A Framework to Approach Shared Use of Mining Related Infrastructure: Rail and Port
Rail & Port Proposals to Service Iron-Ore Projects in Western and Central Africa

2.3. NEW OPPORTUNITIES FROM PREVIOUSLY UNECONOMIC AND UNDEVELOPED MINERAL DEPOSITS

Until the advent of the commodity super cycle, certain mineral deposits were deemed uneconomic to develop due to low commodity prices and/or host governments’ inability to support the construction of capital intensive export transport infrastructure. In today’s high commodity environment, a large number of existing and new deposits have become, in theory, all at once commercially viable. However, the exploitation of most small and medium deposits remain elusive as they cannot individually support the capital cost of the Greenfield transport infrastructure usually needed to connect “pit to port.” In such cases, there is an opportunity to develop the required infrastructure on a multi-client “shared” basis, defraying the capital costs across multiple deposits.

Unlocking previously undeveloped mineral deposits provides a clear opportunity for the countries in which they are located. Host governments have embraced these new opportunities, eager to take advantage of the economic benefits of monetizing their countries’ mineral base through royalties and taxes, as well as potential increases in direct and indirect employment. In the cases where these newly viable mining resources are located in geographically remote regions, this development has led to the need for construction of transport infrastructure, such as roads, railways and ports, to facilitate the delivery of the commodities to the market. In SSA alone, according to Deutsche Bank, it is estimated that more than 4,000 km of Greenfield railway, costing in excess of USD 50 billion would have to be financed and constructed to unlock all known iron ore deposits (see Figure 2).

Figure 2: Iron Ore Projects and Related Infrastructure Needs in SSA

Practically, the development of the mines associated with these deposits will be staggered over time because: i) their total output of 475 to 5,757 mpta would represent an increase of nearly 60 percent of today’s world’s export supply in an environment where global consumption is projected to grow at less than 5 percent per year.
Rail & Port Proposals to Service Coal Projects in Mozambique

Source: MTC
Framework

Step 1: Assessing the current situation - What is at stake?

Step 2: Undertaking a cost-benefit analysis of multi-user & multi-purpose access

Step 3: Identifying operational synergies and verifying the necessary preconditions for shared use

Step 4: Negotiating points
(Step 1) Mining and Infrastructure Project in Perspective

Strategic Importance of Mining Project

- Fiscal revenues
- Linkages to the economy
- First mover?

Strategic Importance of Associated Infrastructure

- In line with national/regional infrastructure plans?
- Potential demand for third party access to rail and port
(Step 1) Determining Potential Demand for Third Party Access

- Historical rail and port throughput (if brownfield)
- Road haulage along corridor that is suitable for rail
- Project proposals
- GIS mapping

Source: MTC
(Step 1) What should be on rail?

Goods: Tons by Commodity in China

Distance: Truck vs. Rail Prices in the USA

Source: WB 2011 Rail Reform
Maximize benefits of the extraction of resources, but different views on what should be prioritized:

- Ministry of Finance – Tax revenues
- Ministry of Industry – Local processing
- Ministry of Transport – access to infrastructure
(Step 1) Understanding the players/interests

- Maximize returns of its investment
- Control design, and operation of fully integrated logistics corridor
- Scope for shared investment/use if does not interfere with own operations
- Against multi-purpose access
(Step 1) Understanding the players/interests

- Multi-user access
- Third party operating the rail and port infrastructure
- Smaller mining companies may prefer a haulage regime
- Large-scale subsequent parties may want their own infrastructure solution
(Step 1) Understanding the players/interests

- Multi-purpose access
- Strong government intervention
- Cross-subsidization for passenger services
(Step 1) Understanding the players/interests

- Prefer vertically integrated single user model
- The more players involved, the higher the risk
- Worst scenario with multi-user and multi-purpose access with unallocated capacity at financial close
(Step 1) Understanding the players/interests

- Multi-purpose access to infrastructure
- Transit fees
(Step 1) The Importance of Timing

**Pre-Negotiations**
- Leading mining company can take open access into account in the decision making process and design phase

**Late in Negotiations**
- Could harm the relationship between the government and the leading mining company. Might delay the project if open access is requested at a late stage in negotiations

**Post-Construction**
- Very difficult to impose open access, especially if infrastructure is operating at capacity
(Step 2) Cost Benefit Analysis of Open Access

**Costs & Risks**
- Capital expenditure to warrant multi-user/multi-purpose access
- Capital expenditure to increase capacity
- Efficiency loss
- Access to finance
- Delay in negotiations
- Costs of regulatory body to supervise shared use

**Benefits**
- Economies of scale
- Development of otherwise stranded assets
- Non-mining development along the corridor
- Limited back-haulage opportunities
- Regional integration
(Step 3) Level of Government Intervention

**SCENARIOS**

1. Little foreseen economic benefit from open access
2. Mining companies willing to share transport infrastructure. Little further foreseen economic benefit from open access.
3. High concerns over stranded mining assets. Little further foreseen economic benefit from multi-purpose access.
4. High potential to unlock economic development along the corridor
5. Cross-border potential to increase trade and unlock economic development along the corridor

**INTERVENTION**
Sierra Leone – Multi-user Agreement

- In 2012, African Minerals signed agreement with Cape Lambert, allowing access to rail and port infrastructure
- Cape Lambert to fund 33% of the Infrastructure upgrade in return for 2mtpa of capacity on the rail and port infrastructure

Source: AML Annual Report 2007
(Step 3) Legal Framework

Open Access Regime

1. Blanket-open access regime vs. industry specific regime
2. Regulation to apply to all access seekers and not only to the same industry
3. Important to clearly draft regulation to achieve open access
4. Mining contract should not contradict legislation

Regulatory Body

1. Monitor non-discrimination of access
2. Monitor/regulate access charges and tariffs
3. Guarantee infrastructure investments & expansion opportunities
4. Analyze and arbitrate access complaints
Government should always retain ownership and control of the right of way
(Step 3) Infrastructure Design

Company/Companies to design infrastructure which maximizes efficiency

1. Excess capacity
2. Potential double track on railway
3. Expansion considerations

4. Multi-purpose
5. Additional quays at port
6. Service road

Regional gauge on railway
The Putu Iron Ore Mine in South East Liberia will build its own railway line and port facility.

The contract design lays the foundations for future expansion of rail:

“The Railroad shall be designed so that it can be expanded on a commercially feasible basis to carry on a continuing basis twice as much traffic as is contemplated by the preceding sentence…”

And port:

"The Port shall be designed and constructed such that it can be expanded on a commercially feasible basis to handle twice as much capacity as is contemplated by the preceding sentence. Such expansion capacity shall include the possible construction of an additional 50 meters on the Iron Ore jetty and the driving of iron ore jetty piles at least 5 meters deeper. The Port basin shall be designed to facilitate further large scale development consistent with any expansion of the railroad (e.g., lengthening of primary wharf, room for additional wharf, or adequate protected anchorage).”

“The land side of the port shall be designed to facilitate future expansion and public or third party access to general petroleum products and general cargo storage and handling facilities.”
(Step 3) Operating Model

Non-Discriminatory Access Potential

Vertically Integrated

Haulage Regime*

Access Regime

Choice to be made according to regulatory/monitoring capacity

Yet to be tested in practice
### (Step 3) Regulator Attributes

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<thead>
<tr>
<th>Attributes</th>
<th>Problem</th>
<th>Solution</th>
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<tr>
<td>Minimize Information Asymmetry</td>
<td>• Operators have a better understanding of costs/profits of rail and port infrastructure</td>
<td>• Regulator needs expertise to monitor access charges and tariffs&lt;br&gt;• Seek foreign expertise until capacity is built up</td>
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<td>Impartiality</td>
<td>• The market is not going to trust the regulatory body to make a fair judgment if it is influenced by a stakeholder that has an interest in the outcome of the decision</td>
<td>• Regulatory body should be independent from the Government&lt;br&gt;• Guidelines should be outlined upon which decisions are made</td>
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<tr>
<td>Predictability</td>
<td>• Perceived risk is going to increase if the regulator is inconsistent with its rulings</td>
<td>• Guidelines should be outlined upon which decisions are made</td>
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## Mozambique – 3 Models & Regulator

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<th>Beira</th>
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<th>Macuze</th>
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<tr>
<td><strong>State of Implementation</strong></td>
<td>Existing line, capacity to be increased</td>
<td>Under construction</td>
<td>Tendered</td>
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<tr>
<td><strong>Ownership/Operation</strong></td>
<td>State owned company</td>
<td>Leading Mining Company</td>
<td>Third Party</td>
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<tr>
<td><strong>Open Access</strong></td>
<td>Yes</td>
<td>Imposed (4mtpa general cargo &amp; 2 passenger trains)</td>
<td>Requirement in tender</td>
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| **Constraints**                | • Difficulty of accessing finance for necessary expansion  
• Port/rail capacity alignment | • Unclear tariff setting mechanism to guarantee multi-purpose access | • Large interest in tender (21 companies), but reported difficulty to provide bank guarantees |

### Regulator (INATTER)
- Approved by the Government in August 2011
- Mandate to regulate terrestrial transport (monitor & arbitrate)
- Integrated in the Ministry of Transport
- Staffing and technical capacity constraints
Step (4) Selected Negotiation Points

1. Access holidays and sunset clauses before shared use applies
2. Haulage regime
3*. Rail and port capacity & expansion design
4*. Financing of non-mining related infrastructure & tariff mechanism for non-mining cargo
5*. Transit fees & integrated border management system with neighbouring government

* Government will need to grant leading mining company founding rights & capacity allocation guarantees
Step (4) Government Negotiation Tactic

Cost-benefit Analysis
- Strategic importance of the infrastructure in question
- Comparison to alternative solutions (options analysis)

Leverage
- Quality and profitability of mining concession
- Costs imposed on mining companies in competing jurisdictions
- Likelihood that another mining company will develop the project if negotiations fail

Finance
- Ultimately, the legal arrangements of a mining related infrastructure agreement will be the reflection of what is financially doable, rather than the other way around.