



Registrar

Modified date no 5266  
date 20-6-04

# National Electric Power Regulatory Authority

Islamic Republic of Pakistan

2nd Floor, OPF Building, G-5/2, Islamabad.  
Ph : 9207200 Ext : 330 — Fax : 9210215  
E-mail : office@nepra.isb.sdnpk.org  
Direct Phone : (051) 9206500

No. NEPRA/R/LAG-55/9951-52

21 - 4 - 2004

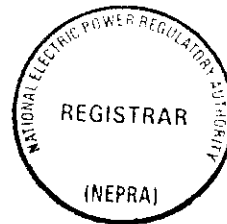
Chief Executive  
Crescent Bahuman Energy Ltd.  
40-A Off Zafar Ali Road,  
Gulberg - V  
Lahore

Subject: **Grant of Generation Licence SGC/024/2004**  
**Licence Application No. RI 10-1-03.025**  
**M/s. Crescent Bahuman Energy Ltd.**

Please refer to your application No. nil dated 29.05.2000 to NEPRA for a Generation Licence.

- Enclosed here is Generation Licence No. SGC/024/2004 granted by the Authority to M/s. Crescent Bahuman Energy Ltd. The Licence is granted to you pursuant to Section 15 of the Regulation of Generation, Transmission and Distribution of Electric Power Act (XL of 1997).
- Also enclosed here is the 'Authorization' pursuant to Section 22 of the Act and Rule 7 of NEPRA Licensing (Generation) Rules - 2000 for sale to bulk power consumers.
- Please quote above mentioned Generation Licence No. in your future correspondence with the Authority.

DA/As above.



*Mahjoob Ahmad Mirza*  
21.04.04  
(Mahjoob Ahmad Mirza)

Copy for information to Director General, Pakistan Environmental Protection Agency, 44-E, Office Tower, Blue Area, Islamabad.

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

**GENERATION LICENCE**

NO. SGC/024/2004

In exercise of the powers conferred on the National Electric Power Regulatory Authority under Section 15 of the Regulation of Generation, Transmission and Distribution of Electric Power Act, 1997 (XL of 1997), the Authority hereby grants a Licence to

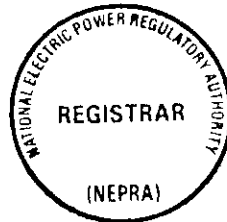
**M/s Crescent Bahuman Energy Limited**  
incorporated under the Companies Ordinance, 1984  
under Certificate of Incorporation  
**No. L-06803 of 1993-94 dated 1<sup>st</sup> January 1994**

to engage in the generation business for delivery and sale to the consumers mentioned in schedule I subject to and in accordance with the terms and conditions of the Licence

Issued under my hand at Islamabad this 21<sup>st</sup> day of April two thousand and four.

Signed

Date: 21.04.04



*[Handwritten signature]*

**Article 1**  
**Application of Rules**

Save as expressly provided otherwise, the provisions of the National Electric Power Regulatory Authority Licensing (Generation) Rules, 2000 as amended from time to time shall apply to this Licence.

**Article 2**  
**Definitions**

Unless there is anything repugnant in the subject or context and save as expressly defined hereinafter, words and expressions used in this Licence bear the respective meanings given thereto in the Act or in the Rules.

**Article 3**  
**Grant of Licence**

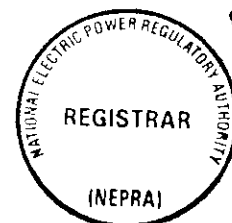
- 3.1 The location, size (capacity in MW), technology, interconnection arrangements, technical limits, technical functional specifications and other details specific to the generation facilities of the licensee are set out in Schedule I of this Licence.
- 3.2 The net capacity of the licensee's generation facilities is set out in Schedule II hereto.

**Article 4**  
**Licence Fee**

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

**Article 5**  
**Term and Renewal of Licence**

This Licence is granted for a term of twelve (12) years.



**Article 6  
Tariff**

The licensee shall charge from its consumers only such tariff which is either approved or specified by the Authority.

**Article 7  
Distribution Facilities of licensee**

Not applicable

**Article 8  
Connection to Transmission System,  
Compliance with Grid Code,  
Pooling and Settlement Arrangement**

Rule 10 of the Rules shall apply only to those SPPs whose generation facilities are connected directly or indirectly at voltage of 132 kV or above.

**Article 9  
Generating Capacity Reserve Requirements**

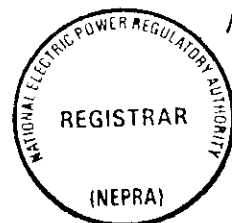
The installed generating capacity of the licensee shall not fall below 85% of the connected load and generating capacity of the largest installed unit at the time of application for generation licence.

**Article 10  
Compliance with Performance Standards**

The licensee shall conform to the relevant NEPRA rules on Performance Standards as may be prescribed by the Authority from time to time.

**Article 11  
Compliance with Environmental Standards**

The licensee shall conform to the environmental standards as may be prescribed by the relevant competent authority.

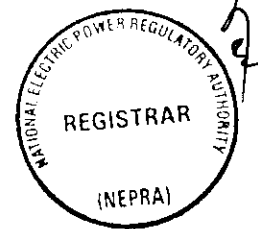


**Article 12**  
**Maintenance of Record**

- 12.1 The licensee shall keep complete and accurate record and data in respect of all aspects of the generation business and the second-tier supply business, in their original as well as in electronic form.
- 12.2 Without prejudice to the provisions of Rule 15(3) of the Rules, unless provided otherwise under the law or the applicable documents, all record and data shall be maintained for a period of five (5) years after the creation of such record or data. The licensee shall not destroy or dispose off any such record or data after the aforesaid period without thirty days prior written notice to the Authority. The licensee shall also not dispose off or destroy any record or data which the Authority directs the licensee to preserve.
- 12.3 All record and data maintained in an electronic form shall, subject to just claims of confidentiality, be accessible to the staff authorized by the Authority.

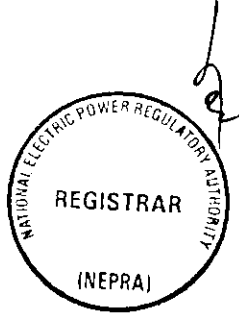
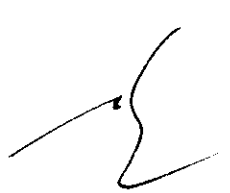
**Article 13**  
**Provision of Information**

- 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 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 have been in the control or possession of the licensee.



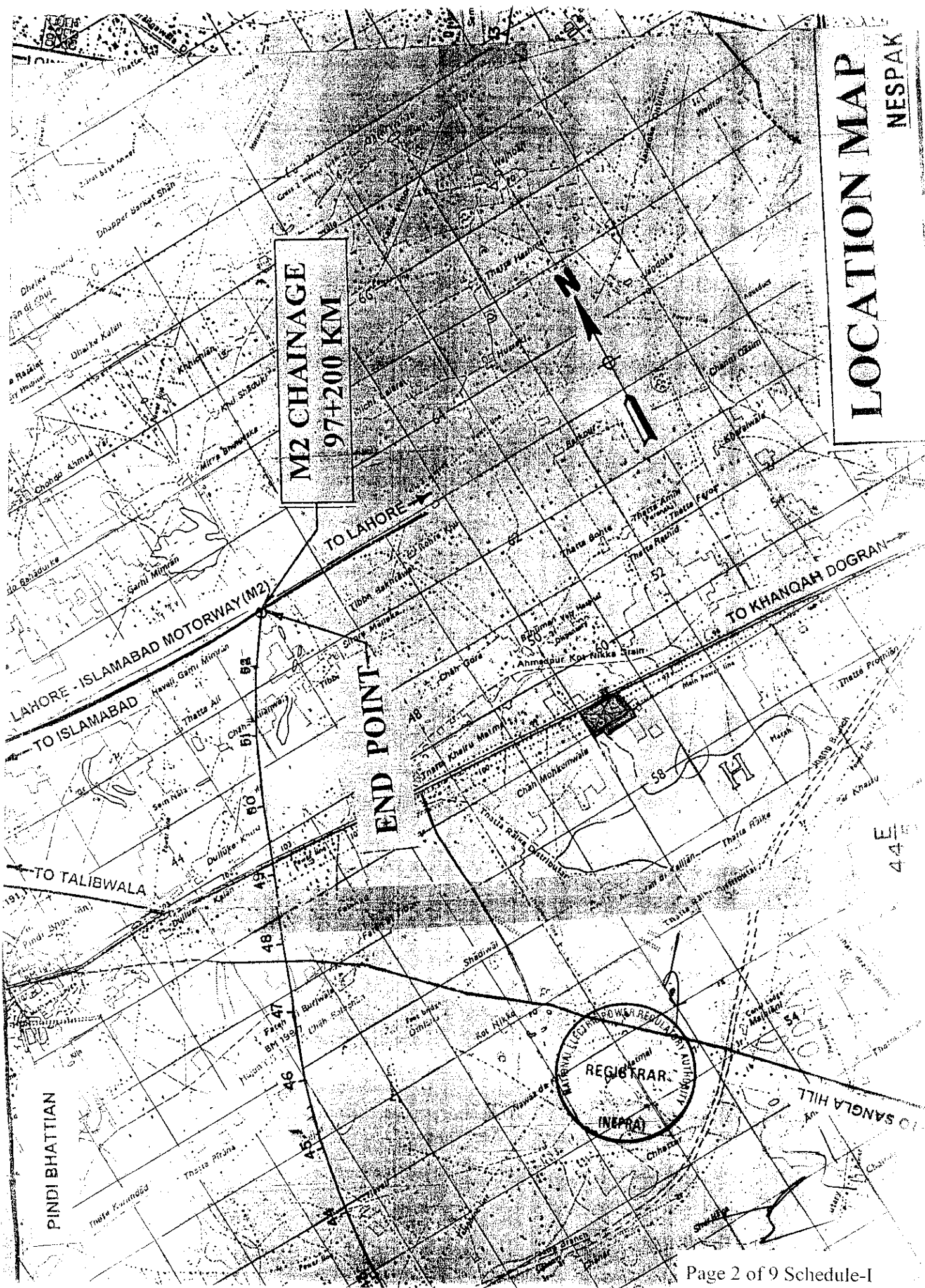
## Schedule – I

The location, size (capacity in MW), technology, interconnection arrangements, technical limits, technical functional specifications and other details specific to the generation facilities of the licensee



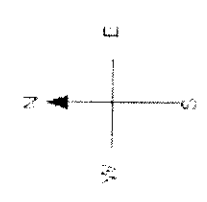
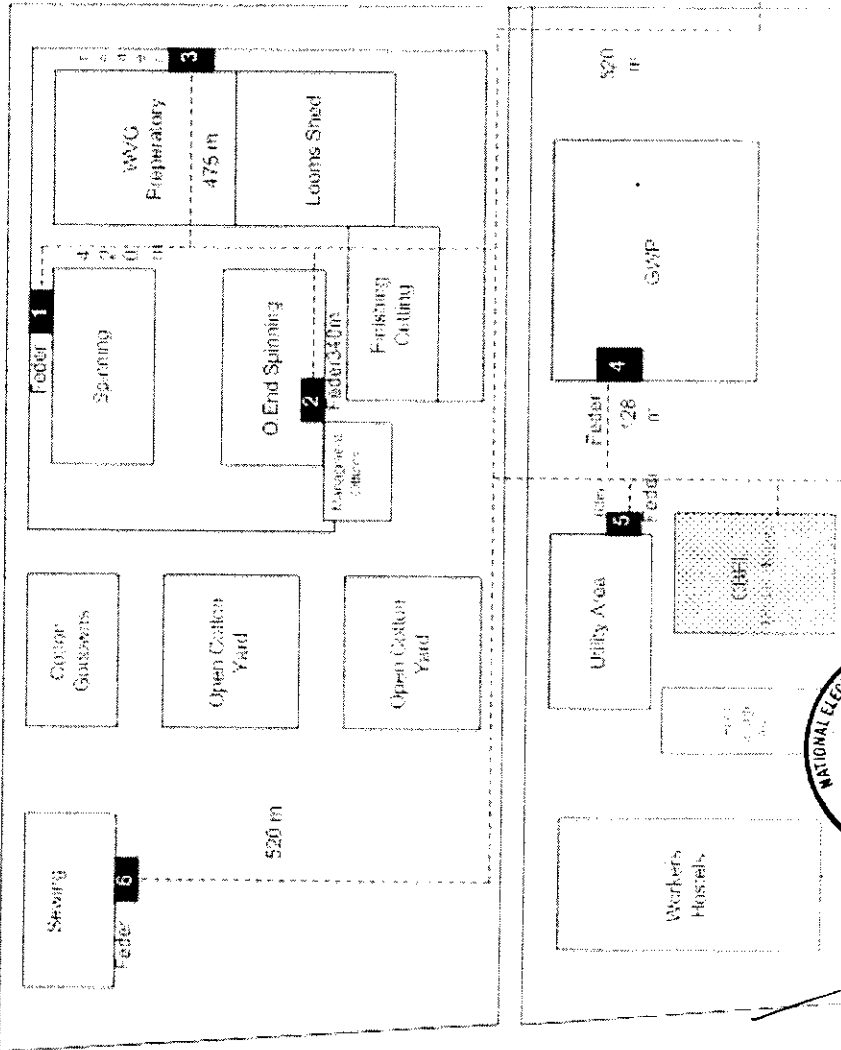
# LOCATION MAP

**M2 CHAINAGE**  
**97+200 KM**



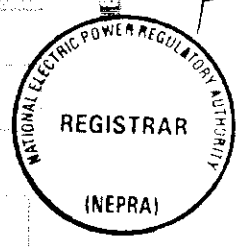
# Map of Crescent Bahuman Energy Limited & Feeders in Crescent Bahuman Limited

Feeders	Cable Size	Length
Spinning	3x120mm <sup>2</sup>	420m
Open Erc	3x95mm <sup>2</sup>	340m
Weaving	3x120mm <sup>2</sup>	475m
GWP	3x120mm <sup>2</sup>	128m
Utility	3x95mm <sup>2</sup>	60m
Sewing	3x95mm <sup>2</sup>	520m
Colony	3x50mm <sup>2</sup>	520m
Waste Water	3x95mm <sup>2</sup>	130m



Key

----- = Feeder Cable



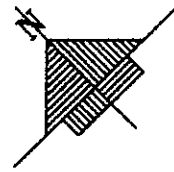
B o u n d a r y W a l l O f C o b l

Gate #3

Entrance

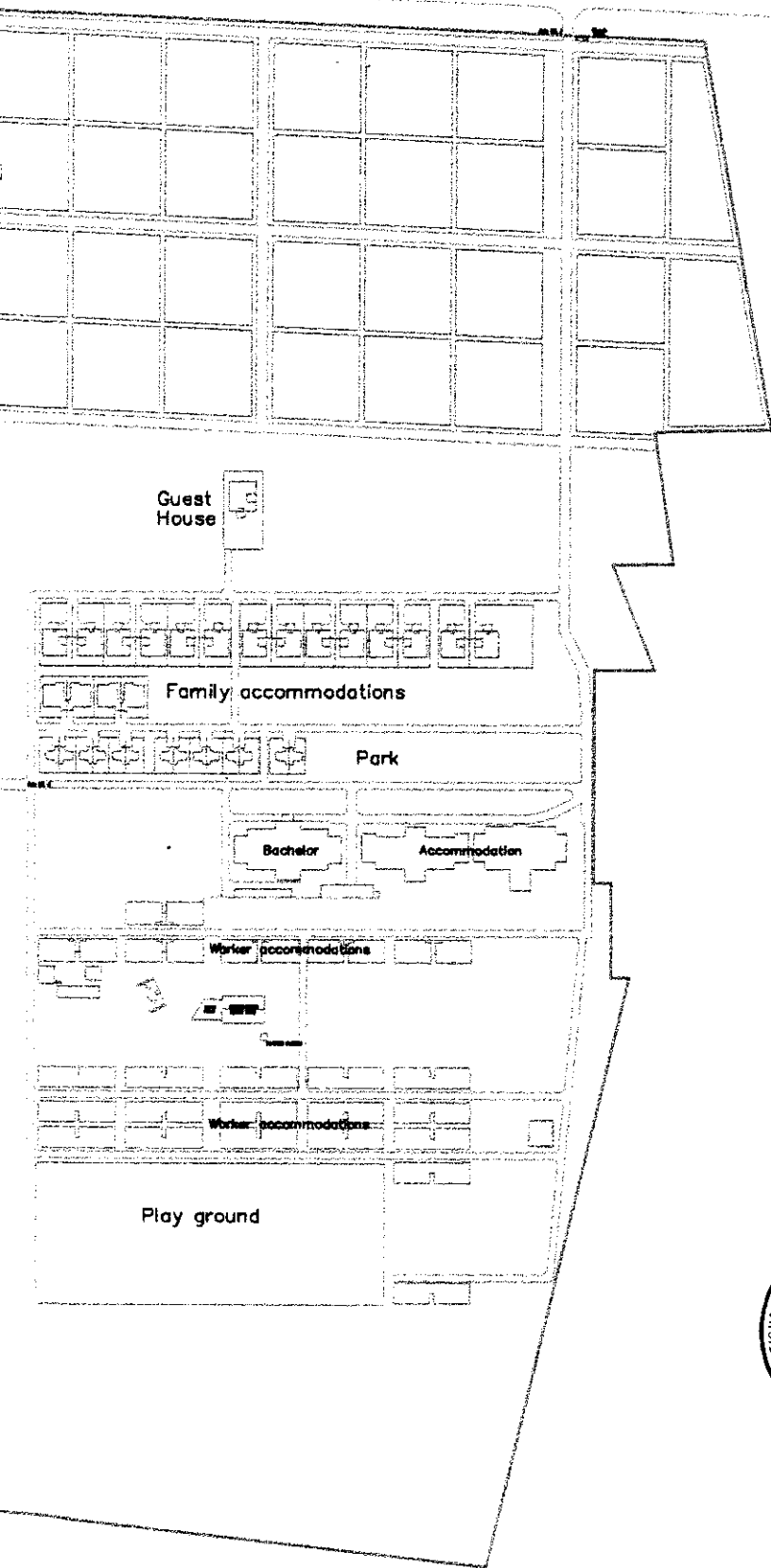
Gate #2

Gate #1



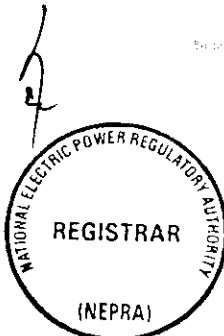
Sargodha road

Lahore



**Legend**

- Spinning
- Processing
- Weaving
- Gements (CSG)
- Utility
- Crane
- Constructed road
- Proposed road



Page 4 of 9 Schedule-I

Note:

- 1) Total Structural Coverd Area = 992148 Sft
- 2) Total Plant Area = 8475078 Sft

2003	Name	Date	<b>crescent bahūmān</b>
Drawn by	Naqem	18 / 12 / 03	
Checked by	Bilal	18 / 12 / 03	
Approved by	Munir Ahn	18 / 12 / 03	
Scale	Plant & machinery layout		
NTS	DWG NO. 001 Comp. Code. CBL-PML-03		

## PLANT DETAILS

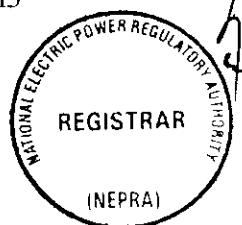
- |    |                   |  |
|----|-------------------|--|
| 1. | Name of Applicant | Crescent Bahuman Energy Limited                |
| 2. | Registered Office | 40A-Off Zafar Ali Road Gulberg V, Lahore       |
| 3. | Plant Location    | Lahore-Sargodha Road Bahuman Distt. Hafiz Abad |
| 4. | Type of Facility  | Thermal Generation                             |

### Plant Configuration

- |     |   |  |
|-----|---|--|
| 5.a | Plant size                                  | 11.632 MW  |
| 5.b | Type of Technology                          | Diesel Generators  |
| 5.c | Number of Units                             | 03   |
| 5.d | Unit Size                                   | 2 x 5.2 MW & 1x 0.83 MW  |
| 5.e | Unit Make and Model,<br>Date of Manufacture | 2 Engine of WARTSILA make, Modle 16 V32E<br>manufacturing date Jan, 1994 and 01 Engine of<br>Mitsubishi make, Model S16N manufacturing date<br>Aug, 1985. (Diesel) |
| 5.f | Date of Commissioning                       | June 1 <sup>st</sup> , 1995  |

### Fuel Use

- |     |                              |  |
|-----|------------------------------|--|
| 6.a | Fuel Type                    | Heavy fuel and Diesel Oil.                     |
| 6.b | Fuel ( Imported/ indigenous) | Imported                                       |
| 6.c | Fuel Supplier                | TOTAL Pakistan Ltd./ Shell Pakistan Ltd        |
| 6.d | Supply Arrangement           | Road   |
| 6.e | No. of Tanks                 | 03 Heavy Fuel Tanks and 01 Diesel Oil Tank.    |
| 6.f | Storage Capacity/ Tank       | 1000 m3/ Heavy Fuel Tank & 100 m3 Diesel tank. |
| 6.g | Gross Storage                | 3100 m3  |



**Emission Values**

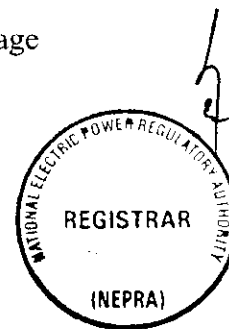
7.a	So <sub>2</sub>	690.4 mg/nm <sup>3</sup>
7.b	Nox	2067.7 mg/nm <sup>3</sup>
7.c	CO <sub>2</sub>	0.4%
7.d	Particulate	47.3 mg/ nm <sup>3</sup>
8.	Cooling Water Source	Tube Wells
9.	Total Installed Capacity	11.632 MW
10.	Total Derated Capacity	11.23 MW
11.	Expected Remaining Life of the Facility	13 Years
12.	Operational Record	Provided

**Project Cost**

13.a	Equity (Thousand Rs.)	60,000
13.b	Debt (Thousand Rs.)	206,000
13.c	Total project Cost (Thousand Rs.)	266,000

**Plant Characteristics**

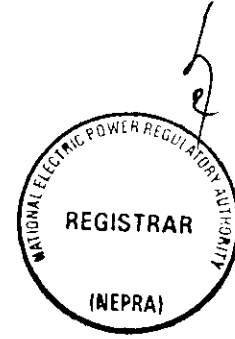
14.a	Generation Voltage (Volts)	11000 Voltage
14.b	Frequency	50 HZ
14.c	Power Factor	0.8
14.d	Automatic Generation Control	Yes



- 14.e Ramping Rate 50 KW/ per second
- 14.f Alternative fuel Diesel Oil
- 14.g Auxiliary Consumption (2003) 1441.6 MWH
- 14.h Time Required to Synchronize  
to LESCO Grid. Not Applicable

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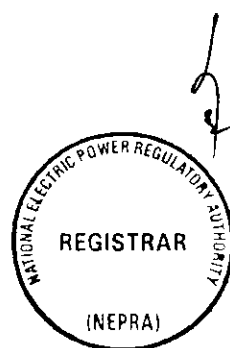


**SPP Licenses-Performa for Information regarding Distribution issues**

**Part A**

**Network Facts**

- A. No. of Feeders 08
- B. Length of Each Feeder (meters) 420, 340, 475, 128, 60, 520, 520, 130
- C. Length of Each Feeder to Each Consumer N/A
- D. In Respect of All the feeders, Describe the property (Streets, farms agri Land etc,) through, under or over which they pass right up to the consumer's premises whether they cross-over or Pass near the DISCO Lines. Through Under Ground Trenches & Within Factory Premises.
- E. Whether Owned by SPP, Consumer or DISCO (deal With each Feeder Separately) All Feeders are Owned By Consumer
- If owned by DISCO please furnish particulars of contractual Arrangement.
  - Operation and maintenance responsibility for each Feeder.
- F. Whether connection with DISCO's Network exists (whether active or not) No  
If yes, provide details of Connection Arrangements (both technical and Contractual)
- Any other network information Deemed relevant for disclosure to or consideration by NEPRA. NONE



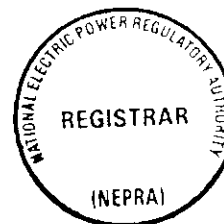
**SPP Licenses-proforma for Information regarding Distribution issues**

**PART-B**

**Consumption Facts**

- |    |  |   |
|----|--|---|
| A. | No. of Consumers   | One   |
| B. | Location of Consumer<br>(distance and/ or Identity of Premises)  | Within same Boundary  |
| C. | Contracted Capacity and<br>Load Factor for each Consumer   | 9.8 MW<br>5.65 MW (Running peak load)                       |
| D. | Specify Whether  |   |
|    | i) the consumer is an associate under<br>taking of the SPP*- if yes, specify<br>percentage ownership of equity;                      | SPP is owned by Crescent<br>Bahuman Limited                 |
|    | ii) there are common directorship;   | Yes   |
|    | iii) either can exercise influence<br>or control over the other.   | Yes   |
| E. | Specify nature of contractual relationship   |   |
|    | I) Between each consumer and the SPP; and  | Power Generation  |
|    | II) each consumer and host DISCO.  | Nil   |
| F. | Capacity originally sanctioned by<br>Provincial Government – If subsequently<br>enhanced, evience of permissions for<br>enhancement. | _____   |
| G. | Tariff arrangement and particulars with<br>WAPDA/Provincial Government.  | AS per Provincial<br>Government approval &<br>same as WAPDA |

\* as defined in the Companies Ordinance, 1984.

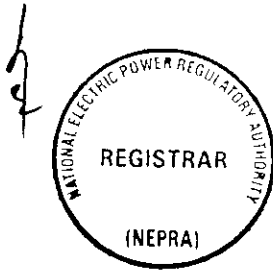


## Schedule - II



## Schedule-II

Gross Installed Capacity (MW)	11.632
Derated Capacity (MW)	11.23
Auxiliary Consumption (MW)	0.164
Net Capacity of the Plant (MW)	11.066



N/A

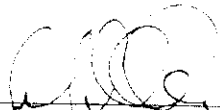
A handwritten signature in black ink.

**Authorization by National Electric Power Regulatory Authority**  
**To**  
**M/s Crescent Bahuman Energy Limited**  
Incorporated under the Companies Ordinance, 1984  
Under Certificate of incorporation No. L-06803 dated 1<sup>st</sup> January, 1994  
**NEPRA Generation Licence No. SGC/024 /2004**  
**For**  
**Sale to Bulk Power Consumers**

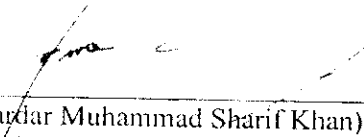
Pursuant to Section 22 of the Act and Rule 7 of the NEPRA Licensing (Generation) Rules - 2000, the Authority hereby authorizes M/s Crescent Bahuman Energy Limited (Licensee) to engage in second-tier supply business, limited to the following consumer also mentioned in Schedule I of Generation Licence No. SGC/ 024 /2004.

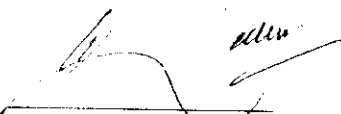
Subject to NEPRA rules and regulations, the Licensee shall charge its consumer only the second-tier supply charge at the rate of Rs. 4.00 per Kwh as determined by the Authority in its determination dated 24-11-2003 & 22.03.2004


1. Crescent Bahuman Limited, Lahore-Sargodha Road, Bahuman, Distt. Hafiz Abad.

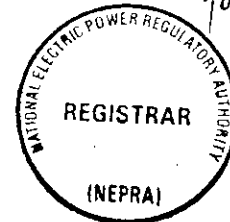
  
(Fazlullah Qureshi)  
Member

  
(Mansoor Elahi)  
Member

  
(Engr. Sardar Muhammad Sharif Khan)  
'T.St.'  
Member

  
(Abdul Rahim Khan)  
Vice Chairman

  
Lt. Gen.(R) Saeed uz Zafar, HI (M)  
Chairman



**Term of the Licence  
(Article 5 of the Licence)  
Crescent Bahuman Energy Limited**

The Rule 5 of the Licensing (Generation) Rules - 2000 stipulates that the term of Licence shall be commensurate with the maximum expected useful life of the units comprised in a generation facility demonstrated to the satisfaction of the Authority unless the applicant consents to a shorter period.

Crescent Bahuman Energy Limited, has shown in its application No.CGEL/FIN/487/2000 dated 31 - 08 - 2000 to NEPRA for a generation licence, remaining life of its facility as 18/20 years.

The Licensing Group considers that the Diesel Electric Generators normally have useful life of around 20 years. Since the plants of Crescent Bahuman Energy Limited were manufactured in 1985/1994 and commissioned in 1995, therefore the Group recommends that the Licence be issued to Crescent Bahuman Energy Limited by the Authority for twelve (12) years from the date of grant of this Licence by the Authority.

**AUTHORITY DECISION**

The Authority agrees with the Licensing Group recommendations about the term of this Licence. The Licence is granted for a term of twelve (12) years.

**Authority**

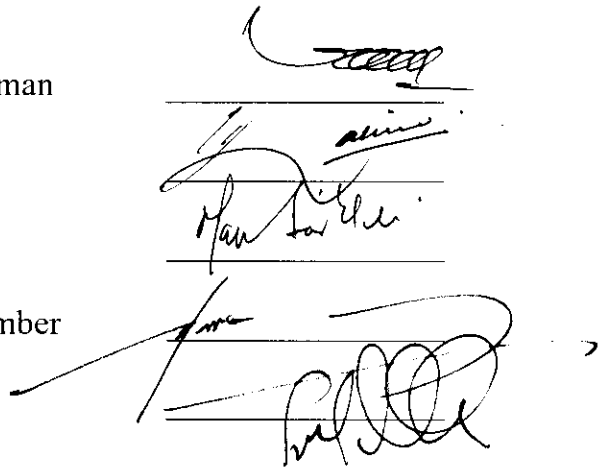
Lt. Gen. (R) Saeed uz Zafar, HI (M), Chairman

Mr. Abdul Rahim Khan, Vice Chairman

Mr. Mansoor Elahi, Member

Sardar Muhammad Sharif Khan T. St., Member

Mr. Fazlullah Qureshi, Member



The image shows four handwritten signatures, each written over a horizontal line. The signatures are in black ink and appear to be cursive or semi-cursive. The first signature is at the top, followed by the second, third, and fourth signatures below it. The signatures are positioned to the right of the names listed in the text.

**Term of the Licence  
(Article 5 of the Licence)  
Crescent Bahuman Energy Limited**

The Rule 5 of the Licensing (Generation) Rules - 2000 stipulates that the term of Licence shall be commensurate with the maximum expected useful life of the units comprised in a generation facility demonstrated to the satisfaction of the Authority unless the applicant consents to a shorter period.

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**AUTHORITY DECISION**

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**Authority**

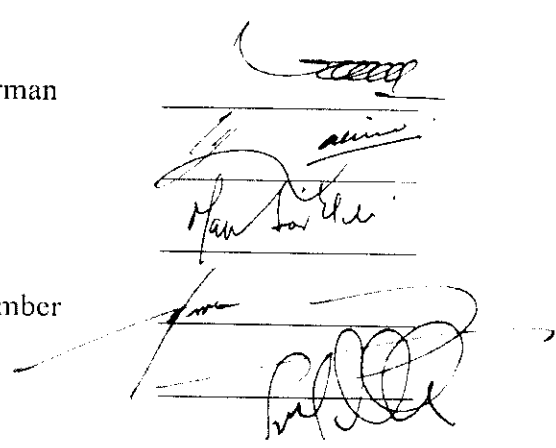
Lt. Gen. (R) Saeed uz Zafar, HI (M), Chairman

Mr. Abdul Rahim Khan, Vice Chairman

Mr. Mansoor Elahi, Member

Sardar Muhammad Sharif Khan T. St., Member

Mr. Fazlullah Qureshi, Member

The image shows four handwritten signatures, each written on a horizontal line. The signatures are in black ink and appear to be cursive or semi-cursive. The first signature is at the top, followed by the second, third, and fourth signatures below it, corresponding to the names listed on the left.

## **BRIEF FOR THE AUTHORITY**

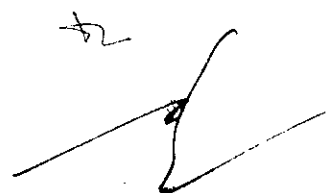
### **Crescent Bahuman Energy Limited**

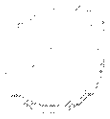
- |    |  |  |
|----|--|--|
| 1. | Type & Plant Location  | Diesel Engine Combined Cycle Type<br>Lahore-Sargodha Road Bahuman, Distt.<br>Hafiz Abad.                             |
| 2. | <u>Plant Capacity</u><br>Installed Capacity<br>Size and No. of Units | 11.632 MW<br>2x5.2 MW & 1x0.83 MW  |
| 3. | Emission Values Provided   | Provided   |
| 4. | Consumer Statistics  | One Consumer   |
|    | a. No of Feeders   | 08   |
|    | b. Length of Feeders   | 420, 340, 475, 128, 60, 520, 520, 130, (in<br>meters)  |
|    | c. Name of Consumer  | Crescent Bahuman Limited   |
| 5. | Capacity Requirements  | Meet the Criteria of Article 9 of the<br>Licence & subject to the evidence<br>provided by the applicant.             |
| 6. | Whether Distribution Licence<br>required                             | No [All distribution facilities are<br>within the boundary of Crescent<br>Bahuman Limited and<br>Owned by consumer.] |
| 7. | Licence Period   | Group recommends twelve (12) years<br>period   |



## ANNEX-I

(1).	Gross Installed Capacity	11.632
(2)	Derated Capacity	11.23 MW
(3)	Gross Generation (2003)	33236.9 MWH
(4)	Auxiliary Consumption (2003)	1441.6 MWH
(5)	Net Capacity	11.066 MW
(6)	(i) Total Consumer Contracted Load	9.8 (Connected Load)
	(ii) Diversified Load (85% for more than one feeder)	8.33
(7)	Least Possible Available Generation	5.86 MW
(8)	Capacity Reserve <b>Shortfall</b> [(7) - (6) iii]	2.464 MW
(9)	Meets the Criteria Under Article 9 of Licence	The applicant has claimed that its running load has never been more than 5.65 MW. Applicant also provided historical evidence (Annex-D). The group also agrees that ratio of peak load to connected load is about 60% which is valid according to Electrical Standards.

A handwritten signature in black ink, consisting of a stylized, cursive script. The signature is written over a horizontal line that extends across the width of the signature.



Crescent Bahuman Energy Limited

Crescent Bahuman Energy Limited  
Plant:  
Lahore-Sargodha Road, Bahuman,  
District Hafizabad-52181, Pakistan

Tel: +92-438-531021-27  
Fax: +92-438-531048  
HO: +92-438-111-245-245  
Email: [mailpt@crescentbahuman.com](mailto:mailpt@crescentbahuman.com)

No. CBEL/02-03/04-0011/324  
Date: March 10, 2004

**Fax:- 051-9210215**

Mr. Husnain Zaighum  
Director Licensing  
National Electric Power Regulatory Authority,  
2<sup>nd</sup> Floor, OPF Building, G-5/2,  
Islamabad.

Subject: **Undertaking for approval of Special diversification factor**

Dear Sir

We the Crescent Bahuman Energy Limited under take that our Electrical Power Installed capacity is 11.3 MWH where as our maximum running load is 5.65 MWH. The idle capacity is for stand-by equipment. So you are requested to please grant us special diversification factor for stand-by equipment.

Regards,

**Nauman Qaseem Sulehri**  
Deputy Manager Finance  
Crescent Bahuman Energy Limited.

Head Office:  
40-A Off Zafar Ali Road,  
Gulberg V, Lahore-54000, Pakistan

Tel: +92-42-111-245-245  
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Email: [mailho@crescentbahuman.com](mailto:mailho@crescentbahuman.com)

Website: [www.crescentbahuman.com](http://www.crescentbahuman.com)  
Portal: [www.ecrescent.com](http://www.ecrescent.com)

# Crescent Bahuman Energy Limited

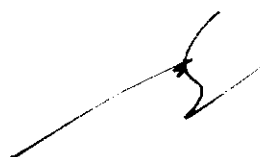
Annex D

Max / Min Load From 1995 ~ 2003										
Year --->	1995	1996	1997	1998	1999	2000	2001	2002	2003	Ttl
Gen (MWh)	23,782	34,395	36,161	32,883	26,723	30,764	33,343	33,237	35,539	286,827
Avg load (kw)	3,068	3,912	4,124	3,753	3,047	3,503	3,807	3,794	4,045	3,673
Max load (kw)	4,700	5,250	5,200	5,100	4,800	4,900	5,200	5,300	5,650	5,650
Min load (kw)	0	0	0	220	210	100	240	250	800	0

## BRIEF FOR THE AUTHORITY

### Crescent Bahuman Energy Limited

1. Type & Plant Location Diesel Engine Combined Cycle Type  
Lahore-Sargodha Road Bahuman, Distt.  
Hafiz Abad.
2. Plant Capacity  
Installed Capacity 11.632 MW  
Size and No. of Units 2x5.2 MW & 1x0.83 MW
3. Emission Values Provided Provided
4. Consumer Statistics One Consumer
  - a. No of Feeders 08
  - b. Length of Feeders 420, 340, 475, 128, 60, 520, 520, 130, (in meters)
  - c. Name of Consumer Crescent Bahuman Limited
5. Capacity Requirements Meet the Criteria of Article 9 of the Licence & subject to the evidence provided by the applicant.
6. Whether Distribution Licence required No [All distribution facilities are within the boundary of Crescent Bahuman Limited and Owned by consumer.]
7. Licence Period Group recommends twelve (12) years period



## ANNEX-I

(1).	Gross Installed Capacity	11.632
(2)	Derated Capacity	11.23 MW
(3)	Gross Generation (2003)	33236.9 MWH
(4)	Auxiliary Consumption (2003)	1441.6 MWH
(5)	Net Capacity	11.066 MW
(6)	(i) Total Consumer Contracted Load	9.8 (Connected Load)
	(ii) Diversified Load	8.33
	(85% for more than one feeder)	
(7)	Least Possible Available Generation	5.86 MW
(8)	Capacity Reserve <b>Shortfall</b> [(7) - (6) iii]	2.464 MW
(9)	Meets the Criteria Under Article 9 of Licence	The applicant has claimed that its running load has never been more than 5.65 MW. Applicant also provided historical evidence (Annex-D). The group also agrees that ratio of peak load to connected load is about 60% which is valid according to Electrical Standards.





crescent bahuman energy

Crescent Bahuman Energy Limited  
Plant:  
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District Hafizabad-52181, Pakistan

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Email : [mailpt@crescentbahuman.com](mailto:mailpt@crescentbahuman.com)

No. CBEL/02-03/04-0011/324

Fax:- 051-9210215

Date: March 10, 2004

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# Crescent Bahuman Energy Limited

Annex D

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Handwritten signature and initials.