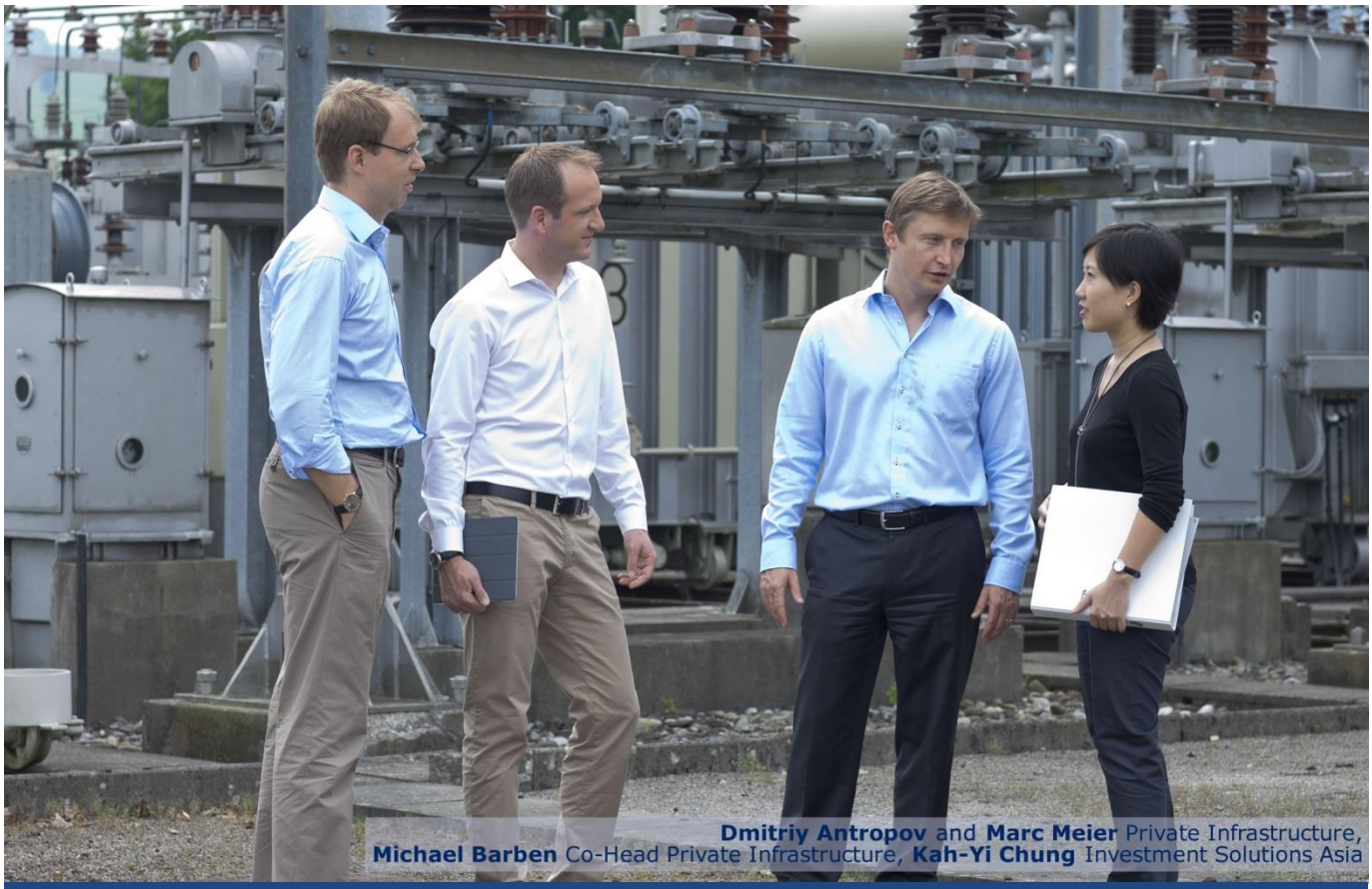


Emerging markets infrastructure: risk, returns and current opportunities

Partners Group Research Flash October 2013

Partners Group
Passion for Private Markets

Dr. Dmitriy Antropov
Vice President, Private Infrastructure

Jean Perarnaud
Managing Director, Private Infrastructure

Partners Group
Passion for Private Markets

Emerging markets infrastructure: risk, returns and current opportunities

EXECUTIVE SUMMARY

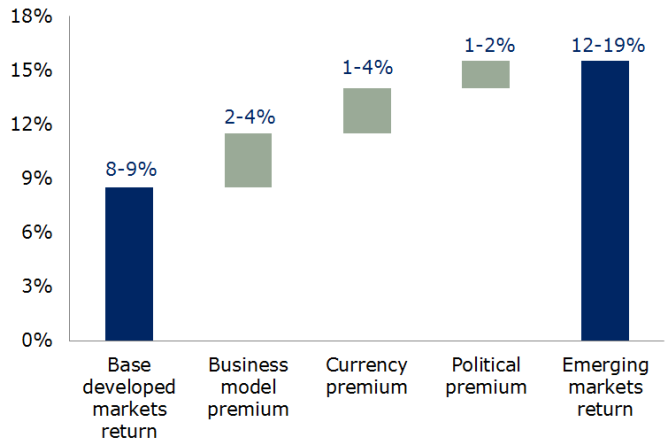
The current market environment is characterized by low yields, intense competition for assets and increased regulatory volatility in many countries previously considered to be stable. This poses a significant challenge for capital deployment in general and investments in infrastructure in particular.

We believe that an allocation to emerging markets private infrastructure is an accretive addition to a private markets investment portfolio, especially based on three megatrends: (i) the need for energy, (ii) the "production – consumption disconnect" (a persistent and growing distance between centers of consumption of natural resources and mining areas) and (iii) increasing urbanization and mobility.

These trends offer attractive infrastructure opportunities in energy, commodity and urban infrastructure. While these segments show differing characteristics in terms of size and level of regulation, in our view, the end user's willingness to pay for an infrastructure-related service represents a key criterion for sectorial and regional assessment.

The potential tangible improvements to a country's economic efficiency through infrastructure reward investors in emerging markets accordingly and offer a compelling proposition with long-term outperformance potential. Such investments – particularly those in countries demonstrating solid economic fundamentals which offer country premiums which more than compensate for the increased risk – can generate highly attractive returns for investors, as outlined in the chart below. Furthermore, renewable energy investments in particular constitute an interesting relative value play.

Emerging markets infrastructure IRR build-up



Source: Partners Group.

We believe that a global emerging markets approach based on the flexible use of different investment instruments, such as equity, preferred equity and mezzanine, can be an effective way of accessing the emerging markets infrastructure opportunity. The implementation of this approach is more complex than executing on "plain-vanilla" bond-like infrastructure investments in mature markets. A global network, advanced skillset and well-resourced platform are important prerequisites to deliver on the strategy, combining the best of both worlds – solid returns for the investors with tangible economic and social impact.

Emerging markets infrastructure: risk, returns and current opportunities

THE NEED FOR INFRASTRUCTURE: EMERGING MARKETS INVESTMENT CASE

The need for infrastructure in emerging markets is well-publicized and clear: demand for infrastructure in emerging markets is estimated to equal USD 1 trillion per year until 2030[1].

Besides offering the potential for investment returns, there is a strong and compelling social case for infrastructure investment in emerging markets: successful infrastructure build-out is capable of dramatically improving people's lives, as well as increasing the efficiency and performance of businesses operating in those regions and potentially therefore leading to the development of further investment opportunities.

In our view, three important megatrends shape the emerging markets infrastructure opportunity today: (i) the need for energy, (ii) the "production – consumption disconnect" (a persistent and growing distance between centers of consumption of natural resources and mining areas) and (iii) increasing urbanization and mobility in large metropolitan areas.

The need for energy

Almost 1.3 billion people in the world live without access to electricity[2]. A further 1.3 billion are dependent on biomass for cooking. The bulk of those are concentrated in Africa and developing Asia; India has the single largest concentration of people still without access to electricity, with nearly one quarter of citizens in this predicament.

What makes this sector particularly interesting for investors is the fact that people are generally willing to pay for electricity, whereas they can be reluctant to pay for other infrastructure-related services, as we'll see below. For example, Umeme, a Ugandan electricity distribution company, recorded average collection ratios (the ratio of collected revenues to billed revenues) of 96% in 2010-12[3], which is close to the ratios observed in the developed markets.

The "production-consumption disconnect"

The combination of increasing urbanization in emerging markets and growing environmental awareness mean that commodity and energy infrastructure need to be brought to a completely new level both in terms of scope (as more commodities need to be transported over larger distances) and type of infrastructure (as people are less willing to accept massive infrastructure installations close to the places where they live).

Significant population and economic growth is observed in many areas with a limited supply of energy resources. As a result, the energy self-sufficiency level for the largest developing Asian economies is significantly below 100% and is not expected to increase in the medium term, as shown in the chart below. Therefore, we expect continuing demand for commodity infrastructure, including port and rail facilities, pipelines, regasification plants and transmission lines.

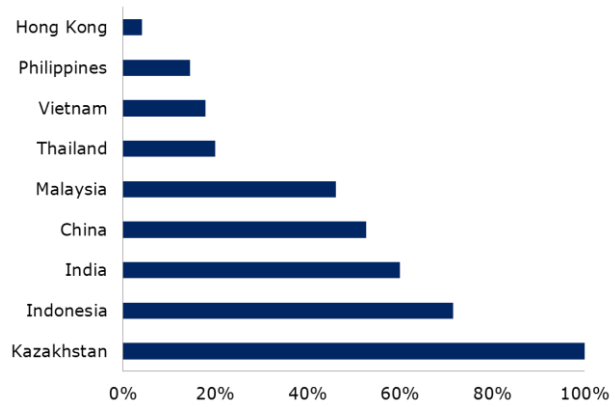
What makes this sector of particular interest to private infrastructure investors is the fact that commodity infrastructure in emerging markets rarely has significant government exposure, as the offtakers and counterparties are often international private players, with a solid credit profile and limited dependence on the local situation. We find this sector particularly appealing

[1] RBS. The Roots of Growth. Projecting EM infrastructure demand to 2030.
[2] IEA. World Energy Outlook. http://www.worldenergyoutlook.org/resources/energydevelopment/accesstoelectricity/ (accessed 22 August 2013).
[3] Umeme, Annual Reports (2011 and 2012).

Emerging markets infrastructure: risk, returns and current opportunities

and believe attractive opportunities can be sourced also going forward.

Exhibit 1: Energy self-sufficiency in Selected Asia and Pacific non-OECD countries



Source: Fueyo, N., A. Gomez, and C. Dopazo. Forthcoming. Energy Security, Sustainability, and Affordability in Asia and the Pacific.

Increasing urbanization and mobility

In 2010-25, 64% of the global GDP growth will come from the world's top 600 cities[4], which will create unprecedented additional demand for infrastructure, be it in transport, telecommunication, social services or other sectors. The need for urban transport infrastructure can be illustrated by the fact that 19 out of 52 emerging market cities with a population of over 5 million are lacking underground metro systems. The total investment in urban infrastructure and operations in the next 30 years is anticipated to exceed USD 350 trillion, with the lion's share in emerging markets[5].

In spite of the fact that the need for urban infrastructure may be as pressing as the need for energy, the development of the sector, especially in the transportation space, has followed slightly different dynamics:

- The development of urban infrastructure requires a lot of coordination and regulatory involvement and a long implementation period. The potential to develop an isolated and effective solution which adds value to the system – such as a new power plant in a region with limited power supply – is limited.
- Users seem less willing to pay for urban transportation solutions than they might for other infrastructure services, such as electricity supply (i.e. public transport tariffs are often very sensitive topics for the population, which has limited acceptance for the concepts of capital recovery and reasonable profit for the investors creating new urban infrastructure).
- Capital requirements for projects are very large and require a significant involvement of the government and a strong commitment to fund these projects which potentially could make them less attractive for private investors on a stand-alone basis.

[4] McKinsey & Company. Winning the USD 30 trillion decathlon (2012).
[5] Shell. New Lens Scenarios. A Shift in Perspective for World in Transition (2013).

Emerging markets infrastructure: risk, returns and current opportunities

As a result, we overweight transactions in this sector where we (i) can be sure of the ability and willingness of government and users to pay for an infrastructure service, and (ii) see limited regulatory complexity and less need for coordination with multiple stakeholders.

Underlying sector assessment

A summary assessment of the three segments of potential infrastructure investing is presented in the table below.

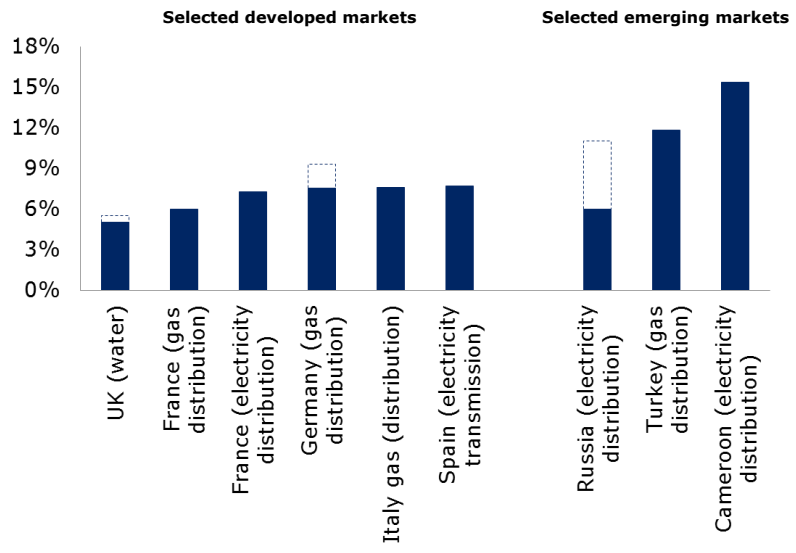
Exhibit 2: Summary sector assessment

	Energy infrastructure	Commodity infrastructure	Urban infrastructure
Project size	Differentiated (low – large)	Large	Medium – very large
Regulation and coordination	Often liberalized; single (isolated) project can add value to the system	Often liberalized; limited number of large offtakers simplify coordination	High government involvement, coordination of multiple stakeholders required
End-user's willingness to pay	High	High	Low

Source: Partners Group.

The end-user's willingness to pay represents in our view a key criterion for sectorial and regional assessment and plays an important role in the attractiveness of an individual investment opportunity. The enormous need for infrastructure and the potential for tangible improvements to a country's economic efficiency make a more straightforward case for infrastructure investors to share in the financial rewards of a project than is seen in a subsidized environment, such as those often found in the developed world. In our view, this is reflected in the current level of allowed regulatory returns in certain markets, shown in the chart below, which allow for more than the additional premiums required for investments in less mature regulatory environments.

Exhibit 3: Allowed regulatory returns (local currency WACC)



Note: dotted lines denote ranges.
Source: Partners Group research.

Emerging markets infrastructure: risk, returns and current opportunities

UNDERSTANDING THE RISK PROFILE OF EMERGING MARKETS INFRASTRUCTURE

International institutional investors generally expect higher returns from their investments in emerging markets infrastructure compared to investments in developed markets. We believe there are three components which add to the risk profile observed in the developed world, conditioning these additional return requirements: regulatory, political and currency risk.

What sometimes goes unnoticed is the fact that the underlying risk-return profile of an emerging markets infrastructure investment is often fundamentally different from the developed world one, as passive bond-like core infrastructure investments are difficult to come by. We estimate that less than 10% of the assets acquired in the emerging markets in the past few years represent operational projects comparable to those a typical institutional investor would expect in Europe and the US. The rest carry some greenfield or development risk. Therefore, what is perceived as a risk premium tied to the location of the asset in an emerging market may in fact be a reflection of the different underlying risk-return profile of the project itself.

In order to price an emerging markets infrastructure investment effectively, an investor needs to differentiate between inherent asset risks and differences in risk perception among various investor groups and mostly across the following areas to capture necessary return premiums: (i) business risk, (ii) regulatory and political risk and (iii) currency risk.

Business risk
We believe that an asset-specific business model (growth) premium, as well as premiums from regulatory and political exposure, tend to be largely recognized by both local and international investors. Therefore, even core infrastructure assets in emerging markets command a required return of equity in at least the low-teen range versus the high single-digit returns currently observed in the developed world.

Regulatory and political risk
Regulatory and political risks are often perceived quite differently by local versus international players.

- *Regulatory premium*
  Regulatory stability is, in our opinion, the key risk in infrastructure investing. So, the question is whether regulatory risk in emerging markets is higher than in the developed world and if a premium should therefore be applied in pricing emerging markets infrastructure investments. For instance, the risk of a change in regulation is higher if the economic situation is poor and the regulation itself is "expensive", i.e. places additional pressure on a country's finances. However, we do not believe that emerging markets countries automatically pose a higher probability of adverse regulatory change. Emerging countries with solid economic fundamentals and limited subsidizing in infrastructure regulation tend to offer a relatively stable environment.

- *Political premium*
  We refer to political risk as the risk of sudden and/or significant political change, impacting an investor's ability to conduct business. This can happen at a country level, as well as on a very specific local level. A good example of how local political risk can play out is a situation where a privatization or government procurement process is significantly modified or canceled altogether. Although this does not necessarily mean a significant loss on the investment, it jeopardizes the transaction security and also poses the question of opportunity cost in considering emerging markets investments. In our view, the cost of political risk insurance should be a good reflection of political risk and

Emerging markets infrastructure: risk, returns and current opportunities

can therefore be added to the return requirement. There are no clear proxies to assess a required political risk premium. Our experience has shown pricing of political risk insurance in the range of 100-200 bps.

Currency risk

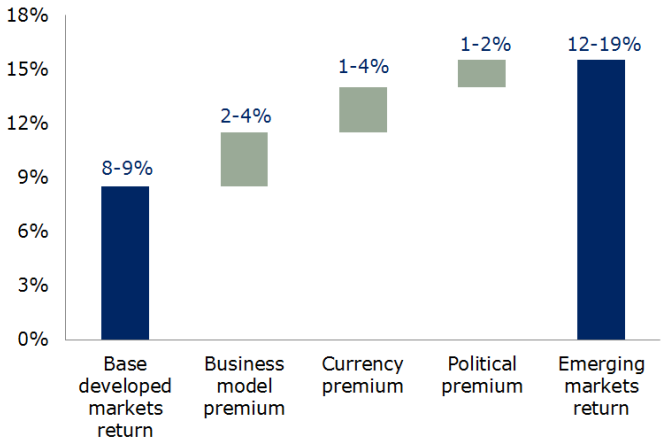
As with regulatory and political risk, emerging markets currency risk is often perceived quite differently by local investors versus their international counterparties. Currency risk in emerging markets investments remains a key consideration for institutional investors coming from the developed world and looking primarily for USD or EUR returns. However, it is interesting to note that currency dynamics over the longer run are not as volatile as one might expect.

Given the high short-term currency volatility, hedging out the currency risk completely would impose significant additional cost onto a project and may well make an investment unfeasible. We would therefore tend to consider the inflation differential (i.e. the difference in inflation over the expected investment horizon between the respective emerging market country and the US or the Eurozone) as an appropriate proxy to price in the currency risk.

While local investors might disregard currency risk completely, it would significantly impact the return requirements of an international investor. As mentioned before, a good proxy of currency risk would be an inflation differential between the emerging country and the Eurozone or the US. A typical difference would be in the 100-400 bps range, lifting the return requirement to close to the mid-teens. On some occasions, currency risk can be eliminated completely through the use of USD investment instruments or USD-based agreements.

Should all of these components be involved, the required return may go up to an IRR in the high teens. In our experience, there are not that many transactions which can be concluded at these levels of return. Those closed, however, offer a very compelling risk-return proposition.

Exhibit 4: Emerging markets infrastructure IRR bridge



Source: Partners Group.

Emerging markets infrastructure: risk, returns and current opportunities

APPROACHES TO EMERGING MARKETS INFRASTRUCTURE INVESTMENT

True infrastructure assets should generate long-term predictable cash flows on the base of contractual or regulatory arrangements. However, many emerging markets infrastructure investment opportunities lack this predictability at the time they are presented to the institutional investors.

On the one hand, we observe a large number of projects seeking capital at the development stage. While these can offer an attractive return in themselves, the outcome of the investment is often binary (depends on the ability to obtain approvals in a reasonable time and at a reasonable cost) and the stability of cash flows is not a given. On the other hand, infrastructure-related opportunities play a much more prominent role in the deal flow and portfolios of emerging markets infrastructure managers. Agribusinesses, mining and infrastructure services are typical areas included under the umbrella of infrastructure in the emerging markets.

While these investments can be potentially attractive, we believe they carry a different risk-return profile and should therefore be considered as part of the equity portion of the portfolio rather than as infrastructure.

Does this mean then that the opportunity set for "true" infrastructure investments in emerging markets is quite limited? In our view, this is not the case for two reasons: (i) the opportunity in itself is so broad that even disregarding the "infrastructure-like" projects described above, there is a substantial universe to select from, while (ii) sophisticated investors can structure the projects in a way which underpins their infrastructure characteristics by using preferred equity or mezzanine instruments, or by entering into framework agreements which allow them to actually only deploy capital at a point in time when a project is de-risked.

We currently see four approaches to infrastructure transactions in emerging markets being deployed by infrastructure specialists, with a number of distinct characteristics, including their risk-return and cash flow profiles:

- *Equity investment in a single operational project*
  The first approach would be to acquire a single operational project, similar to what happens in developed markets. The financial institution would then acquire control over an asset with established cash flows, priced in accordance with the acquirer's cost of capital. Given the limited number of operational projects in emerging markets, especially after taking into account those owned by utilities with a strategic interest, the quantum of capital which can be deployed in this strategy is limited. Furthermore, the returns offer a limited, if any, premium to an international investor, given the visibility of the cash flows and the significant number of investors who can potentially compete for the asset. The combination of a low equity check and limited returns makes it difficult to justify the acquisition and asset management effort for investors already present in the respective emerging market.

- *Equity investment in a development platform*
  The second approach would for instance be to invest into a renewable energy developer. Such an investment can be structured in different ways to provide for more or less flexibility regarding underlying projects, which the developer could pursue. A typical infrastructure investor would be interested in long-term capital deployment, which means that they would tend to make project-driven investments, although the money is invested through the project owner (i.e. a development holding company). Using a development platform allows the deployment of more meaningful amounts of

Emerging markets infrastructure: risk, returns and current opportunities

capital. At the same time, the expected return tends to be higher, given the additional execution premium an investor would receive from supporting a development company. In addition, the approach offers a better alignment of interest with the industry counterparty compared to an outright purchase of a single asset. We believe that this sort of investment is justifiable in an infrastructure portfolio, as long as strong governance rights are achieved (incl. limitations of the development budget and the strict upfront definition of the target projects). The cash flow profile of such an investment would be very much driven by deploying additional amounts of capital at the financial closing of the projects, satisfying pre-defined conditions.

A more restrictive implementation of the second approach would be to invest in projects at financial closing through a framework agreement with a development company. The difference in the return premium expected for the investment would be tied to the absence of development exposure. Clearly, that reduces expected returns and typically makes it necessary to pay some sort of a development premium at financial closing to the partner. Such payment requires careful structuring in order to preserve the alignment of interest. Best practice structures we observe include a meaningful upfront remuneration to the developer at financial closing, a bonus payment upon construction completion and potentially a profit sharing scheme from operations.

- *Mezzanine investment (mid-term)*
  The third approach would consist in a mezzanine financing for a new project, (over)-collaterized with the stakes in the existing or to-be-built projects. Effectively, the investor would provide equity financing at the project level through a subordinated loan granted to the holding company. The approach mitigates two key concerns: on the one hand, security (by having collateral with recourse to specific projects), on the other hand, scope definition (by having financing tied to a particular project as opposed to a number of developments). In our perspective, such an approach offers a superior risk-reward potential, however, its use is limited to situations where the development partner has sufficient assets to collateralize. At the same time, mezzanine capital tends to be more expensive than other forms of financing for operational projects. Therefore, equity owners may have a high incentive to replace it several years into the operation of the asset.

  As an example of a mezzanine investment, Partners Group completed a mezzanine investment in Wind Energy Holdings in 2011 – the holding company for the first utility scale wind farm in Thailand. The investment is being used to fund the construction of West Huaybong 2 and West Huaybong 3, two co-located 90 MW wind farms in the Korat province of Thailand, which is about 200 km north of Bangkok and provides one of the best wind resources in the country. The investment is secured with a significant equity stake in the projects, which by now are completed and have started producing energy. As a result, our investment has been significantly de-risked within 12 months from the investment date. We took additional comfort from the fact that the project has been supported by an excellent group of partners, such as Siemens, Ratchaburi and the Japanese utility Chubu. Despite being an emerging market investment, the project benefits from high quality international partners, which shows the benefit of having a global presence and network.

- *Mezzanine investment (short-term)*
  Finally, the fourth approach would be a short-term debt instrument with a certain allocation to the development projects and take-out upon construction completion. The difference to the previous strategy would be in a shorter holding period (1.5-2 years) and a higher potential IRR. From our perspective, the approach might be unsuitable for

Emerging markets infrastructure: risk, returns and current opportunities

many investors, as it relies heavily on the ability to sell the project after construction completion. The investment multiple tends to be lower in the base case.

INVESTMENT OPPORTUNITY: RENEWABLE ENERGY IN EMERGING MARKETS

Emerging markets renewables are set for an explosive growth in the next few years. The renewable energy generation capacity in the emerging markets globally is set to increase from ca. 250 GW in 2012 to over 400 GW in 2015 with over 80% of the growth coming from wind and solar[6]. This large and compelling opportunity is driven by a number of factors going beyond the demand for energy we discussed before:

- *High resources*
  For instance, Mexico offers one of the highest wind resources worldwide, with the capacity factors approaching 50%, whereas Peru has a very high solar resource approaching 40%. For comparison, European wind assets typically show capacity factors of 20-25%, and solar assets of below 15%.

- *High energy prices*
  Many emerging markets lack local fossil fuels, which results in wholesale electricity prices approaching USD 150-200 per kWh in countries such as Chile and Panama, for example, versus pool power prices as low as EUR 35-40 in selected European countries. High energy prices can support significant capex for new generation.

- *Low regulatory exposure*
  Power generation tends to be one of the first sectors to be liberalized. Private participation is broadly allowed in the development, financing and operations of the assets, as well as in concluding power purchase agreements. This largely reduces interactions with government authorities and provides a sharp contrast to developed markets, where renewable generation is often subsidy-driven and implies higher regulatory exposure than other types of infrastructure investments.

- *Shorter construction period*
  Compared to many other assets, renewable energy assets (wind, solar and small hydro) can be constructed within 1-2 years, which reduces construction risks and shortens the time to cash flow generation for greenfield investments.

Developed vs. emerging markets

In order to provide further color on how renewable energy projects in emerging markets compare to those in the developed world, we summarized the key parameters of six representative wind and solar transactions (three in developed markets and three in emerging markets), which we have analyzed in detail over the past 18 months (Exhibit 5). In outlining these, we focused on the critical dimensions determining the risk-return profile of an infrastructure investment, such as stage of investment, leverage, visibility of cash flows, feasibility of capex and forecast return. When looking at these transactions, the following observations can be made:

- Emerging markets renewable projects are characterized by a lower leverage level (ca. 10% less gearing on average of the projects represented), which is likely to be partially driven by a shorter debt tenor and the need to manage refinancing risk.

[6] Bloomberg New Energy Finance estimates. Accessed 3 October 2013.

Emerging markets infrastructure: risk, returns and current opportunities

- At the same time, emerging markets renewable projects often have longer off-take agreements with a better structure (contractual inflation indexation), supporting the long-term visibility of the cash flows.
- Capex per MW in the emerging markets is slightly higher, suggesting higher costs associated with construction in the emerging markets, as well as potentially higher development premiums supported by higher returns available.
- Expected IRRs are at the upper end of the returns for emerging markets infrastructure investments, underlining the relative attractiveness of the sector.

Exhibit 5: Key parameters of selected renewable transactions

	Developed markets			Emerging markets		
Technology	Wind	Wind	Solar	Wind	Wind	Solar
Stage	Greenfield	Brownfield + development	Brownfield	Brownfield	Greenfield	Greenfield + Development
Gearing	70%	86%	77%	60%	70%	70%
Debt terms	500bps all-in 15 years	200-300bps margin 15 years	300bps all-in 17 years	400bps margin 5 years	1000bps margin 17 years	500-600bps all-in 10 years
Price risk	No	No	No	No	No	Partial
Inflation indexation	No	No	No	Partial	Yes	Yes
Term (PPA or feed-in tariff)	10 years	5 years	20 years	20 years	20 years	10 years
Investment / MW	USD 1.9m	USD 2.9m	USD 2.2m	USD 2.4m	USD 2.5m	USD 3.3m
Project-life equity IRR (local currency)	12-13%	12-13%	8-9%	11-13%	18-20%	16-20%

Source: Partners Group.

Low uptake on renewables in emerging markets to-date

In spite of all those positive characteristics, the overall number of renewable infrastructure transactions in emerging markets remains low so far. In our perspective, this is due to a number of factors.

First, a very limited number of operational projects are sold. For example, out of ca. 15 GW of wind projects which were acquired in Latin America in 2006-2012, only about 5% represented operational wind farms[7]. In our experience, there are also very few turn-key projects available at financial closing. The majority of projects are offered to investors before development is fully completed: they have land and preliminary environmental approvals secured, however, off-take agreements are not always in place, and equipment supply, construction agreement and financing are expected to be arranged at a later stage.

Second, the performance of many projects currently in operation, especially in the wind sector, has been below expectations. A good illustration of this phenomenon is Chile, where a number of wind farms have been unable to deliver the energy contracted, which provided a negative backdrop to the process of obtaining off-take agreements for the new projects.

[7] Focus on Wind Asset Valuations in Latin America. Bloomberg New Energy Finance. 2013.

Emerging markets infrastructure: risk, returns and current opportunities

Third, emerging markets projects tend to be more complex in terms of execution due to their larger size, the need for longer transmission lines and potential social issues, for example disputes over land ownership or over the direct sharing of the benefits of the project with the local communities. The latter has been observed in Mexico, for example, where lack of support from local communities has on some occasions even resulted in the suspension of construction.

Mitigating the challenges: Soleq, a Southeast Asian solar platform

In order to overcome the hurdles outlined above, we focus more on an active approach to renewable investing in emerging markets and move earlier in the development cycle to increase potential returns and broaden the universe of investment opportunities. We are therefore exploring different ways of establishing framework agreements with developers with a view to shaping developments.

For example, Partners Group recently concluded an investment in Soleq – a Southeast Asian solar platform. The platform has highly attractive seed assets with a capacity of ca. 70 MW and is expected to be scaled up over time to reach 300 MW generating capacity. The differentiator for this platform investment versus other projects we considered in the region was the opportunity to build up the platform on the back of a number of attractive projects already secured or identified.

Furthermore, we anticipate being able to create value in the platform from construction cost optimization and the realization of scale benefits, once additional assets are secured. As an infrastructure investor, we are very focused on maintaining a distinctive risk-return profile of the asset. Therefore, investments in new projects are subject to clear parameters, including target geographies, minimum return hurdles and the assumptions which need to be used for return calculations.

To provide further protection to the scale-up of capacity, we have the option to not increase our exposure if we are not fully comfortable that some of the new projects fulfill the formal criteria. Such a structure allows us to capture return premiums in the emerging markets renewable space without taking disproportionate risks. Last but not least, it is important to work with a highly experienced and capable operational team on the ground, which is able to execute on the business plan of a cross-regional platform build-out.

Emerging markets infrastructure: risk, returns and current opportunities

Regional spotlight: Latin America

As mentioned above, we are already active and experienced investors in renewable energy infrastructure in Asian emerging markets – particularly Thailand. We also believe Latin America will be a particularly attractive area for renewable investments in the next few years, as is shown in Exhibit 6, which details the characteristics of the four key clusters for renewable energy development.

Exhibit 6: Characteristics of key Latin American clusters for renewable energy

Country	Wind resource	Solar resource	Power price	Availability of transmission	Offtake availability	Overall attractiveness
Chile	Medium	High	High	Low	Low	**Medium-high**
Central America	Medium-high	Medium-high	Medium-high	Medium	Medium	**Medium**
Mexico	High	Medium-high	High	Low	Medium	**High**
Brazil	High	n.a.	Low	Low	Low-medium	**Low-medium**

Source: Partners Group.

From a returns perspective, **Central America and Chile** can potentially offer the highest equity returns in the region, however, they also probably have the most challenging environment in terms of availability of projects at an advanced development stage and ability to obtain off-take agreements and complete construction. Chile, specifically, had a negative experience with wind farms, which demonstrated production levels below those forecasted. As a result, Chilean offtakers are concerned about the security of supply and are often unwilling to enter into long-term agreements with power producers, unless the contract price is set at a significant discount to the power prices prevailing in the market. In addition, the well-developed environmental and social legislation in Chile allows local communities and environmental organizations to challenge projects at different stages of the permitting process. In certain instances, such claims can even result in permits being withdrawn after they were granted. While this speaks for the robustness of the country's environmental and social legislation, it can also introduce an additional complexity into the permission process.

We believe **Mexico** offers a highly compelling risk-return profile with reasonable underlying base returns, plus a sufficiently deep market and off-take system supporting creditworthy off-take at a reasonable price. Known off-takers in Mexico include Femsa (Coca-Cola subsidiary), Heineken, Walmart, Soriana (Mexican retailer) and Bimbo (Mexican food company) – all of them being large corporates with a solid financial standing, which reduces the project risk and makes it potentially even more compelling than in the feed-in tariff system. In addition, the spot electricity price is currently at very elevated levels and is expected to stay at those levels at least in the near- and mid-term thanks to the growing demand for energy.

Brazil, although very attractive from the resource perspective (especially wind), generally offers returns at the bottom end of many financial investors' expectations on the back of significant (local) capital inflows into the sector. In addition, a potential participation in Brazilian wind transactions is exposed to transaction cost (and risks) because of the need to post performance guarantees in order to be able to participate in an energy auction. The recently announced intentions of the government to make wind farm developers responsible for developing new transmission lines further undermines the efficiency of project delivery from the viewpoint of an investor.

Emerging markets infrastructure: risk, returns and current opportunities

EXECUTING ON OPPORTUNITY IN A COMPETITIVE ENVIRONMENT

Recalling the enormous need for infrastructure investment discussed at the beginning, one could mistakenly assume that the competition for individual assets is limited. The reality is, however, that the number of uncontested investments is pretty low. An important reason for this is that the number of transactions fulfilling the selection criteria of a typical infrastructure investor in terms of structure and investment preparation is significantly below the total number of potential transactions in the pipeline.

Those which satisfy the formal criteria tend to see significant interest. Operational assets, especially those in stable jurisdictions, usually attract interest from both local and international investors. For example, we are aware of a renewable asset in a Central American investment grade country, for which offers implying single-digit buyer IRRs have been received. A large number of core asset owners in emerging markets jurisdictions expect low double-digit exit IRRs, which may not be attractive for international investors.

Finally, large assets involving high-volume construction or operation contracts attract corporates seeking to secure additional orders for their business. We think this is one of the main reasons Brazilian airport concessions have been acquired at high valuations. We therefore don't believe that "bottom fishing" strategies work in the space. A feasible way for the investor to differentiate and secure an attractive transaction relates to the ability to identify and support an expansion strategy.

We are currently in advanced discussions to acquire a portfolio of energy infrastructure assets in an attractive emerging market jurisdiction. We have been able to secure a preferred position with the seller and the management team based on our fundamental knowledge of the sector and the ability to align ourselves in terms of the approach to the growth opportunities. Through an in-depth analysis of the company, we identified a number of high-probability projects which would contribute to the bottom line of the business, one of which has already materialized during the due diligence process.

In addition, we agreed on a framework to assess and potentially fund additional projects, which would be accretive to the investment case. Clearly, such an approach requires substantial time, resources and capital availability, which might make it unfeasible for a smaller and less active investor who is seeking a bond-type exposure.

Key to success: global footprint, local flexibility

Given the local nature of infrastructure assets and the fact they are often deeply embedded in differentiated regulatory frameworks, emerging markets infrastructure investments tend to be even more challenging to execute than private equity transactions in similar jurisdictions.

We mentioned earlier that a local presence is an important success factor. However, it is not the only one. The transactions themselves tend to be more complicated and can have additional requirements, such as the securing of political risk insurance. In addition, government interaction may be more extended, as both the regulatory framework for the asset and the transaction itself tend to be less straightforward.

Furthermore, there is less opportunity to outsource investment execution due to the overall lower degree of market development. As a result, it often takes longer to close an emerging markets infrastructure transaction than a comparable investment in a developed market. While it is clearly quite challenging to have constant local coverage for a large set of emerging

Emerging markets infrastructure: risk, returns and current opportunities

markets, having a sizeable global team can be beneficial as it allows a firm to put professionals on the ground and also pull in extra resources during the active execution phase.

CONCLUSION

As one can see, emerging markets infrastructure offers a large and diverse investment opportunity derived from an overwhelming need for energy, the production/consumption disconnect and continuing urbanization. We believe that the energy space, especially renewable generation, alongside commodity infrastructure, offers the most realizable investment potential in the near and mid term.

Emerging markets infrastructure investments are often characterized by higher returns. These do not stem from an "artificial" regulatory environment (as might be the case in developed markets), but rather from the fact that creating new or developing existing infrastructure assets in emerging markets can offer tangible economic benefits, which are then shared with investors. In addition, an investor can capture meaningful risk premiums by properly assessing and pricing certain investment risks. At the same time, it is important to understand that alpha does not come from a blanket risk premium applied to an emerging market jurisdiction. Securing it requires knowledge of the sector, a broad resource base and the ability to assess the relative value of different investment opportunities on a regional and even global basis. The number of investment solutions offered "off-the-shelf" is limited and seldom permits the construction of the balanced portfolio that a sophisticated private markets investor would expect.

We believe that a global emerging markets approach based on the flexible use of different investment instruments, such as equity, preferred equity and mezzanine, can be an effective way of accessing the emerging markets infrastructure opportunity. The implementation of this approach is more complex than executing on "plain-vanilla" bond-like infrastructure investments in mature markets. A global network, advanced skillset and well-resourced platform are important prerequisites to deliver on the strategy, combining the best of both worlds – solid returns for the investors with tangible economic and social impact.

Emerging markets infrastructure: risk, returns and current opportunities

Client contact:
Kathrin Schulthess
Investment Solutions
Phone: +41 41 784 65 81
Email: kathrin.schulthess@partnersgroup.com

Media relations contact:
Alexander von Wolffradt
Phone: +41 41 784 66 45
E-mail: alexander.wolffradt@partnersgroup.com

www.partnersgroup.com

Disclaimer

This material has been prepared solely for purposes of illustration and discussion. Under no circumstances should the information contained herein be used or considered as an offer to sell, or solicitation of an offer to buy any security. Any security offering is subject to certain investor eligibility criteria as detailed in the applicable offering documents. The information contained herein is confidential and may not be reproduced or circulated in whole or in part. The information is in summary form for convenience of presentation, it is not complete and it should not be relied upon as such.

All information, including performance information, has been prepared in good faith; however Partners Group makes no representation or warranty express or implied, as to the accuracy or completeness of the information, and nothing herein shall be relied upon as a promise or representation as to past or future performance. This material may include information that is based, in part or in full, on hypothetical assumptions, models and/or other analysis of Partners Group (which may not necessarily be described herein), no representation or warranty is made as to the reasonableness of any such assumptions, models or analysis. Any charts which represent the composition of a portfolio of private markets investments serve as guidance only and are not intended to be an assurance of the actual allocation of private markets investments. The information set forth herein was gathered from various sources which Partners Group believes, but does not guarantee, to be reliable. Unless stated otherwise, any opinions expressed herein are current as of the date hereof and are subject to change at any time. All sources which have not been otherwise credited have derived from Partners Group.