Environmental Regulations- Brick Kilns in Nepal

Bhishma Pandit
<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Registered Establishments</td>
<td>429 (826 FNBI)- 701 is operational – 553 fixed , 157 moveable, 85 without registration, 499 members</td>
</tr>
<tr>
<td>Quantity of Bricks Sold</td>
<td>753 million pieces</td>
</tr>
<tr>
<td>Value of Sales</td>
<td>2.3 billion Rupees</td>
</tr>
<tr>
<td>Persons Employed</td>
<td>42,003 (139450- FNBI)</td>
</tr>
<tr>
<td>FNBI source</td>
<td>102,620 Male, 36,830 women</td>
</tr>
<tr>
<td>Value of Output</td>
<td>2.5 billion Rupees</td>
</tr>
<tr>
<td>Total Value Added</td>
<td>1.8 billion Rupees</td>
</tr>
</tbody>
</table>

Reference: CBS-2008
Indicators of Nepal’s Brick Sector (Registered Establishments Only)
Number of Registered Kiln under Brick associations: 499 (22 district)
other district where there is no associations, is assumed to be around 826 (As per FNBI), 701 operational

<table>
<thead>
<tr>
<th>Type</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fixed Chimney</td>
<td>68%</td>
</tr>
<tr>
<td>Moveable BTKs</td>
<td>19%</td>
</tr>
<tr>
<td>Without registration</td>
<td>10%</td>
</tr>
<tr>
<td>VSBK</td>
<td>3%</td>
</tr>
</tbody>
</table>

Growth rate: 20%

Source: FNBI
Contents

• Departments
• Environmental provision for the registration
• Operational regulations
• Monitoring mechanisms & Limitations
• Barriers
• Way forwards
Department

• Registrations- Large brick kilns- Department of Industry- medium and small- Department of cottage & small scale industries- Ministry of Industries


• Stack emission measurement capability- NBSM
History- Phasing out brick firing kilns

• Moveable kilns BTKs phased out from year 2012 in Nepal.

• Moveable kilns BTKs phased out form Kathmandu valley in year 2004.

• Clamp kilns – Phased out from 2015- Rice husk fired clamp kilns- Running
Environmental provision for registration

- IEE/EIA is essential for new kiln establishment
- Forest management- previously 5-km distance from forest- changed to now forest products will be used within the brick kilns
- There is no provision regarding top soil and soil mining within the brick industry
# Operational regulations

<table>
<thead>
<tr>
<th></th>
<th>VSBK</th>
<th>Natural draught-BTK</th>
<th>Forced draft-BTK</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Distance from Urban Area</strong></td>
<td>500m</td>
<td>1km</td>
<td>1km</td>
</tr>
<tr>
<td><strong>Minimum Land Requirement</strong></td>
<td>100ft Radius</td>
<td>200ft Radius</td>
<td>200ft Radius</td>
</tr>
<tr>
<td><strong>Distance from Forest</strong></td>
<td>NA</td>
<td>1km</td>
<td>1km</td>
</tr>
<tr>
<td><strong>Chimney Height</strong></td>
<td>40ft</td>
<td>30m</td>
<td>17-30m*</td>
</tr>
<tr>
<td><strong>SPM Emission Standard</strong></td>
<td>400mg/Nm³</td>
<td>700mg/Nm³</td>
<td>700mg/Nm³</td>
</tr>
</tbody>
</table>

Source: Environment Protection Regulation

Notes: * 17m for forced draught and 30m for natural draft

Mandatory ladder/hole/ station within the chimney
Monitoring mechanism and limitations

• Department of Environmental – Private companies/consultants- Outdated equipments- no measurement SOP/ protocol
• Around 700 kilns operation- 20-30 units measurements- random basis.
• Skilled manpower of emission measurements- Lab and equipments
• Two lab – accredited from NBSM
Barriers

• Coordination between departments- Random checking from environment department- Department of cottage & small scale industries
• Equipments for departments
• Manpower
• Penalty – low??
• Relocations from Kathmandu valley- Brick transportation from 200 km- Transportation emissions/ cost- road conditions- traffic management- Alternate building materials
Way forward

• Integrated policy- Brick sector- Alternate bricks- building code.

• Equipments for departments/ Lab- pollution control board

• Manpower

• Clay -Mining approach and planning.

• Ambient air quality standards- Dust

• Relocations - transportations
Thank you
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