The Copper Industry of the Republic of the Philippines

International Copper Study Group
Statistical Committee Meeting

Background Document: ICSG/STAT41/6

41st Regular Meeting
Thursday 25 April 2013
14.00pm – 17.45pm
Lisbon, Portugal
Philippine Mine Production &
Its Share of World Production, 1950-2012*

1950s: New technology introduced to large-scale mining; Establishments of Padcal and Toledo

1960-1980: The ‘Golden Age’ of copper mining industry; Robust production growth supported by exports

1980-1990: Lower prices and export demand dampened profitability and output of large-scale mining; Shutdown of mines; retreat to smaller-scale mining

1990s: The Philippine Mining Act of 1995 to liberalise the industry; Marcopper tailings spill accident in 1996

2000s: The Supreme Court affirmed the Mining Act in 2004; Higher prices boosted production since 2008

(*) Preliminary data

Data: ICSG
The Philippine Copper Mines and Projects

- Malitao Project (Cu, Au)
- Dilong Project (Cu, Au)
- Padcal (Cu, Ag, Au)
- Didipio (Cu, Au)
- Rapu-Rapu (Cu, Zn, Au, Ag)
- Taurus Project (Cu)
- Toledo (Cu, Au, Ag, Pyrite)
- Buyongan Property (Cu, Au)
- Surigao Projects (Cu, Au, Ni)
- Tampakan Project (Cu, Au)
- Canatuan (Cu, Ag, Au)
- Hinobaan Project (Cu)
- Batangas Projects (Cu, Au)
- Manila
- Kingking Project (Cu, Au)

Data: ICSG Directory of Mines and Plants
# The Philippine Copper Mines and Projects

<table>
<thead>
<tr>
<th>Mines</th>
<th>Capacity (kt/y Cu)</th>
<th>2012 Production (kt Cu in conc)</th>
<th>Start up</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toledo</td>
<td>45</td>
<td>40.8</td>
<td>1955, 2008</td>
</tr>
<tr>
<td>Padcal</td>
<td>20</td>
<td>10.1</td>
<td>1958</td>
</tr>
<tr>
<td>Didipio</td>
<td>18</td>
<td>n/a</td>
<td>2012</td>
</tr>
<tr>
<td>Rapu-Rapu</td>
<td>10</td>
<td>~7.5</td>
<td>2006</td>
</tr>
<tr>
<td>Canatuan</td>
<td>7</td>
<td>6.8</td>
<td>2008</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Projects (Operator/Owner)</th>
<th>Prod. Est. (kt/y Cu)</th>
<th>Project status</th>
<th>Start up</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tampakan (Xstrata &amp; Indophil)</td>
<td>375</td>
<td>Feasibility</td>
<td>2019</td>
</tr>
<tr>
<td>Kingking (St Augustine)</td>
<td>120</td>
<td>Feasibility</td>
<td>2016</td>
</tr>
<tr>
<td>Hinobaan (Copper Resources Corp)</td>
<td>35</td>
<td>Feasibility</td>
<td>n/a</td>
</tr>
<tr>
<td>Boyongan (Philex)</td>
<td>n/a</td>
<td>Feasibility</td>
<td>n/a</td>
</tr>
<tr>
<td>Batangas (Mindoro)</td>
<td>n/a</td>
<td>Exploration</td>
<td>n/a</td>
</tr>
<tr>
<td>Malitao and Dilong (Philippine Metals)</td>
<td>n/a</td>
<td>Exploration</td>
<td>n/a</td>
</tr>
<tr>
<td>Taurus (Philippine Metals)</td>
<td>n/a</td>
<td>Exploration</td>
<td>n/a</td>
</tr>
</tbody>
</table>

Data: ICSG Directory of Mines and Plants, Company reports
Philippine Smelter & Refinery

PASAR
(Philippine Associated Smelting and Refining Corporation):

- Copper smelter
- Copper refinery
- Auxiliary plant (sulphuric acid)
- Dore plant (producing a mixture of gold and silver)

Annual production capacity:
215,000 tonnes of copper

Data: Glencore website
Philippine Smelter & Refinery Production
1983-2012*

Data: ICSG

'000 tonnes Cu

(*) Preliminary data

Fire at acid plant of PASAR

Data: ICSG

(*) Preliminary data
Philippine Copper Exports: Mostly Cathodes 2000-2012*

- Ores and concentrates
- Cathode
- Scrap
- Semi-fabricated products
- Blister and anode

Data: ICSG

'000 tonnes

(*) Preliminary data

Fire at acid plant of PASAR
Low production at Padcal

Data: ICSG

(*) Preliminary data
Philippine Copper Imports: Mostly Concentrates 2000-2012*

(*) Preliminary data

Data: ICSG
Philippine Copper Net Trade and Usage 2000-2012*

**Net trade:**
Exports cathode and imports semis (mostly copper bar, rod, and wire)

**Implications:**
- Well established upstream to produce cathode
- Not enough semis production for local industries

**Usage** in the last decade:
Only 40,000 tonnes of copper are fabricated locally while over 100,000 tonnes are available

**Outlook:**
- Potential growth in demand for copper semis by local auto and electronics production
- Usage will be boosted if PASAR builds rod plant

(*) Preliminary data

Data: ICSG
Philippine GDP by Sector 2012

Electronics industry – 70% of exports, 20% of GDP
Copper flat rolled products and copper wire

Automotive industry
Copper wire and brass rod (wiring harness and auto equipment production)

Copper building wire

Copper tube

Data: NSCB
Philippine Mine, Smelter and Refinery Capacity 2011 to 2016

Data: ICSG Directory of Copper Mines and Plants (February 2013)
Conclusions

• Robust growth over the period 2000 to 2011 – mining, smelting and refining output grew by CAGR of 6%, 3% and 1%, respectively.

• Production in 2012 was 65,500 tonnes of copper in concentrate at the mines, 97,000 tonnes of copper at the smelter and 90,400 tonnes of copper at the refinery.

• The Philippines has great potentials in growth in copper mining in the next 10 years based on the significant copper reserves and projects in the pipeline. In addition, the government recently lifted the moratorium on approval of permits in March 2013, which shall encourage more investments to the mining sector.

• There are also opportunities in the semis fabricating industry, supported by the local electronics and automotive sectors. PASAR has expressed its interests in building a new rod plant, which will boost refined usage if the plan materialises.

• Issues to be addressed:
  Environmental hazards and rights of indigenous people
  The effective level of mining royalties for foreign companies

This is the end of the presentation. Thank you.