



National Electric Power Regulatory Authority Islamic Republic of Pakistan

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No. NEPRA/R/D/L/AG-348/15324-30

November 10, 2016

Mr. Asad Alam Niazi
Director & COO
Norinco International Thatta Power Private Limited
Suite No. 201, 2nd Floor, Horizon Vista,
Block 4, Clifton, Karachi
UAN: +92-21-111-111-275

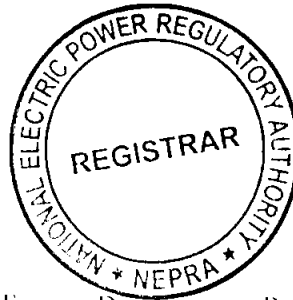
Subject: **Grant of Generation Licence No. WPGL/36/2016**
Licence Application No. LAG-348
Norinco International Thatta Power (Private) Limited (NITPPL)

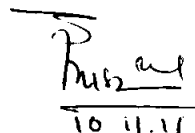
Reference: Your application vide letter No. nil, dated nil (received on June 13, 2016).

Enclosed please find herewith Determination of the Authority in the matter of Application of "Norinco International Thatta Power (Private) Limited (NITPPL)" for the "Grant of Generation Licence" along with Generation Licence No. WPGL/36/2016 annexed to this determination granted by the National Electric Power Regulatory Authority (NEPRA) to NITPPL for its 50.00 MW Wind Power Plant located at Deh Kohistan 7/1 Tapo Jhimpir, District Thatta, in the province of Sindh" pursuant to Section 15 of the Regulation of Generation, Transmission and Distribution of Electric Power Act (XL of 1997).

2. Please quote above mentioned Generation Licence No. for future correspondence.

Enclosure: Generation Licence
(WPGL/36/2016)



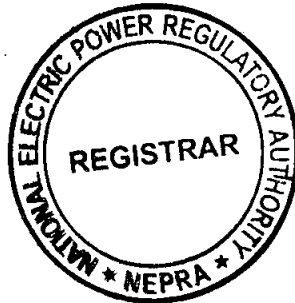

10.11.16
(Syed Safer Hussain)

Copy to:

1. Chief Executive Officer, Alternative Energy Development Board (AEDB), 2nd Floor, OPE Building, G-5/2, Islamabad
2. Chief Executive Officer, NTDC, 414-WAPDA House, Lahore
3. Chief Executive Officer, CPPA-G, 6th Floor, Shaheed-e-Millat Secretariat, Jinnah Avenue, Blue Area, Islamabad
4. Chief Executive Officer, Hyderabad Electric Supply Company Limited (HESCO), WAPDA Offices Complex, Hussainabad, Hyderabad
5. Director General, Environment Protection Department, Government of Sindh, Complex Plot No. SE-2/1, Korangi Industrial Area, Karachi.
6. The Secretary, Energy Department, Government of Sindh, 3rd Floor, State Life Building No. 3, Opposite CM Secretariat, Karachi.

National Electric Power Regulatory Authority
(NEPRA)

Determination of the Authority
in the Matter of Application of Norinco International Thatta Power
(Pvt.) Limited for the Grant of Generation Licence



November 08, 2016
Case No. LAG-348

(A). Background

(i). Government of Pakistan has set up Alternative Energy Development Board (AEDB) for harnessing renewable energy resources in the Country. AEDB has issued Letter of Intent (LoI) to various renewable energy developers for setting up projects in the country, under the Policy for Development of Renewable Energy for Power Generation 2006 (hereafter referred to as the RE Policy).

(ii). The Provinces are also empowered to set up generation facilities of any size, location and fuel of their choice. In view of the said, Government of Sindh has issued an LoI dated April 20, 2015 to Norinco International Corporation Limited (the sponsors) for establishing 50 MW wind based generation facility/wind power plant in the Jhimpir wind corridor, District Thatta, in the Province of Sindh. According to the terms and conditions of the LoI, the sponsors carried out a feasibility study of the project. In order to implement the projects, the sponsors have incorporated a special purpose vehicle in the name of Norinco International Thatta Power (Pvt.) Limited (NITPPL).

✓ **(B). Filing of the Application**

(i). In accordance with Section-15 of the Regulation of Generation, Transmission and Distribution of Electric Power Act, 1997 (hereafter referred to as the NEPRA Act), NITPPL submitted an application on June 13, 2016 requesting for the grant of generation licence.

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✗ (ii). The Registrar examined the submitted application to confirm its compliance with the NEPRA Licensing (Application and Modification Procedure) Regulations, 1999 (hereafter referred to as the Licensing Regulations). The Registrar found the application substantially in compliant with the Licensing

Regulations and submitted the matter for the consideration of the Authority for admission of the application or otherwise.

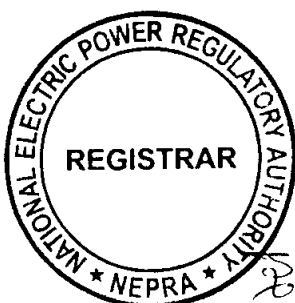
(iii). The Authority considered the matter in its Regulatory Meeting held on July 26, 2016 and found the form and content of the application in substantial compliance with Regulation-3 of the Licensing Regulations. The Authority admitted the application for consideration of the grant of the generation licence as stipulated in Regulation-7 of the Licensing Regulations. The Authority approved the advertisement containing (a). the prospectus; (b). a notice to the general public about the admission of the application of NITPPL, to invite the general public for submitting their comments in the matter as stipulated in Regulation-8 of the Licensing Regulations. Further, under Regulation-9(2) of the Licensing Regulations, the Authority also approved the list of the relevant stakeholders for informing about the admission of the application of NITPPL and for providing their comments to assist the Authority in the matter. Accordingly, the advertisement was published in the national newspaper (i.e. the daily "Business Recorder" and "Dunya") on August 02, 2016.

(iv). Apart from the above, separate letters were also sent to government ministries, their attached departments and representative organizations etc. on August 03, 2016. The said stakeholders were directed for submitting their views/comments for the assistance of the Authority.

(C). Comments of Stakeholders

✓ (i). In reply to the above, the Authority received comments from four (04) stakeholders. These included Anwar Kamal Law Associates, Board of Investment, Engineering Development Board and Central Power Purchasing Agency (Guarantee) Limited (CPPA-G). The salient points of the comments offered by the above mentioned stakeholders are summarized in the following paragraphs:

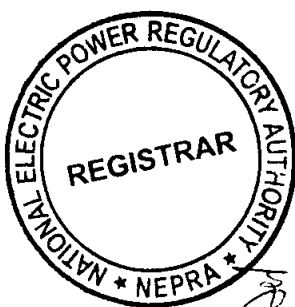
(a). Anwar Kamal Law Associates in its comments raised different issues of power sector in general including surplus capacity, under utilization of power plants and induction of new power plants on "take or pay basis" etc. Further, Anwar Kamal Law Associates submitted its reservations regarding different power sector issues including financial and economic viability of the induction of renewable energy projects, low plant factor



of RE projects, RE projects as non-base-load plants, hourly variation of generation of electricity by RE projects, higher upfront tariff of renewable energy projects, "must run condition" of RE projects, suitability of upfront tariff regime for Pakistan, induction of RE projects in the current scenario (i.e. reduction in oil prices, RLNG contract with Qatar, upcoming coal power projects, sharp decreasing trend in the cost of RE power plants and introduction of competitive market etc.), affordability vs. availability of electric power and long term power purchase agreements on "take or pay" basis etc. Anwar Kamal Law Associates has also contested that if any DISCO is giving its consent to purchase power from RE projects, it should be treated as bilateral contract between DISCO and power producer and all such purchases need to be dealt directly without involving the CPPA-G ;

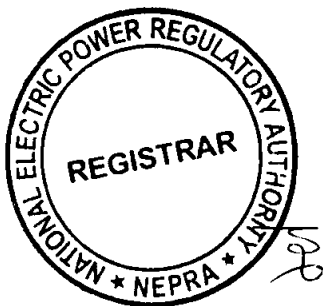
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- (b). Board of Investment in its comments submitted that energy sector is the priority sector of the Government to cater the short fall in the country. Board of Investment being an investment promoting and facilitating agency has also been making its efforts to attract investment in energy sector, Board of Investment understands that affordable and smooth supply of energy is the backbone for industrial growth as well as attracting foreign direct investment in the country. In view thereof, Board of Investment supports the grant of generation licence, subject to consumer friendly and competitive tariff and completion of all codal/technical formalities under rules & regulations;

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- (c). Engineering Development Board submitted that as per CGO-03/2015 power plants of capacity of 25 MW and above are exempted from payment of duties and taxes as defined under the relevant notifications, and no condition for the local manufacturing is applicable on the import of these power plants. while evaluating the list, it was observed that the list of importable items also contains items which otherwise could not be imported as part of plant, machinery & equipment etc. as the same do not fall in the criteria defined under CGO-03/



2015. Therefore, while recommending the list of equipment, it may be ensured that irrelevant equipment are not permitted which are not directly used as power plant equipment;

- (d). CPPA-G in its comments submitted that NITPPL has selected wind turbine generators (WTGs) of Gold Wind (GW-121/2.5MW) of 2.5 MW capacity whereas higher capacity WTGs are also available with different manufacturers which can be installed in the same wind corridor. Further, NITPPL needs to ensure that the proposed plant complies with the provisions of the grid code, approved by NEPRA, as amended in April 2010 for grid integration of wind power plants, already enforced within national grid. It is pertinent to mention that NTDC has given power evacuation certificate to NITPPL intimating that the interconnection facility for evacuation of power from 50 MW wind power project by NITPPL will be constructed/completed by December, 2019. CPPA-G has neither granted power acquisition request nor certificate of power evacuation to NITPPL.



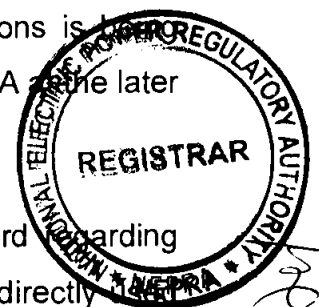
(ii). The above comments of the stakeholders were examined. Comments of Board of Investment were found in favour of the grant of generation licence to NITPPL, whereas Anwar Kamal Law Associates, Engineering Development Board and CPPA-G in their comments have raised certain observations. Accordingly, it was considered appropriate seeking perspective of NITPPL on the comments/observations of Anwar Kamal Law Associates, Engineering Development Board and CPPA-G.

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(iii). In response to the comments/observations of Anwar Kamal Law Associates, NITPPL submitted that the observations put forward by Anwar Kamal Law Associates do not raise any specific objections with respect to NITPPL's application for a generation licence and that the concerns raised by Anwar Kamal Law Associates are generic concerns pertaining to the financial and economic viability of induction of renewable energy power plants in Pakistan's power sector, focusing on macro-economic issues of affordability and underutilization of existing power plants. Such objections have been raised by Anwar Kamal Law Associates time and again on various different matters pertaining to applications for grant of generation licences by different companies, as affirmed by them in their letter. This

reflects that Anwar Kamal Law Associates has no substantial basis or foundation for objecting on the granting of licence to NITPPL. NEPRA's consideration for grant of licence should be based on the criteria laid down under the Licensing Regulations and the Licensing Generation Rules. Under Regulation-5(1) of the Licensing Regulations, NEPRA considers various factors when granting a licence which inter alia include: business experience of the applicant; financial status of the applicant, ability of the applicant to comply with conditions of the licence technology, technical specifications, model, design, operational characteristics and economic life of the facility or the system; and the ability of the applicant to comply with prudent utility practices, the grid code, the distribution code or the uniform industry standards and codes of conduct.

(iv). NITPPL further submitted that Anwar Kamal Law Associates has raised no concerns or objections whatsoever specific to NITPPL and therefore it can be inferred that Anwar Kamal Law Associates has no reservations with respect to NITPPL's expertise and ability in respect of operating a power plant and meeting the requirements of applicable laws/rules/regulations. Further, under Rule-3(5) of the Licensing Generation Rules, NEPRA may refuse a licence where the site, technology, design, fuel, tariff etc. are either not suitable on environmental grounds or do not satisfy the least cost option criteria. In this regard, it is humbly submitted that NITPPL does not fall within the criteria stipulated above as it has already completed the Initial Environmental Examination pursuant to Section-12 of Pakistan Environmental Protection Act, 1997 and the Sindh Environmental Protection Agency has issued a No Objection Certificate in respect of the same on March 4, 2016. Therefore, the power project is suitable on environmental grounds. NITPPL further clarified that at this stage, there has been no determination of tariff for NITPPL's generation facility for which the generation licence has been sought. Furthermore, as per Rule-6 of the Licensing Generation Rules, licensees may only charge such tariff approved or specified by NEPRA, which at this stage has not been done. Therefore, determination of whether the least cost options is satisfied is the sole decision of NEPRA, which is to be made by NEPRA at the later stage of determination of tariff.

(v). On the observations of Engineering Development Board regarding import of irrelevant equipments which are not permitted and are not directly as power plant equipment, NITPPL clarified that in compliance with the CGO-05/2015, NITPPL shall ensure that it abides by all applicable relevant policies and rules in relation to the list of importable items and any equipment for its project.



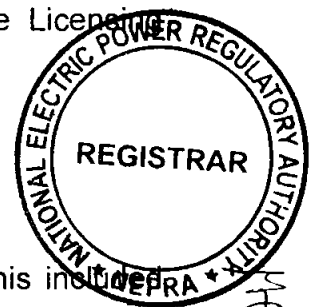
(vi). On the observations of CPPA-G regarding selection of wind turbine generators (WTGs), NITTPPL clarified that selection of the same was based on a thorough technical evaluation of the quality and efficiency of the said WTGs and NITPPL shall ensure that the requisite quantities of WTGs are installed for production of 50MW upon grant of licence. Without prejudice to the foregoing, it is further submitted that there are no restrictions with respect to capacity specifications of WTGs under the Licensing Regulations and the Licensing Generation Rules. Further, NITPPL understands that compliance with the provisions of the Grid Code is a requirement that forms part of the licensing conditions under the Generation Rules and that the same shall be confirmed by CPPA-G itself at the stage of signing the Energy Purchase Agreement, which is to be entered into with CPPA-G. On the observations of CPPA-G that it has not granted a power acquisition request, NITPPL has submitted that currently it is at the stage pertaining to grant of a generation licence, the same shall be considered after approval of the generation licence.

(ii). The rejoinders/reply submitted by the NITPPL were examined and found satisfactory. Regarding the comments of Anwar Kamal Law Associates, it is relevant to mention that most of the comments are related to regulatory and policy decisions and reiteration of its earlier comments which have already been deliberated in the upfront tariffs and generation licence applications in detail. In view of the foregoing, it was considered appropriate to process the application of the NITPPL for the grant of generation licence as stipulated in the Licensing Regulations and the Licensing Generation Rules.

(D). Analysis of the Authority

W/ (i). The Authority has examined the entire case in detail. This includes the information provided by the applicant along with the generation licence application, feasibility study of the project, the interconnection and dispersal arrangement studies, environmental study, provisions of the RE Policy and other relevant information.

W/ (ii). The main features of the application under consideration are that the applicant company i.e. NITPPL is a private limited company incorporated under Section-32 of the Companies Ordinance 1984 (XLVII of 1984), having Corporate Universal Identification No. 0097671, dated February 04, 2016. The memorandum



of association the company includes the business of power generation and sale as one of its objectives.

(iii). Government of Sindh has issued Lol to NITPPL. In accordance with the terms and conditions of the said Lol, the sponsors carried out various studies to assess the feasibility of the Project. These studies included the wind resource assessment, geo technical investigation, digital topographic map, initial environmental examination and grid interconnection study. The complete feasibility study was submitted to Energy Dept. Govt. of Sindh. Further, Energy Dept. Govt. of Sindh has recommended NITPPL for award of upfront tariff.

(iv). NITPPL is planning to install a 50.00 MW wind based generation facility/wind power plant in Deh Kohistan 7/1, Tapo Jhimpir, District Thatta, in the Province of Sindh. To implement the project, the sponsors have selected (GW121/2.5 MW) IEC wind class IIIB wind turbine generators of Goldwind, China. The proposed project will be consisting of twenty (20) wind turbine generators, making the total installed capacity of the generation facility to 50.00 MW. The cut-in, rated and cut-out wind speed for (GW121/2.5 MW) wind turbine generators are 3m/s, 9.3m/s and 22m/s respectively.

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(v). Regarding grid interconnection of the project, the Authority observes that NITPPL has carried out an interconnection and system stability study for dispersal of electric power from the above mentioned wind power plant through NTDC. According to the said study, the power generated by NITPPL shall be dispersed at 132-KV level. The dispersal/interconnection arrangement will be consisting of 132-KV double circuit transmission line looping in-out a sub cluster and connecting nearby wind power plants to Jhimpir-New 132KV collector substation. NTDC through its letter No. 6872/GM/GSC/ dated June 09 has approved the interconnection study of NITPPL and has issued power evacuation certificate to NITPPL. NTDC has further clarified that the power to be generated by NITPPL will be evacuated by December 2019 and the power injected through the project of NITPPL will not have any adverse effect on the national grid as required under the grid code.

(vi). Regarding impact of the project on environment, the Authority is of the opinion that the proposed wind power of NITPPL is based on a renewable energy source and does not cause any pollution however, the operation of the wind power plant may cause some other type of pollution including soil pollution,



water pollution and noise pollution during construction and operation. In this regard, NITPPL carried out an Initial Environment Examination study and Environmental Protection Agency, Government of Sindh has accorded its approval for the same.

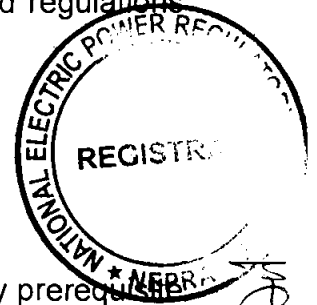
(vii). Regarding land of the project, the Authority has observed that that Land Utilization Department, Govt. of Sindh has allotted 2500 acres of land (on 30 years lease basis), to the sponsors of the project in Deh Kohistan 7/1, Tapo Jhimpir, District Thatta, in the Province of Sindh for 2x50.00 MW wind power plants.

(viii). In view of the clarification and justifications given above, the Authority is of the considered view that the project of NITPPL fulfills the eligibility criteria for grant of generation licence as given under the NEPRA Act, rules and regulations for grant of generation licence.

(E). Grant of Generation Licence

(i). The sustainable and affordable energy/electricity is a key prerequisite for socio-economic development of any country. In fact, the economic growth of any country is directly linked with the availability of safe, secure, reliable and cheaper supply of energy/electricity. In view of the said reasons, the Authority is of the considered opinion that for sustainable development, all indigenous power generation resources including renewable energy must be developed on priority basis.

(ii). The existing energy mix of the country is heavily skewed towards the costlier thermal power plants, mainly operating on imported furnace oil. The import of furnace oil for electric power generation not only causes depletion of the precious foreign exchange reserves of the country but is also an environmental concern. Therefore, in order to achieve sustainable development it is imperative that indigenous RE resources are given priority for power generation and their development be encouraged. The Energy Security Action Plan 2005 (ESAP) of GoP, also recognizes this very aspect of power generation through RE and envisages that at least 5% of total national power generation capacity to be met through RE resources by 2030. The Authority considers that the proposed project of NITPPL is consistent with the provisions of ESAP. The project will help in diversifying the energy portfolio of the country. Further, it will not only enhance the



energy security of the country by reducing the dependence on imported furnace oil but will also help reduction in carbon emission by generating clean electricity, thus improving the environment.

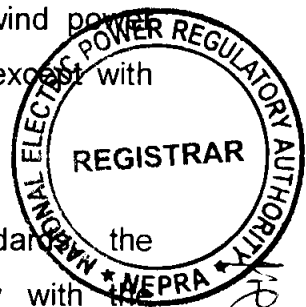
(iii). The term of a generation licence under Rules-5(1) of the Licensing Rules is to commensurate with the maximum expected useful life of the units comprised in a generating facility, except where an applicant for a generation licence consents to a shorter term. As per international benchmark, the useful life of wind turbine generators is considered as 20 to 25 years. In this regard, it is observed that the anticipated Commercial Operation Date (COD) of the wind power plant of NITPPL is December 31, 2019 and it will have a useful life of more than twenty (20) years from its COD. Forgoing in view, the Authority fixes the term of the generation licence as twenty (20) years from COD of the project.

(iv). Regarding the tariff that NITPPL will charge from its power purchaser/CPPA-G, it is hereby clarified that under Section-7(3)(a) of the NEPRA Act, determining tariff, rate and charges etc. is the sole prerogative of the Authority. In view of the said, the Authority directs NITPPL to charge the power purchaser only such tariff which has been determined, approved or specified by the Authority.

(v). Regarding land of the of the project, it is clarified that Land Utilization Department, Govt. of Sindh has allotted 2500 acres of land to NITPPL for development of 2x50 MW wind power plants out of which 1357.33 acres of land would be utilized for this project as shown in schedule-I of the licence. In this regard, the Authority directs NITPPL that the aforementioned land shown in schedule-I shall be exclusively used by NITPPL for the proposed wind power project and NITPPL cannot carry out any other activity on this land except with prior approval of the Authority.

(vi). Regarding compliance with the environmental standards the Authority directs NITPPL to ensure that the project will comply with the environmental standards during the term of the generation licence. In view of the said, the Authority has included a separate article (i.e. Article-10) in the generation licence along with other terms and conditions that the licensee will comply with relevant environmental standards.

(vii). The proposed wind power plant of NITPPL will be using renewable energy resource for generation of electric power. Therefore, the project may qualify

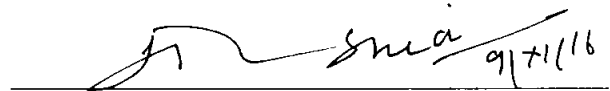


for the carbon credits under the Kyoto Protocol. Under the said protocol, projects coming into operation up to the year 2020 can qualify for the carbon credits. NITPPL has informed that the project will achieve COD by December 31, 2019 which is within the deadline of the Kyoto Protocol. In view of this, an article (i.e. Article-14) for carbon credits and its sharing with the power purchaser has been included in the generation licence. In view of the said, the Authority directs NITPPL to initiate the process in this regard at the earliest so that proceeds for the carbon credits are materialized. NITPPL shall be required to share the proceeds of the carbon credits with the power purchaser as stipulated in Article-14 of the generation licence.

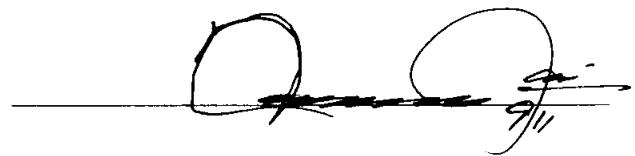
In view of the above, the Authority hereby approves the grant of generation licence to NITPPL on the terms and conditions set out in the generation licence annexed to this determination. The grant of generation licence will be subject to the provisions contained in the NEPRA Act, relevant rules, regulations framed there under and other applicable documents.

Authority:

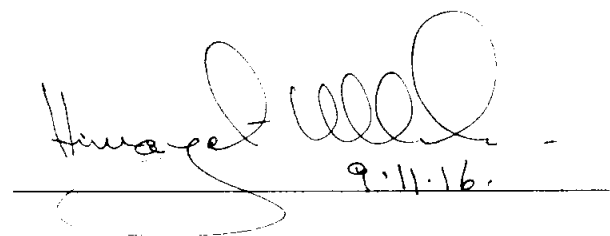
Maj. (R) Haroon Rashid
(Member)

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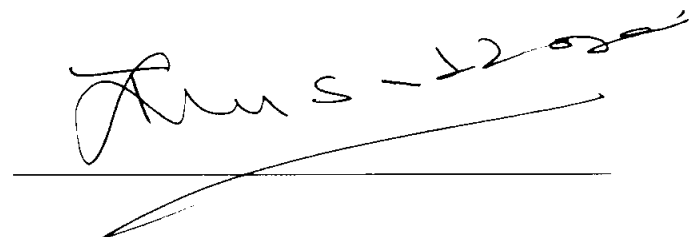
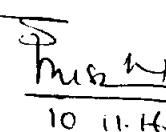
Syed Masood-ul-Hassan Naqvi
(Member)

A handwritten signature in black ink, appearing to read 'Masood-ul-Hassan Naqvi', followed by the date '9/11/16'.

Himayat Ullah Khan
(Member/Vice Chairman)

A handwritten signature in black ink, appearing to read 'Himayat Ullah Khan', followed by the date '9.11.16'.

Tariq Saddozai
(Chairman)

A handwritten signature in black ink, appearing to read 'Tariq Saddozai', followed by the date '10.11.16'.A handwritten signature in black ink, appearing to read 'Tariq Saddozai', followed by the date '10.11.16'.

**National Electric Power Regulatory Authority
(NEPRA)
Islamabad – Pakistan**

GENERATION LICENCE

No. WPGL/36/2016

In exercise of the Powers conferred upon the National Electric Power Regulatory Authority (NEPRA) under Section-15 of the Regulation of Generation, Transmission and Distribution of Electric Power Act, 1997, the Authority hereby grants a Generation Licence to:

NORINCO INTERNATIONAL THATTA POWER (PVT.) LIMITED

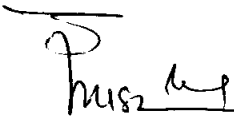
Incorporated under the Companies Ordinance, 1984
Corporate Universal Identification No. 0097671, dated February 04, 2016,

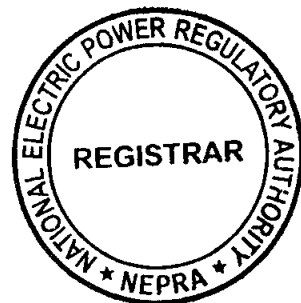
**for Its Generation Facility/Wind Power Plant Located at Deh
Kohlstan 7/1 Tapo Jhimpir, District Thatta, in the Province of Sindh**

(Installed Capacity: 50.00 MW Gross ISO)

to engage in generation business subject to and in accordance with the Articles of this Licence.

Given under my hand on 10th day of November Two
Thousand & Sixteen and expires on 30th day of December
Two Thousand & Thirty Nine.

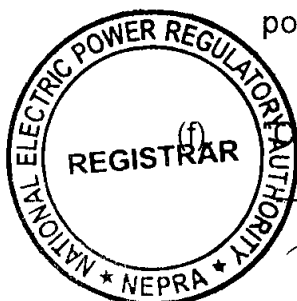

10.11.16
Registrar



Article-1
Definitions

1.1 In this Licence

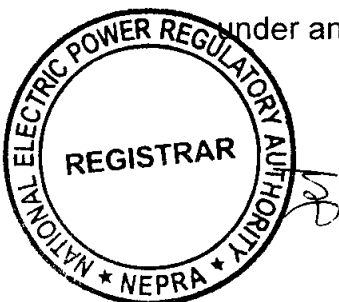
- (a). "Act" means the Regulation of Generation, Transmission and Distribution of Electric Power Act, 1997;
- (b). "Applicable Documents" mean the Act, the NEPRA rules and regulations, any documents or instruments issued or determinations made by the Authority under any of the foregoing or pursuant to the exercise of its powers under the Act, the grid code, the applicable distribution code, if any, or the documents or instruments made by the licensee pursuant to its generation licence, in each case of a binding nature applicable to the licensee or, where applicable, to its affiliates and to which the licensee or any of its affiliates may be subject;
- (c). "Authority" means the National Electric Power Regulatory Authority constituted under Section-3 of the Act;
- (d). "Bus Bar" means a system of conductors in the generation facility/wind power plant of the Licensee on which the electric power of all the wind turbine generators or WTGs is collected for supplying to the Power Purchaser;
- (e). "Carbon Credits" mean the amount of Carbon Dioxide (CO₂) and other greenhouse gases not produced as a result of generation of energy by the generation facility/wind power plant, and other environmental air quality credits and related emissions reduction credits or benefits (economic or otherwise) related to the generation of energy by the generation facility/wind power plant, which are available or can be obtained in relation to the generation facility/wind power plant after the COD;



"Commercial Operations Date (COD)" means the day immediately

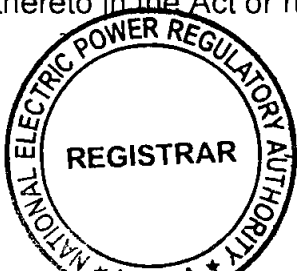
following the date on which the generation facility/wind power plant
of the Licensee is Commissioned;

- (g). "CPPA-G" means Central Power Purchasing Agency (Guarantee)
Limited or any other entity created for the like purpose;
- (h). "Distribution Code" means the distribution code prepared by XW-
DISCO(s) and approved by the Authority, as it may be revised from
time to time with necessary approval of the Authority;
- (i). "Energy Purchase Agreement" means the energy purchase
agreement, entered or to be entered into by and between the Power
Purchaser and the Licensee, for the purchase and sale of electric
energy generated by the generation facility/wind power plant, as may
be amended by the parties thereto from time to time
- (j). "Grid Code" means the grid code prepared by NTDC and approved
by the Authority, as it may be revised from time to time by NTDC with
the approval by the Authority;
- (k). "HESCO" means Hyderabad Electric Supply Company Limited and
its successors or permitted assigns;
- (l). "IEC" means the International Electro-technical Commission and its
successors or permitted assigns;
- (m). "IEEE" means the Institute of Electrical and Electronics Engineers
and its successors or permitted assigns;
- (n). "Law" means the Act, relevant rules and regulations made there
under and all the Applicable Documents;



- (o). "Licensee" means **Norinco International Thatta Power (Pvt.) Limited** and its successors or permitted assigns;
- (p). "NTDC" means National Transmission and Despatch Company Limited and its successors or permitted assigns;
- (q). "Policy" means the Policy for Development of Renewable Energy for Power Generation, 2006 of Government of Pakistan as amended from time to time;
- (r). "Power Purchaser" means the CPPA-G purchasing electric power on behalf of XW-DISCO(s) from the Licensee, pursuant to an Energy Purchase Agreement for procurement of electricity;
- (s). "Regulations" mean the National Electric Power Regulatory Authority Licensing (Application & Modification Procedure) Regulations, 1999 as amended or replaced from time to time;
- (t). "Rules" mean the National Electric Power Regulatory Authority Licensing (Generation) Rules, 2000;
- (u). "Wind Power Plant" or "Wind Farm" means a cluster of Wind Turbines in the same location used for production of electric power;
- (v). "Wind Turbine Generator" or "WTG" means the machines installed at the generation facility/wind power plant with generators for conversion of wind energy into electric power/energy;
- (w). "XW DISCO" means an Ex-WAPDA distribution company engaged in the distribution of electric power.

1.2 Words and expressions used but not defined herein bear the meaning given thereto in the Act or rules and regulations issued under the Act.



Article-2
Applicability of Law

This Licence is issued subject to the provisions of the Law, as amended from time to time.

Article-3
Generation Facilities

3.1 The location, size (capacity in MW), technology, interconnection arrangements, technical limits, technical and functional specifications and other details specific to the generation facility/wind power plant of the Licensee are set out in Schedule-I of this Licence.

3.2 The net capacity of the generation facility/wind power plant of the Licensee is set out in Schedule-II hereto.

3.3 The Licensee shall provide the final arrangement, technical and financial specifications and other specific details pertaining to its generation facility/wind power plant before its COD.

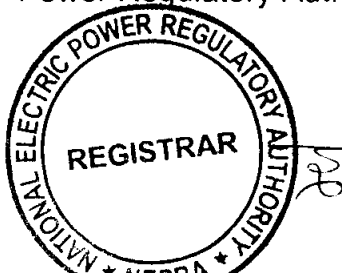
Article-4
Term of Licence

4.1 The Licence is granted for a term of twenty (20) years from the COD of the generation facility/wind power plant.

4.2 Unless suspended or revoked earlier, the Licensee may apply for renewal of this licence ninety (90) days prior to the expiry of the above term, as stipulated in the Regulations.

Article-5
Licence fee

After the grant of this licence, the Licensee shall pay to the Authority the Licence fee, in the amount, manner and at the time set out in the National Electric Power Regulatory Authority (Fees) Rules, 2002.



Article-6
Tariff

The Licensee shall charge only such tariff which has been determined, approved or specified by the Authority.

Article-7
Competitive Trading Arrangement

7.1 The Licensee shall participate in such manner as may be directed by the Authority from time to time for development of a Competitive Trading Arrangement. The Licensee shall in good faith work towards implementation and operation of the aforesaid Competitive Trading Arrangement in the manner and time period specified by the Authority. Provided that any such participation shall be subject to any contract entered into between the Licensee and another party with the approval of the Authority.

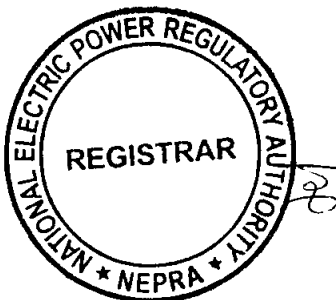
7.2 Any variation or modification in the above-mentioned contracts for allowing the parties thereto to participate wholly or partially in the Competitive Trading Arrangement shall be subject to mutual agreement of the parties thereto and such terms and conditions as may be approved by the Authority.

Article-8
Maintenance of Records

For the purpose of sub-rule (1) of Rule-19 of the Rules, copies of records and data shall be retained in standard and electronic form and all such records and data shall, subject to just claims of confidentiality, be accessible by authorized officers of the Authority.

Article-9
Compliance with Performance Standards

The Licensee shall comply with the relevant provisions of the National Electric Power Regulatory Authority Performance Standards (Generation) Rules 2009 as amended from time to time.



Article-10
Compliance with Environmental Standards

The Licensee shall comply with the environmental standards as may be prescribed by the relevant competent authority from time to time.

Article-11
Power off take Point and Voltage

The Licensee shall deliver power to the Power Purchaser at the outgoing bus bar of its grid station. The up-gradation (step up) of generation voltage up to the required dispersal voltage level will be the responsibility of the Licensee.

Article-12
Performance Data of Wind Power Plant

The Licensee shall install monitoring mast with properly calibrated automatic computerized wind speed recording meters at the same height as that of the wind turbine generators and a compatible communication/SCADA system both at its wind power plant and control room of the Power Purchaser for transmission of wind speed and power output data to the control room of the Power Purchaser for record of data.

Article-13
Provision of Information

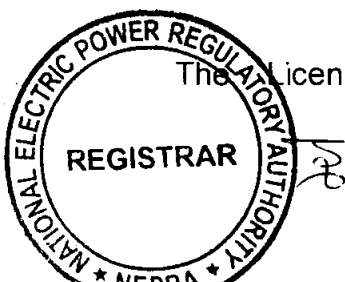
13.1 The obligation of the Licensee to provide information to the Authority shall be in accordance with Section-44 of the Act.

13.2 The Licensee shall in addition to 13.1 above, supply information to the Power Purchaser regarding the wind data specific to the site of the Licensee and other related information on a regular basis and in a manner required by it.

13.3 The Licensee shall be subject to such penalties as may be specified in the relevant rules made by the Authority for failure to furnish such information as may be required from time to time by the Authority and which is or ought to be or has been in the control or possession of the Licensee.

Article-14
Emissions Trading /Carbon Credits

The Licensee shall process and obtain emissions/Carbon Credits



expeditiously and credit the proceeds to the Power Purchaser as per the Policy.

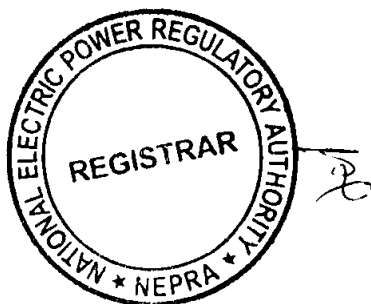
Article-15
Design & Manufacturing Standards

15.1 The Wind Turbine Generator or WTG and other associated equipments of the generation facility/wind power plant shall be designed, manufactured and tested according to the latest IEC, IEEE standards or other equivalent standards in the matter.

15.2 All the plant and equipment of the generation facility/wind power plant shall be unused and brand new.

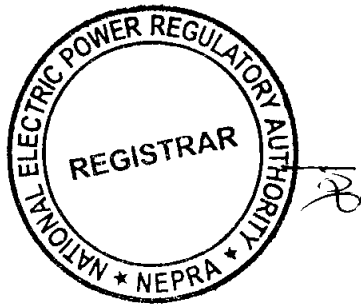
Article-16
Power Curve

The power curve for the individual Wind Turbine Generator or WTG provided by the manufacturer and as mentioned in Schedule-I of this Generation Licence, shall form the basis in determining the cumulative Power Curve of the generation facility/wind power plant.

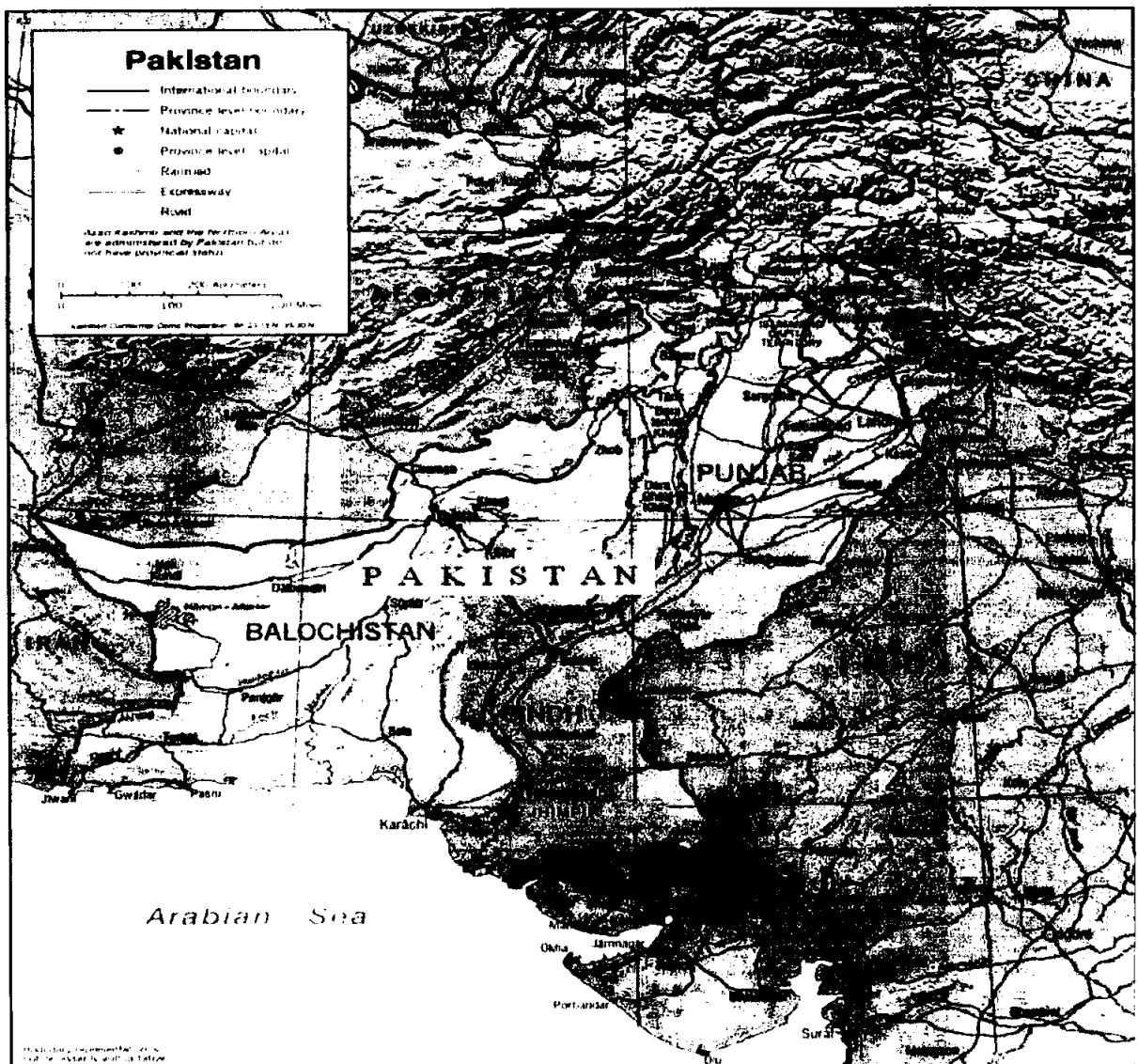


SCHEDULE-I

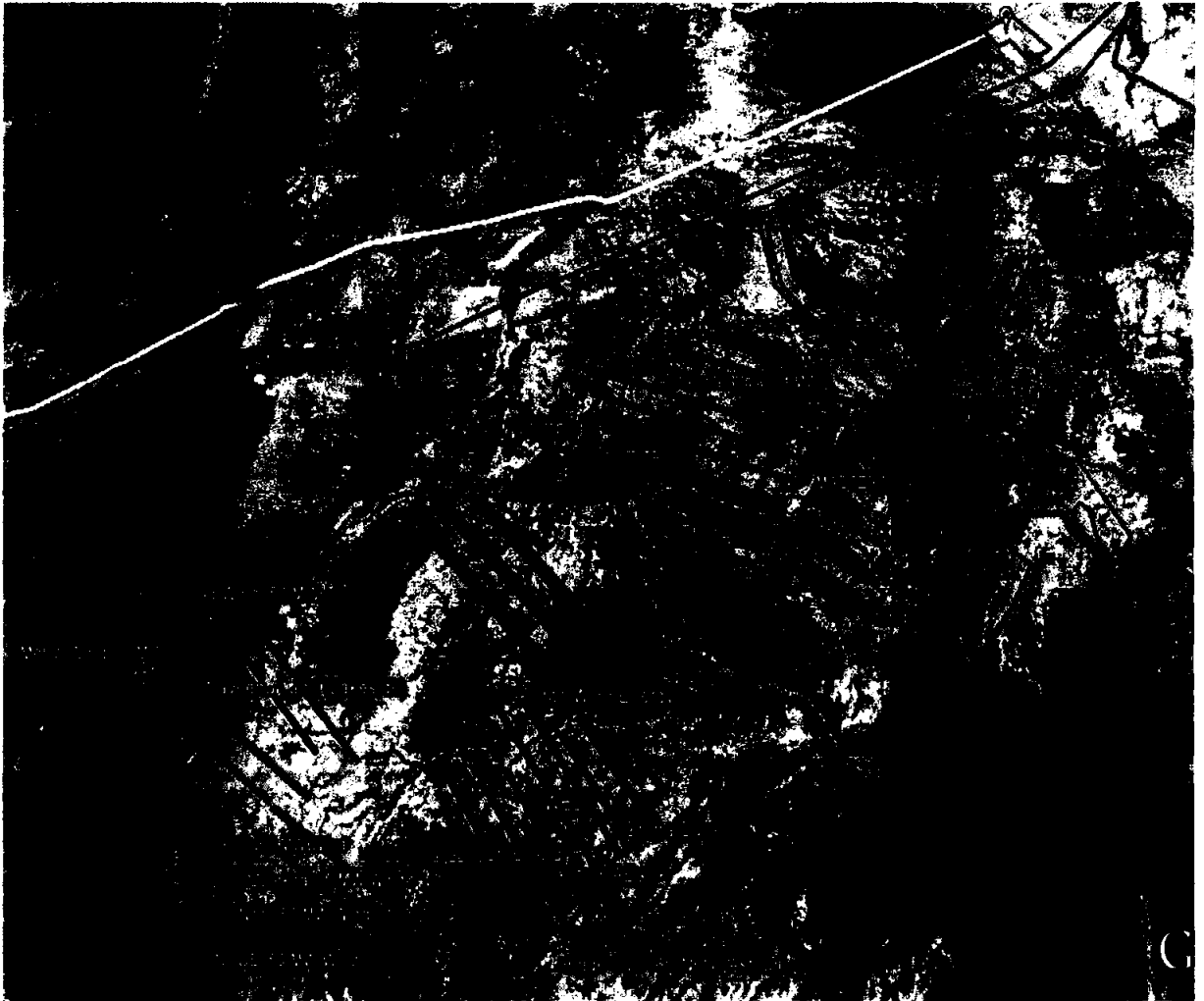
The Location, Size (i.e. Capacity in MW), Type of Technology, Interconnection Arrangements, Technical Limits, Technical/Functional Specifications and other details specific to the Generation Facility/Wind Farm of the Licensee are described in this Schedule.



Site Location of the
Generation Facility/Wind Power Plant of
Norinco International Thatta Power (Pvt.) Limited
(NITPPL)

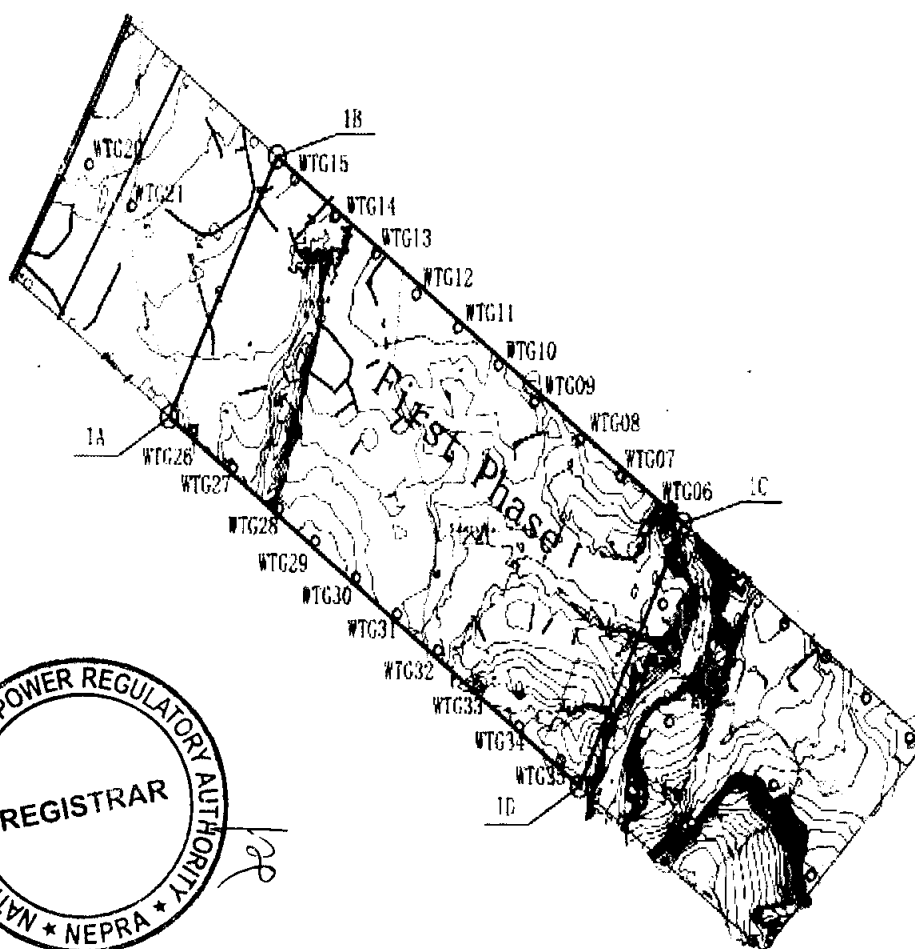


Layout of the Generation Facility/ Wind Power Plant of NITPPL

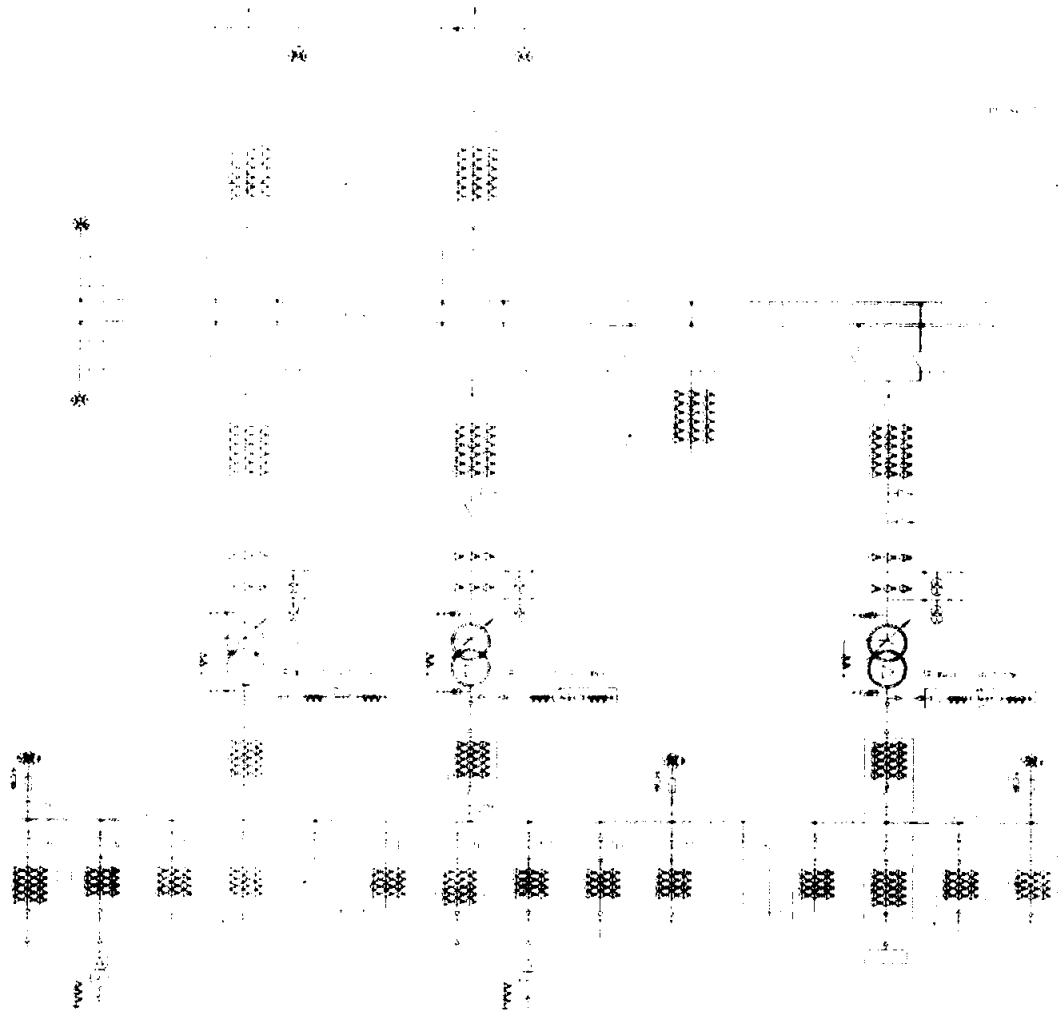


Land Coordinates and Micro-Sitting of the Generation Facility/Wind Power Plant of NITPPL

Boundry	Latitude	Longitude
1A	2778078.31N	400404.74E
1B	2779478.76N	401145.33E
1C	2777527.59N	404018.68E
1D	2776108.92N	403310.86E



**Single Line Diagram (Electrical) of the Generation
Facility/Wind Power Plant of NITPPL**



Interconnection Arrangement for Dispersal of Power from the Generation Facility/Wind Power Plant of NITPPL

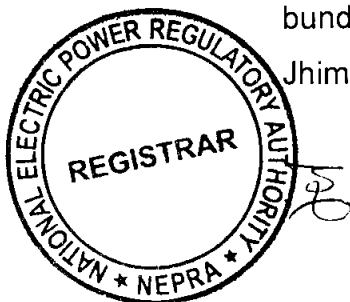
The power generated from the generation facility/wind power plant/wind farm of NITPPL shall be dispersed to the National Grid through the load center of HESCO.

(2). The proposed interconnection arrangement/transmission facilities for dispersal of power will consist of the following:-

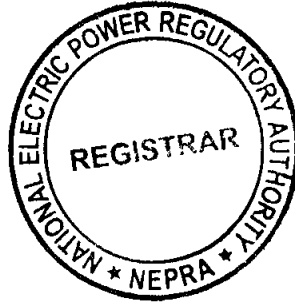
- (a). Addition of 4th 220/132 kV transformer at the under construction Jhimpir New (Jhimpir-1) 220/132 kV substation;
- (b). 132 kV double circuit transmission line approx. 30 km long on Greeley conductor for connecting all the three (03) wind power plants (WPPs) including Shaheen Foundation, Western Energy and NITPPL with 132 kV single circuit from Master WPP to Jhimpir-1. In this scheme, the interconnection of NITPPL WPP includes 132 kV double circuit transmission line. approx. 3 km long, on Greeley conductor for looping In/Out on the 132 kV single circuit from Shaheen Foundation WPP to Master WPP.

(3). The following interconnection schemes/network reinforcement proposed with the other seven (07) WPPs lying in southern part of Jhimpir, will also be required for the reliable power evacuation of three (03) WPPs including NITPPL to the grid:

- (a). 220 kV double circuit transmission line, approx. 18 km long, on twin-bundled Greeley conductor for looping In/Out of one circuit of the existing Jamshoro-KDA-33 double circuit transmission line at the proposed Jhimpir-2 220/132 kV substation;
- (b). 220 kV double circuit transmission line, approx. 07 km long on twin bundled Greeley conductor for looping In/Out one of the planned Jhimpir-Gharo New double circuit transmission line at Jhimpir-2.

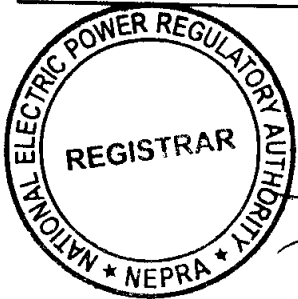
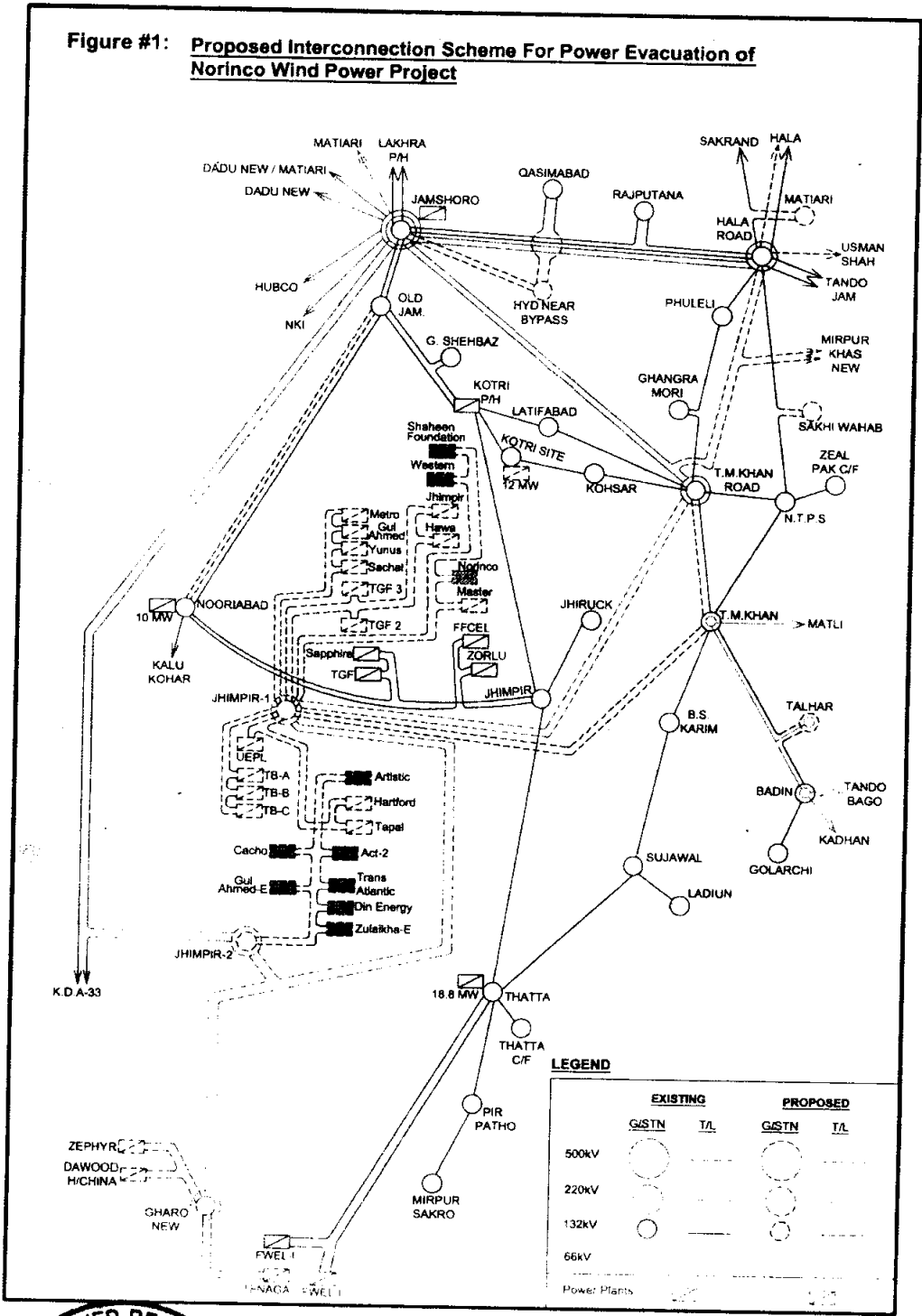


(4). Any change in the above mentioned interconnection arrangement/transmission facilities duly agreed by NITPPL, NTDC and HESCO shall be communicated to the Authority in due course of time.



Schematic Diagram for Interconnection Arrangement for Dispersal of Power from the Generation Facility/Wind Power of NITPPL

**Figure #1: Proposed Interconnection Scheme For Power Evacuation of
Norinco Wind Power Project**



Detail of Generation Facility/Wind Power Plant/ Wind Farm of NITPPL

(A). General Information

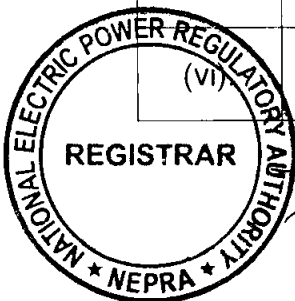
(i).	Name of the Company/Licensee	Norinco International Thatta Power (Pvt.) Limited
(ii).	Registered/Business Office	Suite No. 201, 2 nd Floor, Horizon Vista, Block-4, Clifton, Karachi,
(iii).	Plant Location	Deh Kohistan 7/1, Tapo Jhimpir, District Thatta, in the Province of Sindh
(iv).	Type of Generation Facility	Wind Farm/Wind Power Plant

(B). Wind Farm Capacity & Configuration

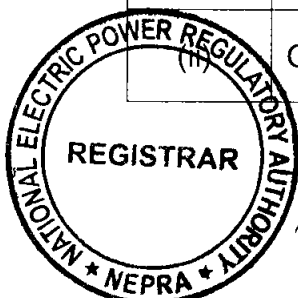
(i).	Wind Turbine Type, Make & Model	Goldwind GW121/2500, Permanent Magnet Direct Drive (PMDD)
(ii).	Installed Capacity of Wind Farm (MW)	50.00 MW
(iii).	Number of Wind Turbine Units/Size of each Unit (KW)	20x2.50 MW

(C). Wind Turbine Details

(a). <u>Rotor</u>		
(i).	Number of blades	3
(ii).	Rotor diameter	121 m
(iii).	Swept area	11595 m ²
(iv).	Power regulation	Combination of blade pitch angle adjustment and generator/converter torque control.
(v).	Cut-in wind speed	3 m/s
(vi).	Cut-out wind speed	22 m/s



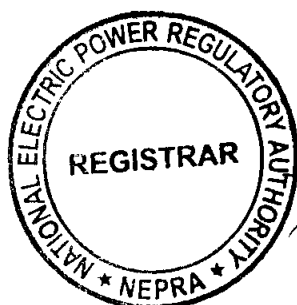
(vii)	Extreme wind speed	52.5 m/s
(viii)	Pitch regulation	Independent Electrical Pitch control system, belt transmission, one for each blade.
(b). <u>Blades</u>		
(i).	Blade length	59.5 m
(ii).	Material	Reinforced fiberglass plastic
(c). <u>Generator</u>		
(i).	Nominal Power	2650 (kW)
(ii).	Voltage	690 V
(iii).	Type	Permanent magnet synchronous generator
(iv).	Degree of Protection	IP54
(v).	Coupling	No coupling
(vi).	Power factor	0.95
(d). <u>Control System</u>		
(i).	Type	Microprocessor control, SCADA.
(ii).	Scope of monitoring	Remote monitoring of different parameters, e.g. temperature sensors, pitch parameters, speed, generator torque, wind speed and direction, etc.
(iii).	Recording	Production data, event list, long and short-term trends
(e). <u>Brake</u>		
(i).	Design	Mechanical brakes
(ii).	Operational brake	Hydraulic Disk Brake for Yaw system.



(iii).	Secondary brake	Hydraulic Rotor Lock (for maintenance only)
(f). <u>Tower</u>		
(i).	Type	Conical barrel tube
(ii).	Hub height	90 m

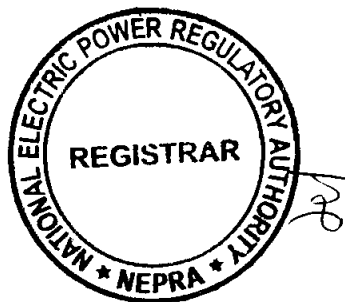
(D). Other Details

(i).	Project Commissioning Date (Anticipated)	December 31, 2019
(ii).	Expected Life of the Project from Commercial Operation Date (COD)	20 Years

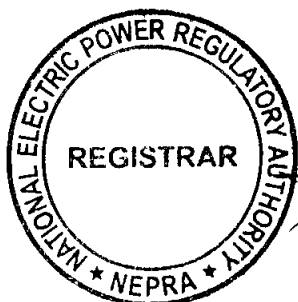
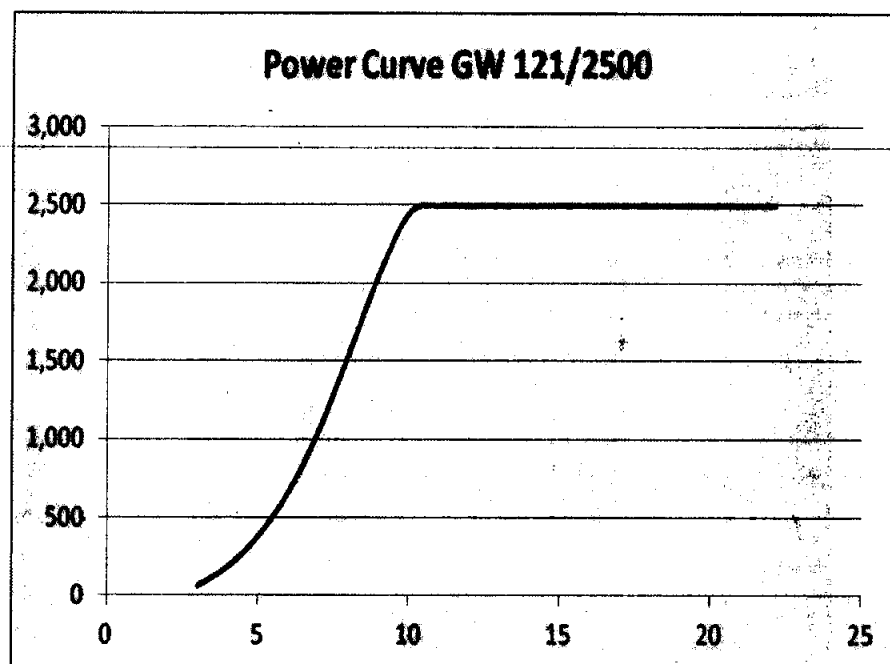


Power Curve of Wind Turbine Generator of
Goldwind GW121/2500
(Tabular)

Wind Speed (m/s)	Power (kW)
3	63
4	188
5	384
6	666
7	1056
8	1555
9	2068
10	2457
11	2500
12	2500
13	2500
14	2500
15	2500
16	2500
17	2500
18	2500
19	2500
20	2500
21	2500
22	2500

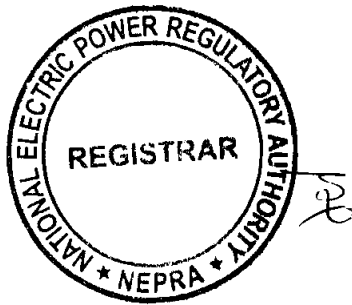


Power Curve of Wind Turbine Generator of
Goldwind GW121/2500
(Graphical)



SCHEDULE-II

The Total Installed/Gross ISO Capacity (MW), 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 Facility /Wind Farm of Licensee are given in this Schedule



SCHEDULE-II

(1).	Total Installed Gross ISO Capacity of the Generation Facility /Wind Farm (MW)	50.00 MW
(2).	De-rated Capacity of the Generation Facility /Wind Farm at Mean Site Conditions (MW)	49.00 MW
(3).	Auxiliary Consumption (MW)	1.70 MW
(4).	Net Capacity of the Generation Facility/Wind Farm at Mean Site Conditions (MW)	47.3 MW

Note

All the above figures are indicative as provided by the Licensee/NITPPL. The net energy available to power purchaser for dispatch will be determined through procedures contained in the energy purchase agreement.

