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# Power Steering Saudi Bus Rapid Transit PPP

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One of the many stories of the Saudi Arabian development market in the last three years has been the rapid acceleration in social and urban infrastructure procured on a PPP basis. The Kingdom has embraced PPP not simply (as often assumed) to alleviate the pressure on government balance sheets but for reasons of cost efficiency and economic diversification.

Saudi Arabia is working particularly hard to establish itself as a major global transport and logistics hub. The country has established a new airline, Riyadh Air, and the ecosystem of transport projects includes the Riyadh metro, seaports, airports, land ports and railway projects.

Somewhere within that ecosystem are the Kingdom's ambitious plans to revolutionize the country's bus networks. The King Salman Center for Local Governance recommends that the Kingdom should develop more Bus Rapid Transit (BRT) systems as a lower cost and lower risk means to implement mass transport, and one which aligns with the 2030 vision.

**Key features of BRT systems**

Saudi authorities have already procured major bus projects in Mecca and Riyadh, and the Al-Madinah Region Development Authority (MDA) has recently qualified bidders for a PPP concession to develop a bus rapid transit network in the city.

Bus Rapid Transit (BRT) projects are a form of public transportation infrastructure and service designed to provide efficient and high-quality bus service in urban areas. BRT systems aim to combine the convenience and speed of a subway or light rail with the flexibility and affordability of a traditional bus service.

Typically, the bus operates on a BRT corridor: contiguous roads served by bus routes or multiple bus routes with a minimum length of several kilometers that has a dedicated bus lane. The other main features of a BRT system typically include platform level boarding for quick and safe access, pre-paid fare collection (which reduces boarding time), high frequency services and special rights of way (e.g. at traffic lights).

**Project structuring and risk**

The first critical issue to consider in relation to BRTs is scope.

The importance of this first step cannot be overstated because the scope of procurement for each of the infrastructure and equipment elements of the BRT may radically change the commercial structuring for the BRT concession and its remuneration scheme.

For example, BRTs may involve extensive road works in the form of road height adjustments (such as new or rebuilt bridges), new road lanes or complete throughways or signaling and paint work (the list of potential works is almost without limit). Stakeholders should consider corresponding questions regarding the developer's securable interests in these infrastructure works: will the project company own the assets or will it develop the works for the common good of the city/state? What might be the capital cost of works against the value of the buses? In a Build Own Operate (Transfer) (BOO/T) concession model, the senior financiers may not be comfortable committing a sizeable part of senior financing into assets over which they have no security or means of securing payment.

Therefore, in a BRT scheme which is heavy on roadworks but light on equipment, it may be preferential to divide the scope into EPC-procured works (funded by the city/state through bond issuance or similar, with developers being compensated fully against milestones achieved) and equipment operation and management (this being the BOO/T concession pursuant to which the developer makes the BRT available on a long-term basis).

This approach does not mean that the city/state must operate and manage the road works; instead, the roadworks may be leased back to the developer for its operation and maintenance in conjunction with the bus fleet under a single concession.

The second related issue concerns the basic remuneration methodology. At the heart of this question is the choice of either: (i) compensating the developer on an availability (quasi-rental) basis against specific performance Key Performance Indicators (or KPIs) (the 'availability risk' model) or (ii) allowing the developer to 'eat what it kills' (the 'demand risk' model). In relation to the latter, the developer has to market itself alongside other transport providers and compete for the custom of the commuting public.

While demand risk-based transport schemes have been implemented internationally (toll road concessions being a prime example), they have not been established in the GCC. There are couple of reasons for this:

1. Developers seeking to implement a project on a limited or non-recourse basis will need to show their senior creditors a reasonable degree of revenue certainty. This is potentially achievable in congested cities with existing practice of using public transport because the senior financiers may gauge, with a high degree of certainty, the demand for the transport service being offered, its value relative to existing and potential competitors and its resultant worst case and best-case scenarios.

While several GCC cities may be considered congested, they do not generally have a practice of using public transport. This makes it difficult to predict the extent to which the public will consider buses as a convenient and comfortable alternative to their cars (even if the latter involves sitting in long traffic jams).

2. There are only a small number of cities in the GCC where there is both a high population density and economic drivers to commuting (that is to say, the general public needs to commute in order to earn a living). It is easy to justify a BRT concession in cities like Tokyo or Delhi. The business case requires more thought in the GCC. Riyadh is an example of a city which may warrant a demand risk-based review. However, this will require some intensive (and non-legal) analysis.

As an alternative to the demand risk-based model, the availability-based scheme is a highly bankable approach. This involves the payment of a monthly, pre-determined fee by the city/state to the developer, against the achievement of continuous transport and asset management KPIs. Senior financiers typically prefer this approach because it solves the question of certainty of revenue, relying on dependable payments from the city/state rather than the level of use by the public.

Such a model is not without risks. The meeting of KPIs is key, as the city/state does not wish to pay a fee for a sub-standard (or even redundant) transport service. It is not unusual for penalties to be levied under the concession which could result in losses for the developer in the event of poor performance. After all, the developer is being paid to deliver a world class transport service for the public and (in the case of Saudi BRTs) to stimulate a culture of commuting which will make other remuneration schemes possible in the future.

It is also possible, under the availability-based scheme, for the developer to collect fees paid by the commuting public and to net off those collections against payments due from the city/state. This structure will usually require the senior financiers to take security over the collections before they are netted off or disbursed (if a surplus exists) to the city/state. This is because the senior financiers are (as the name indicates) senior creditors to all, including the city/state, which should technically be an unsecured creditor of the developer as far as public fee collections are concerned (we are excluding the possibility of separate trust schemes, which the senior financiers may accept).

In this way, while the BRT may initially be cash negative for the city/state (in other words, the revenue generated by the public's use of the BRT is lower than its cost to the city/state under the concession), a long-term change in commuting habits might eventually cause the BRT to be net cash positive for the city/state. If this were to occur, there would be a compelling argument for future transport concessions (including existing BRT expansions) to be procured on a demand risk-basis, as there would be proven precedent.

Finally, all project stakeholders (and particularly the senior financiers) will need to evaluate in detail the technical solution proposed for the BRT. Historically, the choice for a 'bus' would have involved a straightforward cost/value analysis of several automobile manufacturers, all utilizing combustion engines. However, as the world decides how best to implement the energy transition, one of the key benefits of a public bus service today is the ability to equip buses with technology using alternative (and 'clean') fuel sources. This is compelling for authorities across the world, including Saudi Arabia which has pledged to achieve net zero carbon emissions by 2060.

Senior financiers can be wary of nascent technologies; they have little to gain from outperforming solutions and a lot to lose from technically flawed designs. At the heart of this analysis is a fundamental principle of project finance – senior financiers take risk on their borrower and its performance. It is for this reason that new technology is hard to bank on limited/non-recourse basis, in the absence of a technically competent and proven track record.

**Battery versus hydrogen**

There has been a huge increase in the number of battery-powered buses deployed in towns and cities across the world. However, advances in technology mean that hydrogen technology is an increasingly viable option.

The selection of technology requires a complex evaluation, complicated by the sometimes differing considerations for project sponsors and senior financiers. While senior financiers tend to adopt a more conservative view, focusing on proven technology and sustainable performance to ensure repayment of the debt, equity investors often look to introduce the latest technology into their investment assets, seeking to outperform existing solutions against the same or reduced capital outlays.

In a BRT context, a key question for those projects across the world seeking to utilize 'clean' technology is whether to deploy battery or hydrogen fuel cells. Batteries are currently far more proven and understood than hydrogen, which is a compelling feature of the technology in a PPP context. However, as we have seen in the course of the last five years in relation to utility-scale battery storage technology, the conversation between stakeholders has evolved to take in comparative assessments of the financial viability of the respective technologies. The arguments for and against batteries and hydrogen are highly technical and are best considered by the engineers. However, we have come across the following considerations in our recent discussions:

- Hydrogen buses refuel quicker and generally have a larger range, reducing idle time and (in theory) reducing the overall number of depots.

- Battery technology is cheaper to install, operate and maintain than hydrogen. Hydrogen fuel cells need to be replaced partway through the lifecycle, which represents a

significant capex requirement for an operator. This may change as the technology develops.

- Battery performance in hot/ humid climates can be variable. This has been a key factor in the comparatively low deployment of utility-scale battery storage technology in the Middle East, as against the US, Europe and Australia.

- It is logistically more difficult to source and store hydrogen than it is to source electricity. Hydrogen is also viewed by some members of the public (with little justification according to the technology providers) as being more dangerous than battery technology.

- Is hydrogen really 'clean'? Grey hydrogen is the cheapest and most commonly available form of hydrogen but is produced from the burning of fossil fuels.

**Our view**

It is the mega projects – NEOM, Red Sea etc. – that generate the most public interest in the Kingdom's infrastructure market, both inside and outside the Kingdom. However, the market in the more ordinary (and arguably 'mundane') infrastructure in Saudi Arabia is as buoyant and as ambitious as any in the world.

The wave of Saudi bus projects will involve a shift towards the use of public transport. However, the support of the Kingdom for this asset class is a laudable move. With the 2060 net zero target in place, energy and fuel efficiency in moving people around in the Kingdom's cities will be a crucial component to reducing carbon emissions and humanity's environmental impact. Deployment of BRTs and other public transport systems in the Kingdom using battery or hydrogen cell technology will accelerate that path towards an environmentally sustainable future.

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