

Sustainable financing: the basic requirements

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Introduction

The idea of sustainable financing might at first seem a strange concept. Financing is, after all, normally a one-off, project-by-project exercise. But if we step back and look at the wider scene it is evident that throughout the world there are inexorable pressures for the development of more water resources infrastructure, in particular hydropower and multi-purpose projects, and that this will require a sustainable flow of fund far in excess of what is currently available. The demand is certainly far in excess of what is available from the public sector, which has traditionally financed such projects in the past. In future much of the money will need to come from private sources, either for totally private projects or through collaborative venture with the public sector in the form of Public-Private Partnerships.

Unfortunately the private sector has demonstrated its reluctance to finance water infrastructure projects, because it perceives them as being both risky and unrewarding. As an industry we need to look more closely at the way in which such projects are structured to see how they can be made attractive to private financiers in an increasingly competitive world. This paper touches on a few of the key issues that need to be addresses if we are to ensure a sustainable flow of funds into the hydropower sector.

1. Background

Since the 1990s there has been a marked change in the way that infrastructure projects are financed in many parts of the world. This is particularly true of the power sector where publicly-owned state utilities are being dismembered and forced to operate in a more commercial environment. Although the pattern has varied from country to country, the overall direction of movement is inexorably towards increasing dependence on private participation – and, in particular, private financing in a sector that has traditionally relied almost exclusively on public funding.

In the developing world this has not been an easy transition. It has proved to be particularly difficult in the hydropower sector where, despite initial enthusiasm, there has been a generally disappointing outcome when it comes to inward private investment into new projects. The path to private hydro development has become littered with casualties, and many brave attempts to develop hydro projects as independent power producers have ended in costly failures. Others have eventually succeeded, but the price has been high in more ways than one, with the result that there are now relatively few players who are prepared to promote or invest in the greenfield projects, other than at the smaller end of the spectrum.

Experience has shown that over the last fifteen years there have been two major obstacles to new hydropower development - environmental concerns and the lack of finance. On the environmental side much progress has been made with the development of the IHA Sustainability Guidelines, and there is cautious optimism that a more balanced view is now being taken of the relative environmental and social merits of hydropower. However the financing issue has proved to be a much more intractable problem, particularly in the weaker and transitional economies where most of the world's untapped hydro potential remains.

It is the poorest countries of Africa and Asia that are suffering most from these financing constraints. They understandably resent the fact that they cannot finance much-needed water infrastructure projects, and that this is trapping them in a downward spiral of economic decline and environmental degradation. Unless we can find ways of maintaining a sustainable flow of funds into these hydro-rich, but economically weak, countries much of the world's hydro resource will remain in accessible.

2. Key Issues

It is now acknowledged that, in a situation where public funds are strictly limited, the future pattern of infrastructure financing will be based upon the concept of using public money only where absolutely necessary, and wherever possible only as a means of leveraging private finance into projects that it would otherwise avoid. In effect this produces three financing scenarios:

- Private sector financing for projects where the financial returns are adequate and the risks containable.
- Joint Public-Private sector financing for projects that are economically viable but not financially strong enough to exist entirely in the private sector.
- Public sector financing for projects that are either too large or too risky, or not sufficiently attractive for private investment.

Although this may sound as if the private sector is cherry picking the better opportunities and leaving all the difficult projects to the public sector, the reality is that the private financier can always take his money elsewhere. The public sector will inevitably be in the role of “financier of last resort”, but this does not mean that public projects are weaker or less attractive. It simply reflects the fact that some projects are not suitable for private financing, at least without restructuring. The question is: what can be done to make hydropower and multipurpose projects more attractive to the private sector?

In simple terms the answer to this question is to achieve an acceptable balance between risk and reward. There is no fundamental shortage of private sector funding. In fact the exact opposite is the case, with more money looking for good projects than there are good projects available. This is illustrated by the fact that commercial banks compete vigorously to lend money for hydro projects in the form of export credits, because it is effectively risk-free business underwritten by the Export Credit Agencies.

But export credits make up only a small proportion of the total funding required for a typical hydro project, and the bulk of the finance still needs to come from other sources. The difficulties of attracting this money are well known, and can be attributed to a number of factors including:

- a) A heavily front-end loaded risk profile.
- b) Weak financial returns and the long-term nature of such investments.
- c) Concern over payment defaults arising from local currency devaluation.

Although these three issues do not represent the full story, they encapsulate the main concerns that are currently inhibiting the flow of funds into the hydropower sector. There are no simple answers, but it is worth exploring some of these in more detail.

3. Risk Profile

All of us prefer to pay for a product only when it is a tangible reality, but unfortunately this is not possible with a hydropower project, where effectively all of the investment has to be made before the first energy is generated. The situation is actually worse than this, because significant sums of money have to be spent at risk before it is clear whether the project will even go ahead. There have been cases where projects have collapsed (i.e. failed to reach financial closure) after many years preparatory work and the expenditure of \$40 million and more. Whilst such risks might be acceptable in an industry offering large profits and fast returns, they are not sustainable in an industry offering only modest profits over the long-term.

So the problem lies in finding a Sponsor who is prepared to put his money at risk in the first instance, as well as finding a financier who is prepared to come in at a later stage and either invest or lend money to the project. Both of these are proving difficult.

The hydro risk profile is heavily front-end loaded. Once completed it is relatively easy to refinance because an operating hydro project is a relatively secure investment, except possibly for the hydrology – and that is a manageable risk that can generally be kept away from the financiers. The real problems lie in the high transactional costs before financial closure and the site risks during construction.

3.1 Before financial closure

Based on a strictly unscientific review of the projects with which the author has been involved, the bulk of the money spent before financial closure is expended on environmental and social impact studies, design development and, perhaps most of all, on the drafting and negotiation of suite of inter-related contracts. In some cases there can be a dozen or more agreements to be negotiated.

In the past a lot of these agreements were not needed. However as each project becomes a commercial entity in its own right (which is happening, irrespective of the source of finance) it becomes necessary to have an increasingly complex contractual framework based upon a set of agreements that often drafted from first principles at inordinate cost. Whilst it may never be possible to have a fully standardised set of agreements, there is clearly scope for cost and time savings by establishing some pro-forma guidelines to provide a basis for much of the documentation which is now being developed from scratch for each project at such expense.

The construction contract can be one of the most expensive to negotiate, because financiers usually require a time-sure, fixed price Turnkey contract with punitive penalty clauses. Contractors are increasingly unwilling to spend the time and money on bidding for such contracts, particularly when there is strong probability that the project may not reach financial closure anyway. It is much cheaper and easier to bid a unit rate, quantities-based contract – and the end price is likely to be a lot lower – but financiers are usually uncomfortable with this approach which they regard as open-ended commitment. Some financiers with hydro experience accept a multi-contract arrangement, which theoretically exposes the Owner to more risk, but most are still unwilling.

3.2 Construction stage

By comparison with other sectors where project financing is common, hydropower is unusual in that it has a very high construction risk, but only a low technology risk. If things are going to go wrong it is generally at the construction stage, where cost overruns and delays before commissioning can seriously effect financial viability.

Most sponsors accept that the construction stage needs to be particularly carefully handled, and in some respects it is why they are there. Higher risks attract higher rewards, and the typical hydro sponsor will be looking for returns on equity of at least 16%, and often 20% or more depending on the project and its location. If things go badly the returns will obviously be lower, but if all goes well they could be significantly higher. For the lenders, on the other hand, there is no upside. If the project goes badly they risk losing their money, but if it goes well they still only get the agreed interest rate. This means that the lenders have no motivation to adopt anything other than a totally conservative position and, as they are likely to be the dominant financiers, their view naturally prevails.

The problem is that the ultra conservative approach imposed by the lenders is that it can increase costs to a point where the project is no longer financially viable.

In practice construction risk cannot be totally eliminated, although it can obviously be moderated by thorough site investigation and careful planning. However both of these sensible precautions tend to be skimmed under prevailing arrangements where contractors are required to prepare their own designs on a speculative basis as part of the bidding process. As a result the designs are often based upon inadequate site data, for which the Owner will generally decline responsibility even though he has provided it!

While all of this is understandable from a legal viewpoint, it does little to advance the cause of hydropower. We have replaced a culture of sensible risk sharing between the parties by one in which risk is passed around like a hot potato. The idea that risk should rest with the party best able to control it conveniently overlooks the fact that certain risks simply cannot be controlled by anyone. So risk often cascades down the contractual chain until it ends up with the party least able to resist the pressures from above, and with the shallowest pocket. In this uncertain situation the tendency is for all parties to add a hefty price contingency to cover their exposure, irrespective whether it is imagined or real. These contingencies significantly increases price that the Owner pays, despite the fact that the risks might not actually materialise.

The fact that financiers generally require a Turnkey (EPD) contract under which the Contractor assumes single point responsibility for delivering a working project that is “fit for purpose” does more than just complicate the bidding process and increase the price. It may theoretically be perfectly

logical in a legal sense, but in practice it appear not to provide the level of protection intended. No hard statistics available, but there is a lot of circumstantial evidence to suggest that, compared with traditional contracting arrangements, more turnkey hydropower contracts are now ending up in litigation or high-level arbitration. Far from protecting the Owner, the construction arrangements imposed the financiers are often putting the Owner at risk, as well as increasing costs to the point where projects may no longer be financially viable.

As previously noted, there are signs that financiers are now beginning to accept the idea of contracts that are something less than “time sure, price sure”. In particular responsible contractors are unwilling to stand exposure to unlimited geological risk, so more equitable arrangements are having to be made to establish reasonable risk sharing arrangements. These will inevitably have to rely on contingency funding, which is likely to come on the first call from the Owner, and later from the lenders using involve mezzanine financing which normally commands a higher interest rate than the principal loans. While this has happened on a few projects in the past, it needs to be more widely accepted.

4 The currency devaluation problem

Since the financial crises of the late 1990s it has become very difficult to fund projects in hard currency if they only have a local revenue stream. Bitter experience in countries like Argentina and Indonesia has revealed the vulnerability of a dollar-indexed PPA when the local economy runs into turbulent conditions. Whatever the contractual undertakings, it is simply not possible to continue servicing foreign currency debt when the local currency on which the revenue stream is based has seriously devalued.

Ironically the cost of most hydro schemes is dominated by civil works, which is primarily a local cost. But lack of availability of local funds has often meant that in the past the civil works have been financed in hard currency. This problem is most severe in the weaker economies where no local capital markets exist and risk of devaluation is high.

In the stronger economies (such as Central America, China, India, Malaysia and Thailand) hydro projects are attracting private finance in local currency, although it is sometimes relatively expensive and of short tenor. Market capacity can also be a limiting factor. For these reasons it is normal, in certain countries, to refinance on completion at more favourable rates and for longer tenors.

The only long-term solution to this problem is to minimise the devaluation risk by borrowing in the same currency as the revenue stream. The international financing agencies are now lending in a wider range of currencies than ever before. For example, the Alain HPP in India will benefit from IFC loans denominated in Rupees, and ADB has recently approved a \$200 facility for the Philippines under which it will swap hard currency for Pesos for on-lending into selected business sectors. However this still leaves a large number of countries uncovered.

There have been attempts to address the devaluation problem through risk insurance, but in reality it is not possible to obtain full coverage against devaluation for the duration of a long concession of, say, 20 years or more.

The weaker economies are naturally the most vulnerable to devaluation and they do not have the local capital markets to allow them to protect themselves through local financing. In most of the African countries there are effectively no internal capital resource available for funding large infrastructure projects and all private money has to be raised on the international markets at a price that reflects their perception that lending in such markets is high risk. So then poorer the country, the more it pays.

A recent survey of institutional investors in the USA has indicated that most would not purchase securities denominated in the local currency of a developing country, even if they were able to enter into a “binding” currency swap agreement which would allow them to receive payment in hard currency. The shadow of the late 1990s still rests heavily in the minds of most foreign investors.

The need to develop local capital markets offering long-term, competitively priced loans for infrastructure projects is widely recognised, but there is along way to go. One factor that could eventually influence this situation more than anything else would be the rise of the domestic pension industry in the developing and transitional economies. At present the assets often have to be invested in government securities, but they could become an increasingly important source of funds if that requirement is relaxed.

5 Conclusions

The hydro industry is capital intensive, hungry for money - and short of money. The future flow of private finance into the industry will only be assured if we can produce projects with an acceptable risk profile and adequate financial returns. However the existing trend is against this, partially due to the constraints imposed by the financiers. Amongst the changes that we should be seeking are:

- i) Trying to reduce at risk front-end costs by moving towards more standardised contract documentation;
- ii) Reverting to more traditional construction arrangements with an appropriate risk sharing formula that allows competitive bidding to take place in a cost effective manner, even where site data is incomplete (as it always will be).
- iii) Strengthening local capital markets to provide greater access to funding in local currency funding.

It is evident that there will be an increasingly important role to be played by the international financing institutions, and in particular the Multilateral Development Banks through their various Credit Enhancement Mechanisms (like the World Bank's Partial Risk and Partial Credit guarantees) which are designed to provide comfort to private investors.

More generally, there is a need to look at alternative financing models, and to recognise that no single model is going to meet all situations.

Finally, there is clearly a need for financiers in general (with some exceptions) to understand the nature of hydropower better, and to be prepared to consider more flexible contract arrangements, especially related to construction. Provided the financing plan is robust, and can withstand a pre-determined level of cost and time overrun, it is surely preferable to have a viable project and motivate all parties to bring it in at the lowest possible cost, rather than to have no project at all because the contract arrangements were to convoluted and the price too high.

The Author

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