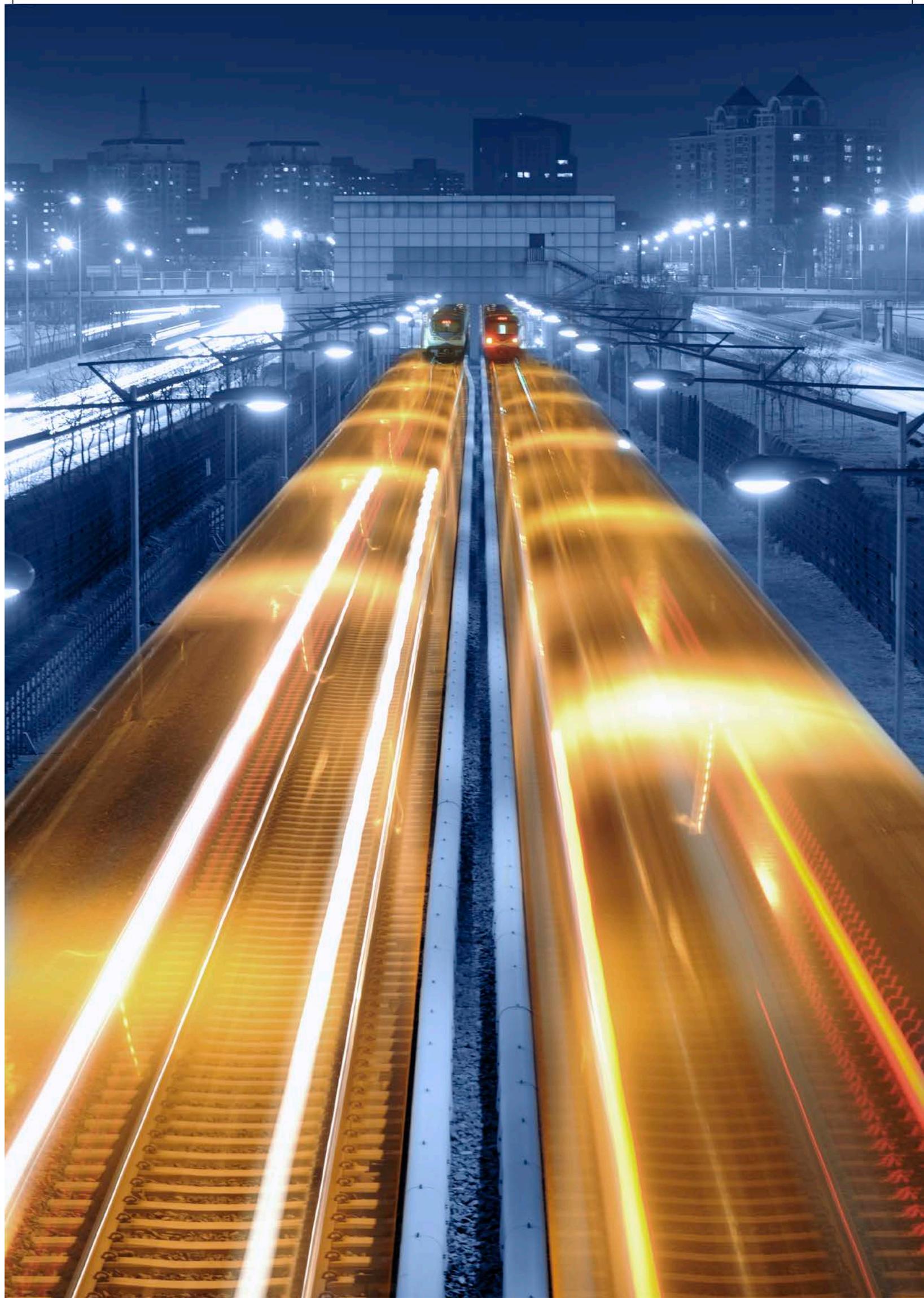


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INTRODUCTION

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FROM THE EDITORS

We are pleased to introduce the second edition of our Energy & Infrastructure Insight, providing information and analysis of current issues and projects across the globe.

In this edition, we offer insights into the milestone \$1.4 billion Guinea Alumina Corporation (GAC) Project financing and what lessons can be learned from it about future project finance opportunities in Africa and beyond.

In Africa, we also consider whether Africa needs gas to complement renewable energy.

In Europe, we look at key trends in the infrastructure institutional funding market, developments in the infrastructure sector for 2020 and finally the U.K. Government Consultation on the RAB Model for supporting new nuclear build.

We hope you find this report interesting and informative.



GREGORY TAN

Partner
New York
T +1 212 848 8324
gtan@shearman.com



IAIN ELDER

Partner
London
T +44 20 7655 5125
iain.elder@shearman.com



BEN SHORTEN

Partner
Singapore
T +65 6230 8907
bshorten@shearman.com

EXAMINING THE MILESTONE GUINEA ALUMINA CORPORATION PROJECT

IN 2019, FINANCIAL CLOSE WAS ACHIEVED ON ONE OF THE LARGEST GREENFIELD MINING PROJECT FINANCINGS IN AFRICAN HISTORY, THE \$1.4 BILLION GUINEA ALUMINA CORPORATION (GAC) PROJECT.

WE EXAMINE HERE THE PROJECT AND ITS FINANCING AND WHAT LESSONS CAN BE LEARNED FROM IT ABOUT FUTURE PROJECT FINANCE OPPORTUNITIES IN BOTH AFRICA AND BEYOND.

PROJECT SPECIFICS

The Republic of Guinea, on African's western coast, is home to the world's largest deposits of high-quality bauxite, which is refined into alumina, which is in turn used as feedstock for the production of aluminium. Guinea is also therefore a key part of the global supply chain for aluminium production and several mines have sprung up to develop north-western Guinea's bauxite reserves.

Emirates Global Aluminium (EGA)'s GAC Project is an opencast bauxite mine about 100km inland from the coast of northwest Guinea. Bauxite is transported to the coast along a pre-existing railway line, operated by CBG. Rail capacity rights on the line are shared with other mine projects, subject to a multi-party agreement whose implementation is monitored by ANAIM, a state-owned infrastructure regulatory authority, and are guaranteed by the Guinean Government. To accommodate users' future capacity requirements, railway capacity is being expanded.

Once the bauxite reaches the coast, it is delivered onto barges arranged by EGA which is then transport to an anchor point offshore, where it is transhipped onto oceangoing vessels and exported.

A key objective for the GAC Project was the vertical integration of EGA's aluminium production business. EGA recently completed construction of a new alumina refinery at Al Taweelah in the UAE and has extensive aluminium smelting operations in the UAE. A second phase envisages the construction of an alumina refinery in country.

FINANCING OF THE PROJECT

By the time of financial close, EGA had already invested significant equity capital. The financing, which will partly be used to refinance the up-front investment, involved facilities totalling \$750 million contributed by IFC, AfDB, EDC, two European DFIs and an international consortium of commercial banks, including UAE banks. IFC provided a total loan facility of \$330 million to the project, including the commercial banks' syndicated debt. MIGA committed political risk guarantees of up to \$129 million to the same commercial lenders. The loans had a tenor of between 12 and 14 years.

The revenues of the Project are derived from a long-term offtake agreement between EGA and GAC, pursuant to which EGA agrees to purchase a minimum annual quantity of bauxite sufficient to generate cash flow for debt service and operational expenses. The offtake agreement reflects a balance of operational flexibility while managing the risk to lenders associated with operational issues and fluctuations in bauxite quality and quantity.

The Project was a major achievement for Guinea, representing a substantial foreign direct investment that is expected to significantly boost the economy and generate an annual average of \$50 million in government revenues. From a sustainability perspective, the project complied with IFC's Performance Standards and the African Development Bank's Integrated Safeguards Systems.

It also involved IFC working with GAC to implement a \$4.4 million advisory services program to increase its social and economic development interventions and enhance benefits to host communities. It is also contributing \$28 million to promote biodiversity within Guinea's Moyen Baffing National Park.



WHY AREN'T MORE AFRICAN MINES PROJECT FINANCED?

Project financing greenfield mining megaprojects in Africa is still uncommon. To date, the largest African project to have been financed on a limited recourse basis had a debt component of \$170 million and although there have been larger mining "megaproject" financings in other geographies, such as the \$4.2 billion Oyu Tolgoi brownfield copper and gold mine project in Mongolia, the fact that the mine and port elements of the GAC Project were entirely greenfield made it one of the most ambitious to have reached financial close.

So why isn't project financing used more frequently in the mining sector in Africa? At first glance, it would seem to address many of the investment challenges that new mining projects face—increases rates of return, spreads operational and market risks, brings aboard financial investors capable of managing political risk, and provides liquidity with long tenors from various sources.

A key underlying reason is that mining projects are perceived to be more risky than the industrial projects that traditionally attract limited recourse investment, and in different ways. Mining projects involve risk at every stage, from the availability of the resource (anticipated quantities and quality may not be guaranteed), the technical (and sometimes political) challenges of extraction and transportation, and instability of price and volume in the end consumer markets.

Accordingly, equity investors are often reluctant to invest before the funding of all remaining capex, including delays and overruns, are locked in. Lenders, who will not share in any potential profits of a project, have an even lower appetite for risk and may be reluctant to fund a project that has not already been shown to have the confidence of a meaningful pre-financing investment from its sponsor. In any event, lenders will require completion guarantees and bankable arrangements for offtake or marketing of the products, all of which are uncomfortable for many sponsors to underwrite years in advance. Sponsors and lenders are therefore looking for each other to make the first financial commitment.

Another reason why project financing has not been a preferred funding option for mining megaprojects is that most of these projects are undertaken by multinational or other large mining companies who can mobilize capital at low cost and on a covenant-light basis from many sources. They also tend to balance development, operating and market risks across a portfolio of assets producing different commodities in multiple geographies with variable risk-reward profiles. This natural hedge removes much of the impetus for structuring each project to be as risk-free as possible, allows for a scale of economy in developing and financing costs, and maintains flexibility to acquire or dispose of assets as market conditions dictate. The bigger mining companies have also reduced their usage of financing and insurance structures to manage political risk, relying instead on their knowledge of particular jurisdictions and simply avoiding those where they cannot get comfortable.

However, EGA—which has a long history of project financing—recognized that the GAC Project was suitable for limited-recourse structuring. It was not a commodity-based financial trading play or portfolio addition and EGA was motivated by a vertical integration strategy to complement existing investments such as the refining and smelting operations in the UAE. Also, whereas other projects might struggle with financing new infrastructure to make the project technically feasible, EGA would be able to share existing rail infrastructure.

From the Project's inception, all the contractual documentation between EGA, the Guinean Government and other local stakeholders had been developed to be bankable. The lenders could appreciate the level of Government support provided and the key project documents did not require material adjustment in order to accommodate the requirements of lenders.

Finally, the Project's lenders themselves were strongly mandated to support the financing, with IFC and AfDB focused on the economic development benefits of the Project as well as its environmental and social credentials and commitments.



LESSONS FOR OTHER MINE PROJECT FINANCING?

The successful financing of the GAC Project is a reminder that, in an industry where novel financing structures such as royalty financing and streaming are increasingly favoured, large-scale, multi-sourced "traditional" project financing can still be the right approach for certain mining projects in Africa.

This is particularly the case for projects where:

- there is a well-proven mineral resource that has a history of being successfully extracted and marketed;
- there is a robust offtake or marketing arrangement in place, backed by solid credit;
- key infrastructure downstream of the mine is already developed, or is straightforward to develop or expand, without the need for significant, risky new-build work;
- the sponsor is willing and able to start investing before the project financing closes, and to guarantee debt until satisfaction of operational reliability tests;
- the sponsor does not need flexibility to dispose of the asset free of financing covenants; and
- the business is able to accept the usual level of lender-driven operational oversight that project financing demands.

It also shows that it is possible to successfully project finance a large development that relies on shared infrastructure (in this case, a railway operated by another mining company). In fact, this can be an advantage, if the alternative is to build costly standalone greenfield infrastructure.

This lesson may be transferable to projects in other developing countries where there are not multiple routes to market. The key is that strong relationships of mutual co-operation are built and maintained among the users and operators of the shared facilities, and that the host government is also dedicated—both contractually and politically—to the success of the structure.

It also highlights the importance of demonstrating a real commitment to environmental and social sustainability. This not only helps with attracting support from multilateral agencies, but also with relationships between the project and the political and social stakeholders in the host country. The sustainability credentials of a mining project need to be front and centre of the financing strategy, not merely a budget line item.

Disclaimer: This article first appeared in Project Finance International.

CONCLUSION

The GAC Project proves that there is real appetite in the debt financing market for African mining projects that have a sound, strategic business case, are well structured and are strongly supported by all stakeholders. The fact that lenders with very different mandates (multilateral development, export credit, and commercial) were able to join together shows the possibility of closing very high value transactions in this sector despite the relative infrequency with which it has occurred to date.

FOR MORE INFORMATION PLEASE CONTACT:



DAN FELDMAN

Partner
Abu Dhabi
T +971 2 410 8158
dan.feldman@
shearman.com



NICK BUCKWORTH

Partner
London
T +44 20 7655 5085
nbuckworth@
shearman.com



ANTHONY LEPERE

Partner
London
T +44 20 7655 5518
anthony.lepere@
shearman.com



CLAIRE HUNTER

Associate
Abu Dhabi
T +971 2 410 8176
claire.hunter@
shearman.com

KEY TRENDS IN THE INFRASTRUCTURE INSTITUTIONAL FUNDING MARKET

INFRASTRUCTURE SPONSORS' NEED FOR A RELIABLE SOURCE OF LONG-TERM FINANCING HAS LED TO A WEALTH OF OPPORTUNITY FOR INSTITUTIONAL DEBT INVESTORS IN THE US AND EUROPE TO INVEST IN A VAST ARRAY OF STABLE, HIGH-QUALITY ASSETS. WHILE BANK DEBT REMAINS AN IMPORTANT PART OF THE FUNDING MIX FOR INFRASTRUCTURE SPONSORS, THE INSTITUTIONAL MARKET IS BECOMING INCREASINGLY ATTRACTIVE IN OFFERING LONG-TERM FINANCING AT COMPETITIVE RATES. THIS ARTICLE WILL LOOK AT SOME OF THE KEY TRENDS IN THE US AND EUROPEAN INFRASTRUCTURE INSTITUTIONAL FINANCE SPACE AND DRAW OUT SOME OF THE KEY MOVEMENTS IN THIS EXCITING AND RAPIDLY CHANGING ENVIRONMENT.

FLEXIBILITY

Flexibility offered by different sources of liquidity is a key focus for infrastructure sponsors and the discussion tends to focus on a few key areas:

Capex

On most multi-creditor platform deals, the capital expenditure needs of the business are supported, in part, through a revolving credit facility from a bank or syndicate of banks. As this facility is used, it can be cleaned down through a private placement restoring it for further capital expenditure. Such facilities are expensive to put in place for more than seven years; an issue that affects bank funding generally. It is, however, common to 'amend and extend' such facilities as needed.

Infrastructure sponsors tend not to fund capital expenditure directly with institutional debt given that investors tend to offer less flexible drawdown terms. In the context of capital expenditure where delays can mean that funding is not required when initially envisaged or is required earlier if a particular issue occurs, flexibility is key. That being said, in the U.S. market, the drawdown profile is often more flexible given the lack of need for swap indemnities (for U.S. investors). For those U.S. investors that are natural lenders in currencies other than U.S. dollars, there is now a push from European sponsors for U.S. investors to offer the same flexibility on European projects.

Pricing Locks

Infrastructure sponsors are also keen to lock in rates at pricing for as long as possible before closing and funding occur. In both the U.S. and European market the "3 for free" rule has long been the norm (i.e. three months without the rate needing to be revised or having to pay to maintain the rate lock). However, infrastructure sponsors in both markets are pushing this further and some sponsors have reported being able to lock in rates for up to two years.

Ratings

A key difference between U.S. and European investors is the need for a rating. Due to NAIC rules, U.S. investors (in particular insurance companies) often require a rating before they are able to invest, although there are exceptions to this rule as evidenced by a number of USPP issuances for European infrastructure projects that were made without a rating.

Maintaining or obtaining a rating does not only allow a wider field of U.S. investors to be involved in a transaction thereby expanding infrastructure sponsors' funding pool, but can also provide infrastructure sponsors with added flexibility for example when linked to portability.

It should also be noted that there is now increased competition for the "Big Three" rating agencies in the form of DBRS and Kroll who are often included on transactions as rating agencies from whom a rating can be obtained. For the purposes of the NAIC rules in the U.S., both DBRS and Kroll are a "nationally recognized statistical rating organization".

Waivers and Consents

Whether rightly or wrongly, it is often perceived, particularly in the European market, that institutional investors can be slower in dealing with waiver and consent requests than banks. This may be because the bank pool on a typical large-scale multi-creditor platform generally only includes banks with whom the infrastructure sponsor has close relationships. The investor pool, however, can end up becoming much wider when each of the individual investors/sub-funds is included and often the infrastructure sponsor has no direct relationship with many of them. One area where investors may begin to see more of a push is in ensuring that the sub-investors/funds that they manage are more responsive to waiver or consent requests and that they use their relationships and influence over sub-investors/funds to help infrastructure sponsors in meeting their aims. In addition, an increasing number of European infrastructure sponsors are undertaking roadshows in between specific issuances in the U.S. to meet ever smaller investors as a way of building up direct relationships with them and therefore not need to rely as heavily on the relationship with the fund manager.

MAKE-WHOLE

Make-whole is often hotly contested by both U.S. and European investors on infrastructure financings in both markets, but is not typically a feature of the bank debt market. On multi-creditor platforms there is also often debate as to whether make-whole should rank pari passu with the principal of other funders (e.g. banks).

Infrastructure sponsors in both the U.S. and European markets are increasingly asking for make-whole holidays towards the maturity of their private placement debt in order to refinance. This is now starting to be seen between three and six months prior to maturity.

In refinancing scenarios, investors may be asked to roll their notes into the new structure to avoid the need to pay make-whole. For the rollover to work, the new notes typically have to have the same pricing and tenor as the refinanced notes, otherwise there may be tax consequences for the investor. A new note will also need to be issued with a new private placement number (if required). This approach has worked successfully on a number of recent deals.

SWAP INDEMNITY

US investors typically require swap indemnities when investing abroad to the extent they are not a natural currency lender. Increasingly, U.S. investors are using their ability to lend naturally on European projects in order to set themselves apart from their U.S. competitors, but swap indemnities are still often required by many U.S. investors.

For European sponsors, one of the key tensions in the way the Model Form swap indemnity language is drafted is that the issuer is obliged to pay amounts of make-whole in U.S. dollars, but it will not receive any "Swap Breakage Gains" (again in U.S. dollars) until it has paid the make-whole. For a European issuer that does not have income or obligations in U.S. dollars (other than the payment of make-whole), this means they would need to buy U.S. dollars in the market in order to pay the make-whole and then, if there is a "Swap Breakage Gain", they may receive U.S. dollars from the investor which they again, need to sell. European infrastructure sponsors have been seeking to have the two amounts netted before a payment is made so that they only need to pay (or receive) a netted amount of U.S. dollars, thus lowering their currency exposure. This conversation continues, including at the ACIC committee level. There is clearly a great deal of activity in the infrastructure funding space and plenty of scope for crossover and the sharing of experiences between the U.S. and European infrastructure finance markets.

***Katie Hicks** is partner in our London office and leads our brownfield infrastructure finance practice. She recently spoke at the Private Placements Global Forum Europe – Infrastructure Summit (on October 10, 2019), the GADS World Conference in Dublin (November 11-13, 2019), the PPIF 2020 in Miami (January 21-24, 2020) and will be speaking at the Infrastructure Investor Global Investor Forum 2020 in Berlin (March 16-19, 2020).*

***Robert Freedman** is a partner in the Projects, Development and Finance practice of our New York office and Co-Head of the Firm's Energy Group, and has significant experience acting for institutional investors in the U.S. and abroad, particularly in the Energy and Infrastructure Sectors. He also spoke at the Private Placements Global Forum Europe – Infrastructure Summit (on October 10, 2019), the ACIC conference in New York in October 2019 and the PPIF 2020 in Miami (January 21-24, 2020).*

***Jonathan Toffolo** is an associate in the infrastructure team in our London office and regularly acts for both infrastructure sponsors and both U.S. and European institutional investors on infrastructure transactions in Europe.*

FOR MORE INFORMATION PLEASE CONTACT:



KATIE HICKS

Partner
London
T +44 20 7655 5035
katie.hicks@
shearman.com



JONATHAN TOFFOLO

Associate
London
T +44 20 7655 5767
jonathan.toffolo@
shearman.com

DOES AFRICA NEED GAS TO COMPLEMENT RENEWABLE ENERGY?

IT'S WIDELY RECOGNIZED THAT THE ROLE OF RENEWABLES IN THE GLOBAL GENERATION MIX IS RISING, REFLECTING THEIR INCREASINGLY LOWER COSTS AND IMPROVED RELIABILITY, SUPPORTED BY CHANGING POLITICAL, SOCIAL AND ENVIRONMENTAL FACTORS. THIS ARTICLE ASKS THE QUESTION WHETHER AFRICA NEEDS GAS TO COMPLEMENT ITS GROWING RENEWABLE ENERGY SECTOR?

Africa saw an 8.4% increase in installed renewable energy in 2018 to reach some 46 GW, tempered somewhat perhaps by the fact that in 2017, all new non-hydro power plant projects were fuelled by fuel oil, diesel or coal (1). The share of renewables in meeting global energy demand is expected to grow by one-fifth in the next five years to reach 12.4% in 2023.

However, with Sub-Saharan Africa (excluding Nigeria, South Africa and Angola) expected to grow economically by 4% in 2019, rising to 4.8% in 2021 in line with forecasts, and given the continent's large and growing population, energy demand is expected to nearly double by 2040.

IRENA has forecast (2) that Africa could meet nearly a quarter of its energy needs from indigenous and clean renewable energy by 2030 with renewables amounting to 310 GW, providing half the continent's total electricity generation capacity. This would amount to a sevenfold increase from the capacity available in 2017 (42 GW). However, Sub-Saharan Africa currently has the lowest energy access rates in the world, with less than half its population having access to electricity (falling to less than one-quarter in rural areas). This has a significantly negative impact on economic growth and sustainable development.

Although access to electricity generated from renewable sources (historically hydropower but increasingly solar and wind) will continue to play a key part in increasing energy access, and technological advances in renewable energy will continue to expand options for increasing access to those not served or underserved by national grids, according to Africa50 however, Africa's energy future "necessarily" includes natural gas (3). The scale of the electrification challenge means that more than one source of fuel will be required to achieve the objective (4).

The continent is home to 7% of global reserves and Sub-Saharan Africa is estimated to have some 400 GW of gas-generated power potential. Gas resources have been identified in fourteen countries in Sub-Saharan Africa, with Nigeria accounting for 81% of proven reserves and several undeveloped fields in Mozambique and Tanzania accounting for 62% of total contingent resources. Despite these notable gas reserves, only 11 countries have the necessary gas-fired generation capacity installed, and although natural gas supplies nearly one-quarter of all power plants by fuel type, they are mostly located in coastal areas of countries with large proven reserves (5).

PROVEN GAS RESERVES IN SUB-SAHARAN AFRICA

Almost all the Sub-Saharan African countries could potentially use natural gas for power generation, either by using domestic gas where they have significant gas reserves, by importing gas by pipeline or LNG import terminals, where appropriate, or by interconnection with neighbouring countries.

However, gas consumption in the region is largely supplied by domestic production from within each country, LNG exports are sent outside the region (Angola and Equatorial Guinea largely exist to export LNG and only Nigeria has a relatively well-developed market which both consumes and also exports by both LNG and pipeline).

Furthermore, there are no LNG imports within the region (although FLNG is a potential alternative) and pipeline trade within the region is limited.

If it's accepted that gas has a role to play, not least as an alternative fuel to the traditional fossil fuel, then it will be necessary to not only create the demand for gas in the generation mix but also the appropriate frameworks to support its usage and the infrastructure to deliver it. If this can be achieved then natural gas could not only serve as a fuel for generation but also promote economic growth in key areas such as petrochemicals, refining and manufacturing.

Furthermore, with average development times of approximately two to three years, gas-fired power plants can fill critical electricity gaps much more quickly than large-scale hydro, coal-fired or nuclear plants. In this context, LNG-to-power projects could provide the bridge for developing domestic production of electricity and for the construction of key gas and electricity infrastructure. To date however, they have been slower to be realised than might have been expected.

PROVEN GAS RESERVES IN SUB-SAHARAN AFRICA

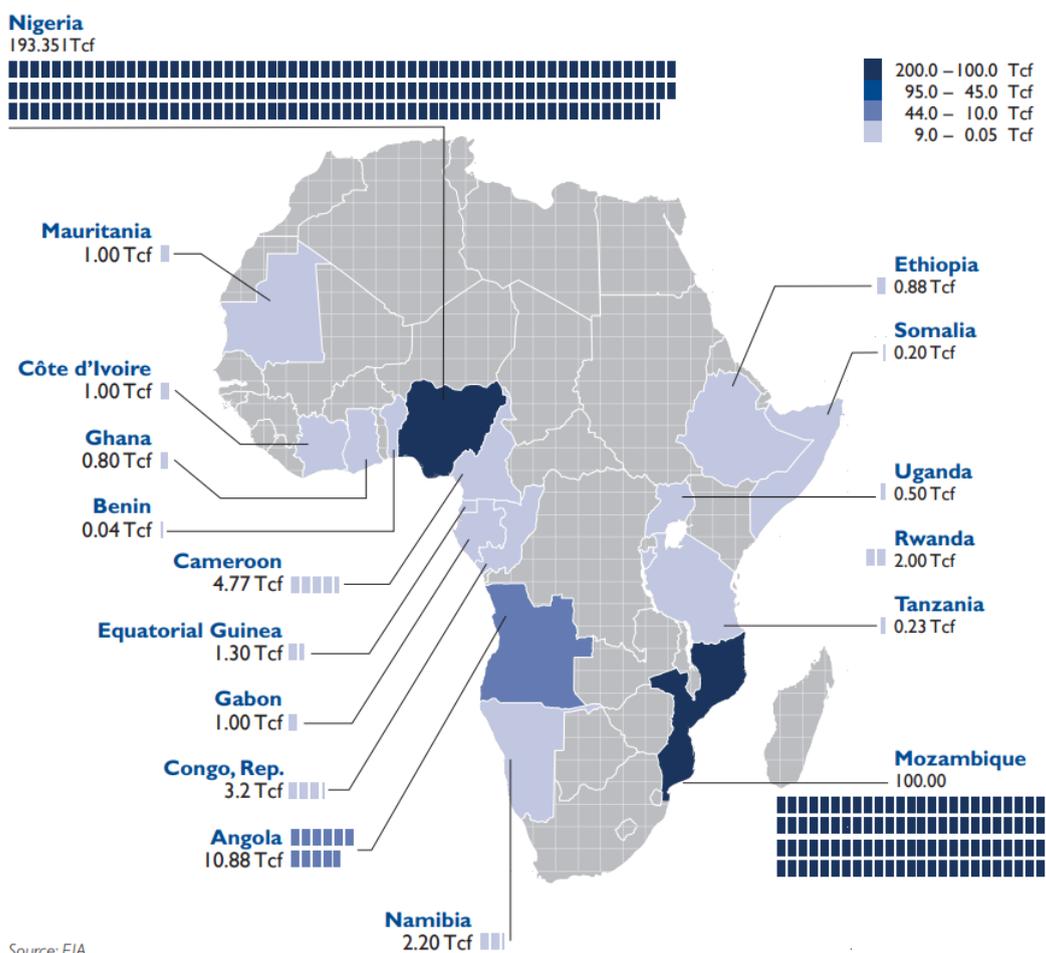


Image source: Power Africa Gas Roadmap to 2030, EIA

WHAT IS CONSTRAINING NATURAL GAS?

Promoting gas generation is not new—the 2016 Power Africa Roadmap outlined plans for the public and private sector partners to work together to add 30,000 MW of new electricity generation capacity and 60 million new connections by 2030. The question therefore is why African countries, lacking investments and infrastructure, have yet to take full advantage of their natural-gas reserves?

While the flexibility of gas for electricity generation makes it an attractive option, the associated infrastructure required to transport and distribute it can significantly restrict its use, potentially limiting it to locations where both demand and infrastructure is well established.

Although the use of natural gas for power generation and other uses could support and encourage infrastructure development and regional integration, there are significant challenges to its development, including the availability of the gas (in terms of both source and delivery point), the relatively small size of the current markets and large distances between markets, the financial position of the offtakers, the lack of adequate downstream infrastructure and the relative size of the markets into which gas might be delivered and the markets ability to take it.

More generally, a challenging operating environment, coupled with a lack of transparency in the resources sector, regulatory uncertainty and policy instability, and a continuing infrastructure deficit, have all deterred investment.

Overcoming these various challenges and addressing the need for environmental and market reforms will be critical to the development of Sub-Saharan African gas-to power markets.



WHAT CAN BE DONE ABOUT IT?

There are any number of risks which will need to be addressed in order to create a suitable environment for the development of African gas resources—political, economic, legal and operational risks, which will have varying prevalence across the Sub-Saharan region but which will need to be identified and mitigated by the appropriate actions. These include:

- *Participation of the state (as guarantor or gas aggregator).* State participation brings with it political and economic risks, including the risk of expropriation, the risk that the government may enact fiscal measures that are not favourable to the project, and the risk that the government may enact regulations that are burdensome or refuse to grant requisite licences or approvals
- *Sovereign ratings, currency volatility and foreign currency reserves.* A sovereign may fail to meet debt repayments resulting in a lower credit rating and increased the risk to lenders. Additionally, hard currency loans can create a currency risk if revenues are denominated in local currency
- *Commodity and currency risks.* LNG procurement takes place in a commoditized global market, which exposes the project company to the significant risk of price volatility. Furthermore, the procurement of LNG faces currency risks, because LNG market price dynamics are driven by competition for LNG cargoes denominated in U.S. dollars

The challenge is how to use the various measures available to mitigate these risks, including:

- Contractual framework structuring which protects the project company, as far as possible from commodity and currency risks, risks associated with state participation, sovereign risks and risks associated with the project's social impact, with particular focus on the treatment of unforeseeable events or conduct, changes in law, force majeure and grid and gas system events
- Tariff structures which are cost effective and manage foreign exchange risk with costs passes through under the Power Purchase Agreement
- State support, both financial and political
- A robust financial framework, suitable for and appropriate to the project structure (whether integrated, incorporating upstream gas extraction, midstream gas transport and downstream gas delivery/regasification and power generation components, non-integrated, incorporating only some of the functions or a hybrid approach)
- Fuel management techniques, which reduce fuel supply risk, allow for effective storage management and despatch and back up and which allocate liability appropriately



CONCLUSION

If the African Union is to achieve its "Agenda 2063" initiative and transform itself socio-economically over the next 50 years, with the necessary infrastructure in place to support accelerated integration and growth, technological transformation, trade and development, including high-speed railway networks, a well-developed ICT and a digital economy, whilst still acting on climate change and ensuring sustainable development, then a stable, reliable, efficient and decarbonized energy system will be needed.

Although environmental and market reforms are critical to the development of Sub-Saharan African gas-to power markets, the successful implementation of path-finder projects will provide models for success. These will be possible where there is a demand for energy, a competitively priced project, supported by secure long-term gas supply and appropriate risk allocation.

Structuring challenges can be addressed at the project level, which can address specific requirements. This flexibility, combined with the key drivers for gas-to-power, should mean that gas-to-power projects will continue to play an important role in the generation mix.

The participation of a motivated state entity, supported by multilateral and private institutions in arranging project debt, with the project equity requirements fully funded by the experienced partners will help deliver successful individual projects but wider systemic reforms in creating the appropriate regulatory frameworks and addressing the currently fragmented, project-focused approach that does not consider whole power system dynamics, including bottlenecks in transmission and distribution will still need to be addressed if gas-to-power projects are to successfully deliver their wider range of benefits (6).

FOR MORE INFORMATION PLEASE CONTACT:



IAIN ELDER
Partner
London
T +44 20 7655 5125
iaain.elder@
shearman.com



SAMUEL OGUNLAJA
Senior Associate
Abu Dhabi
T +971 2 410 8162
samuel.ogunlaja@
shearman.com

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UK GOVERNMENT CONSULTS ON RAB MODEL FOR SUPPORTING NEW NUCLEAR BUILD

IN THE LAST EDITION OF OUR ENERGY & INFRASTRUCTURE INSIGHT, WE DISCUSSED THE UK'S NEW-BUILD NUCLEAR PROGRAM AND THE VARIOUS CHALLENGES IT IS FACING. IN PARTICULAR, WE NOTED THE ANTICIPATED PUBLICATION OF BOTH AN ENERGY WHITE PAPER AND A CONSULTATION ASSESSING THE REGULATED ASSET BASE (RAB) MODEL AS A POTENTIAL ALTERNATIVE TO THE FIT CFD MODEL FOR FINANCING UK NUCLEAR NEW-BUILD.

The anticipated Energy White Paper has yet to appear. The Department of Business, Energy & Industrial Strategy (BEIS) has, however, published its Consultation (*Department of Business, Energy & Industrial Strategy, RAB Model for Nuclear – Consultation*) on a RAB model for new-build nuclear projects and sought industry's views on the same.

Accordingly, the Government has proposed a bespoke nuclear RAB model, based on the banked Thames Tideway Model, but with nuclear-specific adaptations.

The Government's fundamental objective is to de-risk new-build nuclear projects so that they can secure an investment grade rating to support equity financing from institutional infrastructure investors (such as pension funds) and debt financing in the form of low-cost, long-term 'nuclear bonds'.

To understand how this de-risking might be achieved one first needs to understand the RAB Model, and then how it might be applied to nuclear.

THE EVOLUTION OF THE RAB MODEL FOR NUCLEAR NEW BUILD

The RAB Model is a form of economic regulation which is already widely used for U.K. monopoly infrastructure assets (water, gas and electricity networks). Under this model, the Project Company receives a license to build, finance, operate and maintain an asset and charges users for the cost of doing so.

As the Project Company incurs development and construction costs, the Project Company's expenditure is included in the RAB subject to an efficiency test (which assesses whether those costs were efficiently incurred).

Based on the RAB, the Regulator then determines the level of charges which the Project Company can pass to end-users (consumers). These charges are also adjusted periodically to reflect changes in circumstances, including inflation.

In the Thames Tideway Tunnel project, the U.K. Government recognized that the high capex requirements, high complexity and consequent major construction risks meant the private sector would not finance that project at a sufficiently low cost without greater public/private risk sharing. In these respects, new-build nuclear bears many similarities to Thames Tideway.

When developing the Nuclear RAB Model, BEIS used the Thames Tideway RAB model as a starting point but proposed certain modifications—primarily to reflect the even greater construction costs and risks associated with new-build nuclear.

FOUR "KEY" FEATURES OF NUCLEAR RAB MODEL

The Government has identified four specific features that would be required to de-risk new-build nuclear and therefore substantially reduce the cost of capital:

One

A Government Support Package (GSP) to protect investors and consumers against certain low probability but high impact risk events deemed otherwise 'unbankable'. Specifically, the risks that the GSP would protect against include:

- i. **Remote Construction Cost Overruns** – through:
 - i. Contingent Equity Support for funding cost overruns above a pre-determined Funding Cap; and
 - ii. Discontinuation Payment to cover all senior debt (and potentially some equity) where the Funding Cap is exceeded and neither the equity investors nor the Government wish to fund further cost overruns;
- ii. **Debt Market Disruption** – through a temporary Liquidity Facility;
- iii. **Non-political Uninsurable Risks** – whereby the Government would act as an 'Insurer of Last Resort'; and
- iv. **Political Risks** – through a mechanism still to be clarified.

The quid pro quo of these protections is that returns to shareholders would be capped, and in the event of certain delays/costs overruns, even suspended.

Two

An Economic Regulatory Regime (ERR) to ensure the fair sharing of cost and risk between investors and consumers. Based on certain "building blocks" (including return on capital, depreciation and operating costs), the Regulator would determine the Allowed Revenue that would enable the Project Company to recover its costs and generate a return on capital to finance those costs.

In a deviation from the classical RAB model, the Project Company would be entitled to recover all of its forecast Project Costs according to a base-case based on global benchmarking and due diligence undertaken prior to grant of the RAB licence (the so-called 'ex-ante' approach).

This contrasts with the classical 'ex-post' approach described above whereby Project Costs are only included in the RAB if they have been efficiently incurred.

Importantly, the Project Company would also receive Allowed Revenue from 'Day One' of construction. This should significantly reduce financing costs, given it would allow the Project Company to start servicing its debt from the outset rather than incur substantial amounts of interest on loans that would otherwise be fully outstanding for the duration of the 5-10 year construction period.

Finally, up to a pre-determined Funding Cap, a certain percentage of cost overruns will be shared between consumers and then equity investors.

A diagram showing the alignment between capital costs, RAB build-up and financing sources is set out below:

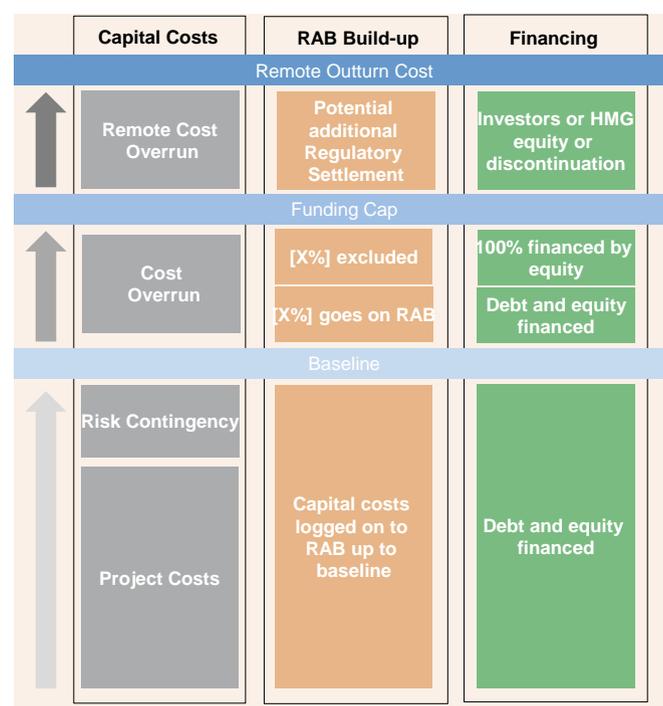


Image source: BEIS RAB Model for Nuclear - Consultation on a RAB Model for new nuclear projects, July 2019

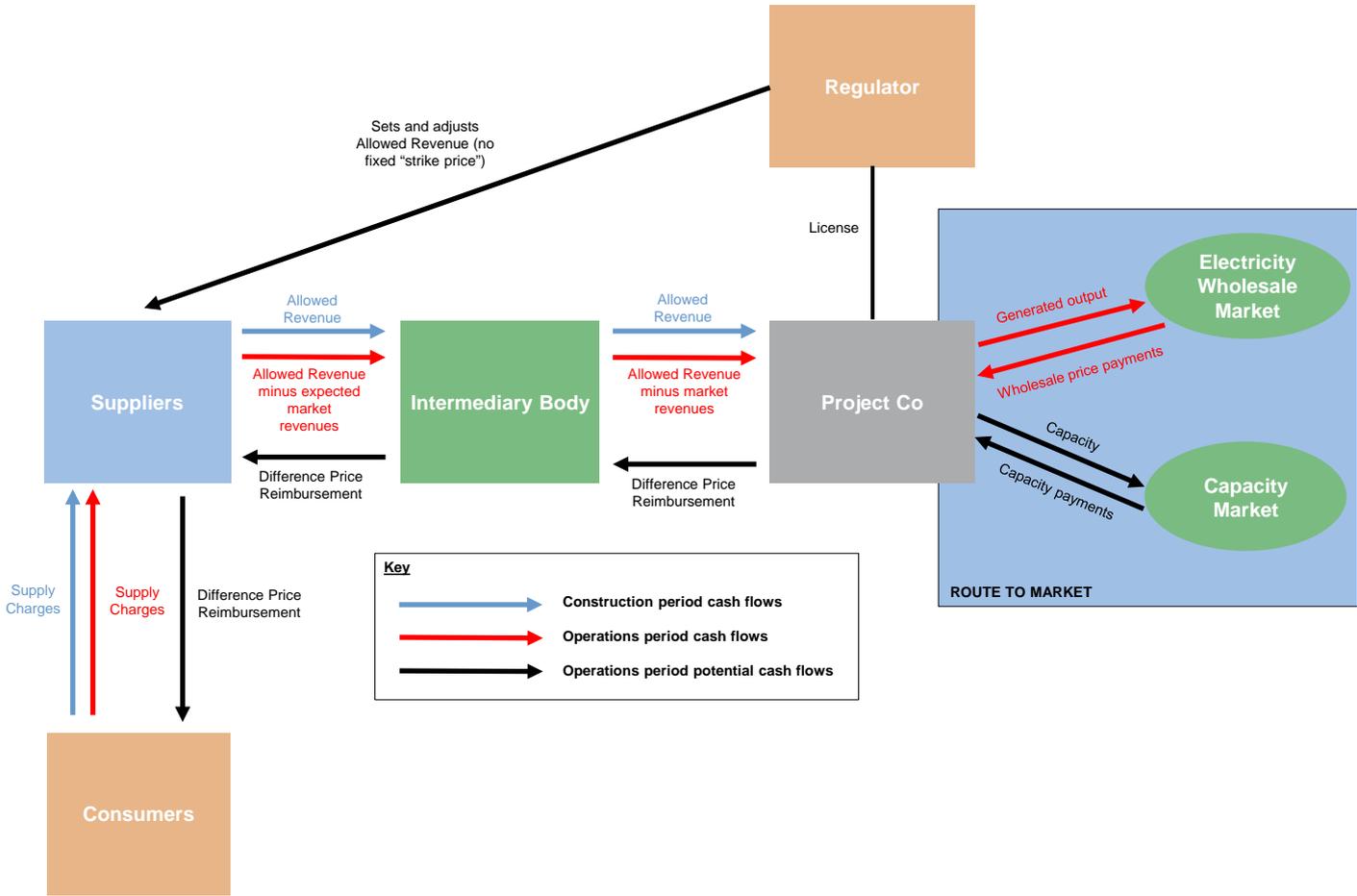
Three

A new, independent economic **Regulator**, to regulate the ERR and be responsible for protecting the interests of consumers, while having regard to the ability of the Project Company to raise finance.

Four

A variable **Revenue Stream** mechanism, providing a £/MWh price (calculated periodically by reference to the Allowed Revenue), allowing for adjustment by the Regulator as circumstances change, and through which funds can be raised from electricity suppliers (and ultimately electricity consumers).

THE REVENUE STREAM MECHANISM



HOW HAS INDUSTRY RESPONDED?

The Government believes that the RAB model will enable new nuclear to be built at scale by both enabling access to lower cost capital and ensuring greater value for money to consumers than the FiT CfD model. The question is: does industry agree?

Initial responses have been broadly positive. The industry has welcome the apparent simplicity of the model. The industry has also acknowledged that the RAB model has the potential to significantly reduce the cost of capital.

As always, however, the devil will be in the detail—particularly as this model has never been applied to projects as complex and costly as new-build nuclear.

Further, it is still to be considered whether the nuclear RAB model offers sufficient value to money for consumers and taxpayers.

On one hand, if the model reduces the cost of capital this should also generate a welcome reduction in new-build nuclear electricity prices.

On the other hand, given consumer sharing of liability for cost overruns, and the fact that Allowed Revenue is payable to the Project Company from day one (i.e. whether or not the relevant plant is ever completed), both consumers and taxpayers would also bear some significant risks.

While the UK's Nuclear Industry Association (NIA) believes BEIS has identified a viable funding model in the RAB, it notes that the model is still very "high level".

The NIA has also noted that flexibility will be required if the model is to be adapted to different nuclear technologies, including small modular reactors.

NEXT STEPS

The consultation phase has now closed and BEIS is considering the responses. This is the first step along what is likely to be a long road. Still, the industry response to date has shown that the RAB Model may well be the Government intervention which is needed to revive the U.K.'s nuclear new-build program.

FOR MORE INFORMATION PLEASE CONTACT:



NICK BUCKWORTH

Partner
London
T +44 20 7655 5085
nbuckworth@
shearman.com



GEORGE BOROVAS

Partner
Tokyo/ London
T +81 3 5251 0214
T +44 20 7655 5000
george.borovas@
shearman.com



THOMAS COLES

Senior Associate
London
T +44 20 7655 5122
thomas.coles@
shearman.com

DEVELOPMENTS IN THE INFRASTRUCTURE SECTOR

IN THIS INTERVIEW TIM SHEDDICK, PARTNER AT SHEARMAN & STERLING, HIGHLIGHTS THE KEY THEMES HE BELIEVES WILL DOMINATE THE MARKET FOR INFRASTRUCTURE ASSETS IN 2020.

WHAT WERE THE KEY DEVELOPMENTS IN THE INFRASTRUCTURE MARKET GLOBALLY DURING 2019?

Increased focus on foreign investment controls - investors saw an increased focus on the control/scrutiny of foreign investment into critical infrastructure assets in both the U.S. and Europe, through increased regulation as well as “softer” controls applied from a public relations/political perspective.

Level of returns on regulated assets - for regulated assets in Europe, the regulators have been looking to tighten the level of allowed returns that investors are entitled to as part of the regulatory pricing settlements, as seen recently in the U.K. water sector. We expect this will increasingly also affect other European regulated assets.

Infrastructure is maturing as an investment class - infrastructure is maturing as an investment class so the allocation of capital by investors to infrastructure continues to grow, and consequently, the amount of available capital to be deployed in the sector continues to grow. The result is that there is ever increasing competition and pricing pressure for quality assets. Investors are also having to think laterally about what constitutes an “infrastructure-like” asset. The scope of “core plus” infrastructure (assets that were not traditionally seen as infrastructure but have the characteristics of infrastructure - high barriers to entry, asset heavy, stable cash flow generative assets) continues to expand. Digital infrastructure for example has become a growing asset class for infrastructure investors in both the U.S. and Europe over the last few years.

WHAT MIGHT INVESTORS NEED TO BE AWARE OF IN 2020?

How to invest - the optics of how investors do deals and how they invest will be increasingly important. Reputation management and public/political perception can be a crucial element to getting deals through successfully. For example, when it comes to responsible and sustainable investing, investors need to ensure they have the right policies in place as well as proof that they have applied them to the management of their existing investments. This is particularly true in privatisations. While government/municipality vendors are keen to get the highest price they must also show the public that they have sold to a suitable type of investor who is a sustainable and responsible new long term owner of the asset.

Climate change - this is likely to become increasingly a tipping point in the way people evaluate opportunities. For example, if there are two relatively similar assets, but one asset is better at managing its carbon emissions or is seen to promote the “green agenda”, that asset may be seen as having a premium in terms of valuation and/or ongoing regulatory environment which tips the balance in its favour.

Geopolitical (un) certainty - finally, an overriding issue over the last year in the global infrastructure sector has been political uncertainty, particularly in the U.K.. However, following the result of the recent general election, the nationalisation risk in the U.K. has been significantly reduced and therefore we may see a number of transactions in the U.K. regulated utility sector.

ARE YOU EXPECTING TO SEE GROWTH IN CERTAIN AREAS AND SECTORS? WHY DO YOU THINK THIS MIGHT BE THE CASE?

Digital - digital infrastructure and the continuing investment into fibre and data centre assets is one area we expect will continue to grow. Europe has not caught up with the U.S. in terms of its focus on data centre investment as part of infrastructure and equally the U.S. has had less of a focus on fibre as an infrastructure asset. In both cases, this is largely due to the way these business are currently owned and operated.

“Core plus” - investors are generally exploring what assets they can fit into the “core plus” bucket, as mentioned above. During 2019, we saw a number of deals in assets not traditionally considered infrastructure (e.g. healthcare, care homes and nursery schools) and expect this creative expansion of the definition to continue in 2020.



LOOKING AT THE SPECIFIC AREA OF AIRPORT INVESTMENT, HOW IS IT EVOLVING AND GROWING? IS THE PACE OF CHANGE INCREASING AND IF SO HOW DOES THIS IMPACT DEVELOPMENT STRATEGY, FINANCIAL PLANNING AND RETURN EXPECTATIONS?

In Europe, there is currently a smaller pipeline of brownfield airport transactions following a fair amount of activity in the airport sector in previous years (although there is still the potential for a number of significant transactions).

In terms of growth, we expect to see this coming from emerging markets including Brazil, Latin America, Africa, Asia, India and Indonesia. This is due to a developing middle class in these markets resulting in people wanting to travel more and take more flights, and therefore a need for more airport capacity.

This is therefore where the airport operators are currently focussed in terms of growth. However, these can be challenging jurisdictions to do deals in.

In the long term, climate change could have a huge impact on airport investments. There is a growing trend, particularly in the developed world, of people seeking to fly less frequently (or at least until aircraft manufacturers can develop lower carbon emitting aircraft).

In Europe, there is potential for a carbon tax to be applied to every flight (which would increase the cost of flying and therefore could impact passenger numbers). Some airline operators are likely to try to take the lead on the reduction of carbon emissions from aircraft rather than having a carbon tax or similar imposed on them but others seem willing to wait and see what happens. Airport operators are already making great strides to make their airports carbon neutral and this trend will continue.

FOR MORE INFORMATION PLEASE CONTACT:



TIM SHEDDICK
Partner
London
T +44 20 7655 5657
tim.sheddick@shearman.com



TOM POUND
Senior Associate
London
T +44 20 7655 5056
thomas.pound@shearman.com



CELEBRATING A SUCCESSFUL 2019

PFI AWARDS 2019

- Global Law Firm of the Year
- Global Multilateral Deal of the Year: GAC
- Petrochemical Deal of the Year Asia Pacific: RAPID
- Bond Deal of the Year Asia Pacific: Mong Duong
- Rail Deal of the Year Europe: Beacon Rail
- Petrochemical Deal of the Year Middle East and Africa: Bapco
- Renewables Deal of the Year Americas: Condor

LATIN FINANCE PROJECT & INFRASTRUCTURE FINANCE AWARDS 2019

- Renewable Energy Financing of the Year: Enel Green Power Solar
- Infrastructure Financing of the Year: Mexico: EVM II

S&P GLOBAL PLATTS GLOBAL ENERGY AWARDS 2019

- Corporate Deal of the Year: Enel Green Power Solar

THE ASSET TRIPLE A INFRASTRUCTURE AWARDS 2019

- Power Deal of the Year (Regional), PPP Project of the Year (Regional), Power Deal of the Year (Indonesia) and PPP Project of the Year (Indonesia): Jawa 1 LNG-To-Power Project
- Renewable Energy Deal of the Year Solar and Wind (Indonesia): Eastern Indonesia \$215 Million Renewable Energy Project
- Petrochemical Deal of the Year (Malaysia): Pengerang Refining Company/Pengerang Petrochemical Company \$8 Billion Bridge Financing Facility
- Telecom Deal of the Year (Singapore): Capital Square Partners Acquisition of Controlling Stake in StarTek/Sale of Aegis to StarTek

FT INNOVATIVE LAWYER AWARDS 2019

- Commended for "Accessing New Markets and Capital": Enel Green Power Solar

MERGERMARKET AWARDS 2019

- Energy, Mining & Utilities M&A Legal Advisor of the Year

“ 2019 WAS A STRONG YEAR FOR OUR MARKET LEADING TEAM OF SPECIALISTS WHERE WE PROVIDED INNOVATIVE ADVICE ACROSS THE VALUE CHAIN IN BOTH GREENFIELD AND BROWNFIELD ENERGY AND INFRASTRUCTURE ASSETS. OUR FOCUS ON SECTORS ENSURES WE ALWAYS REMAIN RELEVANT TO OUR CLIENTS, NO MATTER WHERE THEY ARE IN THE WORLD. ”

GREGORY TAN

Global Project Development & Finance Practice Group Leader

850

LAWYERS ACROSS

23

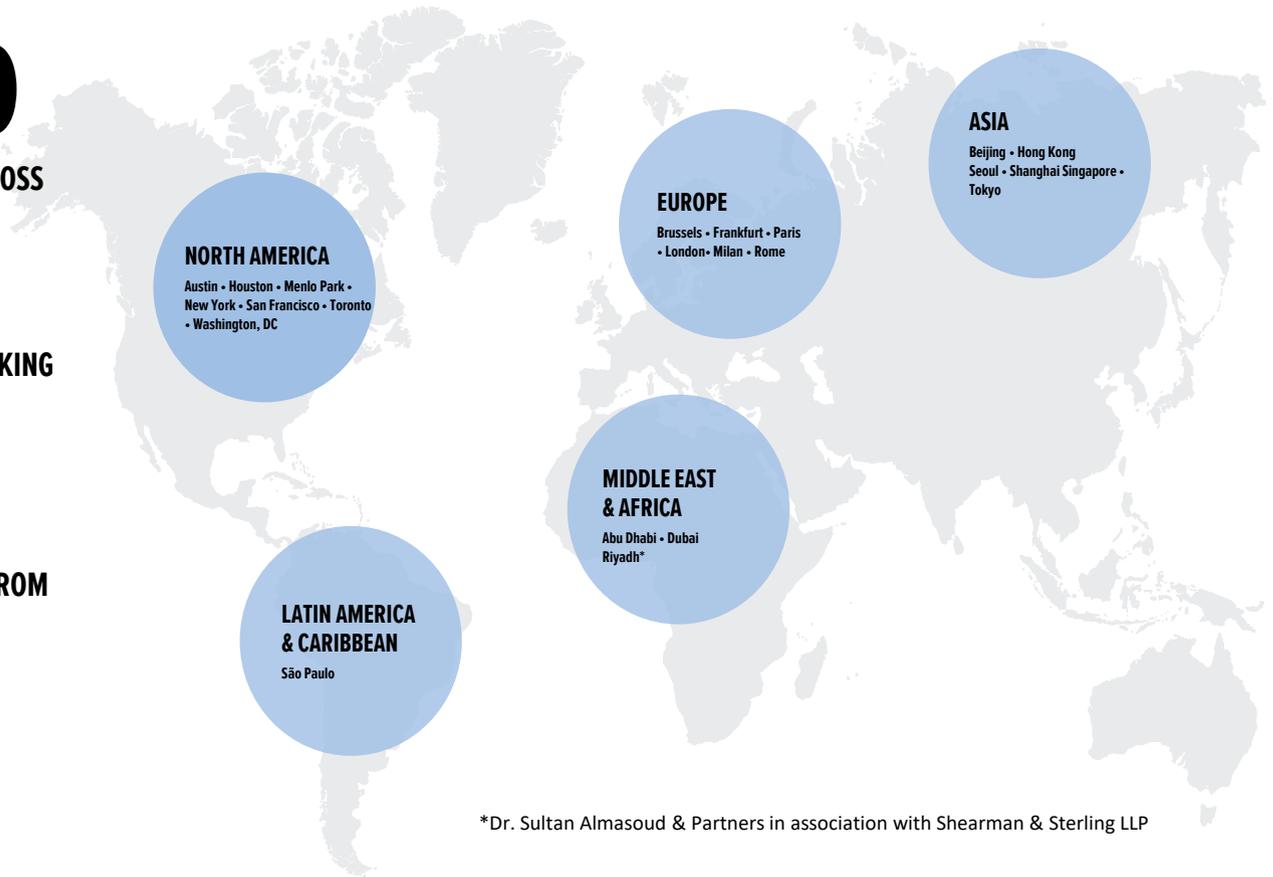
OFFICES SPEAKING
OVER

60

LANGUAGES FROM

70

COUNTRIES



*Dr. Sultan Almasoud & Partners in association with Shearman & Sterling LLP

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Shearman & Sterling is a global law firm with approximately 850 lawyers in 23 offices around the world. We partner with corporations, major financial institutions, emerging growth companies, governments and state-owned enterprises to provide the legal advice and industry insight needed to navigate the challenges of today and achieve our clients' future ambitions.

LEADING THE INDUSTRY ON THE MOST CHALLENGING AND INNOVATIVE ISSUES

LEGAL 500 2019

PRACTICES

Antitrust
Capital Markets
Compensation, Governance & ERISA
Derivatives & Structured Products
Emerging Growth
Finance
Financial Institutions Advisory & Financial Regulatory
Financial Restructuring & Insolvency
Intellectual Property Transactions
International Arbitration
Investment Funds
Litigation
Mergers & Acquisitions
Privacy & Data Protection
Private Client
Project Development & Finance
Public International Law
Real Estate
Tax

INDUSTRIES

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Energy
Financial Services
FinTech
Healthcare
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