Amount (PKR Million)	% of project Cost	Sponsor's Equity (Internal Cash Generation/ Fresh Equity)	470- (PKR 575 Mn in case of exercising green shoe option*)	20%	Long Term Loan	1,880 (with a green shoe option of PKR 420 Mn*)	80%	Total	2,350- 2,875	100%
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	to compliance of Project Debt to Equity of 80:20 Project debt to equity of RYKML to be maintained at 80:20 during the entire tenor of the Facility. All cost overruns under the Project are to be financed by the Sponsors via additional equity
FACILITY AMOUNT	Up to maximum of PKR 1,880 Mn (exclusive of a green shoe option of PKR 420 Mn). Funded/ non funded facility amount will not exceed the Facility amount including any bridge facility and other non-funded facilities established by the Company for the Project.
COST OVER RUN SUPPORT	The Borrower's Sponsors will execute and deliver Project Funds Agreement ("PFA"), in a form acceptable to the Lenders and their Transaction Legal Counsel that irrevocably and unconditionally binds the Borrower's Sponsors to meeting upon first demand, any cash injections required to satisfy Project Cost overruns whether arising out of exchange rate fluctuations or changes in Project design or lay out or for any other reason inclusive of any foreseen contingency, above the stated Project cost from their own sources
FINANCIAL LEAD ADVISOR AND ARRANGER	MCB Bank Limited "(Hereinafter referred to as "Financial Lead Advisor and Arranger")
CO-OPTION	Financial Lead Advisor & Arranger reserves the right to co-opt any financial institution(s) of its choice in order to successfully close the transaction, without incremental cost to the Borrower.
LENDERS	Financial institutions; Development Finance Institutions, NBFCs or any other Institutional Investors including but not limited to the Financial Lead Advisor and Arranger.
TENOR	<ul style="list-style-type: none"> Maximum 8 Years inclusive of two year Grace Period commencing from the date of first drawdown.
GRACE PERIOD	Two years from the date of first draw down;
AVAILABILITY PERIOD AND DRAWDOWN	<p>In case of Co gen project, availability period will be 12 months from the date of first draw down In case of green shoe option (steam efficiency processes), availability period will be 22 months from date of first drawdown under the Facility</p> <p>Disbursement to be allowed in tranches (minimum tranche of Rs. 20 Million) subject to satisfaction of conditions precedent to Drawdown.</p>
FACILITY EFFECTIVE DATE	First Draw Down Date but not later than 60-90 days from the execution of Facility documents by which conditions precedent to Drawdown are to be satisfied.
PRINCIPAL REPAYMENT	Principal will be redeemed in twelve (12) equal semiannual installments commencing from the 30 th month from the date of first Drawdown;
PRICING	Base Rate (as defined below) + 255 basis points per annum, with no floor or cap
BASE RATE	<p>The rate will be determined one working day prior to the beginning of each semiannual period for which the markup is due at the end of the ensuing semiannual period. For the purpose of this Facility, the daily average of the "6 MONTHS ASK" rate will be applied. In the event that this rate is not published on Reuters on the rate fixing date, the same would be replaced with a relevant rate of a similar nature or an alternate basis would be agreed upon for determining the Base Rate.</p> <p>The Agreement is based on the premise that the KIBOR rates continue to be true representation of the financiers' cost of funds and therefore continue to be a realistic benchmark for pricing this Facility. Should any material adverse events occur which ceases or materially inhibit the ability of KIBOR rates to act as a benchmark, the Facility Agent shall be entitled, as it deems fit, to substitute this mark-up benchmark rate with another benchmark that is reflective of market conditions. The Facility Agent will provide at least 14 days written notice of the change of benchmark before it is</p>

	deemed to become mutually applicable. In the event of a lack of acceptance on part of the RYKML, the Facility Agent shall be entitled to terminate the Facility and Borrower will be required to settle the total outstanding amount within 60 days from the ending of the notice period.
MARKUP PAYMENTS	Mark up will be payable semiannually in arrears. The first markup payment of the Facility shall fall due at the end of the six (6) months from the FED, and subsequently every six (6) months thereafter. Markup will be calculated on the basis of actual number of days elapsed in a year of 365 days on the outstanding balance of the Facility
SECURITY	<p>Facility security structure will be finalized after due-diligence. However, the Facility is to be secured by:</p> <ol style="list-style-type: none"> 1. First Pari Passu hypothecation/ mortgage charge over all present and future fixed assets (including Project assets) of the Borrower with 25% margin*. 2. Assignment over receivables/collections arising from the Project by selling electricity to Central Power Purchasing Agency ("CPPA") by the Company. Acknowledgement of CPPA has to be obtained confirming that all Project receivables of RYKML will be transmitted via the designated collection account with MCB. An irrevocable right of set-off, in favor of MCB, has to be established over subject collection account. 3. Assignment & co-loss payee status under all insurances of the Project. 4. Establishment of, and assignment of a Debt Payment Account ("DPA") comprising of a balance equal to the upcoming installment amount (markup payment during the Grace Period and markup and principal repayment after the end of Grace Period.) The DPA shall be maintained by the Agent Bank and amount held in the account will be reset to zero at each installment payment date. DPA will be established such that, it would be funded in three equal installments on fortnightly basis (wherein the first payment to be funded on 150th day, second on 165th day and third to be funded on 179th day with an amount equal to the principal and markup amount ("Payment Amount") due at the end of the each semiannual markup payment period. Thus bringing the amount to 100% at the end of each payment period. This account will be under lien of the Facility Agent/ Trustee in favour of the Lenders. 5. Lien over and set-off rights in respect of all Project accounts including but not limited to (i) Debt Payment Account (DPA); and (ii) any other Accounts. 6. Personal Guarantee of Sponsors/ Directors. <p>*NOC to be obtained from the existing creditors for the perfection of Security before the first draw down under the Facility;</p>
COLLECTION MECHANISM	Upon commencement of the Project/ Commercial Operation Date ("COD") of the Project, cash flows emanating from the Project shall be routed through MCB designated collection accounts, mechanism to be agreed and to be specified in the Facility agreements.
FACILITY / FINANCING DOCUMENTS	<p>The Facility Documents shall include but not be limited to the following:</p> <ul style="list-style-type: none"> • Syndicated Finance Agreement; • Assignment Deed- Project Receivables • Assignment Deed- Project Insurances • Letter of Lien and Right of Set off • Intercreditor Agreement; • Security Documents; • Personal Guarantees • Any document as deemed appropriate by the Transaction Legal Counsel;

EXPECTED FINANCIAL CLOSE	Legal agreement to be executed in tentatively 8-10 weeks from the award of mandate. Indicative timelines to be mutually agreed in between the Financial Lead Advisor and Arranger and RYKML.
INSURANCE	Borrower shall insure and always keep insured all its assets (and all additions thereto) against all reasonable risks including but not limited to loss or damage by fire, explosion, and strike damage, malicious damage, atmospheric damage, and impact damage with a well reputed insurance company or companies, to produce the policies of such insurance to the Agent, if required, to duly pay or cause to be paid the premium and other sums of money payable in respect of such insurance and if required, to produce the Agent receipts for the same within fifteen (15) days of the same becoming due and to assign the policies of insurance in favor of the Lenders to the extent of the amount from time to time due to the Lenders hereunder, and to cause the notice of the interest of the Lenders to be noted on the policies of insurance.
PROJECT DOCUMENTS	<p>An exhaustive list of Project Documents will be finalized by Transaction Legal Counsel however would likely to include without limitation the following:</p> <ol style="list-style-type: none"> 1. Energy Purchase Agreement ("EPA") based on Frame Work for Co-Generation 2013 (bagasse/ biomass)- under the Renewable Energy Policy – 2006 ("Co-Generation Policy- 2013") between the Power Purchaser / Central Power Purchase Agency ("CPPA") / NTDC and the Company relating to the purchase of electrical energy produced by the Company by the Power purchaser. 2. The insurance policies required to be maintained by the Company for the Project from time to time; 3. Key Contracts between the Borrower and the Turbine Manufacturer / Suppliers as well as Boiler Supplier and guarantees/ warranties procured hereunder; 4. Consultancy Agreement in between Descon Engineering / TA and the Company relating to the technical Services, , and guarantees/ warranties procured hereunder; 5. Project Fund Agreement (PFA) to be signed by the Sponsors of the Borrower for funding the cost over runs under the Project (if any) as defined under the Cost Overrun Support Clause. 6. If applicable, any other agreement, document, deed, notice or certificate if designated as such by the Lenders provided they have been executed by the Company. <p>Any other documents that may be required during the due diligence process</p>
TECHNICAL ADVISOR	The Financial Lead Advisor and Arranger shall require the Borrower to appoint, at its own cost and payable at actual, an Independent Technical Advisor ("TA"), who shall be appointed in technical and overall Project cost related consultation with the Borrower. The scope of work of Independent TA will be mutually agreed by the parties. Technical Advisor will be Descon Engineering for the Project.
ADVISORY AND ARRANGEMENT FEES	<p>1.05% of the Facility Amount; which will be payable by RYKML in the following manner:</p> <ul style="list-style-type: none"> ➤ 25% of the fee is payable on the award of the mandate; ➤ 40% on the signing of Facility Documents; ➤ Remaining 35% to be on the first draw down under the Facility;
FACILITY AGENT /SECURITY TRUSTEE	MCB Bank Limited
AGENCY AND TRUSTEE FEES	<ul style="list-style-type: none"> ○ PKR 2,000,000/- for the first year payable at the time of signing of Facility Documents. ○ PKR 1,000,000/- per annum for the remaining seven years of the Facility payable at each

	subsequent anniversary of the Facility Documents date
TRANSACTION LEGAL COUNSEL	Transaction Legal Counsel will be appointed with mutual consent;
STAMP DUTY AND LEGAL EXPENSES	To be billed at actual;
Legal & Other Professional Services	The Financial Lead Advisor & Arranger shall, in consultation with RYKML, engage for the benefit of Lenders such legal and other professional services as are required. All legal and other professional service expenses/charges shall be borne by RYKML and will be payable at actual whether or not the transaction proceeds to signature. The Financial Lead Advisor & Arranger shall negotiate the engagement terms with the service providers accordingly
PREPAYMENT OPTION	<p>The facility can be pre-paid partially or fully [from Borrower's operating cash flows] only after the end of Grace Period with 0.25% pre-payment penalty. No prepayment will be allowed if this facility is refinanced through funds from some other financial institution.</p> <p>RYKML can exercise the prepayment option on installment dates after giving 30 days prior written notice to the Facility Agent, and in integral multiples of PKR 100 million. Amounts prepaid shall be applied in reverse order to which they were due.</p>
CONDITION PRECEDENTS (CPs)	<p>Conditions precedent to drawdown of Facility are to be mutually agreed upon in the Facility agreements and shall include, but not limited to, the following:</p> <p>Project Related CPs</p> <ol style="list-style-type: none"> To avail the first Draw Down under the Facility, Company's independent auditor shall be required to provide an auditor certificate evidencing the amount of the Project development costs incurred prior to the first drawdown date as to their funding by the Company. Such funding, upon verification, shall be treated as equity; For Subsequent draw down under the Facility, the Borrower shall arrange for monthly Auditors certificate confirming the amount of Equity invested into the Project in a 20% ratio for the corresponding disbursement amount as referred in the Disbursement Mechanism clause below. Generation License has been obtained from NEPRA for the Project based on the Frame Work for Co-Generation 2013 (bagasse/ biomass) - under the Renewable Energy Policy - 2006. Company to provide the Letter of Intent issued by Alternative Energy Development board ("AEDB") <p><u>*Subject to internal approval of Lead Arranger, deferral of 60-90 days from the date of first drawdown under STFF shall be provided to RYKML to submit the executed copy of EPA, IA and Letter of Support ("LOS") to be issued by AEDB, post approvals conditions as mentioned in below (e and f) will become operational covenant</u></p> <ol style="list-style-type: none"> Company to provide copies of duly executed Energy Purchase Agreement ("EPA") executed in between Company and Power Purchaser) CPPA/ NTDC for the additional power to be produced under the proposed Project*; Company to provide the executed copy of Implementation Agreement ("IA") to be executed in between the Government of Pakistan and Company*; Company to provide the approval of National Transmission and Dispatch Company ("NTDC") for the Grid Interconnection Studies. Company to provide the certified copies of any other approvals (if required) for the Project; Company to provide the certified copy tariff approval/ acceptance by NEPRA in favor of

RYKML for the Project;

- j. Review and due-diligence of the Financial Model along with the assumptions used therein, to the satisfaction of the Syndicate. The Financial Model would need to appropriately generate financial statement projections, Cash flows and Coverage Ratios of the Company, which shall satisfy the Syndicate requirements.
- k. Execution and delivery of a Project Funds Agreement ("PFA"), irrevocably and unconditionally binds the Sponsors to meeting, upon first demand, any cash / equity injections required to satisfy the entire Project cost-overruns, in form, substance and for amounts, acceptable to the Lenders and Transaction legal counsel
- l. Appointment of Technical Advisor to provide the quarterly Project progress report till the Commercial Operation Date ("COD"). Further, Technical Advisor will provide the Project timelines along with the indicative draw down schedule for the Facility;
- m. Company to provide an acknowledgement of CPPA confirming that all receivables of RYKML will be transmitted via the designated collection account of MCB.
- n. An undertaking from the Sponsors/ Company that in case of any shortfall in the Facility, the Sponsors / Company will inject additional equity of an amount equivalent to the shortfall;

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General CPs:

- o. All authorizations required by Borrower in connection with the execution, delivery, validity or enforceability of the finance documents, the granting of authority to an authorized officer or authorized officers to execute and deliver the finance documents or any other document or notice in connection therewith, and the performance of Borrower of all of its obligations under the finance documents have been completed.
- p. Execution and delivery of all documentation required for a Facility of this nature in form and substance satisfactory to both the Lenders and Borrower.
- q. Creation and perfection of Security to the satisfaction of the Lenders and Lenders' legal counsel;
- r. All required insurances are in full force and effect,
- s. Compliance by the Company of all applicable SBP regulations and other regulatory requirements;
- t. Receipt of a legal opinion from the Transaction Legal Counsel of the Lenders, confirming inter alia the validity, enforceability and binding effect of the obligations of Company under the Finance Documents, in form and substance acceptable to the Lenders.
- u. Company's legal counsel to provide clean legal opinion, acceptable to the Lenders, on key Contracts as defined under Project
- v. Documents Section and any other Project-related contracts/agreements (if required).
- w. Company to provide the copy of valid existing signed Power Purchase Agreement ("PPA") of 8 MW with MEPCO along with the copy of existing Generation License.
- x. Company to provide the latest available valuation report of RYKML from a valuator acceptable to the Lenders and Financial Lead Advisor and Arranger;
- y. Submission of the documents including but not limited to the following to the Agent for circulation amongst the Lenders:
 - (i) SECP certified Memorandum & Articles of Association (or equivalent identification documents) of the Borrower;
 - (ii) SECP certified Certificate of Incorporation;
 - (iii) SECP Certified Form 29;
 - (iv) CNIC copies of all directors duly attested by the Company Secretary;



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	<ul style="list-style-type: none">(v) SECP certified Form A;(vi) Company Secretary certified List of Authorized Signatories;(vii) Company Secretary certified List of Directors;(viii) Duly filled, signed and stamped Borrowers Basic Fact Sheet;(ix) Loan Application Form;(x) Undertaking for Appropriate Utilization of Funds; <p>z. Payment of all fees, costs and expenses (including but not limited to Arrangement Fee, Agency Fee, Lawyer Fee etc.);</p> <p>aa. Any other waiver required from State Bank of Pakistan or any other regulatory body by the Lenders to participate in the Transaction to the extent applicable on the Company to be obtained by RYKML;</p> <p>Other conditions precedent to be advised after due-diligence and included in the Finance Documents.</p>
DISBURSEMENT MECHANISM	<p>Following is the broad Disbursement Mechanism under the Facility, however, the detailed mechanism shall be finalized at the time of legal documentations and will be part of Condition Precedents:</p> <p>For abundant clarity, please note that the below mentioned Disbursement Mechanism shall be applicable from the date of Bridge Finance Facility effectiveness to be provided by MCB, subject to firm approvals. Separate indicative term sheet is provided to RYKML</p> <ul style="list-style-type: none">(a) The Customer shall open and maintain the Disbursement Account with the Facility Agent, in which Company will route all disbursement through STFF and Company's at least 55% of total equity contribution in the Project cost.(b) The contribution already made by the Company through own sources in the Project before opening of the Disbursement/Project account with Facility Agent, separate auditor certificate shall be required for Company's contribution in the Project which shall be counted towards Project equity.(c) Company has to ensure that at least 55% of the overall equity contribution should be routed through the Disbursement Account for Bridge Facility / STFF to be provided by MCB. The detailed mechanism to be finalized at the time of finalization of Facility Documents.(d) The equity routing condition is applicable on the company on overall Project equity requirement basis (20% of Project cost) to be tested accordingly.(e) On monthly basis the Customer shall provide the Facility Agent with an auditor's certificate providing evidence that the Company is complying with the Project Debt to Equity Ratio of not more than 80:20 for the corresponding amount requested for Drawdown pursuant to a Drawdown Notice.(f) The Customer shall provide the Facility Agent with certified true copies of all invoices/ proforma invoices or contracts (where applicable) for the payment of the boiler, civil work, payments under LCs for imported equipment and turbines and other equipment to the suppliers (whether directly or by way of reimbursement);(g) In the case of direct payments to suppliers the same shall be made via a pay order or demand draft through the Disbursement Account;(h) In the case of reimbursements, the Customer shall provide the Facility Agent with copies of the invoices already paid to the supplier along with evidence of such payment The Company can take reimbursement of LCs retired from own sources through providing copies of retired LCs and Performa invoice and proof of payment.(i) Additionally the Customer shall confirm that the amount for reimbursement has not been

	funded from any other facility availed from any other bank or financial institution.
FINANCIAL COVENANTS	<p>Financial Covenants would be calculated annually on the basis of annual audited accounts (year ended 30th September) of RYKML ("Covenant Testing Date") during the tenor of the Facility.</p> <ul style="list-style-type: none"> a) Minimum Debt Service Coverage Ratio (DSCR) not to fall below 1.25x during first two years (2014) and 2015) whereas 1.3x to be maintained during the remaining tenor of this Facility. Debt Coverage will be defined as Earnings before Interest, Taxes, Depreciation and Amortization "EBITDA" / (Interest Expense + sum of current maturity of long term Debt/leases (as mentioned in the account of last year) +other loans payable within 12 months excluding working capital facilities). b) Minimum Current Ratio for the first two year shall be 0.80:1 (2014 and 2015), thereafter 0.9:1 (including current portion of long term liabilities) is to be maintained by RYKML at all times. c) Project Debt: Equity Ratio of Borrower not to exceed 80:20 at any time during the Tenor of the Facility. (Project Long term Debt divided by Equity contribution by the Company in the Project.) d) Long Term Debt:Equity Ratio: Not to exceed 60:40 at any time during the Tenor of the Facility. (Debt will be defined as all interest bearing long term debt including finance lease and current portion of the long term debt and lease finance) e) Debt: Equity Ratio not to exceed 80:20 during the Tenor of this Facility. (Debt will be defined as all interest bearing short and long term debt including finance lease and current portion of all interest bearing long term debt and finance lease) f) Dividends can only be paid if Debt Service Coverage, Current Ratio, Debt to Equity Ratio & other Covenants are complied with. g) Any other financial covenant that the Lenders deem fit and that may be more fully defined in the transaction legal documents.
Operational Covenants	<p>RYKML to ensure meeting the following operational Covenants during the tenor of facility:</p> <ol style="list-style-type: none"> 1. Proposed Project Generation License from NEPRA will remain valid and in force during the entire tenor of the Facility; 2. EPA and IA for proposed Project and all other Project Documents/ Agreements will remain valid and remain in force during the entire tenor of Facility. 3. Subject to internal approvals of the Lenders, Company to provide the copies of the duly executed EPA, IA and LOS within 60-90 days from the date of first drawdown, however in case Company will not be able to provide the same, then Company to provide the copy of duly executed Power Purchase Agreement with relevant DISCOs under the captive power policy for the proposed Project. Thereafter, word "CPPA" will be replaced with "relevant DISCOs" as used under the CP section and Project Documents. 4. Technical advisor to conduct quarterly progress Report on the project, at the expense of the Borrower, till final completion of the project and/or commencement of commercial operations. 5. Representatives of Lenders to visit the Project, at the expense of the Borrower, before finalization of the Facility and subsequently on an annual basis (at a minimum), during the tenor of Facility. 6. RYKML to provide the latest valuation report after the COD of the Project but not later than three months from the COD.

	<p>7. The Borrower to provide the certificate from Pakistan Environmental Protection Agency or relevant Provincial Environmental Protection Agency that the Project meets the environmental guidelines and occupational health and safety standards before COD or within 6 months of FED.</p> <p>8. Company shall ensure that all license, approvals or consents necessary for carrying out the business and operations shall remain valid and in force during the entire tenor of the Facility;</p> <p>9. All required insurances are in full force and effect at all times during the Facility Tenor;</p> <p>Any other condition which the Financial Lead Advisor and Arranger, Lenders and the Transaction Legal Counsel may deem necessary;</p>
OTHER COVENANTS/ TERMS AND CONDITIONS:	<p>During the entire currency of the Facility, compliance by the Company with the following Covenants:</p> <ul style="list-style-type: none"> a) Borrower to comply with all applicable State Bank of Pakistan regulations/ Government of Pakistan laws. b) The Facility/ offer is being submitted on a best effort basis and is subject receipt to the Financial Lead Advisor and Arranger /Lenders' internal credit approval and satisfactory Financial and Legal documentation review; c) Borrower to maintain independent 'A' class auditors as per SBP panel (qualified under the Chartered Accountants Ordinance 1961). d) Borrower shall not change the existing shareholding of the Company. Any change in the majority shareholding along with the management control will require prior written consent of all the Lenders. e) The Company will not invest/ lend more than PKR 20 Mn per year to the associated companies/ subsidiaries during the Tenor of Facility without prior consent of Lenders. f) The Company shall not declare any dividends if the Company is in breach of the Financial Covenants or in case of Event of Default under the Facility. g) Cross Default to be applicable in terms and with respect to the Facility; h) No merger or acquisition or consolidation of the Company will be allowed during the tenor of the Facility without prior written consent of Lenders i) No disposal of its assets having book value of over PKR 50 Mn without prior written permission of Lenders. j) Borrower shall not create any encumbrance with respect to the security, which may rank superior or pari passu with the Security created in favor of the Lenders under the Facility documents without prior approval of the Lenders. k) All levies, duties, surcharges, taxes etc. of whatsoever nature, imposed by the Federal and/or Provincial Government and/or Municipal Authority shall be for the account of the Borrower. l) Borrower will submit reviewed accounts half-yearly accounts within 90 days of the half-year end, annual audited accounts with 120 days of the financial year-end.
EVENT OF DEFAULTS	<p>The Events of Default will be usual and customary for a transaction of this type, including, without limitation, the following:</p> <ul style="list-style-type: none"> a) Breach of Financial, Operational and Other Covenants b) Failure to make payments under any Financing Document; c) Breach of provisions of any Financing Document; d) Breach of representation or warranty in any Financing Document;




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	<p>e) Termination, suspension, repudiation or revocation of a Financing Document or any Consents;</p> <p>f) Illegality, invalidity or unenforceability of any Facility Document or any Facility Document ceases to be in full force or effect;</p> <p>g) Invalidity of Lenders' security or material diminution in the value of any Security or secured property;</p> <p>h) Abandonment or destruction of the whole or a material part of the secured assets unless fully insured and the insurance proceeds are available to be applied in reinstatement.</p> <p>i) Cross Default to be applicable in terms and with respect to the Facility;</p> <p>j) Merger or acquisition with any company without prior written consent of lenders.</p> <p>k) No pending or litigation is in process, which may have a material adverse effect on the Company/Project;</p> <p>l) Termination/ cessation of the Project or Project Documents/ Agreements (Termination of Generation License, EPA or IA executed under the Project</p> <p>m) Any event or series of events occurs which individually or when taken into consideration with any other facts or circumstances then in existence has or results in a Material Adverse Effect.</p> <p>Financial Lead Advisor and Arranger and/or the Lenders would have the right to identify other reasonable events if required as a result of legal/technical/insurance due-diligence.</p> <p>Certain events of default will be subject to an appropriate remedy/ cure periods. Exceptions and qualifications (including those relating to materiality and reasonableness) will be agreed and included where appropriate in Facility Documents.</p>
MATERIAL ADVERSE CLAUSES	The terms and conditions herein and the Lenders' obligations to arrange the Facility are subject to, in the opinion of the Consortium there being no material adverse change in: 1) the domestic bank syndication market; 2) in the business activities and credit standing of the Borrower (or any shareholders) since the date of last audited financials; 3) in the socio-political and economic situation of Pakistan which could adversely affect the successful completion of this transaction.
INDEMNIFICATION	The Borrower hereby indemnifies and agree to hold harmless the Lenders, Agent and each of their affiliates and each of its respective officers, directors, employees, agents, advisors and representatives (each an "Indemnity Party") from and against any and all claims, damages, losses, liabilities, costs and expenses (hereinafter collectively referred to as "Claim"), joint or several, that may be incurred by or awarded against any Indemnified Party, in each case arising out of or in connection with or relating to the Offer or the Facility except to the extent such Claim has resulted from such Indemnified Party's gross negligence or willful misconduct.
CLEAR MARKET PROVISION	To ensure successful arrangement of debt we require that from the date of award of mandate until the date of signing of Facility agreements, the Borrower undertakes that it will not approach or mandate any bank or financial institution for long term fund raising without prior written consent of the Financial Lead Advisor & Arranger.
MARKET FLEX	The Borrower hereby agrees that the Lenders have the right at any time to change any or all of the terms, structure, tenor and pricing of the Facility, if such changes are necessary in the sole judgment of the Lenders to ensure a successful arrangement of the Facility. The Lenders will consult with the Borrower for a period of up to five (5) business days about such changes. If the Borrower does not accept such changes, the Lenders will be entitled to terminate their offer hereunder.
INFORMATION	The Borrower will supply to the Financial Lead Advisor & Arranger, information to produce

	Information Memorandum for distribution to potential investors on a selective and confidential basis. Management of the Borrower will be available to the Financial Lead Advisor & Arranger for meetings with prospective Lenders to assist in the placement process, if required.
SELL DOWN CLAUSE	The Lenders may sell-down all or part of their participation in Facility amount to any other financial institution of their choice before or after signing of the Facility agreements without RYKML's consent. The Company will execute all such documents as may be reasonably required and cooperate in all matters related to such sell-down. All costs, expenses and other charges will be on account of the concerned financial institution(s);
TAXES	<p>Borrower shall make all payments under this Facility without any setoff or counterclaim and free and clear of, and without any deduction or withholding for or on account of, any taxes, duties, costs or expenses.</p> <p>In the event, the Company is required by any applicable law, to deduct the withholding tax on behalf of the Lenders, the Company shall provide to Facility Agent/Lenders, original copies of the tax challans, duly made out in the name of Facility Agent and each such Lender, in respect of the withholding tax so deducted within a period of fourteen (14) days from the date on which such deduction is made by the Company.</p>
PAYMENTS	Subject to the applicable laws, Payments of all dues under the offer will not be subject to counterclaim or setoff for, or be otherwise affected by, any claim or dispute relating to any matter whatsoever and all such payment shall be made in immediately available free & clear funds without deduction for or on account of any present or future charges, deductions or withholdings.
GOVERNING LAWS	The Facility will be governed by and construed in accordance with the laws of the Islamic Republic of Pakistan and exclusive jurisdiction of courts of Pakistan.
VALIDITY OF OFFER	This offer shall be valid for acceptance by the Company till October 01, 2013

Accepted for & on behalf of
RYK MILLS LIMITED:-



Authorised signatory

Authorised signatory

RIAZ AHMAD & COMPANY

Chartered Accountants

RYK MILLS LIMITED

**FINANCIAL STATEMENTS WITH
ACCOMPANYING INFORMATION**

30 SEPTEMBER 2013



AUDITORS' REPORT TO THE MEMBERS

We have audited the annexed balance sheet of RYK MILLS LIMITED as at 30 September 2013 and the related profit and loss account, statement of comprehensive income, cash flow statement and statement of changes in equity together with the notes forming part thereof, for the year then ended and we state that we have obtained all the information and explanations which, to the best of our knowledge and belief, were necessary for the purposes of our audit.

It is the responsibility of the company's management to establish and maintain a system of internal control, and prepare and present the above said statements in conformity with the approved accounting standards and the requirements of the Companies Ordinance, 1984. Our responsibility is to express an opinion on these statements based on our audit.

We conducted our audit in accordance with the auditing standards as applicable in Pakistan. These standards require that we plan and perform the audit to obtain reasonable assurance about whether the above said statements are free of any material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the above said statements. An audit also includes assessing the accounting policies and significant estimates made by management, as well as, evaluating the overall presentation of the above said statements. We believe that our audit provides a reasonable basis for our opinion and, after due verification, we report that:

- (a) in our opinion, proper books of account have been kept by the company as required by the Companies Ordinance, 1984;
- (b) in our opinion:
 - i) the balance sheet and profit and loss account together with the notes thereon have been drawn up in conformity with the Companies Ordinance, 1984, and are in agreement with the books of account and are further in accordance with accounting policies consistently applied;
 - ii) the expenditure incurred during the year was for the purpose of the company's business; and
 - iii) the business conducted, investments made and the expenditure incurred during the year were in accordance with the objects of the company;

RIAZ AHMAD & COMPANY

Chartered Accountants

- (c) in our opinion, and to the best of our information and according to the explanations given to us, the balance sheet, profit and loss account, statement of comprehensive income, cash flow statement and statement of changes in equity together with the notes forming part thereof conform with approved accounting standards as applicable in Pakistan, and, give the information required by the Companies Ordinance, 1984, in the manner so required and respectively give a true and fair view of the state of the company's affairs as at 30 September 2013 and of the profit, its comprehensive income, its cash flows and changes in equity for the year then ended; and
- (d) in our opinion, no Zakat was deductible at source under the Zakat and Ushr Ordinance, 1980 (XVIII of 1980).

Riaz Ahmad & Co.
RIAZ AHMAD & COMPANY
Chartered Accountants

Name of engagement partner:
Syed Mustafa Ali

Date: 20 FEB 2014

LAHORE

RYK MILLS LIMITED
BALANCE SHEET AS AT 30 SEPTEMBER 2013

	NOTE	2013 Rupees	2012 Rupees
EQUITY AND LIABILITIES			
SHARE CAPITAL AND RESERVES			
Authorized share capital 95,000,000 (2012: 95,000,000) ordinary shares of Rupees 10 each		<u>950,000,000</u>	<u>950,000,000</u>
Issued, subscribed and paid-up share capital	3	750,025,000	750,025,000
Unappropriated profit		<u>703,602,998</u>	<u>490,787,423</u>
Total equity		<u>1,453,627,998</u>	<u>1,240,812,423</u>
LIABILITIES			
NON-CURRENT LIABILITIES			
Long term financing	4	690,378,407	763,711,742
Liabilities against assets subject to finance lease	5	40,662,679	57,114,334
Employees' retirement benefit	6	27,030,650	21,335,716
Deferred liabilities	7	278,990,165	187,537,165
		<u>1,036,061,921</u>	<u>1,029,699,957</u>
CURRENT LIABILITIES			
Trade and other payables	8	455,832,616	376,689,879
Accrued mark-up	9	95,811,227	151,452,432
Short term borrowings	10	1,324,904,436	1,789,381,204
Current portion of non-current liabilities	11	452,337,215	396,742,289
Provision for taxation		<u>10,882,041</u>	<u>30,345,375</u>
		<u>2,339,767,537</u>	<u>2,744,611,179</u>
Total liabilities		<u>3,374,829,458</u>	<u>3,774,311,136</u>
CONTINGENCIES AND COMMITMENTS			
TOTAL EQUITY AND LIABILITIES	12	<u>4,828,457,456</u>	<u>5,015,123,559</u>

ASSETS

NON-CURRENT ASSETS

Property, plant and equipment	13	2,842,527,037	2,820,823,409
Long term security deposits	14	2,559,599	2,565,990
		<u>2,845,086,636</u>	<u>2,823,389,399</u>

CURRENT ASSETS

Stores, spare parts and loose tools	15	111,846,282	72,019,634
Stock-in-trade	16	1,118,112,501	1,468,007,773
Trade debts	17	296,424,618	362,524,650
Loans and advances	18	123,176,551	164,116,211
Short term deposits and prepayments	19	12,309,546	14,993,842
Accrued mark-up		4,837,596	2,177,428
Other receivables	20	270,129,971	54,926,732
Short term investments	21	3,337,013	2,696,708
Cash and bank balances	22	45,196,742	30,071,182
		<u>1,983,370,820</u>	<u>2,191,734,160</u>

TOTAL ASSETS

<u>4,828,457,456</u>	<u>5,015,123,559</u>
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The annexed notes form an integral part of these financial statements


CHIEF EXECUTIVE


DIRECTOR

RYK MILLS LIMITED

PROFIT AND LOSS ACCOUNT FOR THE YEAR ENDED 30 SEPTEMBER 2013

	NOTE	2013 Rupees	2012 Rupees
SALES	23	6,661,144,945	4,749,734,794
COST OF SALES	24	(5,653,937,076)	(3,915,197,851)
GROSS PROFIT		1,007,207,869	834,536,943
DISTRIBUTION COST	25	(65,279,640)	(34,321,725)
ADMINISTRATIVE EXPENSES	26	(159,409,755)	(117,613,511)
OTHER EXPENSES	27	(24,883,422)	(23,020,578)
		(249,572,817)	(174,955,814)
		757,635,052	659,581,129
OTHER INCOME	28	43,637,897	25,693,376
PROFIT FROM OPERATIONS		801,272,949	685,274,505
FINANCE COST	29	(516,777,033)	(504,468,300)
PROFIT BEFORE TAXATION		284,495,916	180,806,205
TAXATION	30	(71,680,341)	(79,885,861)
PROFIT AFTER TAXATION		212,815,575	100,920,344
EARNINGS PER SHARE - BASIC AND DILUTED	31	2.84	1.35

The annexed notes form an integral part of these financial statements.


CHIEF EXECUTIVE


DIRECTOR

RYK MILLS LIMITED

STATEMENT OF COMPREHENSIVE INCOME FOR THE YEAR ENDED 30 SEPTEMBER 2013

	2013 Rupees	2012 Rupees
PROFIT AFTER TAXATION	212,815,575	100,920,344
OTHER COMPREHENSIVE INCOME:		
Items that will not be reclassified to profit and loss account		
Items that may be reclassified subsequently to profit and loss account		
Other comprehensive income for the year		
TOTAL COMPREHENSIVE INCOME FOR THE YEAR	<u>212,815,575</u>	<u>100,920,344</u>

The annexed notes form an integral part of these financial statements.


CHIEF EXECUTIVE


DIRECTOR

RYK MILLS LIMITED
CASH FLOW STATEMENT FOR THE YEAR ENDED 30 SEPTEMBER 2013

	2013 Rupees	2012 Rupees
CASH FLOWS FROM OPERATING ACTIVITIES		
Profit before taxation	284,495,916	180,806,205
Adjustments for non-cash charges and other items:		
Depreciation	114,082,838	117,592,583
Finance cost	516,777,033	504,468,300
Provision for gratuity	8,778,781	8,284,900
Loss on remeasurement of investments at fair value through profit or loss	332,650	444,776
Debit balances written off	5,284,239	3,969,158
Impairment loss on operating fixed assets	1,038,772	3,884,211
Gain on sale of short term investments	(970,416)	(1,136,358)
Interest on loan to Janpur Energy Limited - associated company	(2,660,168)	(2,177,426)
Amortization of deferred income on sale and lease back	(2,433,081)	(1,572,638)
Gain on sale of operating fixed assets	(386,949)	(7,091,658)
Gain on sale of stores	-	(12,314,749)
CASH FLOWS FROM OPERATING ACTIVITIES BEFORE WORKING CAPITAL CHANGES	924,339,615	795,157,302
WORKING CAPITAL CHANGES		
(Increase) / decrease in current assets:		
Stores, spare parts and loose tools	(39,826,648)	(80,240,597)
Stock-in-trade	371,895,272	(820,925,191)
Trade debts	66,100,032	(314,613,551)
Loans and advances	40,939,660	3,531,007
Short term deposits and prepayments	222,296	(8,868,667)
Other receivables	(79,931,136)	(9,932,921)
Increase / (decrease) in current liabilities:		
Trade and other payables	79,142,737	(14,948,379)
	438,542,213	(1,245,998,299)
CASH GENERATED FROM / (USED IN) OPERATIONS	1,362,881,828	(450,840,997)
Finance cost paid	(572,418,238)	(440,281,139)
Income tax paid	(140,669,978)	(77,500,326)
Gratuity paid	(3,084,847)	(1,032,080)
NET CASH GENERATED FROM / (USED IN) OPERATING ACTIVITIES	646,708,765	(969,654,542)
CASH FLOWS FROM INVESTING ACTIVITIES		
Property, plant and equipment - acquired	(138,182,227)	(337,744,410)
Proceeds from sale of property, plant and equipment	20,294,400	168,088,692
Proceeds from sale of stores	-	85,164,391
Long term security deposits	2,468,391	1,128,999
Short term investments - net	197,461	81,080
NET CASH USED IN INVESTING ACTIVITIES	(115,221,975)	(83,281,248)
CASH FLOWS FROM FINANCING ACTIVITIES		
Short term borrowings - net	(484,476,766)	1,074,907,537
Proceeds from long term financing	350,000,000	225,000,000
Repayments of long term financing	(373,333,334)	(283,333,334)
Repayment of liabilities against assets subject to finance lease	(28,561,130)	(10,137,225)
NET CASH (USED IN) / FROM FINANCING ACTIVITIES	(516,361,230)	1,006,436,978
NET INCREASE / (DECREASE) IN CASH AND CASH EQUIVALENTS	15,125,560	(46,498,812)
CASH AND CASH EQUIVALENTS AT THE BEGINNING OF THE YEAR	30,071,182	76,569,994
CASH AND CASH EQUIVALENTS AT THE END OF THE YEAR	45,196,742	30,071,182

The annexed notes form an integral part of these financial statements.


CHIEF EXECUTIVE


DIRECTOR

RYK MILLS LIMITED

STATEMENT OF CHANGES IN EQUITY FOR THE YEAR ENDED 30 SEPTEMBER 2013

ISSUED, SUBSCRIBED AND PAID-UP SHARE CAPITAL	UNAPPROPRIATED PROFIT	TOTAL EQUITY
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----- Rupees -----

Balance as on 30 September 2011	750,025,000	389,867,079	1,139,892,079
Profit for the year	-	100,920,344	100,920,344
Other comprehensive income for the year	-	-	-
Total comprehensive income for the year	-	100,920,344	100,920,344
Balance as on 30 September 2012	750,025,000	490,787,423	1,240,812,423
Profit for the year	-	212,815,575	212,815,575
Other comprehensive income for the year	-	-	-
Total comprehensive income for the year	-	212,815,575	212,815,575
Balance as on 30 September 2013	750,025,000	703,602,998	1,453,627,998

The annexed notes form an integral part of these financial statements.


CHIEF EXECUTIVE


DIRECTOR


RYK MILLS LIMITED

*75/4-D, Sarfraz Rafiqui Road,
Lahore Cantt.*

Note on Feasibility

RYK Mills Limited is opting Suo-Moto proceedings for development of upfront tariff for its 30MW new Power Project. The Feasibility study report is not required in the case where Power Producer opt for upfront tariff and accordingly the feasibility study is not being submitted.

Flower

A circular stamp with the text "RYK MILLS LIMITED" around the perimeter and a star in the center.

RYK MILLS LIMITED

75/4-D, Sarfraz Rafiqi Road,
Lahore Cantt.

Prospectus

BRIEF INTRODUCTION OF THE APPLICANT

RYKML is a public (unlisted) limited company located at Janpur in district Rahim Yar Khan which owns and operates 12,000 TCD sugar mill with 18MW power house. The Company is engaged in the manufacturing and sale of sugar (including by-products such as molasses), and generation and sale of electricity. The Company is amongst the leading sugar mills in Pakistan in terms of sugar production and sucrose recovery and is an existing license holder and has an installed capacity of 18 MW which it uses to meet its internal requirements and also sells surplus to MEPCO under a 10 year 8.5MW PPA.

The Company is in the process of setting up a 67 Bar 30MW bagasse fired cogeneration power plant under the Framework for Power Cogeneration 2013 for Bagasse / Biomass to include bagasse/biomass under the ambit of the Renewable Energy Policy, 2006.

SALIENT FEATURES OF THE FACILITY FOR WHICH LICENSE IS SOUGHT

The Facility shall employ 2 X 15 MW Steam Turbo Generators (STGs) for power generation which shall be dispatched to the National Grid through a 132 KV Switchyard. Electricity from the Facility shall be connected to the National Grid by looping in-out of the single circuit of the Feroza to Ahmedpur East 132KV line.

Bagasse which is a by-product of the sugar making process shall be fired in a high (67 Bar[a]) pressure boiler to produce steam which shall be injected to 2 X 15 MW STGs to produce electricity. Surplus electricity of 19MW shall be dispatched to the National Grid.

1	Plant location	On Main K-L-P Road (National Highway) at Janpur, Tehsil Liaquatpur, District Rahim Yar Khan, Province of Punjab
2	Technology	Conventional steam power cycle
3	Installed capacity	30,000 KW
4	Plant detail i. Steam Turbo generators ii. Boiler	2 X15 MW Steam Turbo Generators (STGs) 1X140 TPH 67 Bar(a) Dumping grate bagasse fired boiler

The company shall opt for the upfront tariff for New Bagasse Based Co-Generation projects determined by NEPRA in May 2013 under the Framework for Power Cogeneration 2013 for Bagasse / Biomass to include bagasse/biomass under the ambit of the Renewable Energy Policy, 2006.

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PROPOSED INVESTMENT

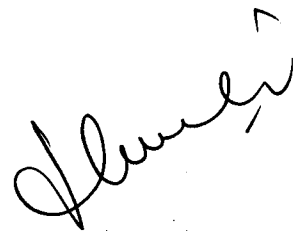
The proposed investment is expected to be approximately PKR 2,850 Million and shall be made through a mixture of Debt (80%) and Equity (20%). Funding for the project has been arranged and the Security documents are currently under signing and the Financial Close is expected in May 2014.

SOCIAL AND ENVIRONMENTAL IMPACT OF THE PROPOSED FACILITY

Bagasse is a by-product produced during the sugar manufacturing process and is an environmental friendly biomass fuel and helps reduce emission of Green House Gasses. Governments across the Globe including Pakistan and neighboring India have incentivized biomass based generation to reduce the effects of Global Warming and to promote the use of indigenous energy sources for electricity generation.

Bagasse based generation by sugar mills like RYKML provide the following benefits:

- Import substitution by replacing costly furnace oil, saving precious foreign exchange. It is estimated that approximately 3,000 MW can be generated by sugar mills located in various parts of the country.
- Contributing towards reducing the electricity shortfall during the low generation months as sugar mills operate in the winter months i.e. non-gas and non-hydel months
- Lower tariff. Since bagasse based generation offers direct replacement for furnace oil/diesel based generation it offers a clear price advantage. Bagasse based tariff is 10.41 US Cent/KWh as against tariff in excess of 18 US Cents/KWh for furnace oil based generation.
- Environment friendly nature of the fuel, helps in reducing Green House Gases and Carbon Footprints
- The Project will use a high pressure boiler of 140TPH and 2 X 15 MW steam turbines to generate electricity for sale to the national grid. The higher steam parameters shall result in 300% more energy dispatch from the same fuel stock.
- Bagasse based cogeneration units offered by sugar mills can be set up in 16 months against the normal period of approximately 5 years for an IPP. The fast track implementation is highly beneficial at a time when the country faces severe energy shortage.
- Reducing distribution costs. Sugar Mills are located in rural areas (away from traditional load centers) and are vastly spread and, therefore, are ideal vehicles for cheap distribution of power to rural areas and non-traditional load centers



RYK MILLS LIMITED

*75/4-D, Sarfraz Rafiqui Road,
Lahore Cantt.*

Infrastructure

The Facility is located on the Main K-L-P Road and is therefore easily accessible. The nearest town is Khan Bela City which has a population in excess of half a million people and is approximately 10 km from the Facility.


The Nearest Grid Station is Khan Bela Grid Station which is located at an approximate distance of 10 km from the Facility.

The Company has residential arrangements for housing more than 50 employees. These arrangements are currently being enhanced.

The Facility is approximately 100 km from Rahim Yar Khan City and Bahawalpur City.

The nearest railway station is Liaquat pur station which is at the distance of around 20-25 km from the Facility.

Rahim Yar Khan International Airport and Bahawalpur Airports are approximately 100-120 km from the Facility.

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RYK MILLS LIMITED

75/4-D, Sarfraz Rafiqui Raad

Lahore Cantt

PROJECT SCHEDULE

	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Oct-14	Nov-14	Dec-14
DUE DILLIGENCE																	
ISSUANCE OF ORDERS																	
APPLICATION FOR LOI TO AEDB																	
ISSUANCE OF LOI																	
COMMENCEMENT OF CONSTRUCTION & ERECTION																	
APPROVAL OF INTER CONNECTIVITY																	
APPLICATION FOR GENERATION LICENSE																	
FILING OF ACCEPTANCE OF UP FRONT TARIFF																	
SIGNING OF EPA & IA																	
LETTER OF SUPPORT FROM AEDB																	
FINANCIAL CLOSE																	
COMMERCIAL OPERATIONS DATE ("COD")																	

7
Fluor



ENVIRONMENT PROTECTION DEPARTMENT

Government of the Punjab

National Hockey Stadium, Ferozepur Road, Lahore



NO. DD (EIA)/EPA/F-518(IEE)/2607/2012/1435
Dated: 13/12/2013

To

Mr. Munir Hussain,
Director,
M/s R.Y.Khan Mill,
House NO. 75/4-D, Sarfaraz Rafique Road,
Cantt, Lahore.

Subject: **ENVIRONMENTAL APPROVAL**
(Under Section 12 of PEPA, 1997 (Amended 2012) read with IEE/EIA Regulations, 2000)

1. Description of Project: 27-MW Bagasse Fired Cogeneration Power Plant.
2. Location of Project: The project site is located at Rukanabad (Janpur), Tehsil Liaquatpur District Rahimyarkhan.

3. Date of Receiving 18.08.2012

4. After review of the IEE Report, Site Inspection Report by DOE and other relevant record, the Environmental Protection Agency, Punjab accords approval for the construction phase of the Project subject to the following conditions:

- (i) The proponent shall ensure compliance of National Environmental Quality Standards (NEQS).
- (ii) Mitigation measures suggested in the IEE Report and Environmental Management & Monitoring Plan (EMMP) shall be strictly adhered to minimize any negative impacts on soil, ground water, air and biological resources of the project area.
- (iii) Monitoring shall be carried out during the entire period of the project activities and monitoring reports shall be submitted to EPA, Punjab on monthly basis to this office.
- (iv) The proponent shall be responsible for adopting appropriate mitigation measures for controlling anticipated environmental hazards.
- (v) The proponent shall install wet scrubber / electrostatic precipitator for the control of air and water pollution.
- (vi) The proponent shall dispose of wastewater after proper treatment.
- (vii) Majority of unskilled and to the extent possible skilled jobs shall be given to the locals after providing them proper training.
- (viii) The proponent shall ensure that strict and efficient health and safety measures are in place for protection of workers backed by a comprehensive emergency response system.
- (ix) The proponent shall plant least 10000 trees of minimum height 6-7 feet on available space within six months. The proponent shall do proper landscaping.
- (x) Proponent shall submit a Community Development Plan for the benefit of communities of the project area to Punjab, EPA.
- (xi) The proponent shall redress the objections/complaints of the locals/stakeholders on priority basis.
- (xii) Sanitary conditions in and around your project will be to the entire satisfaction of this Agency during operational phase of the project. The proponent shall not place the construction material openly.
- (xiii) The proponent shall care about noise issues during construction and operation stage of the project.

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Munir
ATTESTED
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LAHORE

- (xiv) The instructions for the workers, safety signs, and precautionary/preventive measures for the customers/visitors shall be displayed at suitable/prominent places.
- (xv) The proponent shall obtain NOC / clearance from all other concerned departments before commencement of work.
- (xvi) The proponent shall appoint Environmental Manager for the project Manager (having qualification of B.S Environmental Sciences) and shall convey his name along with his complete Mailing Address and Phone Numbers.

5. The proponent shall be liable for correctness and validity of information supplied to this department by the consultant.

6. The proponent shall be liable for compliance of Regulations 13, 14, 17 and 18 of IEE/EIA Regulations, 2000, regarding approval, confirmation of compliance, entry, inspections and monitoring.

7. This approval is accorded only for the construction phase of the project. The proponent will obtain approval for operational phase of the project in accordance with Regulation 13(2) (b) and Regulation 18 of the IEE/EIA Regulations, 2000.

8. Any change in the approved project shall be communicated to EPA, Punjab and shall be commenced after obtaining the approval.

9. This approval shall be valid (for commencement of construction) for a period of three years from the date of issue under Regulation 16 of IEE / EIA Regulations, 2000.

10. This approval can be withdrawn at anytime without any prior notice if deem necessary in the public / national interest.



(UMERA SHAMSHAD KHAN)
ASSISTANT DIRECTOR (EIA)
for Director General, EPA, Punjab
Ph: # 042-99232228

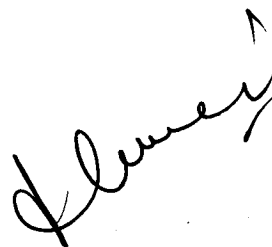
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A copy is forwarded for information to:

1. The Director (North), EPA, Punjab, Lahore.
2. The District Officer (Environment), Rahimyarkhan w.r.t his letter No. 3868/EIA/DOE/RYPK dated 28.09.2012. He is requested to ensure compliance of the above mentioned conditions / measures under intimation to this office.



(UMERA SHAMSHAD KHAN)
ASSISTANT DIRECTOR (EIA)
for Director General, EPA, Punjab



RYK MILLS LIMITED

75/4-D, Sarfraz Rafiqui Road,
Lahore Cantt.

Safety Plan

To provide a safe working environment, the company shall follow a well devised safety plan.

Key features of safety plan are given below:

○ Awareness

Staff working at the facility shall be given information to help them to identify the risks and take necessary measures of safety and protection during their working. To create awareness, personnel at the facility shall be briefed through handouts, in-house seminars, mock safety drills. Particular areas of interest shall be:

- Moral Obligation
- Hazard Recognition
- Importance of Personnel Protective Equipment (PPEs)
- Accident Prevention
- Importance of House Keeping
- Machine Guarding
- Fire Prevention
- Fire Protection
- Fire Fighting

○ Use of Safety Gear and Equipment

Use of PPEs like safety helmet, safety shoes, uniform, dust mask, ear plugs, ear muff, leather apron, leather sleeves, face shield, gloves for their safety shall be issued to all personnel.

○ Assurance of use of Safety gear

The staff working at the facility will be provided all necessary safety gears and protection equipment and its use shall be mandatory during work.

○ Emergency Alarms

Automatic Emergency Alarms shall be installed along with fire suppression system at all fire hazardous locations of the plant site especially at transformers & turbine lube oil systems etc.




○ **Emergency Numbers**

Emergency call numbers shall prominently be displayed in bold at prominent places in the facility.

○ **Emergency Shutdown**

The Emergency response Team shall be responsible to ensure immediate shutdown of the operational systems and equipments if required in the Emergency.

○ **First Aid Facilities**

The availability of first aid facilities and necessary staff to provide urgent and immediate first aid facilities will be ensured at the facility.

○ **Ambulances**

Availability of Ambulance at the facility shall be ensured for causality evacuation to the hospitals.

○ **Mock Fire Drills**

To keep fire brigade staff in good practice, mock fire drill will be executed by creating mock emergency situations.


○ **Fire Fighting System**

The fire protection system will be provided for early detection, alarm, containment and suppression of fire. A comprehensive fire protection system has been planned to meet the above objective. A multitude system shall be provided to combat various types of fire in different areas of the plant and all such systems for various areas shall form a part of a centralized protection system for the entire plant.

- The complete fire protection system shall comprise of following;
- Stand pipe & hose system for building and structure (internal)
- Yard main, hydrants and monitors of plant site (external)
- Fire alarm and signaling
- Portable fire extinguishers
- Water spray fixed systems

The system shall be designed generally as per NFPA (National Fire Protection Association) standards.

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RYK MILLS LIMITED

75/4-D, Sarfraz Rafique Road,
Lahore Cantt.

EMERGENCY PLAN

A comprehensive emergency plan would be implemented to meet unexpected situation to ensure zero injury, damage or loss of any life/property.

Key features of the emergency plan are as follows;

- **Emergency Escapes/Evacuation Plan**

A comprehensive evacuation plan will be prepared and emergency escape procedure and route maps will be displayed at prominent places in the facility. All personnel at the facility shall be made aware of Emergency escape routes and procedures for a quick and safe escape.

- **Awareness of Different Types of Emergencies**

All personnel at the facility shall be educated on how to react to each type of emergency. All staff working at the facility will be given detailed briefing regarding different types of emergencies and their response so that they would be able to identify emergency situations.

- **Training to React to an Emergency Alert Alarm**

All personnel at the facility shall be trained to react to each emergency to take necessary measures of safety and protection at the earliest.

- **Emergency Equipment**

In addition to emergency combatants training, emergency equipment like fire extinguishers and fire hydrants will be provided at the facility to tackle with different types of Emergency.

- **Use of Safety Gears and Equipment**


The staff working at the facility will be given with proper information, guidance and training about the use the safety gears and equipments.

- **Emergency Alarm**

Easy access to emergency alarms shall be provided to raise the alarm in case of any type of Emergency.

- **Emergency Numbers**

Emergency call numbers shall prominently be displayed at prominent places in the facility.

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- **Emergency Response Team**

A well equipped and specialized team will be formed which will be responsible to take all necessary measures and decisions to deal with the emergency and provide relief, support and first aid to the effected staff. The emergency response team will also be responsible for the evacuation of personnel and material from the premises.

- **Emergency Shutdown**

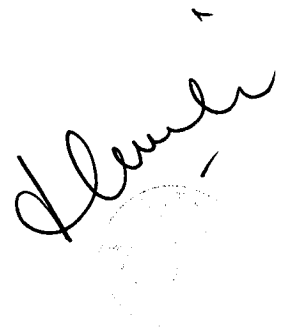
The Emergency response Team shall be responsible to ensure immediate shutdown of the operational systems and equipments if required in the Emergency.

- **Assembly Areas and Muster Points.**

Designated assembly areas / Muster points shall be identified and all personnel working at the facility will be educated to muster at the designated assembly area / muster points in the event of an evacuation for head count.

- **Ambulances**

Availability of Ambulance at the facility shall be ensured for causality evacuation to the hospitals.

A handwritten signature in cursive script, possibly reading 'H. M. ...', is written over a faint, circular official stamp or seal.

RYK MILLS LIMITED

75/4-D, Sarfraz Rafiqui Road,
Lahore Cantt.

Training and Development

Training and Development programmes for our Engineers and Supervisory staff arranged. Engineers and Supervisory staff who will successfully complete the Training program can:

1. Understand the principles, components and measuring instruments associated with AC and DC electricity.
2. Understand the operation and control of the common motors and generators found in utilities.
3. Differentiate between distribution and power transformers by construction and application.
4. Discuss the application of protective relays to protect motors, generators, buses and transformers.
5. Understand the purpose and operation of the various equipment used in electric power generating stations.
6. Describe the functions of the equipment used in power distribution stations.
7. Explain the principles of operation of the various types of steam generators.
8. Describe the methods used to regulate the voltage of distribution systems.
9. Explain the principles of operation of the various types of steam generators.
10. Describe the methods used to regulate the voltage of distribution systems.
11. Understand H.P Valve Operation
12. Understand H.P line and routing
13. Understand DCS process operation
14. Understand High Tension turbines Operation
15. Understand H.P Boiler starts up and Shut Down
16. Understand Turbine start up and operations
17. Understand High Voltage Equipments
18. Understand Safety for smooth operations

We shall also arrange technical workshops/seminars to address all Core Operations. These training can be in-house from a qualified Instructors and experienced professionals or can be outsource to a well developed and professionally competent firms.

Benefits of this training and development programme

a) Reduce Human Errors

Well trained personnel make fewer mistakes. Possible malfunctions and defective components can be recognized earlier and preventive maintenance measures can be put into place.



b) Increase Availability

Power station staff that is able to perform quickly and accurately can help to prevent or minimize forced outage times and thus increase the plant availability.

c) Health and Safety

The awareness of possible dangers in the plant and the safe operation of any equipment is essential. Training ensures a full understanding of the plant and its systems functionality and proper handling in order to prevent any hazards and threats.

d) Motivated Personnel

Staff that has been trained well has a better understanding of the requirements to be met every day. Higher skill levels and know-how lead to better performances on the job and communication within the team. This creates a very professional environment and thus a highly motivated and satisfied work force.

e) Long Term Payback

A well defined training concept with continuous skill development programs and clear learning targets will guarantee satisfying performances of your personnel. This long term approach will ensure the successful productivity of your power station.

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National Transmission & Despatch Company

Chief Operating Officer / General Manager
Central Power Purchasing Agency (CPPA)

No. CPPA/MT-III/RYS-Cogen/1120-23

Dated 21-02-2014

→ Mr. Muhammad Mudassir Iqbal
Head - Energy Business
M/s RYK Mills Limited,
75/4-D, Sarfraz Rafique Road,
LAHORE CANTT.

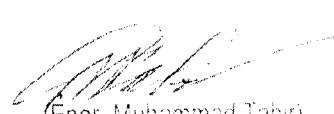
Subject: Vetting of Final Report of Electrical Grid Studies for 30MW RYK Mills Ltd. Bagasse
Fired Co-generation Power Plant near Khan Bela, District Rahim Yar Khan, Punjab
for Supply of 19MW Spillover to the National Grid.

Ref: General Manager Planning (Power) NTDC's Letter No. GMPP/CEMP/TRP-333/RYS-
Cogen/733-37 dated 18.02.2014

General Manager Planning (Power) NTDC vide above referred letter has vetted the subject Final Report of
Electrical Grid Studies of RYK Mills Ltd. provided by M/s RYK Mills Ltd. vide letter No. RYK/PROJ/CPPA/06
dated 10.02.2014.

A copy of General Manager (Planning) Power NTDC's above referred letter is sent herewith for your
information and further necessary action please.

As above


(Engr. Muhammad Tahir)
Addl: Chief Engineer/MT-III (CPPA)

Copy to

1. Chief Executive Officer, MEPCO, WAPDA Office Complex, Khanewal Road, Multan, alongwith a copy of
G.M Planning (Power) NTDC's letter referred above with the request to provide MEPCO's comments on
the Final Report of Electrical Grid Studies, copy of which has already been sent to MEPCO vide this office
letter No. CPPA/MT-III/RYS-Cogen/114-16 dated 12.02.2014 (copy enclosed).

2. M/s PPI, 68/H-2, WAPDA Town, Lahore alongwith a copy of G.M Planning (Power) NTDC's letter referred
above

3. P.A to COO/GM (CPPA), 229-WAPDA House, Lahore.

Master File.

229-WAPDA House, Lahore., Tel: 042-99203515 Fax: 042-99201179 : www.ntd.com.pk, ce2cppa@gmail.com



NATIONAL TRANSMISSION & DESPATCH CO. LTD.

General Manager Planning Power, NTDC

No. GMPP/CEMP/TRP-333/RVK-Cogen/733-37

Dated: 18-02-2014

General Manager (CPPA)
107-WAPDA House
Lahore.
Fax #: 042-99201179

File No. 506
Date 20-02-14
G.S. CE-II (CPPA)

Sub: Vetting of Final Report of Electrical Grid Studies for 30MW RYK Mills Ltd. Bagasse Fired Co-generation Power Plant near Khan Bela, District Rahim Yar Khan, Punjab for supply of 19MW Spillover to the National Grid

Ref: M/s RYK Mills Limited letter No. RYK/PROJ/CPPA/06 dated 10-02-2014.

This office has reviewed the final report of the Electrical Grid Studies and the electronic PSS/E study files of the subject power plant submitted by the consultant (M/s PPI). It has been found that the consultant has incorporated all the comments discussed in meeting with reference to our letter No. GMPP/CEMP/TRP-333/RVK-Cogen/150-54 dated 10-01-2014 and the results of the load flow, short circuit and transient stability analysis along with the contents of the subject report have been found appropriate. Therefore, the subject final report of Electrical Grid Studies of RYK Mills Ltd. Power Plant has been vetted at our end.

It is, however, intimated that the subject report has been vetted only for the interconnectivity aspect of the subject power plant. It should not be considered as a go-ahead signal, any commitment regarding project execution or for any other purpose. Moreover, the comments of MEPCO on the subject report should also be obtained.

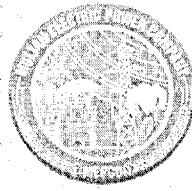
[Signature]
18-2-2014
(R.S. Rehman)

General Manager Planning Power, NTDC

cc:

- Chief Executive Officer AEDB, 2nd Floor, GPF Building, G-5/2 Islamabad. (Fax: 051-8358786)
- Chief Executive Officer (MEPCO), WAPDA Offices Complex, Khanawal Road, Multan. (Fax: 061-9210350)
- M/s RYK Mills Limited, 75/4-D, Sarfraz Rafique Road, Lahore Cantt. (Fax: 042-36601385)
- M/s PPI, 66-H/2, WAPDA Town, Lahore. (Fax: 042-35183166)

- Master File (MF)



MULTAN ELECTRIC POWER COMPANY

OFFICE OF THE CHIEF EXECUTIVE OFFICER MEPCO MULTAN

Ph: # 061-9239798 PABX 061-9210380 Ext: 2075/ Fax # 061-9220202

124
No. /CE/MEPCO/D (MKT)/PP-47/A 209/7-20 Feb, 28 2014


Chief Operating Officer / General Manager
Central Power Purchase Agency (CPPA),
229-WAPDA House Lahore

Subject: INTERCONNECTION STUDY REPORT OF 30MW RYK MILLS
LIMITED POWER PLANT FOR SUPPLY OF 19MW SPILLOVER
POWER TO NATIONAL GRID

Ref: Your letter No.CPPA/M.T-III/RYK Cogen/10048-50 dated 16.12.2013

The interconnection study report of the subject project has been reviewed by MEPCO Planning & Engineering (P&E) Department. The said interconnection study seems correct in load flow and short circuit analysis. However, the scrutiny of stability analysis could not be carried out due to software restrictions. Therefore, it is recommended that the same may be got done from General Manager NDTCL, Planning (Power) Lahore who will give final approval of the interconnection study report.

D.V.As above


Chief Engineer (ES)
MEPCO Multan

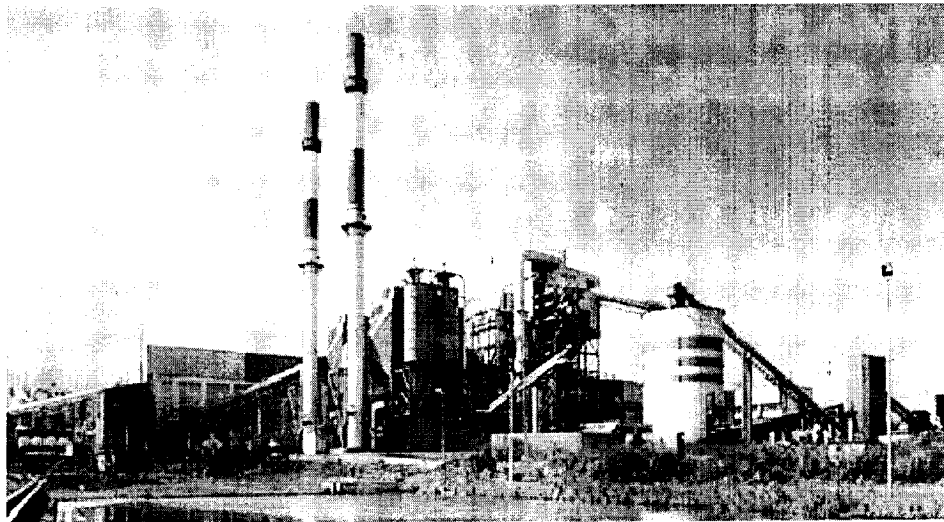
CC to:-

1. General Manager Planning (Power) NTDCL PIA Tower Egerton Road Lahore
2. Chief Engineer (P&E) MEPCO with ref to his letter No.19819 dated 27.02.2014
3. Mr. Mudassir Iqbal Head Energy Business M/s RYK Mills Ltd. 75/4-D, Sarfraz Raffiqui Road Lahore Cantt



INTERCONNECTION STUDY

For
**30 MW RYK MILLS LTD. POWER PLANT
FOR SUPPLY OF 19 MW SPILLOVER TO THE
NATIONAL GRID**



*Final Report
(February 2014)*

POWER PLANNERS INTERNATIONAL

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Phone: +92-42-35182835;
Fax: + 92-42-35183166

Email: info@powerplannersint.com
www.powerplannersint.com

Executive Summary

- ❖ The Final Report of 30 MW RYK Mills Ltd. Power Plant for the Supply of 19 MW spillover to the national grid is submitted herewith after incorporating the comments of NTDC vide their letter No GMPP/CEMP/TRP-333/RYK-Cogen/150-54 dated 10-01-2014 and the comments of MEPCO received vide their Memo No. 9643-44/C.E (P&E) dated 29th January 2014.
- ❖ RYK Mills Ltd. is in the process of establishing a new 2 x 15 MW bagasse based cogen plant employing high pressure boiler in its sugar mill with the aim of exporting 19 MW power to the grid during the crushing season and little thereafter. It is for this purpose that the grid interconnection study has been carried out.
- ❖ The study objective, approach and methodology have been described and the plant's data received from the Client is validated.
- ❖ The system data of NTDC has been used as per permission granted by NTDC vide their letter No. GMPP/CEMP/TRP-333/Co-gen/RYK/6925-28 dated 03/10/2013.
- ❖ The nearest interconnection facilities is the 132 kV substation of Khanbela, and the 132 kV single circuit line from Feroza to Ahmedpur-East lies at about 20 km from the site of RYK Mills Ltd.
- ❖ Due to the location of RYK Mills, the most feasible interconnection scheme would be by looping in-out the existing 132 kV circuit between Feroza to Ahmedpur-East at RYK-Mills PP as shown in Sketch-1 in Appendix-A. The distance of the plant from the looping point is about 20 km. The conductor used will be 132 kV Lynx conductor.
- ❖ The proposed scheme will require two breaker bays of 132 kV at RYK-Mills PP to connect with the 132 kV circuits each from Feroza and Ahmedpur East respectively.
- ❖ In view of planned COD of the RYK-Mills Power Plant in November 2014, the above proposed interconnection scheme has been tested for steady state conditions through detailed load flow studies for the peak conditions of January 2015 for



maximum thermal power dispatches in the grid during winter which is the crushing season.

- ❖ Steady state analysis by load flow reveals that proposed scheme is adequate to export 19 MW spillover of the plant under normal and contingency conditions with RYK 500/220/132 kV Substation commissioned as scheduled in 2013-2014 (i.e. up to June 2014) with some shedding during contingency conditions on some substations around RYK-Mills PP. However the shedding required is significantly lower in the cases with RYK-Mills interconnected as it would play an important role by meeting the load demand of the area locally as well as providing reactive power support to the area thus reducing the amount of load shed otherwise compared to the scenario if RYK Mills PP was not present. If the commissioning of RYK 500/220/132 kV Substation is delayed then in the absence of RYK Mills PP considerable load shedding would be required on some of the substations such as Khanbela, Feroza, Khanpur, Liaqatpur, RYKhan-2, M.W.Qureshia etc. around RYK Mills Ltd. However, with RYK Mills PP present it may be seen that it would play an important role by meeting the load demand of the area locally as well as providing reactive power support to the area thus reducing the amount of load shed otherwise compared to the scenario if RYK Mills PP was not present. The entire 19 MW output of the plant can be evacuated under normal and contingency conditions even without the commissioning of RYK 500/220/132 kV Substation.
- ❖ Also January 2020 case has been studied to see the performance of the proposed interconnection scheme in an extended term scenario. The system conditions of normal and N-1 contingency have been studied for all scenarios to meet the reliability criteria with the proposed additional 132 kV S/C from Bahwalpur-New to Ahmedpur-East. However it is important to note that this re-conductoring is not due to RYK-Mills PP, which in fact helps relieve the stress.
- ❖ The short circuit analysis has been carried out to calculate maximum fault levels at RYK-Mills PP and the substations of 132kV in its vicinity. We find that the fault currents for the proposed scheme are much less than the rated short circuit capacities of switchgear installed at these substations. There are no violations of



exceeding the rating of the equipment due to contribution of fault current from RYK-Mills PP.

- ❖ The maximum short circuit levels of RYK-Mills PP 132 kV have been evaluated for the peak case of 2015 and 2020 to evaluate the maximum fault currents on RYK-Mills PP and the 132 kV Substations in its vicinity in the future scenario. The maximum short circuit level of the RYK-PP 132 kV is 5.28 kA and 4.36 kA for 3-phase and 1-phase faults respectively in the year 2020. Therefore industry standard switchgear of the short circuit rating of 40 kA would be fine to be installed at 132 kV switchyard of RYK-PP as per NTDC requirement taking care of any future generation additions and system reinforcements in its electrical vicinity. For 11 kV the maximum short circuit levels of RYK-Mills PP are 27.91 kA and 30.04 kA for 3-phase and 1-phase faults respectively. Therefore the industry standard switchgear of the short circuit rating of 40 kA would be fine to be installed at 11 kV switchyard of RYK-PP taking care of any future generation additions and system reinforcements in its electrical vicinity.
- ❖ The dynamic stability analysis of proposed scheme of interconnection has been carried out. The stability check for the worst case of three phase fault right on the 132 kV bus bar of RYK Mills PP substation followed by the final trip of 132 kV circuits emanating from this substation, has been performed for fault clearing of 5 cycles (100 ms) as understood to be the normal fault clearing time of 132 kV protection system. Also the extreme worst case of stuck breaker (breaker failure) has been studied where the fault clearing time is assumed 9 cycles i.e. 180 ms. In all events, the system is found strong enough to stay stable and recovered with fast damping. The stability of system for far end faults of 3-phase occurring at Feroza and Ahmedpur East 132 kV bus bars has also been checked. The proposed scheme successfully passed the dynamic stability checks for near and far faults even for the most stringent cases.
- ❖ The proposed scheme of interconnection has been evaluated for the scenarios of 2015 with and without RYK 500/220/132 kV Substation and for the year 2020 to evaluate the future scenario. The proposed interconnection scheme causes no



technical constraints or problems and is therefore recommended to be adopted. In fact the studies establish that RYK-Mills PP will help relieve the identified existing and future constraints in its vicinity.



Report Contents

1. Introduction

- 1.1. Background
- 1.2. Objectives
- 1.3. Planning Criteria

2. Assumptions of Data

- 2.1 RYK - PP Data
- 2.2 Network Data

3. Study Approach & Methodology

- 3.1 Understanding of the Problem
- 3.2 Approach to the Problem

4. Development of Scheme of Interconnection

- 4.1 The Existing and ongoing Network
- 4.2 The Scheme of Interconnection of RYK Mill PP

5. Detailed Load Flow Studies

- 5.1. Peak Load Case 2015: With R. Y. Khan 500/220/132 kV substation
 - 5.1.1 Without RYK Mills Power Plant
 - 5.1.2 With RYK Mills Power Plant
 - 5.1.3 Off-Peak With RYK Mills Power Plant
- 5.2. Peak Load Case 2015: Without R. Y. Khan 500/220/132 kV substation
 - 5.2.1 Without RYK Mills Power Plant
 - 5.2.2 With RYK Mills Power Plant
- 5.3 Peak Load Case 2020 : Extended Term Scenario
- 5.4 Conclusion of Load Flow Analysis

6. Short Circuit Analysis

- 6.1 Methodology and Assumptions
- 6.2 Fault current calculations without RYK-PP – Year 2015
- 6.3 Fault current calculations with RYK-PP interconnected
- 6.4 Conclusion of Short Circuit Analysis



7. Dynamic Stability Analysis

7.1 Assumptions & Methodology

7.1.1 Dynamic Models

7.1.2 System Conditions

7.1.3 Presentation of Results

7.1.4 Worst Fault Cases

7.2 Dynamic Stability Simulations' Results with RYK-PP

7.2.1 Fault at 132 kV near RYK-PP

7.2.2 Fault at 132 kV near RYK-PP (Stuck Breaker)

7.2.3 Fault at Feroza 132 kV (Far-End Fault)

7.2.4 Fault at Ahmedpur East 132 kV (Far-End Fault)

7.3 Conclusion of Dynamic Stability Analysis

8. Conclusions

Appendices

Appendix –A: Sketches for Chapter-4

Appendix –B: Plotted Results of Load Flow for Chapter – 5

Appendix –C: Results of Short Circuit Analysis for Chapter – 6

Appendix –D: Plotted Results of Stability Analysis for Chapter – 7



1. Introduction

1.1 Background

Currently Rahimyar Khan Mills (RYK Mills) Ltd. has an installed capacity of 18 MW (3x6 MW) which is used to meet the load demand of RYK Sugar Mills. RYK Mills is in the process of establishing a new 30 MW power plant comprising 2x15 MW units based on bagasse employing high pressure (67 Bars) boiler for sale of 19 MW spill over to NTDC/CPPA at 132 KV during the crushing season and a little thereafter under the Frame work for Power Cogeneration, 2013 (Bagasse) approved by the ECC of the Cabinet in March 2013 and the Upfront tariff for new Bagasse based cogeneration power projects determined by NEPRA in May 2013. The site of proposed project is located nearly 6-7 km from the existing Khanbela 132 kV Substation in the concession area of Multan Electric Power Company (MEPCO).

The location of RYK-Sugar Mills is shown in the sketch attached in Appendix-A. The maximum spillover to the National Grid from the site will be about 19 MW of electrical power. The project is expected to start commercial operation by November 2014. The electricity generated from this project would be supplied to the grid system of MEPCO through 132 kV grid available in the vicinity of this project.

1.2 Objectives

The overall objective of the Study is to evolve an interconnection scheme between RYK Mills Power Project and MEPCO network, for stable and reliable evacuation of 19 MW of electrical power generated from this plant, fulfilling N-1 reliability criteria. The specific objectives of this report are:

- To develop scheme of interconnections at 132 kV for which right of way (ROW) and space at the terminal substations would be available.



- To determine the performance of interconnection scheme during steady state conditions of system, normal and N-1 contingency, through load-flow analysis.
- To check if the contribution of fault current from this new plant increases the fault levels at the adjoining substations at 132 kV voltage levels to be within the rating of equipment of these substations, and also determine the short circuit ratings of the proposed equipment of the substation at RYK Mills PP.
- To check if the interconnection withstands dynamic stability criteria of post fault recovery with good damping.

1.3 Planning Criteria

The planning criteria required to be fulfilled by the proposed interconnection is as follows:

Steady State:

Voltage	± 5 %, Normal Operating Condition ± 10 %, Contingency Conditions
Frequency	50 Hz Nominal 49.8 Hz to 50.2 Hz variation in steady state 49.4 - 50.5Hz, Min/Max Contingency Freq. Band
Power Factor	0.8 Lagging; 0.9 Leading

Short Circuit:

132 kV Substation Equipment Rating 31.5 kA or 40k

Dynamic/Transient:

The system should revert back to normal condition after dying out of transients without losing synchronism with good damping

- a) Permanent three-phase fault on any primary transmission element; including: transmission circuit, substation bus section, transformer, or circuit breaker. It is assumed that such a fault shall be cleared by the associated circuit breaker action in 5 cycles.



- b) Failure of a circuit breaker to clear a fault ("Stuck Breaker" condition) in 5 cycles, with back up clearing in 9 cycles after fault initiation.

2. Assumptions of Data

The number of new generating units at RYK-Mills PP will be two. As per the data provided by the client the following assumptions have been made:

2.1 RYK-Mills-PP data

Generator data:

Installed capacity of power plant	= 2 x 15 = 30 MW
Lump sum maximum generating capacity	= 30 MW
Power factor	= 0.80 lagging, 0.9 leading
Lump sum MVA capacity	= 2 x 18.75 MVA = 37.5 MVA
Inertia Constant	= 1.5552 MW-sec/MVA
Generating Voltage	= 11 kV
Transformer Rating	= 31.5/40 MVA

2.2 Network data

The 132 kV network in the area near RYK Mills Power Project are as shown in Sketches in Appendix-A. The system data of NTDC has been used as per permission granted by NTDC vide their letter No. GMPP/CEMP/TRP-333/Co-gen/RYK/6925-28 dated 03/10/2013. The latest Generation Expansion Plan and Load Forecast has been used as provided by NTDC and is shown in Appendix-A. The network of MEPCO in the vicinity of RYK Mills was verified during a visit of the site by PPI engineers. Further verification of the network was done during meetings between MEPCO GSO and Planning engineers and PPI engineers during the same visit.



3. Study Approach and Methodology

3.1 Understanding of the Problem

Currently, RYK Mills Ltd. has an installed generation capacity of 18 MW (3X6 MW). It is in the process of establishing a new power plant with 30 MW (2 x 15 MW) generating capacity based on high pressure boiler with the aim of exporting 19 MW power to the grid during the crushing season and little thereafter. RYK Mills Ltd. Power Plant is a Cogeneration plant located on the main National High Way at Janpur in Tehsil Liaquatpur of District Rahim Yar Khan and embedded in the distribution network of MEPCO.

The existing Khan Bela 132/11 kV Substation is located at a distance of about 6-7 km from RYK Mills and is connected to Feroza by a 132 kV Single Circuit. Given the location of RYK-Mills PP and the fact that Feroza to Khanpur 132 kV is a single circuit and N-1 contingency criteria would not be met on this circuit, the most feasible interconnection of RYK-Mills PP would be by looping in-out of the Feroza to Ahmedpur East 132 kV circuit at RYK-Mills PP as shown in Sketch-2 in Appendix-A. The distance of the plant from the looping point would be about 20 km. The conductor used will be 132 kV Lynx.

The proposed power plant embedded in local network in this area shall provide relief to the source substations such as Guddu which are feeding the local network distantly. Khanpur, Feroza and Ahmedpur East and the 132 kV circuits emanating from them that feed good load centers with significant load demand. Almost the entire portion of the 19 MW export of RYK-Mills PP would be used to feed the load demand at Ahmedpur East.

The adequacy of MEPCO network of 132 kV in and around the proposed site of RYK-Mill PP would be investigated in this study for absorbing and transmitting this power fulfilling the reliability criteria.



3.2 Approach to the problem

The consultant has applied the following approaches to the problem:

- A base case network model has been prepared for the year 2015, in which the peak load scenario will occur after the commissioning of RYK-Mills PP in November 2014, comprising all 500kV, 220kV and 132 kV system, envisaging the load forecast, the generation additions and transmission expansions for that year particularly in MEPCO.
- Month of January 2015 has been selected for the study because it represents the maximum thermal dispatch conditions during the crushing season after the COD of RYK-Mill Power Plant. Thus the loading on the lines in the vicinity of this plant will be maximum allowing us to judge the maximum impact of the plant on the transmission system in its vicinity.
- Load flow and short circuit studies have also been performed for January 2020 to see the performance of the proposed Plant in extended term scenario after five years of its commissioning as per NTDC's requirement.
- Interconnection scheme without any physical constraints, like right of way or availability of space in the terminal substations, have been identified.
- Perform technical system studies for peak load conditions to confirm technical feasibility of the interconnections. The scheme will be subjected to standard analysis like load flow, short circuit, and transient stability study to check the strength of the machines and the proposed interconnection scheme under disturbed conditions.
- Determine the relevant equipment for the proposed technically feasible scheme.
- Recommend the technically most feasible scheme of interconnection.



4. Development of Scheme of Interconnection

4.1 The Existing and Ongoing Network

Currently, RYK Mills has an installed generation capacity of 18 MW (3 x 6 MW). RYK Mills Ltd. is in the process of establishing a new bagasse based 2 x 15 MW power plant employing high pressure boiler with the aim of exporting 19 MW power to the grid during the crushing season and little thereafter. RYK Mills Cogeneration plant located on K-L-P National High Way at Janpur in Tehsil Liaquatpur in District Rahim Yar Khan is embedded in the 132 KV network of MEPCO. The existing 132 kV network available around Khan Bela and Feroza 132 kV grid stations is shown in Sketch-1 in Appendix-A.

Khan Bela 132/11 kV Substation is connected to Feroza 132/11 kV Substation via a 132 kV Single Circuit. This, however, means that N-1 is not available on this circuit or for Khan Bela Substation. The 132 kV double circuit from Khanpur to Bahawalpur-New passes in the vicinity of RYK-Mills PP. The circuit on the side facing RYK-Mills PP loops in-out Feroza, Ahmedpur East and Mubarakpur Substation.

Due to the layout of the network in the vicinity of RYK Mills PP, the most feasible interconnection would be with Feroza 132 kV and Ahmedpur East 132 kV by looping in-out the 132 kV circuit between Feroza and Ahmedpur East at RYK-Mills PP. The distance of the plant from the looping point is about 20 km. The conductor used will be 132 kV Lynx conductor.

There is a strong 220 kV and 500 kV network in the vicinity connecting Guddu 220/132 kV grid station with Shikarpur 220 kV, Sibbi 220 kV and Guddu 500 kV substations. The planned R.Y. Khan 500/220/132 kV substation will also be present in the vicinity. A strong system helps in stable operation of a power plant.



4.2 The Scheme of Interconnection of RYK-Mill PP

Keeping in view of the above mentioned 132 kV network available in the vicinity of the site of the RYK-Mills PP, the interconnection scheme has been developed by looping in-out the 132 kV circuit between Feroza and Ahmedpur East at RYK-Mills PP. The distance of the plant from the looping point is about 20 km. The conductor used will be 132 kV Lynx conductor. This proposed interconnection scheme shown in Sketch-2 of Appendix-A.



5. Detailed Load Flow Studies

The base cases have been developed for the peak conditions of January 2015 using the network data of NTDC and MEPCO available with PPI. The peak loads of the year 2015 for MEPCO have been modeled as per the latest PMS Demand forecast as provided by NTDC. Detailed load flow studies have been carried out for January 2015 with two assumptions about R. Y. Khan 500/220/132 kV substation scheduled in 2013-14 (i.e. upto June 2014) which may or may not be realized by January 2015:

- With R. Y. Khan 500/220/132 kV substation
- Without R. Y. Khan 500/220/132 kV substation

5.1 Peak Load Case 2015: With R. Y. Khan 500/220/132 kV substation:

The possibility of R. Y. Khan 500/220/132 kV substation getting energized by January 2015 has been studied in detail for the conditions of without and with RYK-Mills PP respectively. The likelihood of R.Y. Khan 500/220/132 kV Substation getting energized is high given that in the Transmission Plan of NTDC the commissioning of RYK 500/220/132 kV is scheduled in 2013-14.

5.1.1 Without RYK Mills Power Plant

The results of load flows with R. Y. Khan 500/220/132 kV substation but without RYK-Mills-PP have been plotted under normal conditions in Exhibit 0.0 in Appendix-B. The power flows on the circuits are seen well within the rated capacities and the voltages on the bus bars are also within the permissible operating range of $\pm 5\%$ of the nominal. We find no capacity constraints on 132 kV circuits under normal conditions i.e. without any outages of circuits. However some load shedding has to be done in the area surrounding RYK-Mills under normal and contingency conditions. N-1 contingency analysis has been carried out and the plotted results are attached in Appendix – B as follows:

Exhibit-0.1 Feroza to Ahmedpur-East 132kV Single Circuit Out



Exhibit-0.2	Khanpur to Feroza 132kV Single Circuit Out
Exhibit-0.3	Khanpur to Hamza-PP 132kV Single Circuit Out
Exhibit-0.4	BWPN-2 to Mubarakpur 132kV Single Circuit Out
Exhibit-0.5	Samasata to BWPN-2 132kV Single Circuit Out
Exhibit-0.6	RYK-New to Khanpur 132kV Single Circuit Out

5.1.2 With RYK Mills Power Plant

The scenario of RYK Mills PP after the COD of the plant when it starts exporting 19 MW to the MEPCO network has now been studied. The scheme of interconnection modeled in the load flow for RYK-PP is by looping in-out the Feroza - Ahmedpur-East 132 kV single circuit at RYK-PP. The distance of the plant from the looping point is about 20 km. The conductor used will be 132 kV Lynx conductor. The results of load flows with R. Y. Khan 500/220/132 kV substation but with RYK-PP under normal conditions have been plotted in Exhibit 1.0 in Appendix-B.

The power flows on the circuits are seen well within the rated capacities and the voltages on the bus bars are also within the permissible operating range of $\pm 5\%$ off the nominal. We find no capacity constraints on 132 kV circuits under normal conditions i.e. without any outages of circuits. In fact, we see that the export of 19 MW power from RYK-Mills PP reduces the loading on the Khanpur to Feroza 132 kV Circuit by supplying power directly to feed the load at Feroza.

N-1 contingency analysis has been carried out and the plotted results are attached in Appendix – B as follows;

Exhibit-1.1	RYK-PP to Ahmedpur-East 132kV Single Circuit Out
Exhibit-1.2	Feroza to RYK-PP 132kV Single Circuit Out
Exhibit-1.3	Khanpur to Feroza 132kV Single Circuit Out
Exhibit-1.4	Khanpur to Hamza-PP 132kV Single Circuit Out
Exhibit-1.5	BWPN-2 to Mubarakpur 132kV Single Circuit Out
Exhibit-1.6	Samasata to BWPN-2 132kV Single Circuit Out
Exhibit-1.7	RYK-New to Khanpur 132kV Single Circuit Out



We find that power flows on the circuits are well within the rated capacities and the voltages on the bus bars are also within the permissible operating range of $\pm 10\%$ of the nominal for contingency conditions' criteria. However some load shedding has to be done on the substations surrounding RYK-Mills. However this load shedding is considerably lower than the case without RYK-Mills PP interconnected. Thus RYK-Mills-PP helps relieve the stress in this area. We find no capacity constraints on 132 kV circuits under normal and contingency conditions.

5.1.3 Off-Peak Case With RYK Mills Power Plant

The scenario of RYK Mills PP after the COD of the plant when it starts exporting 19 MW to the MEPCO network has now been studied under Off-Peak conditions. The scheme of interconnection modeled in the load flow for RYK-PP is by looping in-out the Feroza - Ahmedpur-East 132 kV single circuit at RYK-PP. The distance of the plant from the looping point is about 20 km. The conductor used will be 132 kV Lynx conductor. The results of load flows with R. Y. Khan 500/220/132 kV substation but with RYK-PP under normal Off-Peak conditions have been plotted in Exhibit 5.0 in Appendix-B.

The power flows on the circuits are seen well within the rated capacities and the voltages on the bus bars are also within the permissible operating range of $\pm 5\%$ off the nominal. We find no capacity constraints on 132 kV circuits under normal conditions i.e. without any outages of circuits.

N-1 contingency analysis has been carried out and the plotted results are attached in Appendix – B as follows;

Exhibit-5.1	RYK-PP to Ahmedpur-East 132kV Single Circuit Out
Exhibit-5.2	RYK-PP to Feroza 132kV Single Circuit Out
Exhibit-5.3	Khanpur to Feroza 132kV Single Circuit Out
Exhibit-5.4	Khanpur to Hamza-PP 132kV Single Circuit Out
Exhibit-5.5	BWPN-2 to Mubarakpur 132kV Single Circuit Out
Exhibit-5.6	Samasata to BWPN-2 132kV Single Circuit Out



Exhibit-5.7	RYK-New to Khanpur 132kV Single Circuit Out
Exhibit-5.8	R.Y.Khan to RYK-New 132kV Single Circuit Out

We find that power flows on the circuits are well within the rated capacities and the voltages on the bus bars are also within the permissible operating range of $\pm 10\%$ of the nominal for contingency conditions' criteria. However some load shedding has to be done on the substations surrounding RYK-Mills. However this load shedding is considerably lower than the case without RYK-Mills PP interconnected. Thus RYK-Mills-PP helps relieve the stress in this area. We find no capacity constraints on 132 kV circuits under normal and contingency conditions.

5.2 Peak Load Case 2015: Without R. Y. Khan 500/220/132 kV substation:

The possibility of R. Y. Khan 500/220/132 kV substation not getting energized by January 2015 has also been studied.

5.2.1. Without RYK Mills Power Plant

The results of load flows without R. Y. Khan 500/220/132 kV substation and without RYK-Mills-PP have been plotted under normal conditions in Exhibit 2.0 in Appendix-B. We find no capacity constraints on 132 kV circuits under normal conditions i.e. without any outages of circuits. However, in absence of RYK-Mills-PP and the 500/220/132kV R.Y.Khan Grid Station, load has to be shed at Uch, Mubarakpur, Ahmedpur-East, Feroza and Khanbela grid stations in order to restrict the 132 kV bus bar voltages on those grid stations to within the permissible 0.95 of nominal/normal 132 kV under normal condition.

N-1 contingency analysis has been carried out and the plotted results are attached in Appendix – B as follows:

Exhibit-2.1	Feroza to Ahmedpur-East 132kV Single Circuit Out
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Exhibit-2.2	Khanpur to Feroza 132kV Single Circuit Out
Exhibit-2.3	Khanpur to Hamza-PP 132kV Single Circuit Out
Exhibit-2.4	BWPN-2 to Mubarakpur 132kV Single Circuit Out
Exhibit-2.5	Samasata to BWPN-2 132kV Single Circuit Out
Exhibit-2.6	R.Y.Khan to Khanpur 132kV Single Circuit Out

We find that although power flows on the circuits are well within the rated capacities however to maintain the voltages on the bus bars within the permissible operating range of $\pm 10\%$ of the nominal for contingency conditions' criteria additional load has to be shed on Uch, Mubarakpur, Ahmedpur-East, Feroza and Khanbela grid stations.

5.2.2. With RYK Mills Power Plant

The results of load flow with RYK-PP interconnected as per proposed scheme are shown in Exhibit 3.0 in Appendix-B. It can be seen that from the spillover of 19 MW power of RYK-PP, 18.7 MW flows towards Ahmedpur-East while the remaining 0.3 MW flows towards Feroza and are used to meet the load demand at Ahmedpur-East, Feroza and the 132 kV circuits emanating from them.

The power flows on the circuits are seen well within the rated capacities and the voltages on the bus bars are also within the permissible operating range of $\pm 5\%$ off the nominal.

We find no capacity constraints on 132 kV circuits under normal conditions i.e. without any outages of circuits.

N-1 contingency analysis has been carried out and the plotted results are attached in Appendix – B as follows;

Exhibit-3.1	RYK-PP to Ahmedpur-East 132kV Single Circuit Out
Exhibit-3.2	RYK-PP to Feroza 132kV Single Circuit Out
Exhibit-3.3	Khanpur to Feroza 132kV Single Circuit Out
Exhibit-3.4	Khanpur to Hamza-PP 132kV Single Circuit Out



Exhibit-3.5	BWPN-2 to Mubarakpur 132kV Single Circuit Out
Exhibit-3.6	BWPN-2 to Samasata 132kV Single Circuit Out
Exhibit-3.7	R.Y.Khan to Khanpur 132kV Single Circuit Out

In all the contingency cases, we find that in the event of outage of any circuit, the intact circuits remain within the rated capacity. Also the bus bar voltages are well within the permissible limits in all the contingency events. This means that the export of 19 MW from RYK-PP helps relieve the stress on the 132 kV circuits from Sadiqabad to R.Y.Khan which then transmit this power to Khanpur and then to Feroza. Also important would be the reactive support that RYK Mills PP would provide to the network in this area. The role of RYK-Mills PP will be helpful in case R.Y.Khan 500/220/132 kV Grid is not energized in the stipulated timeline as this would reduce the shedding required in this area.

5.3 Peak Load Case 2020: Extended Term Scenario

We have also studied the future scenario of June 2020 to assess the impact of the plant in the extended term of 5 years after its installation as per NTDC requirement.

Load flow studies have identified the need for laying a 132 kV Single Circuit from Bahawalpur-New to Ahmedpur-East due to the load growth in this region. It is important to note that this reinforcement is not due to RYK-Mills PP but due to the load growth in the area. In fact RYK-Mills PP helps to relieve the stress in this area. It is important to stress that MEPCO will have to develop 132 kV expansion plans in order to reinforce the network in this area after the commissioning of RYK 500/220/132 kV Substation.

The power flows on the circuits are seen well within the rated capacities and the voltages on the bus bars are also within the permissible operating range of $\pm 5\%$ off the nominal.

We find no capacity constraints on 132 kV circuits under normal conditions i.e. without any outages of circuits.



N-1 contingency analysis has been carried out and the plotted results are attached in Appendix – B as follows;

Exhibit-4.1	RYK-PP to Ahmedpur East 132kV Single Circuit Out
Exhibit-4.2	Feroza to RYK-PP 132kV Single Circuit Out
Exhibit-4.3	Khanpur to Feroza 132kV Single Circuit Out
Exhibit-4.4	Khanpur to Hamza-PP 132kV Single Circuit Out
Exhibit-4.5	BWPN-2 to Mubarakpur 132kV Single Circuit Out
Exhibit-4.6	Samasata to BWPN-2 132kV Single Circuit Out
Exhibit-4.7	RYK-New to Khanpur 132kV Single Circuit Out
Exhibit-4.8	RYK-New to R.Y.Khan 132kV Single Circuit Out

The power flows on the circuits are seen well within the rated capacities and the voltages on the bus bars are also within the permissible operating range of $\pm 10\%$ off the nominal for contingency conditions' criteria

We find that there are no capacity constraints in the proposed connectivity scheme even after 5 years i.e. 2020 with the proposed additional 132 kV S/C from Bahwalpur-New to Ahmedpur-East

5.4 Conclusion of Load Flow Analysis

From the analysis discussed above, we conclude that the proposed interconnection scheme of looping in-out the Feroza - Ahmedpur-East 132 kV single circuit at RYK-PP is adequate to evacuate the 19 MW spillover power of RYK-PP under normal and contingency conditions.

The scenarios of peak load conditions of with and without R. Y. Khan 500/220/132 kV substation in 2015 have been studied in detail. The extended term scenario of 2020 was also studied. It was found that in 2015 with RYK 500/220/132 kV Substation under all the contingency cases the intact circuits remain within the rated capacity but in the contingency conditions some load shedding has to be done in the area. However the shedding required is significantly lower in the cases with RYK-



Mills interconnected as it would play an important role by meeting the load demand of the area locally as well as providing reactive power support to the area thus reducing the amount of load shed otherwise compared to the scenario if RYK Mills PP was not present. Also the bus bar voltages were well within the permissible limits in all the contingency events.

Without the commissioning of RYK 500/220/132 kV Substation load has to be shed in the area. It is important to note that RYK-Mills PP would provide relief to the area by supplying both active and reactive power to the network and would be helpful in meeting the demand of the area incase RYK 500/220/132 kV Substation is delayed.

The scenario of 2020 was also evaluated and it is highlighted that MEPCO would have to make necessary reinforcements at 132 kV associated with RYK 500/220/132 kV Substation. One such reinforcement identified was the laying of a 132 kV S/C from Bahwalpur-New to Ahmedpur-East. With this reinforcement no constraints were found in the evacuation of power from RYK Mills Cogeneration Power Plant in the steady state analysis.



6. Short Circuit Analysis

6.1 Methodology and Assumptions

The methodology of IEC 909 has been applied in all short circuit analyses in this report for which provision is available in the PSS/E software used for these studies.

The maximum fault currents have been calculated with the following assumptions under IEC 909:

- Set tap ratios to unity
- Set line charging to zero
- Set shunts to zero in positive sequence
- Desired voltage magnitude at bus bars set equal to 1.10 P.U. i.e. 10 % higher than nominal, which is the maximum permissible voltage under contingency condition.

For evaluation of maximum short circuit levels we have assumed contribution in the fault currents from all the installed generation capacity of hydel, thermal and nuclear plants in the system in the years 2015 and 2020 i.e. all the generating units have been assumed on-bar in fault calculation's simulations.

The assumptions about the generator and the transformers data are the same as mentioned in Ch.2 of this report.

6.2 Fault Current Calculations without RYK-PP – Year 2015

In order to assess the short circuit strength of the network of 132 kV without RYK-PP for MEPCO in the vicinity of the site of the Plant near Ahmedpur-East and Feroza, fault currents have been calculated for balanced three-phase and unbalanced single-phase short circuit conditions in the year 2015. These levels will give us the idea of the fault levels without RYK-PP and later on how much the contribution of fault current from RYK-PP may add to the existing levels,.

The results are attached in Appendix – C.

The short circuit levels have been calculated and plotted on the bus bars of 132 kV of substations lying in the electrical vicinity of our area of interest and are shown plotted



in the Exhibit 6.1 attached in Appendix-C. Both 3-phase and 1-phase fault currents are indicated in the Exhibit which are given in polar coordinates i.e. the magnitude and the angle of the current. The total fault currents are shown below the bus bar.

The tabular output of the short circuit calculations is also attached in Appendix-C for the 132 kV bus bars of our interest. The total maximum fault currents for 3-phase and 1-phase short circuit at these substations are summarized in Table 6.1. We see that the maximum fault currents do not exceed the short circuit ratings of the equipment at these 132 kV substations which normally are 20 kA, 25 kA or 31.5 kA for older substations and 40 kA for new substations.

Table-6.1
Maximum Short Circuit Levels without RYK-PP in 2015

Substation	3-Phase fault current, kA	1-Phase fault current, kA
BWPN 132kV	14.52	13.92
BWPN-2 132kV	5.97	6.18
Samasata 132kV	4.94	5.05
Liaquatpur 132kV	4.14	4.12
Hamza-PP 132kV	6.27	5.74
Khanpur 132kV	9.83	10.17
R.Y.Khan 132kV	13.60	13.47
Khanbela 132kV	2.99	2.92
Feroza 132kV	4.49	4.57
Ahmedpur-East 132kV	3.64	4.26
Mubarakpur 132kV	3.96	4.41

6.3 Fault Current Calculations with RYK-PP interconnected

Fault currents have been calculated with RYK-Mills PP connected as per the proposed interconnection scheme of looping in-out the Feroza to Ahmedpur East 132 kV Single Circuit at RYK-Mills PP. Fault currents have been evaluated for the peak case of 2015 and 2020 in order to observe the maximum fault current on RYK-Mills PP and the Bus Bars in the vicinity of RYK-PP after its interconnection with the



MEPCO/NTDC network. Fault types applied are three phase and single-phase at 132 kV bus bars of RYK-PP itself and other bus bars of the 132 kV substations in the electrical vicinity of Ahmedpur-East. The graphic results showing maximum 3-phase and 1-phase fault levels are indicated in Exhibit 6.2 for 2015 and Exhibit 6.3 for 2020. Both 3-phase and 1-phase fault currents are indicated in the Exhibit 6.2 and Exhibit 6.3 which are given in polar coordinates i.e. the magnitude and the angle of the current. The total fault currents are shown below the bus bar.

The tabulated results of short circuit analysis showing all the fault current contributions with short circuit impedances on 132 kV bus bars of the network in the electrical vicinity of RYK-PP are placed in Appendix-C. Brief summary of fault currents at significant bus bars of our interest are tabulated in Table 6.2

Table-6.2
Maximum Short Circuit Levels with RYK-PP in 2015

Substation	3-Phase fault current, kA	1-Phase fault current, kA
RYK-PP 6.6kV	20.36	23.86
RYK-PP 11kV	23.29	26.86
RYK-PP 132kV	3.77	3.49
BWPN 132kV	14.54	13.93
BWPN-2 132kV	5.95	6.18
Samasata 132kV	4.95	5.07
Liaqatpur 132kV	4.21	4.17
Hamza-PP 132kV	6.39	5.81
Khanpur 132kV	10.04	10.33
RYK-New 132kV	13.79	13.60
Khanbela 132kV	3.06	2.97
Feroza 132kV	4.64	4.69
Ahmedpur-East 132kV	3.47	4.10
Mubarakpur 132kV	3.85	4.31



Table-6.3
Maximum Short Circuit Levels with RYK-PP in 2020

Substation	3-Phase fault current, kA	1-Phase fault current, kA
RYK-PP 6.6kV	24.14	26.55
RYK-PP 11kV	27.91	30.04
RYK-PP 132kV	5.28	4.36
BWPN 132kV	18.30	18.18
BWPN-2 132kV	13.78	13.52
Samasata 132kV	8.98	7.29
Liaqatpur 132kV	4.97	4.76
Hamza-PP 132kV	7.40	6.33
Khanpur 132kV	11.83	12.04
RYK-New 132kV	16.42	17.03
Khanbela 132kV	4.14	4.17
Feroza 132kV	7.56	7.20
Ahmedpur-East 132kV	6.81	7.28
Mubarakpur 132kV	6.70	5.78

Comparison of Table 6.1 with 6.2 and 6.3 shows a decrease in the short circuit levels for three-phase and single – phase faults due to connection of RYK-PP on the 132 kV bus bars in its vicinity in 2015. This is explainable as the contribution in short circuit current from RYK-Mills PP is offset by the looping distance of 20 km of RYK-Mills from the Khanpur-Feroza 132 kV Circuit. In the 2020 scenario we find that even after some increase, these fault levels are much below the rated short circuit values of the equipment installed on these substations.

The maximum short circuit level of the RYK-PP 132 kV is 5.28 kA and 4.36 kA for 3-phase and 1-phase faults respectively in the year 2020. Therefore industry standard switchgear of the short circuit rating of 40 kA would be fine to be installed at 132 kV switchyard of RYK-PP as per NTDC requirement taking care of any future generation additions and system reinforcements in its electrical vicinity. For 11 kV the maximum

short circuit levels of RYK-Mills PP are 27.91 kA and 30.04 kA for 3-phase and 1-phase faults respectively. Therefore the industry standard switchgear of the short circuit rating of 40 kA would be fine to be installed at 11 kV switchyard of RYK-PP taking care of any future generation additions and system reinforcements in its electrical vicinity.

6.4 Conclusion of Short Circuit Analysis

The short circuit analysis results show that for the proposed scheme of interconnection of RYK-PP with Ahmedpur-East 132 kV Substation, we don't find any problem of violations of short circuit ratings of the already installed equipment on the 132 kV equipment of substations in the vicinity of RYK-PP due to fault current contributions from this power house under three-phase faults as well as single phase faults.

The maximum short circuit level of the RYK-PP 132 kV is 5.28 kA and 4.36 kA for 3-phase and 1-phase faults respectively in the year 2020. Therefore industry standard switchgear of the short circuit rating of 40 kA would be fine to be installed at 132 kV switchyard of RYK-PP as per NTDC requirement taking care of any future generation additions and system reinforcements in its electrical vicinity. For 11 kV the maximum short circuit levels of RYK-Mills PP are 27.91 kA and 30.04 kA for 3-phase and 1-phase faults respectively. Therefore the industry standard switchgear of the short circuit rating of 40 kA would be fine to be installed at 11 kV switchyard of RYK-PP taking care of any future generation additions and system reinforcements in its electrical vicinity.



7. Dynamic Stability Analysis

7.1 Assumptions & Methodology

7.1.1 Dynamic Models

The assumptions about the generator and its parameters are the same as mentioned in Ch.2 of this report.

We have employed the generic dynamic models available in the PSS/E model library for dynamic modeling of the generator, exciter and the governor as follows;

Generator	GENROU
Excitation System	IEEE1
Speed Governing System	TGOV1

7.1.2 System Conditions

Month of January 2015 has been selected for the study because it represents the peak load season after the COD of RYK Mills Power Plant and thus the loading on the lines in the vicinity of RYK-PP will be maximum allowing us to judge the maximum impact of the plant.

The proposed scheme of looping in-out the single circuit of the Feroza to Ahmedpur-East 132 kV at RYK-PP has been modeled in the dynamic simulation.

All the power plants of WAPDA/NTDC from Tarbela to Hub have been dynamically represented in the simulation model.

7.1.3 Presentation of Results

The plotted results of the simulations runs are placed in Appendix-D. Each simulation is run for its first one second for the steady state conditions of the system prior to fault or disturbance. This is to establish the pre fault/disturbance conditions of the network under study were smooth and steady. Post fault recovery has been monitored for nine seconds. Usually all the transients due to non-linearity die out within 2-3 seconds after disturbance is cleared in the system.

7.1.4 Worst Fault Cases

Three phase faults are considered as the worst disturbance in the system. We have considered 3-phase fault in the closest vicinity of RYK-PP i.e. right at the 132 kV bus



bar of RYK-PP substation, cleared in 5 cycles, as normal clearing time for 132 kV i.e. 100 ms, followed by a permanent trip of a 132 kV single circuit emanating from this substation. Also to fulfil the Grid Code criteria the extreme worst case of stuck breaker (breaker failure) has also been studied where the fault clearing time is assumed 9 cycles i.e. 180 ms.

7.2 Dynamic Stability Simulations' Results with RYK-PP

7.2.1 Fault at 132 kV Near RYK-PP

We applied three-phase fault on RYK-PP 132 kV bus bar, cleared fault in 5 cycles (100 ms) followed by trip of a 132 kV single circuit between RYK-PP and Ahmedpur-East 132 kV substation. We monitored different quantities for one second pre-fault and nine cycles after clearance of fault (post-fault) conditions and plotted the results attached in Appendix – D and discussed as follows;

Fig. 1.1 Bus Voltages

The bus voltages of 132 kV bus bars of RYK-PP, Ahmedpur-East, Feroza and Khanpur alongwith 11 kV and 6.6 kV bus bars of RYK-PP are plotted. The results show quick recovery of the voltages after clearing of fault.

Fig. 1.2 Frequency

We see the system frequency recovers back to normal quickly after fault clearance.

Fig. 1.3 MW/MVAR Output of Generators of RYK-PP

The MW/MVAR output of RYK-PP gets back to the pre-fault output quickly after fast damping of the oscillations in its output. However MVAR output acquires equilibrium at a new value.

Fig. 1.4 Speed and mechanical power of Generators at RYK-PP

The speed deviation of the generator, after clearing fault, damps down quickly returning to normal speed as of before fault. The transients in mechanical power also damp quickly and settle to a new equilibrium.

Fig. 1.5 MW Flow on RYK-PP to Feroza 132 kV circuit

Followed by clearing of fault, the trip of a 132 kV single circuit from RYK-PP to Ahmedpur-East causes the entire output of RYK-PP to flow on the intact 132 kV



circuit between RYK-PP and Feroza 132kV circuit. This causes significant loading on the RYK-PP-Feroza 132 kV circuit. We plotted the flows of MW and MVAR on this intact circuit and see that the power flows on this circuit attains to steady state level with power swings damping down fast.

Fig. 1.6 Rotor Angles

The rotor angles of the generators of RYK-PP, Liberty 132 kV, Guddu 220 kV, Engro-Power 220 kV, Fauji-MR(Foundation Power)-220 kV and Guddu New 500 kV are plotted relative to machines at Guddu New 500 kV. The results show that the rotor angle of RYK-PP gets back after the first swing and damps down quickly. Similarly the rotor angles of other machines swing little after the fault and damp fast after clearing of fault. The system is strongly stable and very strong in damping the post fault oscillations.

7.2.2 Fault at 132kV Near RYK-PP (Stuck Breaker)

We applied three-phase fault on RYK-PP 132 kV bus bar, cleared fault in 9 cycles (180 ms), to simulate a stuck breaker case, followed by trip of a 132 kV single circuit between RYK-PP and Ahmedpur-East 132 kV substation. We monitored different quantities for one second pre-fault and nine cycles after clearance of fault (post-fault) conditions and plotted the results attached in Appendix – D and discussed as follows;

Fig. 2.1 Bus Voltages

The bus voltages of 132 kV bus bars of RYK-PP, Ahmedpur-East, Feroza and Khanpur alongwith 11 kV and 6.6 kV bus bars of RYK-PP are plotted. The results show quick recovery of the voltages after clearing of fault.

Fig. 2.2 Frequency

We see the system frequency recovers back to normal quickly after fault clearance.

Fig. 2.3 MW/MVAR Output of Generators of RYK-PP

The MW/MVAR output of RYK-PP gets back to the pre-fault output quickly after fast damping of the oscillations in its output. However MVAR output acquires equilibrium at a new value.

Fig. 2.4 Speed and mechanical power of Generators at RYK-PP



The speed deviation of the generator, after clearing fault, damps down quickly returning to normal speed as of before fault. The transients in mechanical power also damp quickly and settle to a new equilibrium.

Fig. 2.5 MW Flow on RYK-PP to Feroza 132 kV circuit

Followed by clearing of fault, the trip of a 132 kV single circuit from RYK-PP to Ahmedpur-East causes the entire output of RYK-PP to flow on the intact 132 kV circuit between RYK-PP and Feroza 132kV circuit. This causes significant loading on the RYK-PP-Feroza 132 kV circuit. We plotted the flows of MW and MVAR on this intact circuit and see that the power flows on this circuit attains to steady state level with power swings damping down fast.

Fig. 2.6 Rotor Angles

The rotor angles of the generators of RYK-PP, Liberty 132 kV, Guddu 220 kV, Engro-Power 220 kV, Fauji-MR(Foundations Power)-220 kV and Guddu New 500 kV are plotted relative to machines at Guddu New 500 kV. The results show that the rotor angle of RYK-PP gets back after the first swing and damps down quickly. Similarly the rotor angles of other machines swing little after the fault and damp fast after clearing of fault. The system is strongly stable and very strong in damping the post fault oscillations.

7.2.3 Fault at Feroza 132 kV (Far-End Fault)

We applied three-phase fault on far 132 kV bus bar of Feroza to study the impact of a disturbance in the grid on the performance of the plant. The fault is cleared in 5 cycles (100 ms) as standard clearing time for 132kV systems, followed by trip of 132 kV single circuit between Feroza and Khanpur. We monitored different quantities for one second pre-fault and nine cycles after clearance of fault (post-fault) conditions and plotted the results attached in Appendix – D and discussed as follows;

Fig. 3.1 Bus Voltages

The bus voltages of 132 kV bus bars of RYK-PP, Ahmedpur-East, Feroza and Khanpur alongwith 11 kV and 6.6 kV bus bars of RYK-PP are plotted. The results show quick recovery of the voltages after clearing of fault.



Fig. 3.2 Frequency

We see the system frequency recovers back to normal quickly after fault clearance.

Fig. 3.3 MW/MVAR Output of Generators of RYK-PP

The MW/MVAR output of RYK-PP gets back to the pre-fault output quickly after fast damping of the oscillations in its output. However MVAR output acquires equilibrium at a new value.

Fig. 3.4 Speed and mechanical power of Generators at RYK-PP

The speed deviation of the generator, after clearing fault, damps down quickly returning to normal speed as of before fault. The transients in mechanical power also damp quickly and settle to a new equilibrium.

Fig. 3.5 MW Flow on Feroza to RYK-PP 132 kV circuit

Followed by clearing of fault, the trip of a 132 kV single circuit from Feroza to Khanpur causes the entire output of RYK-PP to flow on the intact 132 kV circuit between RYK-PP and Feroza 132kV circuit to feed the loads at Feroza and Khanbela. This causes significant loading on the RYK-PP-Feroza 132 kV circuit. We plotted the flows of MW and MVAR on this intact circuit and see that the power flows on this circuit attains to steady state level with power swings damping down fast.

Fig. 3.6 Rotor Angles

The rotor angles of the generators of RYK-PP, Liberty 132 kV, Guddu 220 kV, Engro-Power 220 kV, Fauji-MR(Foundations Power)-220 kV and Guddu New 500 kV are plotted relative to machines at Guddu New 500 kV. The results show that the rotor angle of RYK-PP gets back after the first swing and damps down quickly. Similarly the rotor angles of other machines swing little after the fault and damp fast after clearing of fault. The system is strongly stable and very strong in damping the post fault oscillations.

7.2.4 Fault at Ahmedpur-East 132 kV (Far-End Fault)

We applied three-phase fault on far 132 kV bus bar of Ahmedpur-East to study the impact of a disturbance in the grid on the performance of the plant. The fault is cleared in 5 cycles (100 ms) as standard clearing time for 132kV systems, followed by



trip of 132 kV single circuit between Ahmedpur-East and RYK-Mills PP. We monitored different quantities for one second pre-fault and nine cycles after clearance of fault (post-fault) conditions and plotted the results attached in Appendix – D and discussed as follows;

Fig. 4.1 Bus Voltages

The bus voltages of 132 kV bus bars of RYK-PP, Ahmedpur-East, Feroza and Khanpur alongwith 11 kV and 6.6 kV bus bars of RYK-PP are plotted. The results show quick recovery of the voltages after clearing of fault.

Fig. 4.2 Frequency

We see the system frequency recovers back to normal quickly after fault clearance.

Fig. 4.3 MW/MVAR Output of Generators of RYK-PP

The MW/MVAR output of RYK-PP gets back to the pre-fault output quickly after fast damping of the oscillations in its output. However MVAR output acquires equilibrium at a new value.

Fig. 4.4 Speed and mechanical power of Generators at RYK-PP

The speed deviation of the generator, after clearing fault, damps down quickly returning to normal speed as of before fault. The transients in mechanical power also damp quickly and settle to a new equilibrium.

Fig. 4.5 MW Flow on Bahwalpur-New to Mubarakpur 132 kV circuit

Followed by clearing of fault, the trip of a 132 kV single circuit from Ahmedpur-East to RYK-Mills PP causes the entire output of that circuit to flow on the intact 132 kV circuit between Bahwalpur-New to Mubarakpur. We plotted the flows of MW and MVAR on this intact circuit and see that the power flows on this circuit attains to steady state level with power swings damping down fast.

Fig. 4.6 Rotor Angles

The rotor angles of the generators of RYK-PP, Liberty 132 kV, Guddu 220 kV, Engro-Power 220 kV, Fauji-MR(Foundation Power)-220 kV and Guddu New 500 kV are plotted relative to machines at Guddu New 500 kV. The results show that the rotor angle of RYK-PP gets back after the first swing and damps down quickly. Similarly the rotor angles of other machines swing little after the fault and damp fast after



clearing of fault. The system is strongly stable and very strong in damping the post fault oscillations.

7.3 Conclusion of Dynamic Stability Analysis

The results of dynamic stability carried out for 2015 show that the system is very strong and stable for the proposed scheme for the severest possible faults of 132 kV systems near to and far of RYK-PP under all events of disturbances. Therefore there is no problem of dynamic stability for interconnection of RYK-PP; it fulfills all the criteria of dynamic stability.



8. Conclusions

- ❖ The nearest interconnection facilities is the 132 kV substation of Khanbela, and the 132 kV single circuit line from Feroza to Ahmedpur-East lies at about 20 km from the site of RYK Mills Ltd.
- ❖ Due to the location of RYK Mills, the most feasible interconnection scheme would be by looping in-out the existing 132 kV circuit between Feroza to Ahmedpur-East at RYK-Mills PP as shown in Sketch-1 in Appendix-A. The distance of the plant from the looping point is about 20 km. The conductor used will be 132 kV Lynx conductor.
- ❖ The proposed scheme will require two breaker bays of 132 kV at RYK-Mills PP to connect with the 132 kV circuits each from Feroza and Ahmedpur East respectively.
- ❖ In view of planned COD of the RYK-Mills Power Plant in November 2014, the above proposed interconnection scheme has been tested for steady state conditions through detailed load flow studies for the peak conditions of January 2015 for maximum thermal power dispatches in the grid during winter which is the crushing season.
- ❖ Steady state analysis by load flow reveals that proposed scheme is adequate to export 19 MW spillover of the plant under normal and contingency conditions with RYK 500/220/132 kV Substation commissioned as scheduled in 2013-2014 (i.e. up to June 2014). If the commissioning of RYK 500/220/132 kV Substation is delayed then in the absence of RYK Mills PP considerable load shedding would be required on some of the substations such as Khanbela, Feroza, Khanpur, Liaquatpur,, RYKhan-2, M.W.Qureshia etc. around RYK Mills Ltd. However, with RYK Mills PP present it may be seen that it would play an important role by meeting the load demand of the area locally as well as providing reactive power support to the area thus reducing the amount of load shed otherwise compared to the scenario if RYK Mills PP was not present. The entire 19 MW output of the plant can be evacuated under normal and contingency conditions even without the commissioning of RYK 500/220/132 kV Substation.



- ❖ Also January 2020 case has been studied to see the performance of the proposed interconnection scheme in an extended term scenario. The system conditions of normal and N-1 contingency have been studied for all scenarios to meet the reliability criteria with the proposed re-conductoring of Khanpur to Feroza 132 kV Single Circuit on Rail Conductor. However it is important to note that this re-conductoring is not due to RYK-Mills PP, which in fact helps relieve the loading on the Khanpur to Feroza 132 kV Single Circuit, but is being proposed in the absence of any 132 kV reinforcements of MEPCO associated with RYK 500/220/132 kV Substation. MEPCO would have to make the necessary reinforcements related to this substation in their own expansion plans.
- ❖ The short circuit analysis has been carried out to calculate maximum fault levels at RYK-Mills PP and the substations of 132kV in its vicinity. We find that the fault currents for the proposed scheme are much less than the rated short circuit capacities of switchgear installed at these substations. There are no violations of exceeding the rating of the equipment due to contribution of fault current from RYK-Mills PP.
- ❖ The maximum short circuit levels of RYK-Mills PP 132 kV have been evaluated for the peak case of 2020 to evaluate the maximum fault currents on RYK-Mills PP and the 132 kV Substations in its vicinity in the future scenario. The maximum short circuit level of the RYK-PP 132 kV is 5.04 kA and 4.48 kA for 3-phase and 1-phase faults respectively in the year 2020. Therefore industry standard switchgear of the short circuit rating of 40 kA would be fine to be installed at 132 kV switchyard of RYK-PP as per NTDC requirement taking care of any future generation additions and system reinforcements in its electrical vicinity. For 11 kV the maximum short circuit levels of RYK-Mills PP are 27.65 kA and 28.73 kA for 3-phase and 1-phase faults respectively. Therefore the industry standard switchgear of the short circuit rating of 40 kA would be fine to be installed at 11 kV switchyard of RYK-PP taking care of any future generation additions and system reinforcements in its electrical vicinity.



- ❖ The dynamic stability analysis of proposed scheme of interconnection has been carried out. The stability check for the worst case of three phase fault right on the 132 kV bus bar of RYK Mills PP substation followed by the final trip of 132 kV circuits emanating from this substation, has been performed for fault clearing of 5 cycles (100 ms) as understood to be the normal fault clearing time of 132 kV protection system. Also the extreme worst case of stuck breaker (breaker failure) has been studied where the fault clearing time is assumed 9 cycles i.e. 180 ms. In all events, the system is found strong enough to stay stable and recovered with fast damping. The stability of system for far end faults of 3-phase occurring at Feroza 132 kV bus bar has also been checked. The proposed scheme successfully passed the dynamic stability checks for near and far faults even for the most stringent cases.
- ❖ The proposed scheme of interconnection has been evaluated for the scenarios of 2015 with and without RYK 500/220/132 kV Substation and for the year 2020 to evaluate the future scenario. The proposed interconnection scheme causes no technical constraints or problems and is therefore recommended to be adopted. In fact the studies establish that RYK-Mills PP will help relieve the identified existing and future constraints in its vicinity

