

Private sector investment and the anatomy of risk

Sanna Markkanen and **Judith Plummer Braeckman** from the Cambridge Institute for Sustainability Leadership recently spoke at a Future Dams webinar. They discussed the complexity of hydropower finance in low income countries and explained why risk must be addressed to attract more private sector investment for large hydropower development. Suzanne Pritchard reports.



Above: **Sanna Markkanen from the Cambridge Institute for Sustainability Leadership says we need to look at why more private sector investment in hydropower could be beneficial**

Below: **Risk is what it is all about when it comes to hydropower, Judith Plummer Braeckman says**



“HYDROPOWER IS BY FAR the largest renewable resource worldwide and can be used as a tool for socio-economic development,” said Sanna Markkanen from the Cambridge Institute for Sustainability Leadership in the UK.

Speaking at a Future Dams webinar in May 2020, Markkanen added that the majority of the world’s untapped techno-economically feasible potential for large hydropower is situated in low- and lower middle-income countries (LICs and L-MICs). However, much of this remains unexploited as hydropower projects are often viewed as risky investments, especially by the private sector. Hindered by difficulties in attracting financing for new projects, LICs and L-MICs find that their ability to take advantage of their natural resources for social and economic development is negatively affected.

Over the past 50 years the structure and key actors involved in large hydropower financing has changed considerably, particularly in LICs and L-MICs. As Markkanen explained in an article co-written with her colleague Judith Plummer Braeckman from the Cambridge Institute for Sustainability Leadership, and Pon Souvannaseng from the University of Manchester in the UK: “Exclusively public projects, typically financed by the host country government with support from multilateral development banks (MDBs), have become less common, while public-private-partnerships (PPPs) and new forms of bilateral finance arrangements have become more prevalent. However, fully privately financed projects with no public or multi-lateral development banks (MDB) finance remain unusual in large hydropower projects.”

As Markkanen et al explain, in the 1970s to 1990s most large hydropower projects were developed primarily using public sector funding, with equity investment from the host country government and debt finance from MDBs. However, from the 1990s onwards public sector funding for such projects dwindled. MDBs have been shifting finance away from large hydro on the grounds that such projects can generate revenue and that public sector funding ought to be directed to sectors such as health and education that cannot be self-funding.

However, the shift to a greater use of private financing in LICs and L-MICs was slow to catch on. Between 1990 and 1995 it was estimated that just 7% of new hydropower projects in these countries were supported by private finance. Private sector reluctance to invest in hydropower projects in unfamiliar markets was put down to the perceived political, commercial

and financial risks, with particular concern about the long-term payment risk.

To address such challenges, financing models that enabled greater private sector contribution but retained MDB involvement, often in the form of guarantees and insurance, began to emerge.

Speaking at the webinar entitled Hydropower Finance – Complexity, Risk and Private Sector Investment, Markkanen said that we need to look at why more private sector investment could be beneficial.

“We are not saying that it always is beneficial,” she added, “but it could potentially incentivise more good quality investment in hydropower.”

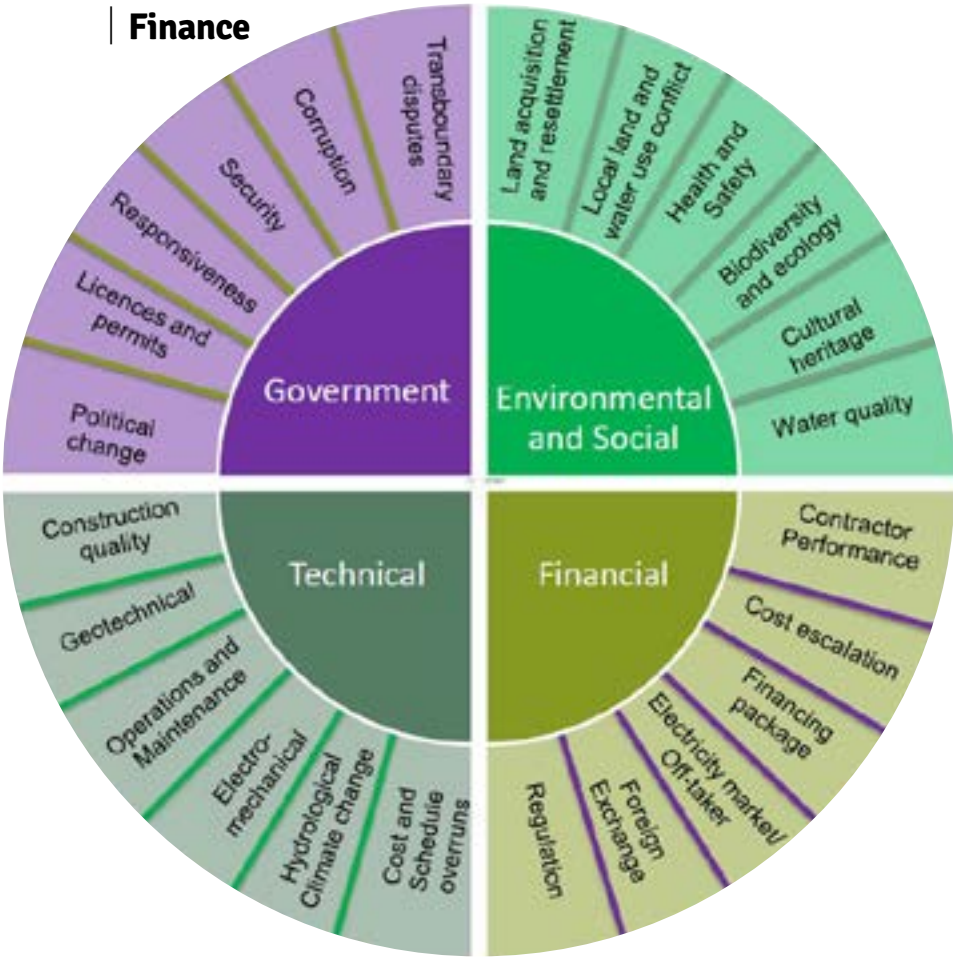
New bilateral finance

“When low income countries come to develop new energy generation infrastructure for development needs, they have two realistic options for finance,” Markkanen explained. “Public sector finance is increasingly unavailable, especially to cover large proportions of project cost. So, on the one hand, there is new bilateral finance which is a simple structure. It is quick and tends to enable projects to be developed at a lower total cost. The government, who is the project owner, is free to set electricity tariffs which in principle means that they can set the tariffs low enough to make them accessible to local consumers. However, it also means that governments can choose to sell electricity to other countries.”

With bilateral financing, only two parties are usually involved: one financing agency which is often an export credit agency, and the host country government. All of the debt is lent directly to the host country government and tends to cover the vast majority of project costs (often up to 85%).

As Markkanen et al explained in their paper: “New bilateral finance offers a simpler financing option for LICs and L-MICs that are frustrated by the delays and complexity associated with the public-private partnership (PPP) structure. Given the economic benefits for the lending country, financing from new bilateral financing agencies is more plentiful and more easily accessible than concessionary debt from MDBs. From a contractual point of view, the simplicity of the bilateral financing arrangements means that they usually take less time to arrange...and can enable LICs and L-MICs to develop their energy infrastructure faster.”

Markkanen explained that one disadvantage of this type of financing is that as the government is the sole equity shareholder, the entire debt amount is going to



Left: **An analytical framework was devised to help understand risk from a financier’s perspective**

show on the country’s balance sheet. The government takes on the entire debt and is solely responsible for repaying it.

“This might become a bigger problem in the future when Covid-19 impacts are better known and we find out more about if different financiers with large amount of debt to developing countries will provide any breaks with payment. Similarly,” Markkanen said, “it can become a big issue if a country borrows a lot of money for several projects simultaneously.”

Other disadvantages of new bilateral finance arrangements are the associated conditions and constraints that can have long-term implications for the host countries. Markkanen et al say that as the financing is generally tied to the source country’s contractors this reduces the host country’s choice over materials and technologies, limiting the scope for competitive procurement and even raising concerns over reduced transparency.

New bilateral financing arrangements can also, according to Markkanen et al, “allow compliance with international environmental protection requirements and social responsibility guidelines to be circumvented, with potentially negative impacts.” They add that while leaving the responsibility for impact assessment and management to the host country government may seem logical, “a lack of capacity or institutional bias can lead to poor and delayed implementation of protocols, or even the overlooking of social and environmental impacts”.

As Markkanen reiterated during the webinar: “Potentially there can be a lack of environmental and social impact safeguards. There is a risk that these safeguards can be overlooked or not appropriately addressed. Primarily this is because there is no

external oversight on these projects and it becomes the sole responsibility of the host country to look into social and environmental impacts, and assess how to address them and follow through. Not all developing countries,” she cautioned, “have much capacity to follow this process appropriately.”

Public-private partnership

Public-private partnership financing tends to address the shortcomings of the new bilateral finance model. PPP projects often involve a special purpose company which is set up to bring together various equity investors to develop a project for profit. This is advantageous as the debt is issued to the project owner (typically a special purpose company) and not to the host country government. However, a typical PPP project financing structure for a project in a low-middle income country (that does have an investment grade credit rating) tends to involve a large number of investors who all take on a portion of the debt and share the associated risk.

Markkanen explained that a large number of investors or financiers are required as generally private sector investors are not willing to take the risk of investing large amounts of their resources, or a substantial proportion of the overall project cost, in a market that is considered more volatile and can be unfamiliar. “And hydropower is generally regarded as a fairly risky investment,” she added. Furthermore, the complexity of the PPP financial structure means that the project is very slow to put together as it requires different agreements between different financiers and the process can become convoluted.

“By far the biggest challenge to PPPs, and the one that often pushes developing countries away from

Right: A better understanding of risk and risk mitigation could bring in more private sector investment for hydropower development



④ them, is the complexity of the financing structure and the slow nature of the process,” Markkanen said.

Risky business

“There is not a shortage of finance for infrastructure but a shortage of finance which has the kind of risk appetite it needs in order to enter a low-income country to finance a large dam,” Judith Plummer Braeckman from the Cambridge Institute for Sustainability Leadership said. “Risk is what finance is all about when it comes to hydropower.”

“Hydropower projects are absolutely site-specific and as a result they have a specific set of risks,” she explained. “You can’t say for every hydropower project that this particular risk is the biggest concern for financiers.”

In an effort to help understand risk from a financier’s perspective, Plummer Braeckman devised an analytical framework. This anatomy of risk is divided into four different areas (government, environmental and social, technical, and financial) which then each identifies six key metrics of risk.

“We found that when we were talking to financiers there were some risks where financiers would simply walk away,” she said. “It wasn’t a case of how can we mitigate this risk but an issue of we’re not going to go there. Transboundary disputes were significant in that, if there was civil unrest or border disputes close to a project, it meant that financiers would simply walk away.”

However, this does not mean that financiers do not try to mitigate all of the risks, Plummer Braeckman commented.

“My research has found that special purpose companies set up to develop hydropower projects will basically mitigate everything they can. Mitigation is quite difficult and there are many risks which cannot be mitigated,” she said, “so if they find something that they can do to mitigate risk, then they will tend to do it.”

Financial risks, you would think, would be the most significant for financiers. In some ways they are, Plummer Braeckman explained, but in other ways financiers say these are the risks they understand best. As a result, the risk isn’t such a concern to financiers as they have a greater understanding of them.

“However, what we did find,” Plummer Braeckman stated, “is that technical risk, which is less understood,

was considered to be a greater concern for financiers than financial risks.”

According to Plummer Braeckman, government and social and environmental risks can also create a business risk. When some of these risks first start to go wrong, they have a greater impact on the reputation of the financier than they do on the credit risk. So, if you have a project which has for example damaged cultural assets, the actual cost of putting that right may not be huge but the reputational risk of it having happened can be really significant. Indeed this is the sort of issue where you may get people campaigning at a company’s headquarters or annual meeting.

Initially some of these risks can cause a business risk rather than a credit or market risk. Ultimately as each risk gets worse, the worse it gets, the more likely it is to affect credit/market risk, ie to affect the likelihood that the financier will be paid to recoup their investment.

When looking at what risk mitigation is available Plummer Braeckman said that one of the key issues for most companies is their own strategy.

“We have been in meetings where financiers have just said ‘no, we don’t do Africa,’” she said. “Some companies have just taken the decision that they are not interested in areas they don’t know well or are too difficult to invest in. They just don’t want to enter any new area at that time.”

Better understanding

Sustainably developed hydropower has a key role to play in the transition to a zero-carbon economy and energy access improvements across low-income countries. However, their development has been hindered by difficulties in attracting finance for new projects. The capital-intensive, lengthy and site-specific nature of new hydropower developments, along with their complex environmental and social considerations, has led to them being regarded as risky investments, particularly by private sector investors.

However, as Markkanen believes: “Better understanding of risk and risk mitigation could actually bring in more private sector investment. This will increase the confidence of private sector investors to invest in projects with larger quantities of money, making financial structures simpler, quicker and cheaper.” ●

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