Water Management in Tata Companies - Natural Capital Risk Exposure of Financial Sector in India organized by GIZ - Nov’15
Tata Cleantech Capital Ltd (TCCL)

- Tata Cleantech Capital is a joint venture between Tata Capital and International Finance Corporation (IFC), a member of the World Bank Group.

- The company is building capabilities to offer a range of financial solutions and advisory services that enhance natural resource efficiency and/or aid carbon footprint reduction.
WATER - what is Tata doing?

…through creating Tata water champions and rolling out WFA in top 50 Tata companies with their help starting with 4 largest cos.
Water Foot Print Assessment

**Coverage**

**Direct**
- Water use within industrial facilities

**Indirect**
- Water use of supplier base

**Watershed**
- Sustainability assessment of watershed

**Partner Organizations and Roles and Responsibilities**

**Tata**
- Management of internal relations
- Acquisition of Water Footprint Assessment (WFA) expertise for internal dissemination
- Performance of water footprint assessments with support of Tata facility staff and WFN

**International Finance Corporation**
- Project scoping and design
- Strategic and Technical Support to project implementation
- Mobilization and supervision of WFN services
- Cost sharing

**Water Footprint Network (WFN)**
- Technical assistance on WFA
- Design and delivery of trainings
- Capacity building of TQMS and Tata facility staff
- Verification/interpretation of results
- Preparation of global publication
Project Activities

Process focuses on transferring skills to facility managers

CEO Launch Workshop  Champions Workshop  Site Visits  Workshop (Accounting)  Workshop (Sustainability & Responses)

Kick-off Event  Technical Training for 25 facility water champions  Scope definition, overview of facilities  Training/ clarification on water footprint accounting  Technical sessions on response formulation

Publication  Company Reports  Engagement with 6 TML Suppliers  CEO Feedback Workshop

Publication for external communication  4 company reports  First-level engagement with Tata Motors SME  Presentations by facility champions
Scope of Water Footprint Project
WF is a multi-dimensional indicator focused on fresh water consumption

Company Coverage
- Tata Steel
  Jamshedpur
- Tata Power
  Trombay
  Jojobera
- Tata Motors
  Sanand
  Pune
  Jamshedpur
  Lucknow
  Pantnagar
- Tata Chemicals
  Babrala
  Haldia
  Mithapur

Water Footprint Assessment (WFA) Stages

1. Direct Water Footprint
2. Indirect Water Footprint
3. Sustainability Assessment
4. Response Strategy Formulation

Components

- Blue WF
  Volume of surface or groundwater evaporated or incorporated into product

- Green WF
  Identification of response strategies for reducing water footprint/enhancing sustainability

- Grey WF
  Volume of polluted water (assimilation volume)
**Product Blue WFP**

<table>
<thead>
<tr>
<th>Material</th>
<th>Direct WF</th>
<th>Raw Materials</th>
<th>Energy</th>
<th>Packaging</th>
<th>Product WFP (KL/MT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bromine</td>
<td>3.3</td>
<td>3.0</td>
<td>0.3</td>
<td>0.02</td>
<td>6.26 KL/MT</td>
</tr>
<tr>
<td>Dense Ash</td>
<td>3.7</td>
<td>3.7</td>
<td>0.3</td>
<td>0.04</td>
<td>3.96 KL/MT</td>
</tr>
<tr>
<td>Soda Ash</td>
<td>3.0</td>
<td>2.4</td>
<td>0.9</td>
<td>0.04</td>
<td>3.76 KL/MT</td>
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<tr>
<td>Cement</td>
<td>2.4</td>
<td>2.7</td>
<td>0.4</td>
<td>0.04</td>
<td>3.29 KL/MT</td>
</tr>
<tr>
<td>Bi- Carb</td>
<td>2.7</td>
<td>2.6</td>
<td>0.4</td>
<td>0.04</td>
<td>3.12 KL/MT</td>
</tr>
<tr>
<td>Caustic 32%</td>
<td>2.6</td>
<td>2.19</td>
<td>1.1</td>
<td>0.04</td>
<td>2.86 KL/MT</td>
</tr>
<tr>
<td>Pure Salt</td>
<td>2.19</td>
<td>1.1</td>
<td>0.8</td>
<td>0.03</td>
<td>2.27 KL/MT</td>
</tr>
<tr>
<td>Vac. Salt</td>
<td>1.1</td>
<td>0.8</td>
<td>0.5</td>
<td>0.05</td>
<td>1.19 KL/MT</td>
</tr>
<tr>
<td>Clinker</td>
<td>0.8</td>
<td>0.5</td>
<td>0.1</td>
<td>0.01</td>
<td>0.87 KL/MT</td>
</tr>
<tr>
<td>Liq Cl2</td>
<td>0.5</td>
<td>0.1</td>
<td>0.0</td>
<td>0.01</td>
<td>0.51 KL/MT</td>
</tr>
<tr>
<td>HCl</td>
<td>0.0</td>
<td>0.1</td>
<td>0.0</td>
<td>0.01</td>
<td>0.1 KL/MT</td>
</tr>
</tbody>
</table>

*Note: Values in KL/MT (Kilotons per Metric Ton).*
Cost Curve

Water saving opportunities, Million m$^3$/annum

Cost of abatement, Rs/m$^3$
Tata Steel Jamshedpur is located in between Subarnarekha and Kharkai River. Upstream of Subarnarekha river Chandil Dam (Capacity 1963 MCM) is located which releases water continuously to maintain the flow of the river.

The river intake is located at Subarnarekha river to cater the need of entire township as well as other associated companies including Tata Steel.

Dimna Lake constructed by Tata Steel for Emergency water supply
- Capacity – 28.6 MCM
- Can cater 40 days in emergency
### Summary Results - Within Fence

<table>
<thead>
<tr>
<th>Name of Company</th>
<th>Comparative water consumption (m³ per unit)</th>
<th>Specific water consumption (m³ per unit)</th>
<th>Abatement opportunity % of current consumption</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tata Power</td>
<td>1.8</td>
<td>3.0</td>
<td>15%</td>
</tr>
<tr>
<td>Tata Steel</td>
<td>3.0</td>
<td>5.84</td>
<td>33%</td>
</tr>
<tr>
<td>Tata Motors</td>
<td>1.7</td>
<td>4.7</td>
<td>50%</td>
</tr>
<tr>
<td><strong>Tata Chemicals</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Soda Ash</td>
<td>2.5-3.6</td>
<td>0.15-0.5*</td>
<td>1.0%</td>
</tr>
<tr>
<td>Urea</td>
<td>4.0-4.5</td>
<td>4.85</td>
<td>10%</td>
</tr>
<tr>
<td>SPS</td>
<td>0.2-1</td>
<td>0.33</td>
<td>20%</td>
</tr>
</tbody>
</table>

* Considers only fresh water
## Water Footprint Assessment: Highlights

<table>
<thead>
<tr>
<th></th>
<th>Tata Steel</th>
<th>Tata Motors</th>
<th>Tata Chemicals</th>
<th>Tata Power</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Operational water footprint</strong></td>
<td><strong>Dominant water user in watershed</strong></td>
<td>Low direct blue water footprint</td>
<td>Water-use efficient</td>
<td>Footprint highly dependent on fuel</td>
</tr>
<tr>
<td><strong>Supply chain water footprint</strong></td>
<td>Simple supply chain</td>
<td><strong>Indirect blue water footprint 85% of total</strong></td>
<td>Raw material and energy significant contributors</td>
<td>Variation across facilities on share of supplier water footprint</td>
</tr>
<tr>
<td><strong>Sustainability Assessment</strong></td>
<td>Sustainability of water use at risk due to new agricultural water canal</td>
<td>Need for water use efficiency due to competing claims across all stakeholders</td>
<td>Participatory watershed management</td>
<td>Risk to water availability due to Mumbai water requirements</td>
</tr>
<tr>
<td><strong>Response Strategy Formulation</strong></td>
<td>Investments for zero water discharge by 2013</td>
<td>Low-hanging fruits implemented; need for technology investments</td>
<td>Investments for zero discharge &amp; promotion of sustainable practices by farmers</td>
<td>Desalination plant</td>
</tr>
</tbody>
</table>
Tata Motors - Vendor Engagement

Overview

Awareness building on facility water usage through workshop on water footprint methodology

Calculation of facility blue and grey water footprint according to WFN methodology

Capturing of lessons learned from engagement with 6 suppliers for replication to other suppliers

Briefs on engagement process (including role of lead corporate, supply chain actors, technical partners etc)

Technical assessment on utilities and wastewater management

Baseline of current water practices and wastewater discharge, and opportunities for conservation/optimization of water usage and wastewater

Facilitation of knowledge sharing among supplier base through formation of user groups for discussion on response strategies/new technologies/methodologies and tools
Comprehensive Environmental Sustainability

2008

- Carbon Footprint and Water Management in Tata Companies
- 350 Climate Change Champions
- Communication on Green Economy

Cambridge Sustainability Leadership Program

- Attended by 150+ CEOs/Sr Executives

Climate Change

Sustainability

2012

CARBON

WATER

WASTE

ENERGY
Thank You

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