OPPORTUNITIES FOR VALUE CREATION IN KAZAKHSTAN’S COPPER VALUE CHAIN

Policy Dialogue on Natural Resource-based Development – 6th Plenary Meeting

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Session 1C
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Opportunities for Resource-based Value Creation in Kazakhstan’s Copper Value Chain: **Phase 1**

- Launched in January 2016, the aim of **Phase 1** of the project is to assess Kazakhstan’s position in the copper value chain and identify opportunities for linkage development.
- This forms the foundation for a more detailed **Phase 2** review of the identified strategies, relying on the *Framework*

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<td>Launch of research</td>
<td>Desk research and data collection</td>
<td>Workshop and fact-finding missions</td>
<td>Draft report ready</td>
<td>Presentation of the inception report at PD-NR plenary meeting</td>
<td>Incorporation of last round of comments and finalisation</td>
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Presentation outline

• Copper sector in Kazakhstan

• Linkage opportunities from the copper sector

• Potential next steps

• Discussion
Kazakhstan’s position in the copper value chain

- Copper is a key export commodity for Kazakhstan
  - Refined copper was 2.3% and copper concentrate was 1% of Kazakhstan's total exports by trade value in 2014

- Activity in the copper value chain concentrated in production and refining, with limited amount of semi-fabrication
Potential linkage opportunities presented by the copper sector in Kazakhstan

**Horizontal linkages**
- Transport, water, power, and communications infrastructure
- Financial services
- Research and development
- Education and skill development

**Copper mine**
- Specialist raw material suppliers
- Component manufacturers
- Engineering & specialist consult. firms
- Specialist input suppliers (explosives, chemicals)
- Original equipment manufacturers
- Engineering & service providers
- Agents & distributors

**Backward linkages**
- Scrap metal
- Wire rod
- Wires/cables
- Rolled sheet/strip
- Profiles/rod
- Tubes
- Casting
- Electrical (wires and cable, communications, transformers, components, etc.)
- Transport (auto & train, wire/components, electrical motors, condensers, etc.)
- Industrial (valves, fittings, renewable energy, transmission, refrigeration, etc.)
- Construction (plumbing, water systems, wiring, air conditioning, fixtures, etc.)
- Other (coinage, decorative items, ammunition, antimicrobial, etc.)

**Forward linkages**
- Copper-containing ore
- Concentrating
- Copper concentrate
- Copper smelting
- Export Markets
- Copper cathodes
- Refining/electrolysis
- Blister copper
- Semi-fabricators
- Scrap metal
- Domestic and export markets

**Fiscal linkages**
- Royalties
- Corporate and income tax
- Dividends
- Licensing fees

**Emerging applications**
- Aquaculture, automotive electrical propulsion, seismic energy dissipation, thermal energy storage, ultra-conductive components

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Source: International Copper Association (2012); European Copper Institute (2015); the World Bank (2011); the University of York (2015); Southern Peru Copper Corporation (2005); Fessaie, Judith (2012); Lydall, Marian (2009); Walker, M.I. and Minnitt, R.C.A. (2005)
Key findings:
Forward linkage opportunities

Copper smelting and refining

- Smelting and refining copper increases the export value, decreases transportation costs, and broadens options for export markets.
- **Where economical, further expanding smelting and refining capacity should be explored by both government and industry.**

Semi-fabrication

- Kazakhstan exports a small number of semis, but the market is dominated by China.
- **There may be limited potential for semi-fabrication due to low margins and market structure.**
Many different backward linkage opportunities, but some present particular innovation potential.

**Environmental services**
- Copper mining and processing is environmentally intensive.
  - Opportunity for environmental services adapted to local conditions
  - In keeping with Kazakhstan’s *Concept for the Green Economy*.
- Environmental services increasingly important for mining
  - Social license to operate
  - Economic benefits of processing mining waste

**Mining Equipment, Technology and Services (METS)**
- Upgrading to international standards
  - METS firms benefit from support in upgrading to international standards, investing in new technologies, and expanding scale, capacity and reliability.
- Soviet era equipment presents opportunity for upgrading and refurbishment and new mines will require new equipment.
Key findings: Technology linkage opportunities

- Information and Communications Technologies (ICT) are increasingly important for mining industry

- Potential to develop new specialisation in Kazakhstan suppliers and support broader spill-overs into other sectors

- Education programs that respond to industry demand and programs that support technology transfer and R&D are important supporting factors
Two types of infrastructure were identified as critical for the copper industry.

**Transport**

- **Well developed railroads...**
  - Kazakhstan ranks 27th out of 140 countries in the WEF infrastructure pillar – the main way of copper transportation.

- **...but quality of roads remains low:**
  - Kazakhstan ranks 107th out of 140 countries.

**Electricity**

- **Copper sector’s demand for energy could catalyse growth in renewable power**
  - This would be in support of Kazakhstan’s *Concept for the Green Economy*.

- **Electricity infrastructure** is undermined by regional misbalance in power provision (northeast vs southeast).
Potential ways forward: Phase 2

• Concrete and implementable policy recommendations for each viable linkage opportunity
  – based on in-depth analysis of lessons learned by Knowledge Peers as well as the particular characteristics of Kazakhstan

• Informed by substantive consultations with stakeholders from private sector and representatives from relevant government bodies.

Ultimate output: a blueprint strategy for coordinated action by the broad range of public and private sector stakeholders, aimed at efficient support of linkage opportunity development
Thank you

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