

**IPMA AWARDS  
FOR THE YEAR 2015-2016**

**IPMA Paper Mill of the Year Award  
IPMA Energy Conservation Award  
IPMA Environment Award**



**INDIAN PAPER MANUFACTURERS ASSOCIATION**  
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## GENERAL INFORMATION GUIDELINES

1. IPMA Awards have been constituted to give due recognition to forward looking paper mills in the country who can be inspirational to others.
2. IPMA Awards are classified as:
  - A. IPMA Paper Mill of the Year Award
  - B. IPMA Energy Conservation Award
  - C. IPMA Environment Award.
3. IPMA Awards for the year 2015-2016 is for performance during financial year ending 31<sup>st</sup> March 2016.
4. All pulp and paper mills are eligible for contesting these IPMA Awards irrespective of size (integrated or otherwise) or raw material usage.
5. Parameters of evaluation have been developed by a team of eminent personalities associated with the paper industry.
6. A Jury of eminent experts for evaluating entries for IPMA Awards would be constituted. Jury may also at their discretion co-opt experts from different fields for a proper evaluation.
7. The Jury may call for additional information from the shortlisted organisations. The Jury may also develop separate criteria for small paper mills, agro based paper mills, integrated large pulp and paper mills and for multi-product companies, if they so desire. The Jury reserves the right of not recommending an award during a particular year if none of the entries adjudged is deemed worthy of the same.
8. The Jury may also visit the mills if desired necessary, to gather more information or to verify the information already provided.
9. Multi-product companies may be required to give additional information related to their pulp and paper manufacturing activities enabling the Jury to make proper evaluation.
10. Information provided by the applicants will remain confidential.
11. For each Award applied for, applicants are also requested to send, along with the filled-in Application Form, a separate write-up and presentation on their achievements for consideration of the Jury.

Please fill in the Application Form and send (along with relevant documents / enclosures) in **duplicate (hardcopy)** on or before **31<sup>st</sup> October 2016** to IPMA at the address given below. Entries received after due date will not be considered.

**Mr. Rohit Pandit**  
**Secretary General**  
**INDIAN PAPER MANUFACTURERS ASSOCIATION**  
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**Website: [www.ipma.co.in](http://www.ipma.co.in)**

**IPMA Paper Mill of the Year Award 2015-2016**

**A. IPMA Paper Mill of the Year Award 2015-2016****A. General Data**

- A.1 Name of the Mill :
- A.2 Address (Factory) :
- i) Telephone :
- ii) Fax :
- iii) E-mail :
- A.3 Registered / Corporate Office :
- i) Telephone :
- ii) Fax :
- iii) E-mail :
- A.4 Name of the
- i) Chairman :
- ii) Managing Director :
- iii) Director :
- A.5 Contact Person's Name :
- (for correspondence / queries related to the Awards)
- i) Telephone :
- ii) Fax :
- iii) E-mail :
- A.6 Year of Commencement of Production :

Year ends on .....  
(please fill in)

| B.   | Financial Data  |          | 2013-2014 | 2014-2015 | 2015-2016 |
|------|---|----------|-----------|-----------|-----------|
| B.1  | Installed Capacity  | MT       |           |           |           |
| B.2  | Paper Production  | MT       |           |           |           |
| B.3  | Pulp Production   | MT       |           |           |           |
| B.4  | Sales (Paper)   | MT       |           |           |           |
| B.5  | Sales Turnover (Gross)  |          |           |           |           |
|      | i) Paper  | INR Lakh |           |           |           |
|      | ii) Total Company   | INR Lakh |           |           |           |
| B.6  | Total Fixed Assets (Gross)  |          |           |           |           |
|      | i) Paper  | INR Lakh |           |           |           |
|      | ii) Total Company   | INR Lakh |           |           |           |
| B.7  | Gross Profit – Paper<br>(Before Depreciation and Tax)   | INR Lakh |           |           |           |
| B.8  | Net Profit - Paper  | INR Lakh |           |           |           |
| B.9  | Capital Employed*   | INR Lakh |           |           |           |
| B.10 | Working Capital   |          |           |           |           |
|      | i) Current Assets   | INR Lakh |           |           |           |
|      | ii) Current Liabilities   | INR Lakh |           |           |           |
| B.11 | Finished Goods (Paper) Stock at the<br>end of the Year  | MT       |           |           |           |
| B.12 | Finished Goods (Paper) Stock at the<br>end of the Year  | INR Lakh |           |           |           |
| B.13 | Debt at the end of the Year   | INR Lakh |           |           |           |
| B.14 | Workmen / Staff / Officers and Others<br>(including Casual and Contract<br>Workers on the last day of the Year) | Number   |           |           |           |

\* Capital Employed = Net Fixed Assets (excluding revaluation and capital work-in-progress) + Investments + Net Current Assets + Miscellaneous Expenditure.

| C. | Technical Data |  | 2013-2014 | 2014-2015 | 2015-2016 |
|----|----------------|--|-----------|-----------|-----------|
|----|----------------|--|-----------|-----------|-----------|

C.1 **Production of Paper** MT

C.2 **Production of Pulp** MT

**Input Consumption**

C.3 **Raw Materials**  
(show all raw materials on AD basis)

i) Bamboo / Hardwood MT

ii) Bagasse MT

iii) Rice / Wheat Straw MT

iv) Market Pulp MT

v) Waste Paper MT

vi) Others, if any (please specify) MT

C.4 **Chemicals**  
(show chemicals used for pulp /  
paper making together)

i) **Caustic:**

(a) Total MT

(b) Per Tonne of Paper Kg

ii) **Chlorine:**

(a) Total MT

(b) Per Tonne of Paper Kg

iii) **Sodium** (Total) MT

iv) **Sulphate** (Per Tonne of Paper) Kg

v) **Recovery** (Large Mills) %

vi) **Energy** K.Cal

(A composite figure of Joules for all  
energy inputs should be shown and a  
detailed calculation should be  
attached separately)

| D. | Global Competitiveness |  | 2013-2014 | 2014-2015 | 2015-2016 |
|----|------------------------|--|-----------|-----------|-----------|
|----|------------------------|--|-----------|-----------|-----------|

Please provide details separately on the following parameters (emphasis should be on quantifiable achievements)

#### D.1 Research & Development

- i) Technical Personnel Working                      Number
- ii) Amount Spent
  - a) Capital    INR Lakh
  - b) Revenue    INR Lakh
- iii) Patents Developed / Registered              Number
- iv) New Products Developed / Launched      Number
- v) New Innovation in Process  
Technology
- vi) Any other Technical Achievements

#### D.2 Human Resource Development

- i) Number of Persons exposed to Training      Number
- ii) Average Time Spent on per Person
- iii) Quality Circles                                  Number
  - a) Members
  - b) Problems Solved
  - c) Implemented
- iv) Corporate HRD Plan for next 5 years  
(please attach a separate write-up)

#### D.3 Quality

- i) TQM
- ii) Number of People exposed to  
ISO / TQM Training
- iii) Other Achievements in Up gradation  
of Quality



| 2013-2014 | 2014-2015 | 2015-2016 |
|-----------|-----------|-----------|
|-----------|-----------|-----------|

**D.4 Environment**

- i) ISO 9000 (Initiated / Mid-Stream / Received Certificate)
- ii) ISO 14000 (Initiated / Mid-Stream / Received Certificate)
- iii) OHSAS 18001
- iv) FSC – COC
- v) Induction of New Technologies to enhance Operational Efficiencies for Greener Energy and Pollution Abatement (please elaborate to cover each dimension)
- vi) Details of Current Effluent
- vii) Steps taken for Pollution Abatement Measures
- viii) Steps taken in Developing Eco-Friendly Products (please attach a separate write-up)
- ix) Energy Audit (if conducted, please specify years)
- x) Water Audit (if conducted, please specify years)

**D.5 Exports**

- i) Exports of Paper MT
- ii) Export Turnover of Paper INR Lakh
- iii) Offices Abroad, if any
- iv) New Markets Established
- v) Plans for Future

| 2013-2014 | 2014-2015 | 2015-2016 |
|-----------|-----------|-----------|
|-----------|-----------|-----------|

**D.6 Corporate Social Responsibility**

- i) Does the Company have a CSR Policy?  
(if yes, please attach a copy)
- ii) Does the Company have a Policy on:
  - a) HIV / AIDS
  - b) Child Labour
  - c) Labour Practices
  - d) Equal opportunities and non-discrimination with regard to gender, political or other opinion, social origin, religion, etc.
  - e) Prevention of Sexual Harassment
  - f) Employment of Differently-Abled
  - g) Business Ethics
  - h) Accountability
- iii) What are the partnerships created and activities undertaken in the community?  
If yes, briefly describe against each sector mentioned below
  - a) Healthcare
  - b) Education and Literacy Promotion
  - c) Improving Rural Infrastructure
  - d) Rural Community Development: Welfare Programme, Economic Empowerment of Women, Income Generating Programme and Child Welfare
  - e) Any Other (please specify)

**Notes:** 1. Wherever space is insufficient, please provide details in a separate sheet.  
2. Please add any other achievement that you consider significant for evaluation.  
3. Please attach a copy of your last Balance Sheet.

**IPMA Energy Conservation Award 2015-2016**

**B. IPMA Energy Conservation Award 2015-2016****A. General Data**

- A.1 Name of the Mill :
- A.2 Address (Factory) :
- i) Telephone :
- ii) Fax :
- iii) E-mail :
- A.3 Registered / Corporate Office :
- i) Telephone :
- ii) Fax :
- iii) E-mail :
- A.4 Contact Person's Name :  
(for correspondence / queries related to the Awards)
- i) Telephone :
- ii) Fax :
- iii) E-mail :
- A.5 Year of Commencement of Production :
- A.6 Products Manufactured :
- A.7 Total Production (Tonnes) (2015-2016) :

| B. | Technical Data | Unit | Base Year Data for Preceding Three Years |           |           | Reference Year |
|----|----------------|------|--|-----------|-----------|----------------|
|    |                |      | 2012-2013                                | 2013-2014 | 2014-2015 | 2015-2016      |

**B.1 Components of Actual Production**

- |  |    |
|--|----|
| a) Own Pulp  | MT |
| b) Purchased Fibre (pulp, waste paper, etc.) (item wise details) | MT |
| c) Others (including ash and moisture)                           | MT |
| d) Total (a+b+c)   | MT |

**B.2 Energy Inputs**  
(Average calorific value of all energy inputs should be specific figure for each year and not a range)

**B.2.1 Coal**

- |                                   |          |
|-----------------------------------|----------|
| a) Local (by e-auction / linkage) |          |
| Quantity                          | MT       |
| Average Gross Calorific Value     | K.Cal/Kg |
| b) Imported                       |          |
| Quantity                          | MT       |
| Average Gross Calorific Value     | K.Cal/Kg |

**B.2.2 Lignite**

- |                                  |          |
|----------------------------------|----------|
| a) Quantity                      | MT       |
| b) Average Gross Calorific Value | K.Cal/Kg |

**B.2.3 Furnace Oil**

- |                                  |          |
|----------------------------------|----------|
| a) Quantity                      | KL       |
| b) Average Gross Calorific Value | K.Cal/Kg |

| Unit | Base Year Data for Preceding<br>Three Years |           |           | Reference<br>Year |
|------|---|-----------|-----------|-------------------|
|      | 2012-2013                                   | 2013-2014 | 2014-2015 | 2015-2016         |

**B.2.4 Diesel Oil**

- a) Quantity KL
- b) Average Gross Calorific Value K.Cal/Kg

**B.2.5 Biomass**

(black liquor, non-fossil fuel)

- a) Quantity MT
- b) Average Gross Calorific Value K.Cal/Kg

**B.2.6 Power** (purchased only)

- a) Quantity KWH
- b) Average Gross Calorific Value K.Cal/  
MWH

**B.2.7 Others** (please specify)

- a) Quantity MT
- b) Average Gross Calorific Value K.Cal/Kg

**B.2.8 Power**

- a) Purchased KWH
- b) Own KWH
- c) Total (a+b) KWH

**B.2.9 Distribution of Power**

- a) Pulp and Chemical Recovery KWH
- b) Paper Machines KWH  
(including Stock Preparation  
and Finishing Plant)
- c) Others KWH  
(please specify section-wise)
- d) Total (a+b+c) KWH  
[Note: Sl. No. B.2.9 (d) to  
match with Sl. No. B.2.8 (c)]

| Unit | Base Year Data for Preceding<br>Three Years |           |           | Reference<br>Year |
|------|---|-----------|-----------|-------------------|
|      | 2012-2013                                   | 2013-2014 | 2014-2015 | 2015-2016         |

**B.2.10 Steam**

- |   |   |
|---|---|
| a) Generation                               | T |
| b) Distribution                             |   |
| i) Pulp and Recovery                        | T |
| ii) Paper Machine                           | T |
| iii) Power Generation                       | T |
| iv) Others<br>(please specify section-wise) | T |
| v) Total (i+ii+iii+iv)                      | T |
- [Note: Sl. No. B.2.10 (a) to match with Sl. No. B.2.10 (b) v)]

**B.3 Energy Audit**

(If conducted, please specify years)

- Percentage of reduction in energy consumption achieved in comparison to financial year 2011-2012.
- Target for percentage reduction in energy consumption set for financial years 2016-2017 and 2017-2018.
- Whether Company has appointed an Energy Auditor?
- Whether Company is a Designated Consumer (DC) under the PAT Scheme of BEE? If yes, please give Target and Achievement under PAT Cycle 1 and Target for PAT Cycle 2.

**B.4 Measures taken in the Plant to enhance Energy Efficiencies (please elaborate).****Notes: 1. Wherever space is insufficient, please provide details in a separate sheet.****2. Please attach a copy of your:****(a) Annexure to Director's Report – Form-A – Disclosure of particulars with respect to Conservation of Energy.****(b) Schedule VI of the Balance Sheet showing analysis of materials consumed.**

**IPMA Environment Award 2015-2016**



**C. IPMA Environment Award 2015-2016****A. General Data**

- A.1 Name of the Mill :
- A.2 Address (Factory) :
- i) Telephone :
- ii) Fax :
- iii) E-mail :
- A.3 Registered / Corporate Office :
- i) Telephone :
- ii) Fax :
- iii) E-mail :
- A.4 Contact Person's Name :  
(for correspondence / queries related to the Awards)
- i) Telephone :
- ii) Fax :
- iii) E-mail :
- A.5 Year of Commencement of Production :

| Preceding Year<br>2014-2015 | Year Under Review<br>2015-2016 |
|-----------------------------|--------------------------------|
|-----------------------------|--------------------------------|

- A.6 Installed Capacity MT
- A.7 Paper Production MT
- A.8 Pulp Production MT
- A.9 Sales (Paper) MT
- A.10 Sales Turnover (Gross)
- i) Paper INR Lakh
- ii) Total Company INR Lakh
- A.11 Workmen / Staff / Officers & Others Number  
(including Casuals & Contract  
Workers on Last Day of the Year)

**B. Technical Data**

| Preceding Year<br>2014-2015 | Year Under Review<br>2015-2016 |
|-----------------------------|--------------------------------|
|-----------------------------|--------------------------------|

**B.1 Environment Management System**

1. Does the Mill have an Environmental Policy?
2. Has the Environment Policy been formally adopted and who has signed the Policy?  
  
Name  
Designation
3. Has the Production Unit been certified under ISO 14001?
4. Who chairs the EMS Management Review Committee at the Production Unit level?
5. Does the Production Unit undertake Internal Environmental Audit? If yes, define briefly with respect to the procedures adopted for environmental auditing and frequency of internal environmental auditing
6. Does the Mill go for Environmental Audit by External Agency?
7. Does the Mill go for Water Audit?  
If so, benefits accrued from such audits
8. Briefly explain the various initiatives undertaken by the Company to raise environmental awareness among the employees
9. Does the Mill formulate its own internal standards? If yes, define briefly
10. Does the Mill set quantitative targets towards sustainable management of natural resources and pollution control? If yes, define briefly
11. Out of the elements mentioned below, which all have been made an integral part of the quantitative targets. Define briefly
  - i) Resource Consumption Efficiency
  - ii) Pollution Generation
  - iii) Training
  - iv) Environmental Performance Evaluation / Audit
  - v) Product Stewardship
  - vi) Any Others (please specify)

| Preceding Year<br>2014-2015 | Year Under Review<br>2015-2016 |
|-----------------------------|--------------------------------|
|-----------------------------|--------------------------------|

12. Are the quantitative targets listed above updated and reviewed regularly? If yes, define briefly with respect to frequency
13. Were these targets, with respect to each element, achieved in the year under review?
14. Does the Mill have a Procurement Policy for raw materials, which addresses issues such as energy, chemicals, etc.?
15. Does the Mill have an Environment Department at the Corporate level / Head Office and the Production Unit level?
16. What is the designation of the Environment Department Head at Corporate and Production Unit level?
17. Whom does the Head of the Environment Department at Corporate and Production Unit level report to?
18. List the awards, honours and recognition, which the Company as a whole or its Production Units has won in last 4 years.
19. What are the responsibilities assigned to the Environment Department at the Corporate and Production Unit level?

## **B.2 Process Technology**

1. Please briefly define the type of pulping process and cooking technology adopted in the Mill
2. Please briefly define the type of brown stock washing equipment installed and Kappa number of the unbleached pulp
3. Please briefly explain about the type of screening / cleaning system installed
4. Has the Production Unit adopted Oxygen Delignification? If yes, briefly explain
5. Please briefly explain about the type of washing equipment installed at pre and post ODL process
6. What is the percentage Kappa reduction after ODL?

| Preceding Year<br>2014-2015 | Year Under Review<br>2015-2016 |
|-----------------------------|--------------------------------|
|-----------------------------|--------------------------------|

7. Has the production unit adopted any enzyme pre-treatment of brown stock?
8. What is the bleaching sequence adopted by the Mill?
9. Please briefly explain about the type of evaporators
10. Does the Mill have direct contact evaporators?
11. Please briefly explain about the type of recovery boiler
12. Does the Mill have lime mud re-burning system? Briefly indicate about the fuel used, make up lime used and characteristics of the lime generated
13. Please provide details on the paper machines installed with respect to production capacity, product mix, whether online coated, etc?
14. Please briefly describe initiatives / modifications / adoption of new technology in process for reducing pollution load

### **B.3 Resource Utilisation**

#### **B.3.1 Raw Material**

(show all raw materials on AD basis)

- |                                |    |
|--------------------------------|----|
| 1. Bamboo                      | MT |
| 2. Hardwood                    | MT |
| 3. Bagasse                     | MT |
| 4. Rice / Wheat Straw          | MT |
| 5. Market Pulp                 | MT |
| 6. Waste Paper                 | MT |
| 7. Any Others (please specify) | MT |

| Preceding Year<br>2014-2015 | Year Under Review<br>2015-2016 |
|-----------------------------|--------------------------------|
|-----------------------------|--------------------------------|

8. Specify the total quantity of raw material procured from the following sources:

- i) Farm land sourcing
- ii) From Government sources
- iii) Captive Plantation
- iv) Open Market  
(include all sources other than above)

9. Total quantity of raw material (OD basis) per tonne of unbleached and bleached pulp

### B.3.2 Chemicals

a) **Pulping: Cooking** (pulp on BD basis)

**Note:** Please furnish similar information on all relevant chemicals used for waste paper / de-inked pulp

1. Caustic
  - i) Total Tonne
  - ii) Kg / Tonne of Unbleached Pulp
2. Salt Cake
  - i) Total Tonne
  - ii) Kg / Tonne of Unbleached Pulp
3. Sulphur
  - i) Total Tonne
  - ii) Kg / Tonne of Unbleached Pulp
4. Lime
  - i) Total Tonne
  - ii) Kg / Tonne of Unbleached Pulp
5. Any Others (please specify with consumption)

b) **Pulping: Bleaching** (pulp on BD basis)

**Note:** Please furnish similar information on all relevant chemicals used for waste paper / de-inked pulp

1. Chlorine
  - i) Total Tonne
  - ii) Kg / Tonne of Bleached Pulp
2. Caustic
  - i) Total Tonne
  - ii) Kg / Tonne of Bleached Pulp

| Preceding Year<br>2014-2015 | Year Under Review<br>2015-2016 |
|-----------------------------|--------------------------------|
|-----------------------------|--------------------------------|

- 3 Hydrogen Peroxide
  - i) Total Tonne
  - ii) Kg / Tonne of Bleached Pulp
4. Oxygen
  - i) Total Tonne
  - ii) Kg / Tonne of Bleached Pulp
5. Calcium Hypochlorite
  - i) Total Tonne
  - ii) Kg / Tonne of Bleached Pulp
6. Chlorine Dioxide
  - i) Total Tonne
  - ii) Kg / Tonne of Bleached Pulp
7. Any Others (please specify with consumption)

c) **Papermaking**

1. Fillers (please specify)
  - i) Total Tonne
  - ii) Kg / Tonne of Paper
2. Sizing Chemical (please specify)
  - i) Total Tonne
  - ii) Kg / Tonne of Paper
3. Dyes
  - i) Total Tonne
  - ii) Kg / Tonne of Paper
4. Optical Brightening Agent
  - i) Total Tonne
  - ii) Kg / Tonne of Paper
5. Retention Acid (please specify)
  - i) Kg / Tonne of Paper
6. Any Others (please specify with consumption)

B.3.3 **Energy**

(A composite figure of Joules for all energy inputs should be shown and a detailed calculation should be attached separately)

| Preceding Year<br>2014-2015 | Year Under Review<br>2015-2016 |
|-----------------------------|--------------------------------|
|-----------------------------|--------------------------------|

**B.3.4 Water**

Total

Section-Wise

i) Pulp Mill (Per Tonne of Bleached Pulp)

ii) Paper Machine (Per Tonne of Paper)

iii) Waste Paper Treatment Plant (Per Tonne of Pulp)

iv) Recovery

v) Power Plant

**B.3.5 Steam**

Section-Wise

**B.4 Pollution Abatement Equipment**

1. Does the Mill have scrubbers for bleach plant gases control
2. Does the Mill have facilities for handling NCG's? If yes, briefly explain
3. Does the Mill have installed lime re-burning system
4. Please attach the effluent treatment plant flow-sheet and briefly explain each step
5. Briefly explain about the sludge (both primary & secondary) handling equipment and sludge disposal details
6. Briefly explain about the effluent disposal system
7. Briefly explain about the air emission control equipment in the stacks

**B.5 Pollution Generation & Discharge**

1. Please provide the details of waste water generated and discharged from the Mill, against the following parameters:

| Parameters                  | Influent |                   | Effluent |                   |
|-----------------------------|----------|-------------------|----------|-------------------|
|                             | PPM      | Kg / T of Product | PPM      | Kg / T of Product |
| Flow (m <sup>3</sup> / day) |          |                   |          |                   |
| Biological Oxygen Demand    |          |                   |          |                   |
| Chemical Oxygen Demand      |          |                   |          |                   |
| Total Suspended Solids      |          |                   |          |                   |
| Total Dissolved Solids      |          |                   |          |                   |
| Adsorbable Organic Halides  |          |                   |          |                   |
| Colour                      |          |                   |          |                   |

2. Please provide the details of air emissions discharged from the Mill, against the following sections of the Plant:

| Parameters                                    | Stack attached to Lime Kiln | Stack attached to Recovery Furnace | Stack attached to DG Set | Stack attached to Boilers | Hood attached to Bleaching Section |
|---|-----------------------------|------------------------------------|--------------------------|---------------------------|------------------------------------|
| Flow (Nm <sup>3</sup> / day)                  |                             |                                    |                          |                           |                                    |
| SPM (mg / Nm <sup>3</sup> )                   |                             |                                    |                          |                           |                                    |
| NOx (mg / Nm <sup>3</sup> )                   |                             |                                    |                          |                           |                                    |
| SO <sub>2</sub> (mg / Nm <sup>3</sup> )       |                             |                                    |                          |                           |                                    |
| CO (mg / Nm <sup>3</sup> )                    |                             |                                    |                          |                           |                                    |
| H <sub>2</sub> S (mg / Nm <sup>3</sup> )      |                             |                                    |                          |                           |                                    |
| Mercaptans (mg / Nm <sup>3</sup> )            |                             |                                    |                          |                           |                                    |
| Total Reduced Sulphur (mg / Nm <sup>3</sup> ) |                             |                                    |                          |                           |                                    |
| Chlorine (mg / Nm <sup>3</sup> )              |                             |                                    |                          |                           |                                    |



3. Please provide the details of solid waste generated from the Mill, against the following parameters:

| <b>Parameters</b>                         | <b>MT / Annum</b> |
|---|-------------------|
| Chipper Dust / Pith                       |                   |
| Fly Ash                                   |                   |
| Bottom Ash                                |                   |
| Primary Sludge                            |                   |
| Secondary Sludge                          |                   |
| Lime Sludge                               |                   |
| Ash and Inert from Lime Kiln              |                   |
| Dregs and Grits from Recovery             |                   |
| Sludge from Hypo Plant                    |                   |
| Sludge from Waste Paper / De-inking Plant |                   |
| Plastics                                  |                   |

4. Please briefly explain the disposal details of the solid waste with respect to each of the above elements.

#### **B.6 Greenhouse Gas Emissions & Climate Change**

1. Present emissions of GHG's at each individual step of the process with quantification.
2. Steps taken / planned to be adopted at each stage to reduce the GHG's emissions.
3. Complete plan of action with time schedule.
4. Other balancing methods proposed / under implementation to enlarge the carbon sink.
5. Any proposal to change over the present fuel to green fuels with process modification.

**B.7 Environmental Monitoring**

1. Please provide the details of liquid effluent parameters monitoring frequency and conducting agency against the following parameters:

| Parameters                   | Monitoring Frequency | Conducting Agency |
|------------------------------|----------------------|-------------------|
| Flow (mg / Nm <sup>3</sup> ) |                      |                   |
| Biological Oxygen Demand     |                      |                   |
| Chemical Oxygen Demand       |                      |                   |
| Total Suspended Solids       |                      |                   |
| Total Dissolved Solids       |                      |                   |
| Adsorbable Organic Halides   |                      |                   |
| Colour                       |                      |                   |
| Any Others (please specify)  |                      |                   |

Please provide a brief write-up on the Online Effluent Monitoring System installed and the action taken whenever alerts are received on exceedances of values over the prescribed norms.

2. Please provide the details of air emissions monitoring frequency and conducting agency against the following parameters:

| Parameters                                    | Monitoring Frequency | Conducting Agency |
|---|----------------------|-------------------|
| Flow (mg / Nm <sup>3</sup> )                  |                      |                   |
| SPM (mg / Nm <sup>3</sup> )                   |                      |                   |
| NOx (mg/Nm <sup>3</sup> )                     |                      |                   |
| SO <sub>2</sub> (mg / Nm <sup>3</sup> )       |                      |                   |
| CO (mg / Nm <sup>3</sup> )                    |                      |                   |
| H <sub>2</sub> S (mg / Nm <sup>3</sup> )      |                      |                   |
| Mercaptans (mg / Nm <sup>3</sup> )            |                      |                   |
| Total Reduced Sulphur (mg / Nm <sup>3</sup> ) |                      |                   |
| Chlorine (mg / Nm <sup>3</sup> )              |                      |                   |
| Any Others (please specify)                   |                      |                   |

3. Please provide the details of solid waste generated monitoring frequency and conducting agency against the following parameters:

| Parameters                    | Monitoring Frequency | Conducting Agency |
|-------------------------------|----------------------|-------------------|
| Chipper Dust                  |                      |                   |
| Fly Ash                       |                      |                   |
| Bottom Ash                    |                      |                   |
| Primary Sludge                |                      |                   |
| Secondary Sludge              |                      |                   |
| Lime Sludge                   |                      |                   |
| Ash and Inert from Lime Kiln  |                      |                   |
| Dregs and Grits from Recovery |                      |                   |
| Sludge from Hypo Plant        |                      |                   |
| Any Others (please specify)   |                      |                   |

| Preceding Year<br>2014-2015 | Year Under Review<br>2015-2016 |
|-----------------------------|--------------------------------|
|-----------------------------|--------------------------------|

#### B.8 Research & Development

1. Does the Mill have any R&D Department, both at the Corporate level / Head Office and Production Unit level? If yes, briefly explain about the facilities
2. Is the R&D Department clubbed with any other department?
3. Please mention the total expenditure on R&D annually (INR Lakhs)
4. Is the R&D Lab, both at the Corporate level / Head Office and Production Unit level recognised by the Government of India?
5. Please provide the annual O&M expense incurred for R&D (INR Lakh) and the proportion of the total turnover spent in the last 4 years on R&D (%)
6. Please describe the various R&D initiatives undertaken by the R&D Department in the last 4 years, which have bearing on the environment benefit

| Preceding Year<br>2014-2015 | Year Under Review<br>2015-2016 |
|-----------------------------|--------------------------------|
|-----------------------------|--------------------------------|

**B.9 Health & Safety**

1. Does the Mill have a policy statement on maintenance of safety and health at work place?
2. Is the Mill certified for OHSAS 18001?
3. Has the Mill ever conducted health risk assessment studies? If yes, briefly explain
4. Does the Mill have healthcare centre / hospital for the benefit of its employees? Briefly explain
5. Does the Mill conduct Safety Audits?
6. What was the capital expenditure (INR Lakh) the Mill incurred on the healthcare facilities for its employees?
7. Has the Mill formulated an onsite disaster management plan? If yes, briefly explain
8. Does the Mill conduct emergency preparedness training?

**B.10 Plantations / Recycled Fibre**

1. Does the Mill have a plantation / social forestry programme?
2. Does the Mill use recycled fibre / market pulp for its furnish requirement?
  - i) Grades of waste papers used
  - ii) % furnish used from waste paper pulp, market pulp, own pulp