PROJECT INFORMATION MEMORANDUM

Regional municipal solid waste management facility for treating the Municipal Solid Waste (MSW) collected from the cities of Bhubaneswar and Cuttack on design, build, finance, operate, and transfer (DBFOT) basis

Volume III – Project Information Memorandum (PIM)

HOUSING and URBAN DEVELOPMENT DEPARTMENT
GOVERNMENT OF ODISHA

Transaction Advisor: Orissa Industrial Infrastructure Development Corporation (IDCO)

June 2013
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1. Introduction

The Housing and Urban Development Department (H&UDD), Government of Odisha (GoO), is taking steps to improve the municipal solid waste management (SWM) services in the twin cities of Bhubaneswar and Cuttack and desires to develop a regional municipal solid waste management (SWM) facility for treating the Municipal Solid Waste (MSW) collected from Bhubaneswar and Cuttack on a Public Private Partnership (PPP) basis in compliance with the Municipal Solid Waste (Management and Handling) Rules, 2000, (MSW Rules) under the aegis of the Environment (Protection) Act, 1986. H&UDD has engaged Orissa Industrial Infrastructure Development Corporation (IDCO) as the transaction advisor for this project and has authorized Bhubaneswar Municipal Corporation vide letter no 16761/HUD/13-HUD-65-REFM-17-SCH-007/3013 (Vol-II) dated 15th May 2013 to issue the RFP for the project.

The objectives of H&UDD through this project include:

- Improve the efficiency of secondary collection and transportation of waste from the transfer stations in Bhubaneswar and Cuttack;
- Introduce scientific treatment and disposal of solid waste;
- Institute a transaction structure that assures sustainability of this project and similar future PPP projects; and
- Comply with the MSW Rules.

1.1 Transaction Process and Timelines

The issuance of the requests for proposal (RFP) and the information memorandum (IM) on 29th May 2013 to the interested parties will mark the start of the tender process. The expected timetable is presented in Table 1.

Table 1: Bhubaneswar Cuttack SWM Project - Transaction Timeline

<table>
<thead>
<tr>
<th>Activity</th>
<th>Expected Timeline</th>
</tr>
</thead>
<tbody>
<tr>
<td>Issue of RFP</td>
<td>13th June 2013</td>
</tr>
<tr>
<td>Receipt of Pre-Bid Queries</td>
<td>26th June 2013</td>
</tr>
<tr>
<td>Pre-Bid Meeting</td>
<td>12:00 Hours IST, 28th June 2013</td>
</tr>
<tr>
<td>Due date for Bid submission</td>
<td>Till 15:00 Hours, 24th July 2013</td>
</tr>
<tr>
<td>Opening of Envelope-1 (Qualification)</td>
<td>16:00 Hours, 24th July</td>
</tr>
<tr>
<td>Opening of Envelope-2 (Commercial)</td>
<td>to be communicated later</td>
</tr>
<tr>
<td>Letter of Award (LoA)</td>
<td>Within 60 days of Bid submission</td>
</tr>
<tr>
<td>Signing of Concession Agreement</td>
<td>within 45 days of issue of LoA</td>
</tr>
</tbody>
</table>
1.2 Organization of IM

The IM includes an overview of the business opportunity, an overview of the socio-economic environment, an outline of the legal aspects of the project, as well as technical aspects, including waste quantification and characterization analysis and projections.
2. Business Opportunity

2.1 Attractive Project

The project is strongly supported by the Government of Odisha and its H&UDD department. The municipal corporations of Bhubaneswar and Cuttack along with its elected representatives, staff and citizens also support the project in the larger interest of improving the environment and health and sanitation of the cities. The project will be the first regional municipal SWM facilities in the state and one of the few such projects in the country. And is keenly been watched by various implementing agencies across the India. The project presents an opportunity to develop a regional MSW waste treatment facility of a large to medium scale with the H&UDD supporting various technology options to ensure the best sustainable value to the state.

2.2 Favourable Structure

The project structure has been designed to mitigate the risks and issues associated with the specificities of Bhubaneswar and Cuttack. Some of the key features of the project are mentioned below and described in more detail in this document:

- Choice of technology is given to the bidder in this tendering process;
- Partial debt funding has been made available for the project with concessional interest rates;
- Minimum guaranteed tonnage mechanism;
- Tipping fee payment obligation of BMC and CMC and guaranteed by H&UDD and paid through an escrow account;
- No user fee collection risk for the concessionaire.

The project documents (RFP, concession agreement) are based on international best practices and standards.
Regional municipal solid waste management facility for treating the Municipal Solid Waste (MSW) collected from the cities of Bhubaneswar and Cuttack

3. Economic and Political Environment

3.1 Geographic Setting

3.1.1 Odisha

Odisha is the ninth largest state in India by area and eleventh among the states by population. The state is located along the eastern boundary of the country. It shares its borders with West Bengal and Jharkhand in the north, Chhattisgarh in the west, and Andhra Pradesh in the south. It has a long coastline of about 400 km along India’s eastern shoreline. According to Census 2011, Odisha has a population of 41,947,358.

3.1.2 Bhubaneswar

Bhubaneswar is located between 85°44’ E to 85°55’ E longitude and 20°12’ N to 20°25’ N latitude in Khordha district of Odisha. It is situated in the eastern coastal plains, along the axis of the Eastern Ghats. It has an average altitude of 45 m (148 ft) above sea level. The city lies on the southwest of the Mahanadi River and within its delta and forms the northern boundary of Bhubaneswar metropolitan area.

3.1.3 Cuttack

Cuttack is located at 20.5° N 85.83° E in the Cuttack district of Odisha and has an average elevation of 36 m (118 ft). Located at the apex of the Mahanadi Delta, the city is surrounded by the Mahanadi River and its tributaries from almost all the sides.
3.2 Climate and Geology

3.2.1 Bhubaneswar

The city has a tropical climate, specifically a tropical wet and dry climate. The average temperatures range between a minimum of around 12°C (54°F) in winter to a maximum of 42-45°C in summer. The southwest monsoons appear in June. The average annual rainfall is 154 cm, most of which is recorded between June and October.

3.2.2 Cuttack

Cuttack features a tropical wet and dry climate. The summer season is from March to June when the climate is hot and humid. Thunderstorms are common at the height of summer. The monsoon months are from July to October when the city receives most of its rainfall from the southwest monsoon. The annual rainfall is around 144 cm. The winter season from November to February is characterized by mild temperatures and occasional showers. Temperatures may exceed 40°C at the height of summer and may fall to below 10°C in winter.

The city is prone to cyclones from the Bay of Bengal. Summer thunderstorms also cause a lot of damage. Cuttack is however safe from earthquakes, being situated in the relatively safe seismic zone II.

The Mahanadi provides much of the drinking water to the city. There are numerous ponds (pokharis) in the city that store rainwater.

3.3 Population Profile

3.3.1 Bhubaneswar

Bhubaneswar has witnessed widespread growth in its population over the years, and the current population is estimated to be around 1,060,000 as per the provisional data of Census 2011. Table 2 shows the population growth of Bhubaneswar for the last three decades.

<table>
<thead>
<tr>
<th>Year</th>
<th>Population</th>
<th>Decadal Population Variation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Absolute</td>
</tr>
<tr>
<td>1991</td>
<td>411542</td>
<td>-</td>
</tr>
<tr>
<td>2001</td>
<td>648032</td>
<td>236490</td>
</tr>
<tr>
<td>2011</td>
<td>1060000</td>
<td>411968</td>
</tr>
</tbody>
</table>

Bhubaneswar has a significant slum population, both authorized and unauthorized, spread all over the city. The total slum population of the city at present is 3,08,614¹ which is around 30% of the total population.

¹ Population residing in authorized and unauthorized slums. (Draft City Sanitation Plan for Bhubaneswar).
3.3.2 Cuttack

Cuttack has witnessed nominal growth in its population over the years, and the current population according to the provisional census data of Census 2011 is 694,980. Table 3 shows the population growth of Cuttack for the last three decades.

**Table 3: Population Trend in Cuttack**

<table>
<thead>
<tr>
<th>Year</th>
<th>Population</th>
<th>Decadal Population Variation</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Absolute</td>
<td>Percentage</td>
</tr>
<tr>
<td>1991</td>
<td>403418</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>2001</td>
<td>535139</td>
<td>131721</td>
<td>33%</td>
</tr>
<tr>
<td>2011</td>
<td>694980</td>
<td>159841</td>
<td>30%</td>
</tr>
</tbody>
</table>

There are no accurate estimates available for the population residing in slums in Cuttack. As per the information provided on the website of CMC, there are 257 slum pockets in CMC.
4. **Current status of SWM**

BMC and CMC are responsible for providing municipal SWM services to their citizens, including planning, design, construction, operation, and maintenance of municipal SWM infrastructure within their jurisdictional limits. Majority of the waste is generated by the household population of the cities. The two cities have a large number of vegetable and fruit markets and commercial establishments, which also generate a significant quantity of waste.

4.1 **Collection and Transportation of Waste**

4.1.1 **Bhubaneswar**

The city of Bhubaneswar generates 400 metric tons of solid waste every day. To collect the waste from the city and to keep the city clean, 3,100 personnel have been deployed by BMC. Mainly wheelbarrows, tri-cycles, and tractors are used for the transportation of solid waste. Of the 60 wards, 40 wards are managed by private contractors. The remaining 20 wards are covered directly by BMC. The solid waste collected is dumped near Sainik School and from there; it is transported to the dumping site in Bhuasuni which is proposed to be developed as regional processing and landfill facility.

4.1.2 **Cuttack**

The total waste generated per day in this city is about 150 tons. The per capita waste generation is 400 gm. The city has 70 waste storage depots and approximately 1,000 dustbins for the storage of waste generated from the city. The sweepers as well as the citizens are expected to deposit the waste at these depots. These waste storage depots are either open or made up of masonry walls. At some places, cement concrete bins are also placed, but most of them are unhygienic and unscientific. Due to increased shortage of manpower, CMC has outsourced collection of solid waste in 36 wards and cleaning and sweeping of two major roads along with door-to-door waste collection, to private operators. SWM of the remaining 18 wards is undertaken by CMC. Solid waste generated from the entire city is sent to the dumping yard at Chakardharapur.

4.1.3 **Existing System – Treatment and Disposal**

At present, BMC and CMC do not have any waste treatment or processing facility for treating the MSW generated in the cities. The entire quantity of waste collected is sent for disposal to the dumping sites at Bhuasuni and Chakardharapur, respectively, by BMC and CMC. BMC and CMC do not have any engineered landfill site for disposal of waste and, at present, practices open dumping of waste.
4.2 Waste Quantity and Characteristics

4.2.1 Waste Quantity

The major sources of MSW in BMC and CMC are:

- Residential households
- Fruits and vegetable markets; and
- Hotels and restaurants

The summary of waste quantification is given in Table 4 and Table 5, for BMC and CMC respectively.

Table 4: Source-wise Collection of MSW in Bhubaneswar

<table>
<thead>
<tr>
<th>Source</th>
<th>Quantity (TPD)</th>
<th>Percentage Contribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Households</td>
<td>229</td>
<td>57.4%</td>
</tr>
<tr>
<td>Institutions</td>
<td>24</td>
<td>6.0%</td>
</tr>
<tr>
<td>Commercial Establishments</td>
<td>28</td>
<td>7.0%</td>
</tr>
<tr>
<td>Hotels, Restaurants, and Food Stalls</td>
<td>20</td>
<td>5.0%</td>
</tr>
<tr>
<td>Temples</td>
<td>6</td>
<td>1.4%</td>
</tr>
<tr>
<td>Marriage Halls</td>
<td>9</td>
<td>2.3%</td>
</tr>
<tr>
<td>Street Sweeping</td>
<td>2</td>
<td>0.5%</td>
</tr>
<tr>
<td>Construction and Demolition Waste</td>
<td>16</td>
<td>4.0%</td>
</tr>
<tr>
<td>Hospitals</td>
<td>4</td>
<td>1.0%</td>
</tr>
<tr>
<td>Dairies</td>
<td>62</td>
<td>15.5%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>400</strong></td>
<td><strong>100.0%</strong></td>
</tr>
</tbody>
</table>

Table 5: Source-wise Collection of MSW in Cuttack

<table>
<thead>
<tr>
<th>Source</th>
<th>Quantity (TPD)</th>
<th>Percentage Contribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Households</td>
<td>101</td>
<td>67.69%</td>
</tr>
<tr>
<td>Street Sweeping</td>
<td>16</td>
<td>10.47%</td>
</tr>
<tr>
<td>Commercial and Industrial Establishments</td>
<td>11</td>
<td>6.98%</td>
</tr>
<tr>
<td>Hotels and Restaurants</td>
<td>8</td>
<td>5.58%</td>
</tr>
<tr>
<td>Vegetable and Fish/Meat Markets</td>
<td>13</td>
<td>8.37%</td>
</tr>
<tr>
<td>Hospitals</td>
<td>1</td>
<td>0.91%</td>
</tr>
</tbody>
</table>

---

2 The data presented in Table 4, Table 5, and Table 6 has been obtained from various external consultants of BMC and CMC. This data is indicative and should be used as such. Bidders are advised to undertake their own due diligence to determine the waste characteristics. BMC/CMC and their consultants/advisors do not undertake any responsibility on the accuracy of this data and financial implications of decisions based on this data.
Regional municipal solid waste management facility for treating the Municipal Solid Waste (MSW) collected from the cities of Bhubaneswar and Cuttack

<table>
<thead>
<tr>
<th>Source</th>
<th>Quantity (TPD)</th>
<th>Percentage Contribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>150</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

### 4.2.2 Waste Characteristics

Waste characterization provides details on waste quality in terms of combustible, recyclable, and compostable waste and inert/rejects for landfills. Table 6 presents the waste characteristics of waste generated from BMC and CMC.

**Table 6: Waste Characterization of MSW in Bhubaneswar and Cuttack**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>As per CPHEEO manual</th>
<th>Bhubaneswar Study Results, (%)</th>
<th>Cuttack Study Results, (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compostable material</td>
<td>40.04</td>
<td>23.36</td>
<td>65.74</td>
</tr>
<tr>
<td>Paper</td>
<td>2.95</td>
<td>9.41</td>
<td>2.76</td>
</tr>
<tr>
<td>Textile</td>
<td>NA</td>
<td>8.68</td>
<td>0.55</td>
</tr>
<tr>
<td>Plastic</td>
<td>NA</td>
<td>10.29</td>
<td>2.90</td>
</tr>
<tr>
<td>Rubber, leather, and synthetics</td>
<td>0.73</td>
<td>NA</td>
<td>1.12</td>
</tr>
<tr>
<td>Glass</td>
<td>0.35</td>
<td>10.28</td>
<td>1.42</td>
</tr>
<tr>
<td>Metals</td>
<td>0.32</td>
<td>9.68</td>
<td>1.84</td>
</tr>
<tr>
<td>Combustible materials</td>
<td></td>
<td>12.13</td>
<td></td>
</tr>
<tr>
<td>Inert/incombustible materials</td>
<td>48.38</td>
<td>12.87</td>
<td>21.0</td>
</tr>
<tr>
<td>Other materials</td>
<td>NA</td>
<td>3.68</td>
<td>1.34</td>
</tr>
</tbody>
</table>

### 4.3 Minimum Waste Guarantee by BMC and CMC

While the amount of waste collected BMC and CMC may be higher, the BMC and CMC shall provide an assured quantity of waste on a per day basis to the designated transfer station(s) as mentioned in the following Table 7 on year-on-year basis.

**Table 7: Minimum Waste Quantities by BMC and CMC**

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Year</th>
<th>Daily Obligated Waste Quantity (MT per Day) - BMC</th>
<th>Daily Obligated Waste Quantity (MT per Day) - CMC</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>2014</td>
<td>334.00</td>
<td>122.40</td>
</tr>
<tr>
<td>2.</td>
<td>2015</td>
<td>345.79</td>
<td>125.64</td>
</tr>
<tr>
<td>3.</td>
<td>2016</td>
<td>375.89</td>
<td>135.40</td>
</tr>
<tr>
<td>4.</td>
<td>2017</td>
<td>387.17</td>
<td>138.98</td>
</tr>
</tbody>
</table>

3 Central Public Health & Environmental Engineering Organization
Regional municipal solid waste management facility for treating the Municipal Solid Waste (MSW) collected from the cities of Bhubaneswar and Cuttack

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Year</th>
<th>Daily Obligated Waste Quantity (MT per Day) - BMC</th>
<th>Daily Obligated Waste Quantity (MT per Day) - CMC</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.</td>
<td>2018</td>
<td>398.78</td>
<td>142.65</td>
</tr>
<tr>
<td>6.</td>
<td>2019</td>
<td>410.75</td>
<td>146.42</td>
</tr>
<tr>
<td>7.</td>
<td>2020</td>
<td>423.07</td>
<td>150.28</td>
</tr>
<tr>
<td>8.</td>
<td>2021</td>
<td>448.89</td>
<td>161.97</td>
</tr>
<tr>
<td>9.</td>
<td>2022</td>
<td>453.60</td>
<td>166.24</td>
</tr>
<tr>
<td>10.</td>
<td>2023</td>
<td>458.36</td>
<td>170.64</td>
</tr>
<tr>
<td>11.</td>
<td>2024</td>
<td>463.18</td>
<td>175.14</td>
</tr>
<tr>
<td>12.</td>
<td>2025</td>
<td>468.04</td>
<td>179.77</td>
</tr>
<tr>
<td>13.</td>
<td>2026</td>
<td>496.60</td>
<td>193.74</td>
</tr>
<tr>
<td>14.</td>
<td>2027</td>
<td>501.82</td>
<td>198.86</td>
</tr>
<tr>
<td>15.</td>
<td>2028</td>
<td>507.08</td>
<td>204.25</td>
</tr>
<tr>
<td>16.</td>
<td>2029</td>
<td>512.41</td>
<td>209.78</td>
</tr>
<tr>
<td>17.</td>
<td>2030</td>
<td>517.79</td>
<td>215.47</td>
</tr>
<tr>
<td>18.</td>
<td>2031</td>
<td>549.39</td>
<td>232.37</td>
</tr>
<tr>
<td>19.</td>
<td>2032</td>
<td>555.16</td>
<td>238.67</td>
</tr>
</tbody>
</table>
5. Legal and Regulatory Environment: MSW Rules

The MSW Rules were promulgated under the Environment (Protection) Act, 1986, (EP Act) as explained below. Under the MSW Rules, municipal authorities are responsible for the implementation of the provisions of the MSW Rules.

BMC and CMC are responsible for the management and handling of MSW and the development of any infrastructure for collection, storage, transportation, processing, and disposal of MSW within the municipal area in accordance with MSW Rules and the Odisha Municipal Corporation Act, 2003.

BMC and CMC are authorized under Rule 7(2) of the MSW Rules and under Section 337 of the Odisha Municipal Corporation Act, 2003, to delegate the MSW services as well as the design, construction, operation, and maintenance of any facility required under the MSW Rules, to a private operator. However, BMC and CMC still remain responsible for the implementation of and compliance with the MSW Rules. A private operator may also be liable pursuant to the MSW Rules for breaches of the MSW Rules resulting from any of its act or omission.

5.1 Application of MSW Rules

The MSW Rules are currently not being complied by BMC and CMC due to the absence of waste treatment and disposal facilities. This project is aimed towards complying with MSW regulations. The concessionaire is expected to operate the SWM system in BMC and CMC according to MSW Rules in accordance with the concession agreement.

Rule 3(xv) of MSW Rules defines ‘MSW’ to include commercial and residential wastes generated in municipal or notified areas in either solid or semi-solid form excluding industrial hazardous wastes but including treated biomedical wastes. Thus, industrial waste, non-treated biomedical waste, and hazardous waste are excluded from solid waste governed by the MSW Rules. Their collection, transport, storage, processing, and disposal are subject to specific regulations.

Under Rule 7(1) of the MSW Rules, any MSW generated in a city or a town shall be managed and handled in accordance with the procedure laid down in Schedule II. This schedule is in connection with collection, segregation, storage, transportation, processing, and disposal of MSW. The following sections provide a brief description of the rules of the sections relevant to the scope of the project.

5.2 Transportation of MSW

Vehicles used for transportation of wastes shall be covered. Waste should not be visible to public, nor exposed to open environment, preventing their scattering. The storage facilities set up shall be attended on a daily basis for clearing of waste. The bins or containers wherever placed shall be cleaned before they start overflowing.

Transportation vehicles shall be so designed that multiple handling of waste, prior to final disposal, is avoided.
5.3 Processing of MSW

A suitable technology or a combination of technologies should be adopted to make use of wastes so as to minimize the burden on landfills. Following criteria shall be adopted for processing of the collected waste:

- Biodegradable waste shall be processed by composting, vermicomposting, anaerobic digestion, or any other appropriate biological processing for stabilization of waste. It shall be ensured that compost or any other end product shall comply with the standards specified in Schedule IV of MSW Rules.
- Mixed waste containing recoverable resources shall follow the route of recycling.

5.4 Disposal of MSW

Landfilling shall be restricted to non-biodegradable, inert, and other wastes that are not suitable either for recycling or for biological processing. Landfilling shall also be carried out for residues of waste processing facilities as well as pre-processing rejects from waste processing facilities. Landfilling of mixed waste shall be avoided unless the same is found unsuitable for waste processing. Landfilling may be permitted under circumstances that cannot be avoided or until proper facilities are installed, but shall be done following proper norms. Landfill sites shall meet the specifications as given in Schedule III of MSW Rules.

5.5 Technical Specifications Applicable under MSW Rules

Rule 7(2) of MSW Rules states that the waste processing and disposal facilities to be set up, have to meet the specifications and standards specified in Schedules III and IV of MSW Rules. Schedule III sets specifications for landfill sites and Schedule IV sets standards for composting, treating leachates, and incinerating.

5.6 Compost and Leachate Standards

In order to ensure the safe application of compost, the MSW Rules specify compost quality standards. Products that do not achieve the levels set out in the following table should not be used for food crops. However, it may be utilized for purposes other than growing food. In addition, specific standards have been established for leachate quality. The leachate quality standards depend on the disposal method used with the most stringent criteria specified for disposal in surface water bodies. The standards mentioned in the MSW Rules shall be followed for compost and leachate.

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4 The standards of compost are to be followed only in case composting is used by the concessionaire as a processing technology.
6. Project Description

6.1 Project Area and Service Scope

6.1.1 Envisaged System Components

The successful private partner (the concessionaire) would be responsible for the following:

a. Design, construction, and operation of transfer stations at Bhubaneswar and Cuttack at the sites identified by BMC and CMC, respectively;

b. Provision and operation of adequate number of suitable vehicles for the transportation of waste from the transfer stations to the regional processing plant and scientific landfill facility at the specified site in Bhuasuni;

c. Design, construction, and operation of a regional processing plant and a scientific landfill facility at Bhuasuni; and

d. Processing of MSW using a suitable technology, management of the products of processing, and scientific disposal of inerts in the sanitary landfill site.

6.1.2 Indicative estimated project cost

The indicative estimated project cost for composting based technology is presented in the following Table 8.

Table 8: Indicative estimate of Capital cost of Project

<table>
<thead>
<tr>
<th>Sr No</th>
<th>Particulars</th>
<th>Civil Structure (Rs. Lakh)</th>
<th>Plant and Machinery (Rs. Lakh)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Tertiary Transport (from transfer station to processing and landfill facility)</td>
<td>-</td>
<td>420.00</td>
</tr>
<tr>
<td>1</td>
<td>Bhubaneswar</td>
<td>-</td>
<td>300.00</td>
</tr>
<tr>
<td>2</td>
<td>Cuttack</td>
<td>-</td>
<td>120.00</td>
</tr>
<tr>
<td>B</td>
<td>Transfer Stations</td>
<td>453.61</td>
<td>118.84</td>
</tr>
<tr>
<td>1</td>
<td>Bhubaneswar</td>
<td>226.80</td>
<td>59.42</td>
</tr>
<tr>
<td>2</td>
<td>Cuttack</td>
<td>226.80</td>
<td>59.42</td>
</tr>
<tr>
<td>C</td>
<td>Processing plant</td>
<td>1,854.00</td>
<td>2,100.41</td>
</tr>
</tbody>
</table>

The above figures are unverified estimates. BMC and its consultants / advisors do not take any responsibility for the above. Bidders are advised to undertake their own assessment on all aspects of project cost. BMC and its consultants / advisors do not undertake any responsibility on the accuracy of this data and financial implications of decisions based on this data.
Regional municipal solid waste management facility for treating the Municipal Solid Waste (MSW) collected from the cities of Bhubaneswar and Cuttack

<table>
<thead>
<tr>
<th>Sr No</th>
<th>Particulars</th>
<th>Civil Structure (Rs. Lakh)</th>
<th>Plant and Machinery (Rs. Lakh)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Basic Infrastructure at MSW - resource recovery center</td>
<td>579.34</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>MSW receiving and upfront segregation (mechanized)</td>
<td>215.56</td>
<td>211.00</td>
</tr>
<tr>
<td>3</td>
<td>Composting (Organic Fertilizer)</td>
<td>685.22</td>
<td>806.50</td>
</tr>
<tr>
<td>4</td>
<td>RDF(Refuse Derived Fuel) Fuel Pellets</td>
<td>262.12</td>
<td>560.00</td>
</tr>
<tr>
<td>5</td>
<td>Plastic and inert processing</td>
<td>102.54</td>
<td>195.00</td>
</tr>
<tr>
<td>6</td>
<td>Material handling automobiles (included in respective sections)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Vat@12.50%</td>
<td></td>
<td>221.56</td>
</tr>
<tr>
<td></td>
<td>Transportation @3.00%</td>
<td></td>
<td>53.18</td>
</tr>
<tr>
<td></td>
<td>Insurance etc. @0.50%</td>
<td>9.22</td>
<td>8.86</td>
</tr>
<tr>
<td></td>
<td>Erection &amp; Commissioning</td>
<td></td>
<td>44.31</td>
</tr>
<tr>
<td>D</td>
<td>Sanitary Landfill Site</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Sanitary landfill site for Phase –I (10 years)</td>
<td></td>
<td>901.05</td>
</tr>
</tbody>
</table>

**GRAND TOTAL PROJECT COST FOR PHASE-I [A+B+C+D]** 5,847.91

6.2 Waste Treatment Technology

It is desired that the MSW management system would scientifically transport, process, and dispose the waste, have maximum recycling and recovery, and create public awareness. The concessionaire shall develop the project facilities using technology or technologies (the proposed technology), which ensures that:

- Biodegradable and recyclable contents of MSW are separated through a suitable material recovery facility (MRF);
- A suitable processing technology is used for processing of the biodegradable content of MSW;
- A suitable processing technology is used for processing the combustible content of MSW;
- A suitable technology is used for recovering and processing recyclable content of MSW;
- Not more than 20% of the MSW received at the processing facility is sent to the landfill.

6.3 Sites

The sites for transfer stations at Bhubaneswar, transfer station at Cuttack and landfill facility at Bhuasuni are already identified by the BMC and CMC. These sites at all locations shall be transferred to the Successful Bidder on “As Is Where Is” basis.
6.3.1 Transfer Stations (Bhubaneswar)

BMC has identified 2 (two) sites for the development of transfer stations for the MSW generated in Bhubaneswar: Gadakan (approximately 24 km from the processing site at Bhuasuni) and Ghatakia (approximately 18 km from the processing site at Bhuasuni). BMC shall grant a licence to the concessionaire to enter the site and undertake the activities necessary for fulfilling the obligations of the bidder under this project.

6.3.2 Transfer Station(s) (Cuttack)

CMC has identified 1 (one) site for the development of a transfer station for the MSW generated in Cuttack at Satichura (approximately 30 km from the processing site at Bhuasuni). CMC shall grant a licence to the concessionaire to enter the site and undertake the activities necessary for fulfilling the obligations of the bidder under this project. CMC has also identified a second location (within 10 km of the existing transfer station) for the additional transfer station, which shall be handed over on similar condition upon request of the bidder (Refer to Note provided in Clause 2.1 of the Concession Agreement).
Regional municipal solid waste management facility for treating the Municipal Solid Waste (MSW) collected from the cities of Bhubaneswar and Cuttack
6.3.3 Landfill Site

GoO has identified the project site for the proposed project, located in Bhuasuni and admeasuring 61.485 acres, and has leased the same to BMC for the development of a regional MSW processing and disposal facility. GoO is the rightful owner. BMC shall grant the licence to the concessionaire to enter the site and undertake the activities necessary for the project.

6.3.3.1 Drawing of landfill Site at Bhuasuni
6.3.3.2 Location of Bhuasuni Site
6.4 Design Period and System Capacity

The concessionaire shall develop MSW treatment facility for an expected input MSW quantity of 800 TPD during the concession period and the processing plant shall have the capacity to process an additional 25% of waste as and when required. The concessionaire shall design the system considering a horizon period of 20 years. The Concessionaire is free to design his processing facility as per his projections of population and growth of the cities of Bhubaneshwar, Cuttak and neighbouring areas. He is also free to set up the facility in phases provided the minimum quantity of obligated quantity of waste is processed and he has an additional capacity to handle waste in excess of 25% of the obligated quantity of waste.

6.5 Sources of Revenue

6.5.1 Tipping Fees

The concessionaire will be paid a tipping fee calculated on the basis of the volume of waste weighted at the Transfer stations. The tipping fee will be escalated by 5% on an annual basis. The payment will be made by BMC and CMC on a monthly basis. BMC and CMC are guaranteeing a Tipping fee payment for a minimum quantity of waste as specified in Section 4.3.

The payment of Tipping fee will be guaranteed by a revolving letter of credit from the BMC and CMC and further assured by H&UDD, GoO by means of deducting the payment due to the Concessionaire from the fund transfers the H&UDD makes to the BMC and CMC in event of default.

6.5.2 Sale of Recyclables

The concessionaire may accrue all revenues from the sale of recyclables recovered during the waste processing.

6.5.3 Sale of Treatment By-product

The concessionaire may accrue all revenues from the sale of treatment by-products including compost, fuel, power, bricks etc.

6.5.4 Sale of Carbon Credits

Ten per cent of revenue realized by the concessionaire from the trade of certified emission reduction credits under the Clean Development Mechanism will be shared with BMC and CMC after adjustment for related expenditures.
7. Environmental and Social Issues

7.1 KfW Sustainability Guidelines

Given that the project is eligible to receive funds from Orissa Urban Infrastructure Development Fund (OUIDF), which is ultimately funded by KfW, KfW’s sustainability guidelines will apply to the project.

The concessionaire will be responsible for undertaking an environmental and social impact assessment (ESIA) and a climate change assessment for the project, with the objective to ‘anticipate and appraise any foreseeable impact a project may have on the environment, the climate, and/or on social factors, and to identify and prevent any negative impact, or limit it to a tolerable level and (provided that the negative impact is inevitable but still tolerable) introduce compensation measures’.

The first step of the ESIA will be to appraise the project to determine whether it falls into category A, B, or C as per KfW guidelines. The scope of the in-depth study thereafter depends on the categorization of the project.

7.2 Environment and Social Impact Assessment

The concessionaire will be responsible for undertaking the ESIA for sites mentioned in Section 6.3 and obtaining the environmental clearance prior to the appointed date. The terms of reference for the ESIA approved by the state environment authority and in compliance with KfW standards will be made available to the concessionaire.

7.3 Social Concerns

The concessionaire is expected to undertake the operation of the project using the best social practices, in particular with regards to health and safety of workers and communities. Where practicable, employment preference should be given to the people of Odisha, provided they possess the right qualifications. The concessionaire shall make every effort to improve its employees’ skill levels, if necessary, through specialized training.

To the extent possible, the concessionaire should participate in community awareness consultations and training programmes organized by BMC and/or CMC to ensure the sustainability and success of the project.
8. **Concessional Funding**

In order to improve the financial viability of the project, it has been selected by H&UD to receive funding in terms of concessional loan from the OUIDF.

8.1 **Background**

GoO, vide its notification no. Reforms-UR-01/2012/2709/HUD dated 31 January 2012, constituted the OUIDF as a trust in H&UD for the purpose of financing infrastructure projects in the state of Odisha, undertaken by urban local bodies (ULBs), statutory bodies, public sector undertakings, and private investors. On 28 March 2012, GoO executed a trust deed through the Governor for establishing the OUIDF. The OUIDF was set up with the objective to, among others, provide financial assistance to the ULBs, statutory bodies, public sector undertakings, and private investors for setting up infrastructure projects in Odisha, in the form of loans, grants, and equity. Eligible infrastructure projects include development of infrastructure in the sectors such as Municipal Solid Waste Management (MSWM).

Subsequently, on 2 August 2012, GoO, acting through its Governor, entered into a project agreement with OUIDF and KfW, the German development cooperation institution, for implementation of environment related urban infrastructure in Odisha. KfW extended a loan of EUR 50,000,000 to GoO and a financial contribution of EUR 2,500,000 for promoting environment related urban infrastructure development in Odisha.

8.2 **Form of Financing**

OUIDF has agreed in principle to provide support to the project under the concessional loan facility, based on the commercial terms described in the table below.

<table>
<thead>
<tr>
<th>Assumptions</th>
<th>OUIDF Concessional Loan</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facility Amount</td>
<td>10% of the initial project cost subject to maximum of Rs. 10 (ten) crores</td>
</tr>
<tr>
<td>Rate of Interest</td>
<td>8%</td>
</tr>
<tr>
<td>Maturity</td>
<td>10 years</td>
</tr>
</tbody>
</table>
9. **Key Terms of the Concession Agreement**

The project will be governed by a concession agreement (the ‘Agreement’) setting out, inter alia, the rights and obligations of the parties, service, and performance standards, monitoring and reporting procedures, payment mechanism and performance deductions, dispute resolution procedures, penalties, and termination procedures. The main parameters of the structure entail the following:

**PPP Mode:** The agreement will be executed on a design, build, finance, operate, and transfer (DBFOT) model, i.e., the concession will be granted to the concessionaire to implement the project with BMC and CMC acting as the administrative authorities will enter in to Concession agreement with the Concessionaire overseeing the implementation of the Project. In addition, GoO, through H&UDD, will guarantee payments that are due to the concessionaire by BMC and CMC.

**Scope of Project:** The scope of the project will be as set out in Section 6.1 in accordance with the applicable rules and regulations set in the concession agreement.

**Concession Period:** The concession rights will be granted to the concessionaire upon satisfaction of conditions precedent and will continue for a period of 20 years.

**Service Commencement:** The concessionaire will be required to meet certain conditions precedent as mentioned in the concession agreement.

**Late Service Commencement at the Processing and Landfill Site:** The completion date for the project facilities is 25 months from the commencement date; the longstop date is defined as 2 months after the scheduled completion date.

**Supervening Events:** Customary termination mechanisms and compensation for the concessionaire have been provided in the concession agreement;

**Payment Mechanism:** A tipping fee will be paid by BMC and CMC to the concessionaire as described in the agreement. The tipping fee is subject to a minimum guaranteed tonnage. It is escalated at 5% per annum. BMC and CMC’s payment obligation is guaranteed by H&UDD by means of a revolving letter of credit.

**Other Sources of Revenue:** The concessionaire may accrue all revenue from the sale of recycled products (including plastic bottles, glass, paper) and treatment by-products and any potential accrual of CDM credits The Concessionaire would be liable to share 10% (ten percent) of the revenue earned on account of CDM Credits with BMC and CMC.

**Performance Requirements:** Monitoring and reporting procedures have been defined to ensure full compliance with performance obligations and corrective actions, to be taken when appropriate during all phases of the project (design, construction, operation, maintenance, and transfer).

**Change in Law:** Adequate provisions will allow the concessionaire to seek compensation for change in law, such that the concessionaire is put back in the same financial position.

**Change of Ownership:** The main shareholder of the project company, whose technical and financial capabilities are considered for evaluation, shall hold at least 26% of the subscribed and paid-up equity of the project company for 3 years after the execution of the concession agreement.
Regional municipal solid waste management facility for treating the Municipal Solid Waste (MSW) collected from the cities of Bhubaneswar and Cuttack

**Early Termination**: Customary termination mechanisms and compensation for the concessionaire have been provided in the concession agreement.

**Expiry and Termination**: All land and project assets will be handed back to BMC and CMC at the termination of the agreement, at no charge.

**Insurance**: The concessionaire shall effect and maintain insurance for the project at its own cost.

**Dispute Resolution**: Any disputes under the concession agreement will be resolved amicably through negotiations between the parties. If such disputes are not resolved, then they will be referred in accordance with the procedure agreed under the concession agreement.

The general and specific service obligations/specifications of the concessionaire have been set out in appendices to the concession agreement.
10. Bidding Process

The main steps of the tender process are as follows:

**Expression of Interest/Notice Inviting Tender**: The invitation for expressions of interest/notice inviting tender will be uploaded on the websites of IDCO, BMC, CMC and H&UDD as well as will be published in the leading newspapers on 13th June 2013.

**Request for Proposal (Bid Documents)**: The bid documents will be issued on 13th June 2013 on the websites www.idco.in, www.urbanorissa.gov.in, www.bmc.gov.in and, www.cmccuttack.gov.in. Bidders are required to pay Rs 52,500/-, inclusive of 5% value added tax, as the cost of the RFP documents in the form of mentioned in the Clause 2.12.2 of RFP document.

**Pre-Bid Conference**: 12:00 Hours, 28th June 2013 at Conference Hall, Bhubaneswar Municipal Corporation, Bhubaneswar-751014

**Bidders’ Due Diligence**: Bidders will have the ability to submit questions in writing before and during the bidders’ meeting.

Since the RFP documents are freely downloadable from the website, it may not be possible for BMC to inform all the Bidders the changes/ modifications to the bidding documents or change in any of the dates for the bidding process. The Bidders are advised to regularly visit the website for updates on the Bidding process.

**Tender**: Bidders will be invited to submit one technical proposal and one financial proposal. The technical and financial bid will be evaluated by BMC. Technical proposals of bidders who satisfy the qualifications criteria specified in the bid documents will then be evaluated on a pass/fail basis. Only the bidders whose technical proposal obtains a ‘pass’ will have their financial proposals evaluated.

**Award**: BMC will issue the winning bidder a letter of award. Upon satisfaction of the specific conditions post the issue of LOA, BMC and CMC and the special project company (SPC) newly formed by the winning bidder will enter into the concession agreement separately with BMC and CMC.