



# SHARED-USE INFRASTRUCTURE

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## Shared use of extractive industry infrastructure investments can be a catalyst for inclusive and sustainable growth in Africa. Perrine Toledano explores how

Only about 30% of Africa has access to electricity, and transport costs in Africa are among the highest in the world. For the World Bank, the annual funding gap for infrastructure investment in Africa is US \$31 billion.

This gap however can be filled if the investments of natural resource concessionaires are leveraged and not planned in an enclave model. In resource-rich but infrastructure-poor Africa, natural resource concessionaires have traditionally developed railways, ports and power plants to serve their own needs. Africa has therefore often missed the opportunity of coordinating those large investments with national infrastructure planning and has failed to promote potential synergies and shared use of the privately developed infrastructure.

“As has been the case for many years,” says Helen Tarnoy, Executive Director of Aldwych International Ltd, “there is a wealth of potential opportunities for power developers owing to the substantial unmet demand for reliable power [including from the mining industry] across the continent. The opportunities are, however, not usually structured or packaged in any way by host governments or utilities.”

The potential to increase welfare gains by improved coordination between the government and companies is therefore tremendous: from avoiding the environmental damage of duplication of infrastructure between competitors to increasing the power supply to the grid, to unlocking the agriculture sector by providing cheaper transportation.

“We have to create complementary

infrastructure,” says Brian Molefe, CEO of South Africa’s Transnet, “and it is more likely to happen when the complementing interests outweigh the competing interests.” The cost savings are nevertheless not always obvious to the industry and barriers to shared use are heavy. Only a sound regulatory and policy framework can lift them.

### KEY BARRIERS

Large infrastructure investments, such as in railways, ports, hydro-electric plants and power networks, exhibit natural monopoly features with high fixed costs and low operating costs. Consequently, the marginal cost is below the average cost and both decline as output expands. It causes a tricky situation where prices cannot be set at the marginal cost as required by social efficiency because prices must be at least equal to the average cost in order for the endeavour to be commercially viable. In this situation, it is generally more economically efficient for one firm to supply all the market’s demand. The flip side is that it ends up in exclusive access or monopoly pricing for infrastructure services.

This explains why, in Africa, the traditional model, where the mine owner has been granted the vertically integrated concession of the railways (and thus is responsible for all the capital expenditure as well as the operations and maintenance of the assets), has not been successful in achieving shared use even if the state has kept the ownership of the tracks to preserve the “national interests.”

Separating ownership of the mine, railway and port infrastructure is a more efficient structural solution: if the owner of the infrastructure assets is different from the mine investor, the owner is incentivised to maximise capacity utilisation, (provided that there is sufficient capacity), which should naturally result in shared use.

Separating the ownership is particularly necessary in the cases in which the government is faced temporarily with one mining investor in a promising mining area that is bound to attract many other miners (e.g Liberia with Arcelor Mittal); or with major companies that can afford the total

infrastructure costs and that do not see a business case for sharing the upfront capital costs (e.g Mozambique with Vale).

But this separation of ownership is not appealing to bulky miners, such as in coal and iron ore, which consider their infrastructures as part of an integrated system on which they want close control and zero coordination costs.

Those coordination costs are particularly high in the case of sharing the railways with non-mineral users, such as farmers, given that they are generally low volume and dispersed and that the logistic solutions are not in place to make multi-purpose infrastructure economically viable (warehouses, loading stations, feeder roads).

In Australia, in the coal Hunter Valley, to cope with the coordination costs associated with separated ownership, an independent supply chain coordinator has been established to communicate with all participants in the supply chain to maximise overall throughput from the mine to the shipping entity. In Africa, such a critical coordinating body doesn’t exist. It is only in the DRC-Zambian copper belt, where one single copper mine cannot afford a dedicated line, where the model of separating ownership has been adapted and that shared use is achieved in practice.

An additional factor of high coordination costs is Africa’s single-track railway system, a remnant of colonial times, that mining companies rarely transform into double-track given the high investment.

More critically, mine investors generally have little regulatory incentive to design infrastructure with greater capacity than their mine’s production, such as establishing the right of way, bridging bases, making cuttings bigger, let alone constructing assets with overcapacity. Pointed questions regarding payment and allocation of capacity are bound to arise with generally no regulatory answers.

For instance, in Richards Bay, while the railway is government-owned (Transnet), the coal terminal at the port is owned by the major coal mine investors, and it is therefore difficult for other coal producers to obtain capacity allocations at the port. Consequently, those other coal producers

do not seek access to the railways, so shared access is not achieved in practice.

The same goes for the electricity generated by the mine: appropriate legislation for mining companies' power generation does not always exist, or does not address the possibility of selling electricity to the grid, whereas the challenge for host countries with expensive grid electricity is to increase domestic supply. When there is no grid, the issue is even more acute.

AngloGold Ashanti financed a new electric power line from Siguiri mine to the nearby town and provided two generators, giving the community 1.2MW. An engineer at one of leading mining firms insists that the crucial question is "who pays for the maintenance? Who ensures the financial sustainability? It can't be the company."

Even where regulations mandate shared use or third party access, governments faced with monopolistic structures rarely have the bargaining power to impose such terms. To cope with this, countries like India or Brazil have adopted the golden share approach to influence or veto key strategic decisions.

Finally, weakly drafted contractual language between states and private investors has proved ineffective in ensuring shared use or third party access, particularly when the designated infrastructure is capacity constrained.

According to Miguel Peres, Managing Director, Mozambique at Brazil-based Odebrecht, the absence of an efficient statutory access regime or of an independent regulator to refer to, to regulate the monopolies, "is the number one barrier to shared use."

### A CHANGE IS COMING

With the increase in commodity prices as well as the fact that the African continent has proved its attractiveness, the race to attract investments is coming to an end. Africa is becoming more demanding towards the investor.

For instance, the Mozambique and Malawi governments have been reluctant to let Vale develop the Nacala Corridor given their intention to keep exclusive access. Mozambique's Minister of Transportation and Communication,

Paul Zucula, is adamant: Nacala's rail and port concession granted to Vale "will also serve for the transportation of passengers and diverse merchandise, including livestock, in the agricultural region comprising the northern corridor."

In Liberia, the 2010 contract signed for the Putu mine requires the mine owner to build infrastructure with excess capacity and to provide 24/7 electricity to local communities in a ten-kilometre radius around the mine site.

In the DRC, in 2005, the public utility SNEL cancelled its deal with MagIndustries, whose plan was to rehabilitate turbines in exchange for power for its mining operations, when realising the unfavorable terms of the deal: negligible additional capacity for the country and the country had to pay the equivalent of a 26.5% financing interest for the Inga I and II upgrades.

"[Complimentary infrastructure] is more likely to happen when the complimenting interests outweigh the competing interests"

In Guinea, with the new 2011 mining code, the government requires an equity stake in the infrastructure projects to limit the exercise of monopoly power.

In addition, governments are issuing new laws and regulations facilitating coordination and partnership with the companies. Mozambique recently passed a PPP law. In South Africa and Cameroon, reforms are underway to unbundle the power sector and encourage the participation of the mining industry's own-generation in the power market.

Furthermore, with the steady increase in commodity prices, mining has expanded and few mining projects happen in isolation, making the business case to coordinate and share infrastructure with other mineral users clearer.

The Mbalam Iron Ore Railway developed by Sundance Resources in Cameroon and the Rio Tinto Simfer railways in Guinea, for example, are

expected to open to other operators on a fee-for-service basis. Rio Tinto in the coal corridor in Mozambique is seeking to develop a new railway with other coal competitors under a multi-user scheme where capital costs are shared.

To implement multi-user platforms, "it is unrealistic to expect all projects within a region to be ready at the same time, therefore one needs an anchor project justifying the railway investment and the railway [must be] designed to be expanded to accommodate other projects as they develop" says Ewen Wigley, Head of Corporate Development at Africa Iron Ore Group.

### PROPER PLANNING IS NEEDED

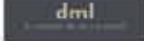
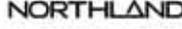
Independent from a weak regulatory framework or companies' reluctance towards shared use is the issue of the proximity of population and activity centres. For instance, with the support of the World Bank, the government of Madagascar created a joint venture with Rio Tinto to develop the port of Ehoala. Rio Tinto's operated port is multi-purpose but "as the port is remote from other economic activity, container-shipping activity is extremely modest (15,000 TEU over the past three years), so in effect it only serves Rio Tinto's needs," contends Henry Pringle, a port specialist.

Therefore, requiring shared use and open access from mining investments cannot save on the effort of national infrastructure planning to identify where the public-private coordination makes more sense. This planning effort seldom happens in Africa but is indispensable to unlock the economic potential of the continent.

To help this planning effort, a ten-year aspirational map can be a useful tool that would indicate the infrastructure necessary for national development by 2023, and would anticipate the demand for various forms of infrastructure by assessing the potential economic activity. **Ai**

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