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People's Republic of China: Financing Public–Private Partnerships

Business Case for the Public–Private Partnership Credit Enhancement Facility

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Report to PPP Centre, Ministry of Finance, and the Asian Development Bank

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Executive Summary

The People's Republic of China (PRC) has become one of the world's largest infrastructure markets, driven by strong economic growth and rapid urbanisation. Further demand comes from the government's efforts to address regional disparities and ensure the availability of basic services to all of its people. The PRC faces many challenges in meeting these needs. Two critical issues are:

- increasing the use of markets for raising the necessary equity and debt; and
- improving the quality and efficiency of public service delivery.

The PPP model offers a way to address both of these issues, by encouraging social investment and bringing with it improved efficiency and expertise to strengthen the delivery of public services.

More extensive use of PPPs by local governments is supported by the PRC Government but poses a number of challenges:

- local governments may be accumulating a substantial fiscal burden through their contributions to PPPs. Careful decisions are needed to optimise the use of scarce fiscal resources on projects with high social and economic value; and
- commercial banks and social capital partners may have concerns that fiscal stresses may lead to payment delays and other interruptions to PPP contracts.

The need for a Credit Enhancement Facility

A Credit Enhancement Facility (CEF) can assist in the continued development of infrastructure through PPPs by addressing the quality of PPPs and by helping local governments meet their commitments in a timely manner. It will provide liquidity support by making payments to social capital partners when internal budget or approval issues delay payment by local governments. The facility will then recover these payments from the local government whose obligations it has covered whilst charging a fee for the service.

In this way, social capital partners—who generally have limited ability to manage delays in payment—will be protected from payment delays. This will improve access to finance and lower its cost, leading to an increase in value for money and expand PPPs as a viable option. Such a facility that targets government liquidity risk is not currently available in the PRC.

The CEF is particularly important to the promotion of private investment in PPPs. Private sector service providers that lack the ability to borrow of state owned enterprises (SOEs) and have inherently weaker relationships with government, will typically have a lower tolerance for government risk. They are likely to be more concerned than SOEs that poor liquidity management by local governments will lead to problems that are difficult to manage, such as delays in payments and other interruptions to PPP contracts. Private investors that are unfamiliar with PPPs may have difficulties in assessing risks, and this could also impact on their ability to support PPPs.

A CEF will improve the quality of PPPs

The CEF will improve the quality of PPPs as in order to obtain credit enhancement, local governments will be subject to a stringent risk appraisal process that examines both their creditworthiness and the social, economic and commercial viability of the proposed project, thus establishing a 'standard' for PPP development.

Local governments that are fiscally responsible will be able to secure credit enhancement for high quality PPPs, lowering project risk and the cost of finance.

Initial and Medium Term Structure of the CEF

The CEF should initially be set up with Government support backed by a multilateral development bank such as the ADB. In the medium term it will evolve to a club or mutual fund of local governments and financial institutions providing services to members. In the long term in may evolve further to a market-owned financial institution offering its services to the market.

In the short term, to be credible the CEF must demonstrate that it is viable and profitable and has the expertise to assess risk and price its credit enhancement services effectively. If it was established by local governments and financial institutions, it would be difficult to acquire this critical mass. Thus PRC Government involvement is essential to provide the initial start-up capital and set in place the appropriate governance structures, policies and procedures to ensure the objectives of increasing the quality and quantity of PPPs is achieved.

Transition to Mutual Ownership

While initial strong higher level government (i.e. central and provincial) support is required, in the medium term we suggest that involvement of local governments and financial institutions will strengthen PPP capacity more widely across the sectors.

To this end we recommend that the CEF require an equity contribution from local governments seeking liquidity support.

Governance of the CEF

The CEF will require strong governance through an independent Board to ensure that it can assess the financial, economic and commercial viability of PPPs and the creditworthiness of local governments if it is to achieve its objectives of improving the quality and quantity of PPPs.

Through such mechanisms as the Shareholders Agreement and the Articles of Association the Government will set shareholding limits, and the CEF's policies and procedures.

Financial Structure and Risk Management

We recommend that the CEF be capitalised with equity of CNY 6.0 billion. This has been chosen on the basis that it will allow support of around 600 typical PPPs. Provided the projects it supports are sufficiently diverse, and its project and creditworthiness processes are sound this should allow a leverage of 4 to 6—i.e. it can provide 4 to 6 times the support relative to its capital base.

To achieve that diversity, it will be necessary to have risk management policies that limit exposure to a single project, a single local government or a single infrastructure sector.

Coverage

The CEF should only cover payment obligations that arise directly from a PPP contract and are undisputed. This is because, to achieve its objectives, the CEF should not provide general liquidity support, nor should it have a role in disputes that may arise between a social capital partner and a local government.

Both parties should agree that a payment is required, but that the local government does not have the ability to make the payment when it is due.

As a short term facility—it's not a guarantee fund—we recommend that the maximum amount of support be capped at a maximum of six months of "normal" monthly availability payments or a lesser amount as determined by other exposure limits.

Recourse Agreements

We recommend that local governments pay a penalty on any claims in addition to overdue amounts and that the CEF has a credible enforcement mechanism. This may involve withholding intra government payments made to the local government.

Pricing

We recommend that the CEF fees be made up of four components:

- **Arranging Fee:** charged on application to cover the costs of assessing the project and the counterparty risks
- **Front End Fee:** An exposure fee charged at financial close for capital provision set as a percentage of the maximum value of credit support
- **Annual Facility Fee:** Annual liquidity support fee paid in advance for each year set as a percentage of the maximum value of credit support; and
- **Penalty:** Payable as part of the Recourse Agreement on the value and time of credit support set as a rate that reflects the "last resort" nature of the CEF

Indicative Financials

Our analysis of the commercial business case shows that investors can expect to make an initial return of around 6.0%.

This is a low return when compared to that of a typical equity return for a PPP project but the CEF is a well-capitalised, low risk financial services business. It invests its capital in low risk and highly liquid products in order to pay claims quickly. It has strong recourse options so the risk of any permanent default is very low. It covers its project and creditworthiness assessments through an upfront fee and charges an annual facility fee for the preservation of capital and recovery of its operating expenses. Local governments pay penalties for claims against the facility.

In the medium to long term, the CEF would be expected to make returns that are comparable with the market conditions for low risk financial services businesses.

	CNY million	Notes
Income	**510**	
Investments	240	4% on capital of CNY6 billion
Fees	240	0.8% on credit enhancement of CNY30 billion
Penalty	30	6%, 2 projects require support (3% of total), six months' delay for recourse
Expenses	**150**	
Operating costs	95	
Liquidity pool costs	30	1.0% for CNY3 billion standby liquidity facility
Non-recourse	25	One failure every two years
Equity Returns	**360**	Indicative equity returns of 6.0%

1 Introduction

The Asian Development Bank (ADB) is assisting the Peoples' Republic of China (PRC) to develop new tools to enhance the role that the government can play in providing support to Public Private Partnerships (PPP). As part of this technical assistance, ADB is developing a proposal for a tailored Credit Enhancement Facility (CEF) for the emerging PPP market in China.[1]

ADB has engaged the services of a PPP Specialist Advisor from Castalia Strategic Advisors (Castalia) to prepare a business case for the CEF. The purpose of the business case is to propose a framework for the design of the CEF and to demonstrate that there is a robust case for moving forward with the proposal. The business case draws on the international experience with such facilities. Initial feedback from the market has also been considered in the proposed design.

The business case includes:

- the need for a CEF
- options for the design
- governance
- financial structure
- operational structure
- process for providing credit enhancement
- commercial business case
- legal issues
- next steps

The proposed design will need to be refined after further testing in the market and with relevant government authorities. The proposed design presented in the business case is to provide a starting point or foundation for a CEF tailored to the PRC's circumstances. Several iterations may be required to finalise the proposal for presentation to the Ministry of Finance (MOF).

[1] Assistance is being provided under ADB. 2014. *Technical Assistance to the People's Republic of China for Financing Public-Private Partnerships*. TA 8869-PRC. Manila.

2 The Need for a Credit Enhancement Facility

In this section we look at the way in which the continued development of public service and other infrastructure in the PRC could be assisted by the development of a CEF and provide an overview of how such a CEF would work. We also look at the wider benefits of a CEF—benefits that mean the concept should be supported by the PRC Government.

2.1 Growth of PPPs in the PRC

The PRC has become one of the world's largest infrastructure markets, driven by strong economic growth and rapid urbanisation. Further demand comes from the government's efforts to address regional disparities and ensure the availability of basic services to all of its people.

The PRC faces many challenges in meeting these needs. Two critical issues are (i) increasing the use of markets for raising the necessary equity and debt, and (ii) improving the quality and efficiency of public service delivery. The PPP model offers a way to address both of these issues, by encouraging social capital and bringing with it improved efficiency and expertise to strengthen the delivery of public services.

The government of the PRC has strongly advocated the use of PPPs and private financing more broadly for the development of public services. Most recently, in July 2016, the State Council responded to a record low in private investment in the first half of the year with an intensified promotion of PPPs. The State Council agreed to encourage more standardized and rapid development of PPPs. Enhanced guidance is to be provided on securing social capital (which includes state-owned enterprises and the private sector) for education, medical care, elderly care and other service sectors, as well as infrastructure. Institutional barriers that hinder PPP development, including overlapping government functions and gaps in policies and legislation, are to be addressed.[2]

This decision builds on wide ranging public finance reforms initiated in 2013, and a broader push for the market to play a decisive role in the country's development.[3] PPP activity gas since boomed, with PPPs required to deliver public services and help maintain the PRC's new 'normal' rate of economic growth.

The PPP framework has been strengthened through the release of regulations and policy directions. Notably, in 2014, the government issued several documents encouraging private investment in public services and infrastructure including:

- the *Notice to Encourage Private Capital to Invest in First Infrastructure Project* (May 2014) which contained a list of 80 major national projects in which private companies were invited to participate; and
- the *Guiding Opinions on the Innovative Investment Mechanism and Encouraging Social Investment in Key Sectors* (November 2014) which focused on easing market access to encourage investment through innovating financing regimes.

Both the Ministry of Finance (MOF) and the National Development Reform Commission (NDRC) issued PPP guidelines during 2014: *The Guide on operation of public-*

[2] See 'State promotes public-private partnerships' (http://www.chinadaily.com.cn/business/2016-07/09/content_26023918.htm) and 'Li says private investment needs boost' (http://www.chinadaily.com.cn/business/2016-07/20/content_26149079.htm).

[3] The reforms are discussed in ADB. 2014. *Money Matters: Local Government Finance in the People's Republic of China*. Manila.

private partnership projects (interim) (November 2014) and the *Guidelines on development of public-private partnership projects* (December 2014) respectively. These guidelines are designed to help local governments and private actors share risk in a sound, efficient manner. According to the NDRC's guidelines, PPP mechanisms should be favoured in infrastructure or public services, which both fall under government responsibility and are suitable for market-based operations.

MOF's PPP Centre reported 9,285 PPPs as of mid-2016, with a value of almost $1.6 trillion, most of which are in the early stages of development.[4] In comparison, local government expenditure was reported as $2.0 trillion in 2013 (the most recent data)[5].

Historically, PPPs in the PRC relied on user revenue to cover project costs. But there has been a shift to the 'government pays' approach to allow projects that are economically justified, but not financial viable relying solely on user charges. The types of PPP that require government support in this way provide social infrastructure such as schools, hospitals and aged care facilities. Around 60% of existing PPPs rely on government contributions to be viable. The 'government pays' model is a common approach for PPPs, including in Europe, the United Kingdom, the United States where it dominates the market.

2.2 Challenges from Government Contributions to PPPs

A large number of PPPs with a heavy reliance on government contributions creates a number of challenges for the PRC.

By pursuing PPPs, local governments may be accumulating a substantial fiscal burden through the commitment they entail for government contributions and support.

Whilst there is nothing intrinsically wrong with the local governments making forward fiscal commitments, this requires careful decisions about when to offer government financial support and how to manage the government liabilities that arise from such support, whilst still being effective in encouraging infrastructure investment. Entering into low quality and low priority PPPs could also limit the local government's ability to meet the demand for important expenditure in the future.

These fiscal commitments could also increase the perception of local government creditworthiness risk. Local government debt in the PRC has already attracted considerable attention, both in terms of the level of debt and the opaque structure of the liabilities[6]. Concerns relating to local government creditworthiness and the riskiness of local government contributions in a PPP contract can add to the cost of finance or deter finance altogether. This will be particularly problematic for local governments with limited, or no, track record in developing PPPs and managing long term contracts with social capital partners.

The commercial banks will face difficulties when assessing the creditworthiness of the local government and the risks of the project. They may be concerned that poor liquidity management and unpredictable administration of PPP contracts by local governments will lead to delays in payments and other interruptions to PPP contracts. They will consequently be hesitant in lending to social capital partners.

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[4] Data for: the PRC are from the Integrated PPP Information Platform of the Ministry of Finance's PPP Centre (http://www.cpppc.org:8082/efmisweb/ppp/projectLivrary/toPPPMap.do).

[5] China Statistics Yearbook.

[6] In 2013, local government debt amounted to CNY 17.9 trillion - about one-third of China's GDP (National Audit Office of the People's Republic of China, 2013) and much of this borrowing was done off balance sheet through financing vehicles to circumvent restrictions on direct borrowing by local governments.

2.3 Objective of a Credit Enhancement Facility

The primary objective of the CEF is to provide liquidity support for social capital partners, thus facilitating the continued expansion of PPPs. However, an important secondary objective is to improve the quality of PPPs in the PRC.

Facilitating more PPPs

Offering credit enhancement to PPPs will make them more bankable and attract a wider variety of social capital partners.

The CEF will provide liquidity support by making payments to social capital partners when local governments have failed to meet contractual obligations in the PPP agreement. The facility will then recover these payments from the local government whose obligations it has covered whilst charging a fee for the service.

In this way, social capital partners—who generally have limited ability to manage delays in payment—will be protected from payment delays that might result, for example, from internal local government approval and budgetary processes. This will improve access to financing, help PPPs to be financed by longer term loans and encourage financing by institutional investors. Lower cost financing, in turn, will increase value for money, and expand PPP as a viable option across the PRC.

Such a facility that targets government liquidity risk is not currently available in the PRC.

Improving the Quality of PPPs

Equally important will be the role of the CEF in improving the quality of PPPs. In order to obtain credit enhancement, PPPs will be subject to a stringent risk appraisal process that examines both the creditworthiness of the local government involved in the PPP and the viability of the proposed project. Through consistent application of this risk appraisal process, the CEF will establish a 'standard' for PPP development to give confidence in the quality of the PPP and its value for money.

Local governments that are fiscally responsible will be able to secure credit enhancement for high quality PPPs, lowering project risk and the cost of finance. Their PPPs can flourish even in the face of market unease about the creditworthiness of other local governments. Governments that are fiscally irresponsible, or are promoting low quality PPPs, will either be unable to secure a credit enhancement, or will pay a high price for it. The market will send a clear signal that improvements are needed and incentivize efforts to do better.

If, as we recommend, the CEF is set up as an independent entity with a profit motive, then it will have the incentive to identify the true risks of projects when assessing an application for credit enhancement in order to protect its returns. The CEF will then make its own decisions on whether it will support a project and how much risk it will bear, on a project-by-project basis and across its portfolio.

The results of the CEF's assessment will be clearly communicated to the market as the cost of credit enhancement will vary commensurate with a project's level of risk. The lower the quality of PPP, and hence higher the risk, the higher the fee that will be paid. At a certain level of risk, credit enhancement will not be forthcoming at all. Local governments will be incentivised to prepare high quality PPPs in order to obtain credit enhancement at the lowest cost.

Promoting Private Investment

The CEF is particularly important to the promotion of private investment in PPPs. Private sector service providers that lack the ability to borrow of state owned enterprises

(SOEs) and have inherently weaker relationships with government, will typically have a lower tolerance for government risk. They are likely to be more concerned than SOEs that poor liquidity management by local governments will lead to problems that are difficult to manage, such as delays in payments and other interruptions to PPP contracts. Private investors that are unfamiliar with PPPs may have difficulties in assessing risks, and this could also impact on their ability to support PPPs.

2.4 PRC Government Support for the CEF Concept

As a result of these twin objectives of facilitating the continued implementation of PPPs and improving their quality, the PRC Government has indicated its backing for the concept of a PPP support mechanism in several recent documents. Specifically:

- the *Notice on Forwarding the Guiding Opinions of the Ministry of Finance, National Development and Reform Commission and the People's Bank of China on Promoting the Public–Private Partnership Mode in the Public Service Sector (Guo Ban Fa [2015] No. 42)* issued by General Office of the State Council on May 19, 2015 defines the direction for a PPP fund: "…actively explore effective methods through which the government capital motivates social capital and financial capital to participate in PPP projects. The central government invests in and guides the establishment of Chinese PPP financing support fund which participates in the project as the social capital party to ensure more access to the project financing. …On the precondition of assuming limited losses, local governments are encouraged to initiate and establish the CEF together with the financial institutional experienced in investment management, and attract more social capitals to participate by introducing structured design…".
- On June 28, 2015 Lou Jiwei, the Minister of Finance, proposed at the 15th session of Standing Committee of the 12th National People's Congress, "…the establishment of the PPP financing support fund should be studied. The PPP project implementation can be sped up and the PPP project's financial viability can be improved through advance payment of early development funds, entrusted loan, guarantee, equity investment and other methods. Localities should be guided to adopt a standardized PPP model to better attract social capital to participate in the public service sector through the PPP model and promote implementation of more PPP projects".
- The *Suggestions on National Economy and Social Development for the 13th Five-Year Plan Period (Adopted at the Fifth Plenary Meeting of the 18th Central Committee of the Communist Party of China on October 29, 2015)* proposes that, "…give play to the prying role of government capital and leverage the innovative financing methods to motivate social capital to participate in investment …".

2.5 Other Countries' Experience

Different forms of credit enhancement have been used successfully in many developing countries with the aim of increasing the uptake of PPPs through making them attractive to private sector investors. Credit enhancement has been particularly effective when either the countries' financial institutions are still developing their experience in PPP procurement or PPP is being expanded to non-traditional sectors such as social infrastructure.

In Appendix A we compare:

- The Indonesia Infrastructure Guarantee Fund (IIGF)
- Brazil's Federal Guarantee Fund; and

- Mexico's FONADIN and Partial Credit Guarantee.[7]

Three main features of the facilities were analysed: the objective of their credit enhancement product; the form of the credit enhancement; and the allocation of risks.

While all three examples are different as a result of being tailored to the needs and circumstances in their country, they all had similar objectives:

- To make PPPs more attractive to financial institutions
- To smooth any financial shocks to the government counterparty; and
- To improve the quality of PPP projects.

These three examples are government-led initiatives. In developed economies, credit enhancement can be provided by the financial markets without being government-led. Pure-market credit enhancement has many advantages, but is more likely to be a long term vision for 'developing PPP countries' such as the PRC.

[7] These funds and PPP funds more broadly are examined in Schur, M.. 2016. *Public Private Partnership Funds: Observations from the International Experience*. East Asia Department Working Paper. Forthcoming.

3 Options for the Design of the CEF

We recommend that:

- in the short term, the CEF be set up with initial government support backed by a multilateral development bank such as the ADB;
- in the medium term, the CEF be structured in the form of a club or a mutual fund of parties such as local governments and financial institutions; and
- in the very long term, the CEF might evolve to fully market owned financial institution and provide its services to the market generally.

The aim is for the CEF to enhance the creditworthiness of the PRC's PPP transactions by providing liquidity support. In order to be credible, the CEF will need to show financial markets that it is a viable and profitable long term business, with appropriate expertise to carry out its liquidity support function effectively, and is backed by sufficient financial resources to ensure solvency over a wide range of economic and operational scenarios.

In the medium term, we recommend that the CEF be structured as a club or a mutual fund of parties such as local governments and financial institutions that have the motivation and incentives to be involved.

However, achieving the critical mass and operational performance necessary for the CEF is unlikely to occur spontaneously by local governments and financial institutions—the co-ordination and facilitation effort would be too great. In addition, a CEF set up and formed "organically" is more likely to be shaped by first movers' particular needs and interests, potentially undermining the appropriate mix of public policy objectives and commercial objectives to be achieved.

For these reasons we recommend that in the short term the CEF be set up with initial PRC Government support—essentially seed capital—and over time evolve to a mutual fund providing services to its members (local governments and financial institutions) with the PRC Government still retaining a policy interest.

It is also recommended that the CEF initially be set up with the support of a multilateral development bank such as the ADB. The participation of ADB will enhance the credibility of the CEF in financial markets. The presence of an 'AAA' entity such as ADB will strengthen the reputation of the CEF, and most importantly, lower its cost of capital. The participation of ADB will also enable the use of special arrangements for accessing grants from higher level governments, in the event that local governments do not meet their payments to a CEF. Such special arrangements, which are explained further below, will cement the credibility of the CEF.

In the very long term, the CEF might evolve to an independent financial institution and provide its services to the market generally and not just the shareholders.

In this section we explain why the CEF will need government support at least initially, and why the mutual fund concept is the recommended medium to long term structure.

Essentially we see the establishment of the CEF as encompassing two phases:

- **Phase One:** The initial establishment phase as a government supported entity; and
- **Phase Two:** A second phase when the CEF has established sufficient credibility to move towards a more diverse shareholding.

3.1 Phase One: Initial Government Support

We recommend that:

- the CEF be established by higher level governments with the participation of ADB through both an initial allocation of start-up capital and the creation of the CEF's objectives, policies, rules and operating procedures.

To be credible to social capital providers, banks, financial markets generally and rating agencies the CEF will be required to have:

- An operating history that demonstrates the professionalism and effectiveness of the CEF in its key tasks of assessing the creditworthiness of local governments and the quality of PPP projects; and
- A strong capital base, sound capital management and well-founded pricing for the liquidity support.

It will clearly be difficult to convince a critical mass of local governments and financial institutions to invest in the facility before it could demonstrate these qualities. The potential investors would want to invest in a proven entity, and would not necessarily be motivated to invest in the initial start-up phase.

Further, even if a critical mass of investors could be persuaded to underwrite the start-up phase, the entity that they developed would not necessarily meet the public policy objectives of higher level governments. A solely commercially focussed entity might, for example, identify a profitable niche as a "lender of last resort" providing high cost bridging finance to meet local government's liquidity needs rather than seeking to improve the quality and effectiveness of PPP transactions.

For these reasons, we recommend that CEF's initial capital and policy support be from higher level governments (e.g., central and provincial governments) and ADB. This initial capital support will allow the facility to be implemented quickly in order to start to establish its creditworthiness and demonstrate an impact on the PPP market in a short time frame.

Higher level government involvement beyond the initial capital will give them control of the policy objectives, operating policies and governance rules of the CEF. It is unlikely that a consortium of local governments and financial institutions could agree on a set of policies, procedures and governance arrangements to ensure an effective and robust CEF in the absence of a strong degree of guidance or involvement of higher level governments.

One reason to use ADB loans is to benefit from ADB's strong standing in financial markets, which will result in a lower cost of capital for the CEF. A second reason is to allow recourse agreements similar to that employed by the IIGF. Such recourse agreements will allow the CEF to recover payments from grants transferred by a higher level government, should the local government not meet its obligations to the CEF. Such

an arrangement is generally not possible under the Budget Law. But having back-up access to grants is possible when an ADB loan is on-lent to the CEF with a government guarantee (as loans from multi-lateral development banks receive special treatment). In this case, a CEF established with ADB financial support would be established with an IIGF-type recourse agreement. Such an agreement will remove any doubt that the CEF will not be financially sustainable, even in its formative stages.

3.2 Phase Two: Options for the Medium Term Structure

We recommend that:

- after the start-up phase, the CEF consist of both local governments and commercial participants (banks, guarantee companies and other financial intermediaries) with a residual interest by the PRC Government;
- while the medium term concept would be that the "start-up" capital be retired as the CEF grows and new equity is contributed, higher level governments should always maintain a residual shareholding to ensure that it can influence the public policy objectives of the CEF.

For the medium term, after the CEF has achieved operational and financial credibility, three options for the structure of the CEF were considered:

- a stand-alone government facility consisting of participating local governments
- a stand-alone commercial facility consisting of participating banks and other financial intermediaries; and
- a facility consisting of both local governments and commercial participants.

For all models we recommend that the PRC Government retain a residual shareholding. In order to support the transition of the CEF towards a stronger market-orientation and to expand to a much larger facility, Phase Two would not rely on recourse agreements that have access to grants from higher level Governments. A recourse agreement would still be used, but it would only seek recourse from the local government.

3.2.1 Local Government Only Option

Under this option, the CEF would evolve after the start-up phase as a standalone government entity with local governments having the majority shareholding and with the PRC Government holding a residual shareholding—perhaps 10 percent.

There are three reasons while, although this structure is sound, it is not the preferred option:

- As a government entity it will have a mix of commercial and social objectives. Managing complex and potentially conflicting objectives could be challenging. This may lead to inconsistency in the decision making related to individual projects and in how much risk the CEF takes on. The CEF will have to live with this ambiguity which may prove challenging for its overall financial sustainability
- The credit-worthiness of the CEF is also relatively low in this option as it will be perceived by the markets as one government entity providing support for another government entity. Even if there is a large number of participants the social capital providers may view the CEF as intrinsically not much different

to the governments themselves, although of course, there are benefits in pooling the risk of requiring liquidity support; and

- raising capital from local governments is likely to be limited as they will have many alternative and socially desirable claims on capital.

3.2.2 Commercial Only Option

A "commercial only" CEF would have a number of advantages. It would likely have good access to capital and the focus on a commercial profit seeking entity would ensure that assessment of the risks of individual projects, the creditworthiness of the local government counterparty and the pricing of the product would be of a high order.

It would also help banks to understand and develop their capacity to understand and lend to PPPs.

There are however some disadvantages to this option:

- Competition amongst banks to lend to PPP entities could bias the CEF to limit coverage to only those PPPs with financial links to the member banks. This has the potential to create conflicts of interest and may reduce the pool of investors in the CEF. It may also create the perception that the banks are providing liquidity support for their own loans; and
- While banks would have a commercial focus, the interactions between the banks and the PRC Government could be problematic and getting the balance right would be difficult. Too much control by the banks might see the public policy objectives unsatisfied, too much control by the PRC Government may limit the willingness of banks to be involved.

3.2.3 Joint Local Government and Commercial Option

In terms of efficiency and effectiveness, if the choice is between a local government only or commercial only CEF, a commercial only approach on balance would be preferable.

However, there are clear benefits that will come from having local governments participate in the CEF, as opposed to being customers and this suggests that a mix of the two options would be attractive.

For the CEF to work there must be sufficient demand for the product from local governments with quality PPPs. There must also be sufficient diversity in the PPPs (e.g. project location and type) to manage the CEF's overall portfolio risk. With local governments as participants the CEF will be able to build a pipeline of opportunities more easily. Once local governments have committed to joining the CEF they will want to access its benefits by applying for credit enhancement for their projects. They will also want to see the CEF grow, to increase their returns, and will therefore be incentivised to encourage other local governments to apply for credit enhancement.

Having local governments participate in the CEF will also reduce risk as they will feel pressure from each other to meet their obligations. Governments will know that the CEF can only continue if every participating government meets its obligations. The CEF will be sufficiently "part of the system" to be able to enforce collections of outstanding obligations by each local government.

Financial entities will want to join the CEF in order to become an "insider" in the PPP space. Through their participation they will gain access to a pipeline of PPP projects and build relationships with the local governments that are active in PPP procurement.

They will also clearly help the CEF to be commercial as they will require the CEF to be a profit-orientated facility with clear commercial criteria for monitoring performance and holding the Board accountable. They will also motivate the CEF to be vigilant in its project assessments to reduce its overall risk. This clarity around incentives will reduce the risk of the CEF succumbing to political pressure and having to make compromises. It will also appropriately balance the influences of the PRC Government, the local governments and the private sector.

Finally, having both financial institutions and local governments with strong incentives to participate will give access to the widest pool of funds.

3.3 Recommended Option

The combination of local government and commercial participants is recommended as it is most likely to produce a strong and effective CEF as each offer different advantages that will assist CEF to be more effective.

From a broader public policy perspective, one of the objectives of establishing the CEF is to improve the overall quality of PPPs and build PPP capacity in the PRC to improve overall confidence in the PPP market. By involving both local government and commercial participants, the CEF will be able to strengthen PPP capacity more widely across the sector.

Local governments will have the opportunity to build capacity in developing and managing high quality PPPs efficiently through access to specialist skills and the experience of commercial participants.

Commercial participants will increase their understanding and skills in evaluating PPPs, assisting them to position themselves to provide debt financing to PPPs in the future.

3.4 Transition to Phase Two

The transition from Phase One, a higher level government entity, to Phase Two, an entity with diversified shareholding is expected to happen organically.

While marketing to promote the CEF to banks and local governments will be required, phased approach with initial PRC capitalisation will ensure that the CEF is operational and functional, thereby ensuring that there is a track record and evidence of benefits to engage interested parties. This track record makes it a much less abstract and a more compelling proposition for investment committees of banks, as well as for key political decision-makers in local government.

Higher level government's residual shareholding will ensure that the original policy objectives of the CEF will be maintained as it transitions from its initial form as a start-up with higher level government support and funding to a more diversified shareholding encompassing the mutual fund—shared risk concept.

4 Governance of the CEF

We recommend that:

- the CEF establish clear commercial performance criteria and accompanying procedures to maximise its returns and protect itself from political pressures;
- the CEF maintain the 'buy-in' of the local governments to continue to attract projects and ensure that the local governments continue to exert pressure on one another to fulfil their obligations.

As an independent entity, the CEF will be responsible for managing its balance sheet. In order to establish and maintain its creditworthiness in the market, the CEF needs to demonstrate that it has strong procedures for managing its requirement to provide liquidity support through an appropriate balance sheet of highly liquid assets, or a combination of less liquid assets coupled with standby loans and other debt instruments.

It will also need to demonstrate that it has the appropriate processes for assessing PPP projects and the creditworthiness of local government entities and the ability to appropriately price its liquidity support product.

A robust corporate governance scheme will be critical.

In this section we outline the governance structure for the CEF, covering:

- The Articles of Association and Shareholders' Agreement
- The proposed ownership structure, initially as a 100% government owned Facility, and then as the recommended hybrid local government and financial institution model
- The Board and decision making structure; and
- The operational structure.

The overall governance structure will require careful balance of two competing concerns:

- on one hand the CEF will need to establish clear commercial performance criteria and accompanying procedures to maximise its returns and protect itself from political pressures to support poor quality projects; and
- on the other hand, it will need to maintain the 'buy-in' of the local governments to continue to attract projects and ensure that the local governments continue to exert pressure on one another to fulfil their obligations to the CEF. Thus having them as shareholders will create the right framework within which the Board sets the objectives and direction of the CEF.

4.1 Articles of Association and Shareholders' Agreement

While there are other options for the legal structure of the CEF, for this business case we have assumed that it is established as a "joint stock limited company" under Article 3 of the Companies Law of the PRC.

As such the scope of the company's operations will be set in its Articles of Association. The Articles, together with a Shareholders' Agreement, will establish the company scope, its purpose, how it will operate and its key policies and procedures.

In the following sections we detail those provisions.

We recommend that:

- the CEF be established initially as a government capitalised entity and transition into a mutual fund where participants—as shareholders—collectively manage risk;
- the CEF be established as a company.

4.2 Ownership Structure

The Shareholders Agreement and/or company Articles of Association should among other things provide for limits on shareholdings, voting rights and sale of a holding.

The shareholding limits should be for a low minimum—say 1 percent to allow for maximum participation—and a low maximum—say 10 percent to ensure that no single shareholder is dominant.

Higher level government's residual shareholding should also be specified and we recommend a 10 percent minimum or the minimum holding that allows a shareholder to influence major changes to the company's constitution or such changes as restructuring, mergers and the like. Alternatively, this could be achieved through a "golden share" with special voting rights.

With the possible exception of the golden share, voting rights should be proportional to shareholdings with a caveat that no shareholder can vote on a matter in which they have an interest. In other words, a local government cannot as a shareholder vote on a matter concerning a PPP to which they are a party or a financial institution cannot vote on a matter that involves support to an entity with which they have significant financial dealings—for example a 10 percent interest in the PPP debt or equity.

We note that shareholder votes on these, essentially operational, matters should be exceedingly rare as such decisions are almost always made by the Board.

There should be limits on an entity selling its holding—the sale can only be to a local government or financial institution that provides debt (or equity) to the PPP market. However, such restrictions should also be accompanied by a buy back provision at fair value to avoid a shareholder being locked in if there are no suitable buyers. In this case, the CEF should buy back the holding and distribute it among existing shareholders in proportion to their holding.

We recommend that:

- the CEF require an equity capital contribution of at least 1 percent from local governments seeking liquidity support for PPPs.

4.3 Transition to Phase Two

In the medium term—Phase Two—the CEF needs wide-spread participation in order to work and be sustainable. In addition to having sufficient capital (see section 5.1), the CEF must ultimately have the ability to diversify across a wide range of local governments to spread risk.

On this basis we recommend that from the beginning, that is even in Phase One, that local governments seeking liquidity support for a project must contribute equity capital, as suggested above a minimum of 1 percent. This will address the need for widespread participation and the need to diversify away from higher level governments as the sole provider of capital.

We recommend that:

- the nature of the Board and the allocation of decision making responsibilities be clearly defined to ensure the CEF functions effectively.

4.4 The CEF Board and Decision Making Structure

The corporate governance structure proposed must also comply with the laws and regulations applicable to the proposed legal structure under PRC law.

An Independent Board is Key

The key to the governance structure is an independent Board that is empowered to act for the benefit of the CEF. A strong Board will minimise the risk of political interference and ensure high standards of transparency and disclosure.

The Board will provide normal corporate governance with appropriate approval delegations to sub-committees and management.

The Board's Role is Strategic

While the Board is ultimately responsible for the performance of the CEF including: how the objectives of the CEF are set and achieved, how risk is monitored and assessed, and how performance is optimised in order to maximise the returns to shareholders, it must undertake this at a strategic level through setting policies and guidelines and not be involved in day-to-day or operational decisions.

Board Composition is a Balancing Act

Determining the appropriate composition of the Board will be a balancing act between independent and non-independent members.

Clearly the Board cannot consist, for example, of either all local government or commercial bank representatives as a result of the conflict of interests nor can it be all independent directors as they don't have enough "skin in the game" to be accountable.

In general, Board members should be appointed through voting by shareholders with some caveats and controls set in the Shareholders' Agreement or company Articles of Association. They should specify a minimum number of independent directors.

The Shareholders' Agreement should specify that the PRC Government has the right to directly appoint at least one Board member and perhaps more depending on the size of the Board.

The chair of the board must be an independent member.

Board sub committees

In line with the requirement for the Board to only act at a strategic level, we recommend a series of subcommittees be established for the approval of applications, investment decisions, and overall risk management.

Each subcommittee will be managed by a director appointed by the Board.

The remaining members should be independent or experts, including the managers of the business with members making recommendations in accordance with detailed evaluation criteria and policies set by the Board.

4.5 Relationship between the CEF and Government

We recommend that:

- the CEF has operational and financial independence from its participants and government shareholders.

One of the key attributes of the CEF will be operational and financial independence from its participants and the government. However, clearly there will be a relationship between the CEF and the government as the CEF will have an important public policy role and the government will substantially fund and support the CEF in the start-up phase.

An independent CEF will have two key advantages when compared to a government-run entity. Its analysis of the creditworthiness of local governments and its assessment of PPPs will be seen by the market as being underpinned by commercial considerations only. This will lead to confidence in the CEF and will improve the quality of PPPs in the PRC.

An independent CEF will also have the greater operational flexibility and won't be reliant on budget appropriations.

Establishing Creditworthiness

Independence will allow the CEF to establish its own creditworthiness separate from that of its participants. As an independent entity, the CEF will be able to develop its own procedures to demonstrate that it:

- applies high standards when assessing projects;
- can manage its leverage ratio and meet calls on its capital (including the risk of multiple claims being submitted at once); and
- secure timely reimbursements from the local governments.

This will be essential in order to give confidence to the market that the credit enhancement will be honoured and that commitments made by the CEF are more credit-worthy than the local government commitment which is being covered.

As an independent entity the CEF will also be able to assess and settle claims promptly as it will not be affected by the budget constraints of its participants. As equity contributions will be received up front, the CEF will also be insulated from the broader fiscal risks of the local government participants.

Improving the Quality of PPPs

As an independent entity with a profit motive, the CEF will have the incentive to identify the true risks of projects when assessing an application for credit enhancement in order to protect its returns. The CEF will then make its own decisions on whether it will support a project and how much risk it will bear, on a project by project basis and across its portfolio.

This will be clearly communicated to the market as the cost of credit enhancement will vary commensurate with a project's level of risk. The lower the quality of PPP, and hence higher the risk, the higher the fee that will be paid. Local governments will be incentivised to prepare high quality PPPs in order to obtain credit enhancement at the lowest cost.

Operational Flexibility

The CEF will fund its own operations from its initial capital base and earnings from charging fees and other activities (investments). It will not be reliant on budget appropriations. This will allow the CEF more freedom to find a market for itself and set its own pace of development.

This independence will also be essential to allow the CEF to manage its own operating budget. This will give it the flexibility, for example, to attract staff with necessary skills as it will be able to offer market salaries.

4.6 Operational Structure

We recommend that

- management and operation of the CEF is outsourced to appropriately qualified entities; and
- this is reviewed by the Board once the CEF's operational framework and procedures are established to ensure it is the most efficient structure.

We recommend that some of the functions of the CEF be outsourced, at least initially. Three processes that best lend themselves to outsourcing are:

- **Investment Portfolio Management.** The capital of the CEF will be invested in a range of financial instruments with the aim of maximising returns while maintaining adequate liquidity to meet claims. This could be achieved by investment in liquid assets or through investment in longer term assets with liquidity provided by standby facilities. The Board will determine the principles and guidelines to achieving an appropriate balance, and most importantly determining the appropriate risk return trade-off for the CEF.

  There are many specialist fund managers that could perform this function.

- **Creditworthiness assessment.** The CEF will be required to assess the creditworthiness of the local governments that apply for liquidity support. This is a key function as it will determine both the pricing of the support facility and the level of risk that the CEF wishes to take.

  There are a number of credit rating agencies that could perform this specialist task

- **Project Assessment.** The CEF will be required to assess projects both for their economic and commercial efficiency as well as their suitability for

procurement as a PPP. This latter task will involve detailed analysis of the risk allocation in the PPP contract.

There are a number of specialist consulting firms that could offer services in these areas.

However, even with a high level of outsourcing, the CEF will require a skilled team of professional staff that have the ability to appropriately manage these outsourced functions and ensure that the CEF is administered in accordance with Board policies and processes.

5 Financial Structure of the CEF

We recommended that:

- the CEF be initially capitalised by higher level governments with equity of CNY 6.0 billion;
- each party that joins the facility is required to contribute capital up-front;
- as new capital is raised, higher level governments reduce their initial start-up equity until it reaches a defined minimum level;
- only local governments that are equity participants will be eligible to apply for credit enhancement;
- the CEF grows its capital base by investing in liquid assets and/or non-liquid assets with the support of stand-by facilities, in addition to earnings from credit enhancement charges and penalties; and
- the CEF, in the long term, may accept applications for credit enhancement from local governments that are not participants subject to strict limits.

In this section we set out the financial structure of the CEF, the:

- **Capital Base**—that is contributions from shareholders; and
- **Leverage Ratio**—the extent of liquidity support that can be provided from the capital base; and

5.1 Capital Base

We recommend that the CEF initially be capitalised by higher level government with equity of CNY 6.0 billion. This amount has been chosen as it provides an appropriate base with the potential to provide coverage for approximately 600 typical PPPs—see Section 9.2.

This is a working assumption and the initial size of the CEF will need to be informed by market soundings and agreement of the appropriate stakeholders. Even in Phase 1, for example, the higher level governments could commit to contribute up to CNY 6.0 billion, but could do so in stages as the demand for the CEF's product warrants.

We recommend that all shareholders—including local government and financial institutions, contribute capital—that is they are issued shares in the CEF in proportion to their contribution.

Only local governments that are equity participants will be eligible to apply for credit enhancement, although equity participation will not guarantee that the local government application will be approved. There will be a minimum shareholding level for local governments. As discussed in Section 4.1 there will be a minimum shareholding level.

Equity contributions will be made up-front when joining the facility. The CEF will then determine the level of liquidity support it is able to provide based on what is appropriate to its capital limit. New participants will be able to join at any time.

As new participants join, the higher level governments should retire their shareholdings until it reaches a pre-determined minimum shareholding level in total. We would recommend a level of 10 percent or the minimum holding that allows a block of

shareholders to influence major changes to the company's constitution or such changes as restructuring, mergers and the like.

The reduction could be on a prorate basis so that the CEF's capital base grows from the initial start-up level as more participants join. For example, if each new participant contributes 1 percent of the capital base, the higher level governments could reclaim 0.5 percent of the start-up equity they contributed.

Advantages of Participant Shareholdings

If participants contribute capital, they will expect the CEF to make a return on their investment – regardless of whether they are commercial or local government participants. This will create the correct incentives to ensure that the CEF maintains high standards when evaluating projects and does not provide credit enhancement to projects that are too risky or low quality.

The ability of participants to adversely influence the way in which the CEF operates, and its decisions to offer credit enhancement to individual projects, will depend on the CEF's robust governance structure and decision making mechanisms, as described in Section 4.

Participants will also want to ensure that the CEF is operationally efficient and that it attracts skilled individuals who are able to balance the CEF's risk exposure against the need to make deals happen.

For this concept to work, the CEF must be able to demonstrate solid expected returns to attract the commercial participants and to allow the local governments to justify their commitment of public funds.

The CEF will earn income by charging for the coverage it provides, receiving penalties when claims are made and earning interest on outstanding payments. Profits will be re-invested and the CEF's equity will be expected to grow.

The CEF will also invest its capital in liquid assets, generating further returns. It may also consider using stand-by loans to allow it to make less liquid investments. Investment will allow the CEF to grow its capital, and therefore expand its coverage more quickly than the growth of pure equity capital would allow.

In the longer term, the CEF can consider accepting applications for credit enhancement from local governments that are not equity participants. By expanding its customer base, the CEF will increase its opportunities. Simultaneously this will allow local governments for who the requirement to contribute capital is too onerous, to access the benefits of the CEF.

However, it is recommended that the CEF establish clear limits for customers that are not shareholders if it pursues this option. For example, by limiting these local governments to a single project cover, or by setting a limit on the level of exposure to a particular customer.

The pricing for these non-participant local governments should also reflect the increased risk.

5.2 Leverage Ratio

The key financial metric in determining the CEF's level of activity and hence potential earnings will be the leverage ratio, i.e. the total value of credit enhancement issued relative to the capital base.

Initial analysis of the PPP market in the PRC suggests that a leverage ratio of 4 to 6 would be possible (see Section 9.2) provided the PPP projects it supports are sufficiently

diverse, the Credit Enhancement Agreements (CEA) are priced correctly, and a credible enforcement regime for recourse payments is established.

As the CEF gathers data from the projects it covers it will be able to perform more sophisticated analysis on claim distributions and potentially increase coverage levels without substantially more capital.

6 Credit Enhancement Coverage

We recommend that:

- the CEF provides credit enhancement in respect to PPP contracts only and does not offer coverage of wider government actions that cannot be precisely articulated in the PPP contract; and
- the CEF only accepts undisputed claims.

The role of the CEF and the form of assistance it provides to PPPs can be defined by describing how the CEF becomes involved in a PPP and the limits on its involvement. The characteristics of credit enhancement coverage typically include the following:

- The CEF provides credit enhancement in respect to PPP contracts only. This credit enhancement is a form of liquidity support.
- The CEF does not offer coverage of any wider government actions that cannot be precisely articulated in the PPP contract.
- The CEF will assess an application for credit enhancement to confirm that the proposed project passes its evaluation criteria and that the local government meets its standards for creditworthiness in the context of the project. The CEF will not evaluate wider government policy or political risks to the project.
- Credit enhancement is offered under a CEA. The CEA is a tri-partite agreement between the CEF, local government and social capital provider. The CEF is not a party to the main PPP contract and the PPP contract itself does not contain any payment obligations for the CEF.
- The CEF cannot step into a PPP contract and perform the obligations of the local government to cure a default that triggers payment under a contract compensation provision.
- The involvement of the CEF in a PPP will be triggered by the submission of a claim by the social capital partner under the CEA. This claim should be undisputed by the local government.
- Once triggered, the CEF's involvement will be limited to assessing the legitimacy of the claim and providing a financial remedy to the social capital partner on the terms and conditions and up to the limits specified in the CEA.
- The CEF cannot act as an arbitrator between parties to the PPP contract or resolve any disputes over claims and/or obligations under the PPP contract.

7 Risk Management

We recommend that:

- the CEF set limits on the amount of liquidity support it offers to an individual project, an individual counterparty, and an individual sector in accordance with a well-defined risk management policy.

The CEF will need to set limits on the amount of liquidity support it offers to an individual project, an individual counterparty, and an individual sector in accordance with a well-defined risk management policy.

The risk management policy will ensure that the CEF has a diversified portfolio of projects, counterparties and sectors and can thus manage its exposure prudently and efficiently. The risk management strategy and the portfolio approach is key to establishing the leverage limits of the CEF's capital—see Section 5.2.

The portfolio strategy will serve four main purposes:

- It will allow the CEF to prioritise projects for assessment if the number of applications for credit enhancement exceed CEF's capacity – both in terms of its capital limit and resources available for assessing and approving applications
- It will allow the CEF to manage its overall risk by ensuring sufficient diversification
- It will allow the CEF to adopt a strategic approach to achieving its objectives by identifying which PPPs offer the greatest potential for returns; and
- It will promote transparency around the CEF's priorities and strategy for project selection.

In this section we set out the time period for which liquidity support should be provided to meet the CEF's objective and a prudent approach to project, counterparty and sector limits that will ensure an appropriately diversified portfolio.

7.1 Period of Liquidity Support

We recommend that:

- support be limited to a maximum period of six months—that is a limit of six months of "normal" payments;
- no more than one support event—a series of payments—per year; and
- support be limited by the operation of risk management and portfolio management policies (see Section 7.2).

The CEF's role is to provide liquidity support—that is to step in and ensure regular payments are made to the social capital provider in circumstances where the local government is unable to meet its obligations for a short period.

That failure to meet obligations might be due to internal local government processes, budget approval processes or other factors that might cause a short term mismatch between receipts and payment obligations.

This not a guarantee fund and thus, regardless of any limits on amounts that might result from the CEF's portfolio strategy, there should be a limit to the time period over which support is required.

This will ensure that the CEF's objective of liquidity support are met and that smaller projects are not disproportionately supported.

7.2 Portfolio Risk Management

We recommend that:

- initial limits on exposure be imposed, monitored and controlled by a risk management subcommittee of the Board and change over time in response to market conditions and as the CEF gains experience.

To ensure that the CEF has an appropriately diversified portfolio that will allow it to manage its risks appropriately and prudently leverage its available capital efficiently we recommend there be four types of limits on exposure:

- Limits on the exposure to a particular project based on its risk classification
- Limits on the overall portfolio of risk classifications
- Limits on the exposure to a particular counterparty; and
- Limits on exposure to a particular sector.

In this section we recommend initial limits based on our experience with similar organisations.

7.2.1 Limits on Project Exposure

An exposure limit for a single project shall be followed to minimise losses from that specific project. The exposure shall be set taking into account the risk rating of the project on the basis that in the event of a local government having a liquidity issue, they are more likely to use available cash to meet obligations on projects that are seen as worthwhile or of high value. Conversely, projects that are problematical—that is high risk—are less likely to be given priority for payment.

As a prudent policy, CEF shall restrict its exposure to the riskier projects and focus on better quality projects. The project exposure limits that we recommend are detailed in Table 7.1.

Table 7.1: Recommended Individual Project Risk Limits

Project Risk Category	Very Low	Low	Moderate	High	Very High
Maximum percentage of CEF Capital	15%	10%	5%	2.5%	0.5%

Note that even projects categorised as "Very High" risk will have passed the CEF's assessment process and are suitable for credit enhancement—albeit that the cost of the facility will be much higher.

7.2.2 Limits on Overall Portfolio Risk Exposure

There should also be exposure limits for the overall portfolio on the risk classification of projects—that is the portfolio for example should not consist of only high risk projects.

The portfolio composition limits that we recommend based on the risk grade of individual projects in the portfolio are detailed in Table 7.2.

Table 7.2: Recommended Portfolio Composition Limits

Project Risk Category	Very Low	Low	Moderate	High	Very High
Cumulative percentage of CEF Capital	≤ 100%	≤ 90%	≤ 50%	≤ 10%	≤ 5%

The above limit shall allow the CEF to focus on supporting high quality projects and, of course incentivise local governments to improve the quality of projects submitted.

7.2.3 Limits on Counterparty Exposure

There should also be exposure limits for counterparties. If a single local government counterparty has multiple projects for which the CEF is contracted to provide liquidity support, then the potential exposure is highly likely to be cumulative if the counterparty has a period of low liquidity.

We recommend that exposure to any single local government be less than 20 percent of the CEF's capital.

7.2.4 Limits on Exposure to a Single Sector

Single sector exposure arises when the CEF has exposure to two or more projects that are associated with the same infrastructure sector. Our recommended limits are detailed in Table 7.3.

Table 7.3: Recommended Sector Limits

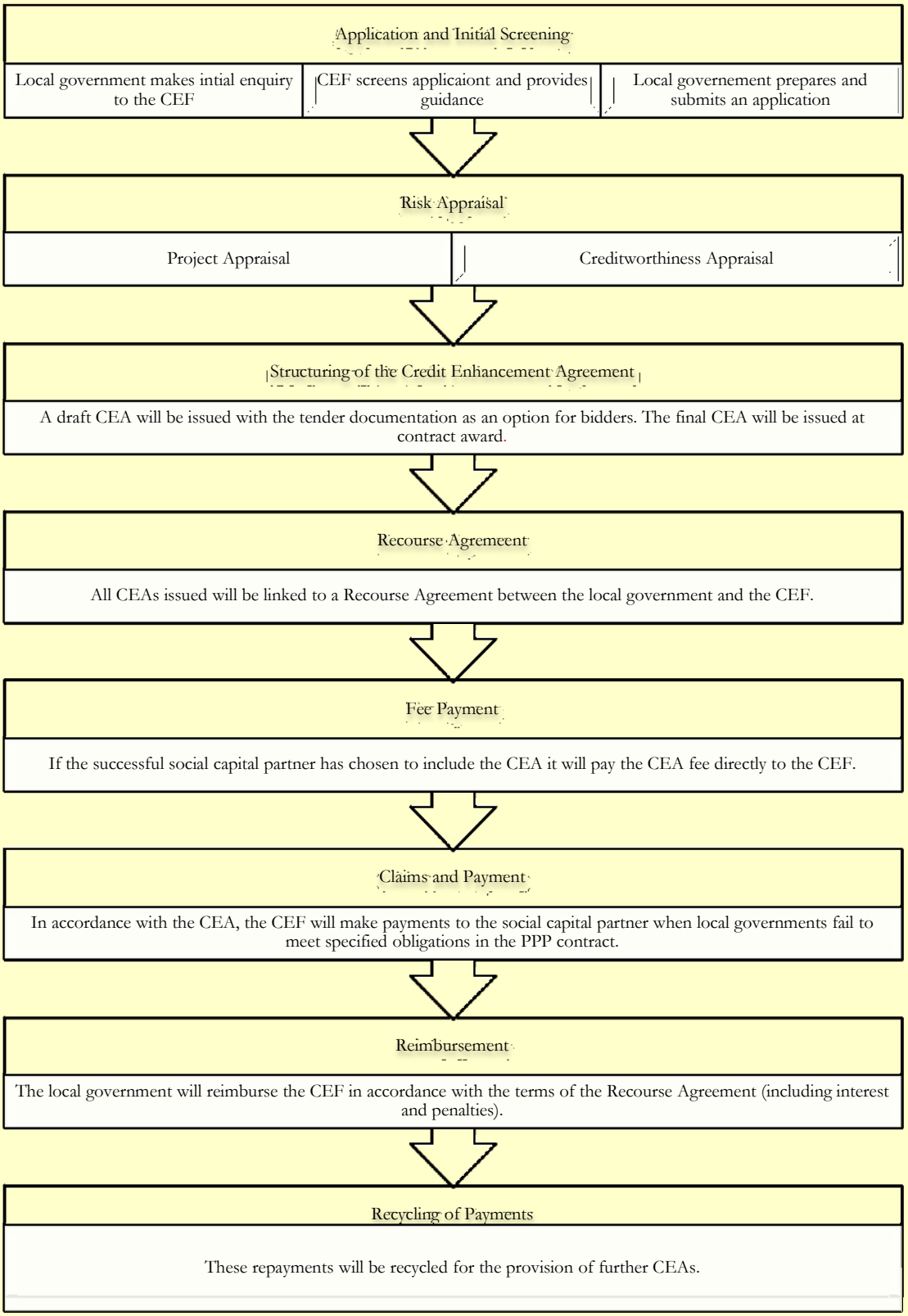
Sector	Limit of Capital
Toll Roads	≤ 20%
Urban Railways	≤ 20%
Urban Water Supply	≤ 40%
Hospitals	≤ 40%
Aged Care Facilities	≤ 40%
Schools	≤ 40%

The limits shall help the CEF to reduce concentration risk to a sector.

8 Process for Providing Credit Enhancement

An overview of the CEF process is shown in Box 8.1.

Box 8.1: Process for providing credit enhancement



8.1 Application and Initial Screening

We recommend that:

- the CEF plays a guiding role to assist local governments to prepare the necessary documentation to apply for credit enhancement; and
- to the extent possible, the function of providing guidance to local governments at the application stage is kept separate from the function of evaluating applications and conducting the risk appraisal.

Local governments will initiate the credit enhancement process by making an inquiry to the CEF regarding the potential for credit enhancement for their PPP project. In response to this, the CEF will provide a comprehensive guidance package including items such as:

- Checklist of documents to be included in the application package;
- Guidance on eligibility criteria;
- An overview of the process including the risk appraisal;
- Application forms/documents; and
- Relevant pro forma documents such as the CEA and the recourse agreement

Local governments will then prepare the necessary application documentation and submit the application for credit enhancement to the CEF.

It is expected that the CEF will need to provide guidance to local governments in order to help them to bring their projects to the point where they are ready to be appraised for a CEA. This will include helping them to understand what conditions their project must satisfy to receive a CEA, as well as the quality and quantity of information and documentation that needs to be submitted as part of the application in order for the CEF to be able to appraise a project.

The key questions to be addressed will be:

- Is the local government that has submitted the application a participant in the CEF and has it made the necessary equity contributions (see section 5.1)?
- Does the project type fit with the current portfolio strategy and is within the current CEF limits[8]?
- Does the local government have all of the required documentation ready to submit an application?
- Is it likely that the project will meet the CEF appraisal standards? and
- Does it achieve the minimum required bankability level?

In principle, there should be no conflict of interest between assisting a local government to prepare a high quality project and appraising that project for credit enhancement as the CEF will retain long-term exposure to the CEA, and hence would have no incentive to cut corners or develop undue enthusiasm for the project during the pre-appraisal stage. There are also important synergies between the risk appraisal mandate and the

[8] The management may recommend a change in the portfolio strategy to the Board if the project does not fit within the strategy (e.g. exceeds a sector limit) but is considered to be a good project with potential for solid returns.

ability to bring projects to the point where they are ready to submit a formal application to the CEF. However, since the application documents will represent the local government's assessment of project quality and risks, and a core function of the CEF is to form its own independent view, there will inevitably be some concerns about objectivity if the same team was involved both in assisting the local government with its application and then assessing whether that assistance has resulted in a project that should be supported by a CEA.

It is recommended, to the extent possible, that the functions of advising local governments on how to prepare their application documentation and appraising the application to recommend whether the CEF should enter into a CEA be carried out by separate teams.

After receiving guidance from the CEF, the local government will prepare all of the necessary information and submit the application for credit enhancement. Applications will then be progressed for risk appraisal following the process outlined below in section 8.2.

8.2 Risk Appraisal Framework

We recommend that:

- the CEF adopts robust risk standards that must be met before a CEA will be approved;
- that these standards be applied consistently to all applications regardless of whether the local government has an existing CEA;
- that the assessment includes an evaluation of the project risk as well as an assessment of the creditworthiness of the local government in relation to the project; and
- the results of this assessment be considered together with the CEF's portfolio strategy to structure and price the offer for credit enhancement.

The CEF will have robust risk standards that must be met before a CEA will be approved. Participants will have an incentive to maintain these standards in order to protect their own capital invested in the Fund.

The risk appraisal process will be on a "first come, first serve basis", unless there are significant resource constraints in which case the CEF management will prioritise projects in line with its portfolio strategy. The CEF will treat all applications equally and apply the same criteria and methodology for assessing risk. The same process will be followed for each application, regardless of whether the applicant has an existing CEA with the CEF.

The risk appraisal for a specific CEA application comprises two components:

- the evaluation of the project risk; and
- an assessment of the creditworthiness of the local government in relation to the project.

The risk appraisal will also determine whether additional risk mitigation measures are required before the project can be approved.

Certain factors disproportionally affect risk and it is recommended that any 'red flag' items prevent the credit enhancement application from proceeding until these risks are addressed. This may require applications to be amended with additional risk mitigation measures added before an application is resubmitted to the CEF.

8.2.1 Project Risk Appraisal

The project risk appraisal methodology systematically appraises the economic, financial, technical, legal, environmental and social merits of project proposals to identify risks to overall project feasibility.

The key questions to be answered include: is the project viable and are the project risks able to be adequately managed?

All projects have some degree of uncertainty but the appraisal process should focus on making sure the uncertainty does not result in significant project risks by:

- identifying uncertainties or unknowns in the proposal;
- determining if the uncertainty presents a risk to the project's viability;
- understanding if the risk can be managed; and
- determining the likelihood and impact of the risk occurring.

This risk-based approach will ensure that the appraisal process is focused and efficient, and that it is not misdirected by trying to understand and resolve all project uncertainties.

The risk-based framework will raise a number of key questions that determine whether the project is likely to be successful, independent of the CEF's support. These questions include:

- Needs analysis: does the underlying project makes sense? What problem is the project solving and how will people react to the solution?
- Option analysis: is the project the best option? How does it compare to other possible solutions including the "do nothing" solution?
- Technical assessment: is the project technically feasible as proposed (e.g. location, size, technology)?
- Economic feasibility: does the socio-economic cost benefit analysis confirm that the project is viable?
- Financial feasibility: are the financial returns robust and reasonable? Will they attract good quality sponsors? Is the project financially sustainable?
- Environment and social assessment: what are the potential impacts? What mitigating measures are in place and what do they cost?
- Legal and institutional assessment: are there any legal constraints to the development and implementation of the project?

The effort expended on appraising each aspect of the project should be proportionate to the risk of loss associated with an incorrect assessment. A full financial, technical and legal assessment for all options may not be necessary to prove that the proposal is the best option, or that it is viable.

A draft methodology for the project risk appraisal is contained in Appendix A.

8.2.2 Creditworthiness Risk Appraisal

The creditworthiness risk appraisal will assess the creditworthiness of the local government in the context of the PPP. It is an assessment of the prudency of the local government's exposure to the project from an economic, financial, institutional and governance perspective. This includes financial and non-financial (physical) support that the project requires from the local government to proceed.

The creditworthiness of the local government relates to its *ability* and *willingness* to meet all of its obligations to the project:

- Ability to Pay – refers to the local government's ability to meet its obligations to the project. It includes its fiscal (financial) capacity to meet contractual obligations, and the existence of an institutional framework that facilitates payments.
- Willingness to Pay – refers to other factors that may prevent the local government from meeting its obligations despite having the ability to pay such as fiscal priorities or political will.

The obligations of a local government continue throughout a project and vary depending on project phase, as well as how well the PPP is performing. As such, local government obligations can be considered in three categories:

- Obligations during the development and construction phase which might include activities such as site selection and acquisition, detailed project design and specification, and construction of interfaces such as transmission lines and connecting roads;
- Obligations during the operational phase which would include payment for the service, output or product of the infrastructure and might also include continued provision of fuel for a power station and provision or operation of interfaces such as connecting roads and transmission lines at a defined level of service; and
- Obligations if the project performs poorly or fails, which may include making the full quantum of termination and compensation payments to the private sector investors. It may also include making payments to the CEF under the Recourse Agreement if the social capital partner has made a claim.

Four key risk factors have been identified, considering the type and timing of a local government's obligations. These will form the foundation of the creditworthiness assessment.

The four key risk factors are as follows:

- Economic outlook: including GDP growth, employment, diversification and demographic factors.

  Consider the future financial position of the local government. Is it likely to improve or deteriorate?

- Post project financial flexibility: the ability of the local government to fund the project and the maximum exposure in the event of termination.

  What is the size of the project commitments relative to the overall financial revenues and expenses of the local government?

- Institutional framework: the legislative framework for the local government and its power and obligations, level of reliance on central government and reporting and accounting procedures.

  Does the local government have the appropriate authority and powers to manage and control the project and deliver on its obligations?

- Governance and management: the ability of the local government to manage and meet its future obligations.

  Will the local government be willing to use its authority and powers to manage and control the project and deliver on its obligations? e.g. organisational structure, risk controls and management.

  Does the local government have appropriate human resources and skills to manage the project?

For each risk factor, a range of indicators, both qualitative and quantitative have been identified. These indicators will be assessed for the local government using pre-defined criteria and given a score between 1 and 3. Different indicators will be given different weightings, to reflect their relative importance in the determination of creditworthiness. The combination of scores and weights will be used to calculate a rating score for each of the four key risk factors. These rating scores will then be weighted to arrive at an overall rating score of between 1 (weakest) and 3 (strongest).

The CEF will have to decide how much risk it is willing to bear, but in principle the local government will 'pass' the creditworthiness assessment if it scores 2 and over.

In practice, the CEF should take a proactive approach during the risk appraisal and identify areas where the local government could improve its rating.

The complete methodology is outlined in Appendix C.

8.3 CEA Pricing and Structure

We recommend that:

- the outcome of the project and creditworthiness risk appraisal, portfolio risk strategy and other CEF policies be considered together in the decision to offer credit enhancement and to determine the cost and terms of the CEA; and
- that the fee for the CEA be paid by the social capital partner directly to the CEF, prior to the social capital partner including the CEA in its bid for the PPP.

In this section we detail the principles underpinning the setting of the fees and charges for the provision of liquidity support by the CEF, the structure of such fees and discuss which party or parties should pay the fee.

8.3.1 Pricing Principles

The fees charged by the CEF are the primary mechanism by which it earns a commercial return and grows its capital base. The CEF will need some consistency in how it determines the fees to be charged but this must be balanced against the need for flexibility to enable the CEF to vary the fees commensurate with a project's level of risk.

The CEF will also need the flexibility to adjust its fee levels over time to respond to specific circumstances.

The fee that is set for a specific CEA needs to perform four functions:

- Cover the administrative and staff costs of the CEF and the financial cost of providing the liquidity support
- Provide a financial signal to encourage local governments to develop high quality PPPs
- Provide value to the social capital partner by being competitive with any similar products available in the market, or reflect the difference between the cost of debt and equity for PPPs with local governments that have or do not have liquidity support; and
- Provide appropriate returns to the CEF investors.

The outcome of both the project and creditworthiness risk appraisal, portfolio risk strategy and other CEF policies, should be considered together in the decision to offer credit enhancement and to determine the cost and terms of the CEA.

There is no absolute level of risk that constitutes a "good" PPP and the CEF must decide how much risk it will tolerate. This includes assessing the financial risk to the CEF from covering the project and the impact that the proposed CEA will have on the solvency of the CEF.

8.3.2 The Fee Structure

We recommend that the fee be made up of four components:

- **Arranging Fee:** charged on application to cover the costs of assessing the project and the counterparty risks
- **Front End Fee:** An exposure fee charged at financial close for capital provision set as a percentage of the maximum value of credit support
- **Annual Facility Fee:** Annual liquidity support fee paid in advance for each year set as a percentage of the maximum value of credit support; and
- **Penalty:** Payable as part of the Recourse Agreement on the value and time of credit support set as a rate that reflects the "last resort" nature of the CEF—that is to incentivise the local government to use all other loan or credit facilities before the CEF.

Box 8.2: Example of Fee Structure (illustrative only)

A local government obtains liquidity support for a PPP with a construction cost of CNY 1,400 million. The amount of liquidity support is capped at CNY 50 million; six months of normal availability payments based on a project life of 25 years and a WACC of 5 percent.
The fees payable would be:

Fee Type	Paid	Amount	Note
Arranging Fee	On application	CNY 1.0 million	Based on costs
Front End Fee	On Financial Close	CNY 0.125 million	0.25% of facility
Annual Facility Fee	Annually in advance	CNY 0.4 million	0.8% of facility
Penalty	Monthly on outstanding balance	CNY 0.375 million	9% of outstanding amount per month

8.3.3 Option for Payment of the Fees

Of the four fees detailed in Section 8.3.2, we recommend that as a practical matter the local government pay the **Arranging Fee** and the **Penalty.**

The Arranging Fee is in the nature of an application fee and occurs before any social capital partner is involved and is payable regardless of whether the application is successful or not.

The Penalty is only payable when the local government calls on the facility and thus should be paid by them.

In regard to the **Front End Fee** and **Annual Facility Fee** there are three options for deciding on the party that should pay the fee:

- The local government
- The social capital partner; or
- A 50/50 split between the two.

Ultimately, even if the social capital partner pays all or part of these fees, it will be included in the cost of the PPP to the local government.

If the local government pays the fee directly, then the government is increasing its creditworthiness and should benefit by having greater competition by bidders or a lower cost PPP.

On the other hand, if the social capital partner believes that the CEF fee is a cost effective way of reducing their own costs and risks, for example through lower cost finance, then having the fee paid by the social capital partner will result in the lowest cost.

A split between the two recognises that both parties benefit from the fee.

On balance we recommend that the Front End Fee and Annual Fee for the CEA be paid by the social capital partner directly to the CEF on financial close of the PPP and thus the choice of whether to take up the CEA will be made by the social capital partner.

This will provide an important discipline on the CEF. If the social capital partner believes that either they can obtain some equivalent support for a lower cost; or that the cost of the support is excessive, then they will not exercise that option.

The local government would apply for and offer the liquidity support as part of their tender documentation at the price set by the CEF.

8.4 Credit Enhancement Agreement

We recommend that the CEA defines:

- each risk event and the value of local government obligations covered;
- any limits on the amount or level of cover;
- claim triggers for the social capital partner;
- the timeline and schedule for payments; and
- the cost of the agreement.

The terms of the credit enhancement will be specified in a Credit Enhancement Agreement (CEA) which will be a legal agreement between the CEF, the social capital partner, and the local government.

The CEA will precisely define each risk event and the local government's obligations for that event as a monetary amount. Any limits or conditions of the cover must also be defined. In this way the total value of the local government's obligations that are covered by the CEF is known, and therefore the CEF's total exposure will be able to be quantified from the CEA. This is essential to allow the CEF to determine its liabilities on a project by project basis and in total across its portfolio.

The cost of the agreement will be specified in CEA, that is the credit enhancement fee and the cost of any penalties—see section 8.3.

8.5 Recourse Mechanism

We recommend that

- local governments be required to pay a penalty on any claims in addition to charges on overdue repayments;
- a credible enforcement regime be established;
- a local government that is in default be considered ineligible for any further credit enhancement; and
- serious consideration be given to the central government withholding payments in the event that a local government fails to meet its obligations under the agreement.

The Recourse Agreement will be executed between the local government and the CEF. It should have direct recourse to the local government for any claims that have been paid by the CEF, to ensure that it can recover payments in a timely manner. The Recourse Agreement must be clear and transparent, specify the repayment period, the charges and the penalties.

The design and structure of the Recourse Agreement is an important factor in the propensity of a local government to default on its obligations under a PPP. Essentially if the Recourse Agreement is "soft" the local government may use the CEF as a source of short term funds when under financial stress. Local governments will be required to pay a penalty on any claims in addition to charges on overdue repayments. The penalty must be such that the CEF is the more expensive that sources of finance available to the local government body. This will ensure that the CEF serves the purpose for which it is designed and does become a form or low cost, short term source of funds for local government.

A credible enforcement regime must be established to protect the integrity of the CEF. If there is no credible enforcement regime, then the local government may choose to ignore its obligations under a PPP contract believing that the CEF will step in and pay its obligations without any impact on the local government.

Additionally, this will impact the CEF's leverage ratio as it will require more capital to cover payments under CEAs where it cannot eventually recover the amount from the local government.

It is recommended that consideration be given to the central government withholding payments in the event that a local government fails to meet its obligations under the agreement. This is provided for under the initial phase of the CEF. It is possible because an ADB loan would help finance the initial phase of the CEF in a way that would not preclude withholding governmnet payments—see Section 3.1.

As a minimum the local government that is in default of the Recourse Agreement will be ineligible for any further credit enhancement and liable to have losses recouped through the cancellation of their equity in the CEF.

8.6 Claims

We recommend that the CEF:

- only accept a claim if:
  - the social capital partner has made attempts to compel the local government to pay and the local government has subsequently refused; and
  - the claim is undisputed between the local government and the social capital partner.
- set a time limit on how long it will take to consider a claim, and publishes the procedure that must be followed for making a claim.

The purpose of the CEF is to make payments to social capital partners when local governments have failed to meet contractual obligations in the PPP agreement. Thus, the CEF will not be liable to make a payment until it can be determined that the local government has breached its obligations and the social capital partner has incurred a financial loss.

A local government's failure to meet its obligations involves two stages:

- The risk event occurs and consequently disadvantages the social capital partner; and
- The social capital partner has attempted to compel the local government to pay and the local government has subsequently refused.

It is recommended that the CEF only accepts a claim for assessment once both of the above stages have occurred. Further, the failure of the local government to meet its obligations should be undisputed between the local government and the social capital partner.

The CEF will set out the broad triggers for a claim and each CEA will set out the specific triggers for the individual PPP agreement.

It is recommended that payments from the CEF be tied to amounts specified in the PPP agreement between the local government and the social capital partner. The amounts can be specified by amount or formula or otherwise as set out in the PPP agreement but any claim to the CEF must be able to be expressed as a monetary amount that was due to the social capital partner and that has not been paid. This will protect the CEF and ensure that claims are for known local government obligations articulated in the PPP agreement.

The CEF will be marketed as a liquidity support facility, so to be workable claims must be paid out quickly. The CEF will set a time limit on how long it will take to consider a claim, and publish the procedure that must be followed for making a claim and the required documentation.

9 Commercial Business Case

In this section we detail the commercial business case for the CEF. We discuss the market soundings needed to ensure that there is a pipeline of suitable PPP projects and provide indicative financials for a "steady state" mature CEF.

9.1 Need for Market Soundings

We have prepared this business case on the assumption that there is a pipeline of suitable PPP projects and used assumptions such as the average size of the current stock of PPPs to inform our analysis.

To further develop this business case, we recommend market sounding to understand the likely demand for credit enhancement by assessing the types, number and values of PPPs under development.

9.2 Size of the CEF

The CEF's ability to provide liquidity support will be determined by its available capital limit and the leverage ratio.

There are approximately 8,000 PPPs currently in operation in the PRC with a value of US$1.7 trillion—thus the average size of a PPP is approximately US$210 million or CNY 1,400 million.

The maximum amount of liquidity support required for an average PPP, based on six months of normal availability type payments is approximately CNY 50 million, based on a typical project life of 25 years and a project WACC of 5 percent.

Assuming an initial capital base of CNY 6,000 million and a conservative leverage ratio of five, the CEF would be able to support around 600 PPP projects or about 7.5 percent of the existing stock of PPPs.

The CEF will of course grow from this initial size as local governments apply for coverage and contribute equity, with the growth in capital thus closely aligned to the growth in support offered.

9.3 Indicative Financials

Our analysis shows that investors can expect to make a return of around 6.0%.

This is a low return when compared to that of a typical equity return for a PPP project but the CEF is a well-capitalised, low risk financial services business. It invests its capital in low risk and highly liquid products in order to pay claims quickly. It has strong recourse options so the risk of any permanent default is very low. It covers its project and creditworthiness assessments through an upfront fee and charges an annual facility fee for the preservation of capital and recovery of its operating expenses. Local governments pay penalties for claims against the facility.

In the medium to long term, the CEF would be expected to make returns that are comparable with the market conditions for low risk financial services businesses.

	CNY million	Notes
Income	**510**	
Investments	240	4% on capital of CNY6 billion
Fees	240	0.8% on credit enhancement of

		CNY30 billion
Penalty	30	6%, 2 projects require support (3% of total), six months' delay for recourse
Expenses	**150**	
Operating costs	95	
Liquidity pool costs	30	1.0% for CNY3 billion standby liquidity facility
Non-recourse	25	One failure every two years
Equity Returns	**360**	Indicative equity returns of 6.0%

10 Key Legal Issues

The CEF design presented in the business case conforms with PRC legislation. Notably, the CEF conforms with restrictions on the issuance of government guarantees under the Guarantee Law, and restrictions on government borrowing under the Budget Law.

The CEF provides liquidity support. It is a shared liquidity pool that PPP social capital partners can access, and local government agree to reimburse (with penalties and payment of an establishment fee) should the pool be drawn upon to meet the local government's own obligations. The CEF does not release the local government from its obligation to meet a commitment under the PPP agreement. It instead changes cash flows. That is, in the event the CEF makes a payment to the social partner on behalf of the local government, the recourse agreement obliges the local government to pay the CEF what was originally to be paid to the social partner.

The CEF is independent of government. This independence is readily apparent when the CEF is majority owned by financial intermediaries, as proposed in the long term. If the CEF is to be government-owned, as may be required initially, independence will be ensured by the CEF's board and other governance arrangements, and the arms-length operation of the facility by a professional funds manager.

Participating financial institutions and governments may contribute capital (e.g., as limited partners) into the CEF according to the fund agreement, and are entitled to receive capital refund and returns from the CEF. Their returns are not linked to any specific investment/capital contribution into a specific PPP, but are linked to its (and all LPs') investment into the CEF, and the CEF performance.

The CEF's liquidity support differs to a guarantee. Article 6 of the Guarantee Law explaines that "….guaranty means that the guarantor and the creditor agree that, when the debtor fails to perform his debt, the guarantor will perform the debt or bear the liability in accordance with the agreement." The CEF does not accept the local government's obligations and therefore does not issue a guarantee.

The recourse agreement may allow the CEF to recover payments owing from a local government from the grants transferred by a higher level government. Such an arrangement, which would be entered into voluntarily by a local government using the CEF, provides the CEF priority access to local government funds. It differs to a counter-guarantee. Article 4 of the Guarantee Law explains that "When a third party offers the creditor a guarantee on behalf of the debtor, he may require the debtor to offer a counter guarantee." The key point is that under the CEF, higher level governments do not accept the liability of local governments.

Support from the CEF is also not in the nature of a loan. The Budget Law places tight restrictions on the ability of local governments to borrow. The recourse agreement obliges the local government to pay the CEF should the CEF make a payment to the social capital partner on behalf of the local government. This differs to a loan. The local government cannot borrow or otherwise receive funds from the CEF for use by the local government as it wishes. There is no loan agreement, which in the PRC covers acts of borrowing.

Nor is the recourse agreement in the nature of insurance policy. An insurance policy is fundamentally different in that it pools risk across participants, with claims funded from the premiums paid by all participants. The CEF will instead recover payments from the local government that creates the need for the payments.

11 Next Steps

To proceed we recommend the following steps:

- Presentation of the business case to relevant stakeholders
- Consider feedback and market testing before finalising design
- Legal review and legal advice for structure, type of company etc.
- Development of the detailed financial plan, essentially the prospectus
- Approval of the financial business strategy and business case
- Refine the CEF's legal structure
- Develop and execute the strategy for capital raising
- Recruit the core management team
- Develop operational procedures including project and counter party evaluation, risk management policies, credit management and exposure limits and project monitoring procedures.
- Develop pro formas including the CEA, recourse agreement and shareholder agreement.

Appendix A: Credit Enhancement Facilities in other countries

A.1 Introduction

Different forms of credit enhancement have been used successfully in many developing countries with the aim of increasing the uptake of PPPs through making them attractive to private sector investors. Credit enhancement has been particularly effective when either the countries' financial institutions are still developing their experience in PPP procurement or PPP procurement is being expanded to non-traditional sectors such as social infrastructure.

In this Appendix we compare:

- Mexico's FONADIN and Partial Credit Guarantee.
- Brazil's Federal Guarantee Fund; and
- The Indonesia Infrastructure Guarantee Fund (IIGF)

An overview of the facilities is provided in Appendix A.2 . Table A.1summarises the main features of the facilities include: the objective of their credit enhancement product; the form of the credit enhancement; and the allocation of risks.

A.2 Overview of the Facilities

A.2.1 FONDANIN.

The Mexican Government Infrastructure Fund, "FONADIN", was established in February 2008, as the agency for infrastructure development in communications, transportation, water, natural resources and tourism. Its mandate is to support private sector participation in the planning, design, construction and transfer of Mexican infrastructure projects. Its objective is to make infrastructure projects both attractive to private sector entities and bankable. Part of this role is to take risks that the market is unwilling, or unable, to take.

Its main form of support is equity and subordinated debt to allow PPPs with limited access to financing from banks and/or capital markets complete their financing plans.

FONDANIN offers four types of partial guarantees (with a limit of 50% of the guaranteed obligation):

- First Loss: FONDANIN assumes the first loss and makes the first disbursement under the guarantee when there are insufficient funds to meet debt service obligations, before any other guarantees disburse.
- Pari Passau: FONDANIN disburses an agreed portion of the insufficiency of funds along with other lenders or guarantors.
- Last Payment: FONDANIN is the last guarantor to disburse on its guarantee after all other guarantees have been disbursed.
- Mixed: A combination of first-loss and pari passau.

FONDANIN also offers performance guarantees and political risk guarantees. Performance guarantees cover a portion of the construction risk up to 15% of the investment budget. They may also cover initial operation, or ramp up, until project revenues reach 40% of project revenues. Political risk guarantees are determined on a

case by case basis to absorb political risks that exist as determined by the Technical Committee.

FONDANIN's guarantees focus on non-investment grade projects that are normally not suitable for guarantees due to their high risk and therefore higher probability of disbursement.

A.2.2 Mexico's Banobras Bank

The Banco Nacional de Obras y Servicios Públicos, SNC- or "Banobras" - is Mexico's state owned development bank. Its mandate is to promote and finance infrastructure projects and public services, mainly, through sub-national government lending and project finance.

Banobras traditionally provided long term credit facilities to PPP projects, but added financial guarantees to its portfolio in 2007. Two types of guarantee are offered:

- Partial Credit Guarantees; and
- Contract Payment Enhancement Guarantee.

Banobras only offers guarantees to investment grade projects. Guarantees are managed by a specialist team within Banobras.

Partial Credit Guarantees

A Partial Credit Guarantee – referred to as a "Timely Payment Guarantee" – is an unconditional and irrevocable guarantee of the timely payment of debt obligations (principal and interest repayments). The coverage limit is set according to the level of credit enhancement that wants to be achieved, up to 50% of the principal amount of the guarantee obligation. To determine this limit, Banobras together with the client (the contracting agency) submit the proposed project to a credit rating agency and obtain a 'shadow rating' of the project without the guarantee in place. Banobras then works with the rating agency to determine the impact the proposed guarantee structure would have on the rating, and the level of guarantee required to achieve the rating level that will satisfy the beneficiaries of the guarantee (banks or capital markets). In effect Banobras offers the minimum level of credit enhancement required to achieve its purpose.

The price of the guarantee is set as a portion of the savings in interest rate that the project sponsor obtains from using the credit enhancement. In this way, the project sponsor still obtains a net saving from using the guarantee.

Under the guarantee, Banobras disburses funds to the beneficiary to make debt service payments when project cash flows are insufficient – ie it is a direct guarantee to the debt. Banobras becomes a lender to the project acquiring a reimbursement obligation from the project, subordinated to senior debt service, and usually repaid once the project cash flows have recovered, or during the tail of financing.

Contract Payment Enhancement Guarantee

A Contract Payment Enhancement Guarantee (CPEG) guarantees the full and timely payment of government obligations to a private sponsor under a "Service Rendering Contract" (Proyectos de Prestación de Servicios or PPS). Under a PPS, the private sponsor commits to construct, operate and maintain the infrastructure in exchange for fixed availability payments made by the government, subject to discounts if defined service standards are not met. The product provides credit enhancement over project revenue, from which debt repayments are derived. The lenders are still exposed to revenue risks – for example penalties for poor performance, or cost overruns – but the

risk of non-payment or delayed payment by the government is partially mitigated by the guarantee.

Banobras issues the guarantee after an appraisal process which focuses on the creditworthiness of the contracting agency (subnational entity) as well as assessing the source of cashflow used to meet payment obligations under the PPS.

A.2.3 Brazil's Federal Guarantee Fund

Brazil's Federal Guarantee Fund (FGP) was established to guarantee federal government financial obligations to PPP projects awarded by federal agencies. The main purpose of the fund is to prevent public payment defaults by guaranteeing payments to private PPP participants.

The FGP is open to the federal government, its agencies and public foundations. It cannot provide guarantees at the subnational level (to States or Municipalities). The legal limit for the FGP, and the overall limit for the provision of guarantees is R$6 billion (approximately USD1.8bn currently). The FGP is managed by the Bank of Brazil.

The FGP can also provide counter-guarantees to insurance companies, financial institutions and international organisations to guarantee payment of the government's obligations to the private sector PPP participant.

The FGP's capital base is entirely public from the capital contributions of its shareholders (as well as earnings). The FGP has its own assets, separate from shareholders' equity, and subject to its own rights and obligations.

The FGP offers the following guarantees:

- non-conditional surety;
- pledges of chattel rights integrating FGP equity;
- mortgage of real estate belonging to the FGP entity;
- chattel mortgage, with the direct possession of the assets remaining with the FGP or with the trustee contracted before the guarantee is enforced;
- other agreements producing a guarantee effect, provided that they do not transfer the legal title or the direct possession of the assets to the private partner before the guarantee is enforced;
- guarantee, whether a mortgage of personal security, tied to a public interest affect equity organized as a consequence of the separation of assets and rights belonging to the FGP.

The type of guarantee offered to the private partner depends on the type of assets allocated in the FGP portfolio. Each type of guarantee is backed by assets with characteristics that are consistent with the type of guarantee.

A.2.4 The Indonesia Infrastructure Guarantee Fund (IIGF)

The IIGF was established in 2009 as a State Owned Enterprise under the Ministry of Finance. Its provide guarantees over the financial obligations of government contracting agencies (ministries, regional government and SOEs) in PPP contracts.

IIGF is designed to be the sole provider of government guarantees in Indonesia. This is ensured through a robust governance structure minimizing risk of political interference, high standards of transparency and disclosure, ring-fencing of IIGF's assets, and a mechanism to ensure full operational independence of IIGF.

It was established in order to:

- Provide guarantees to well-structured PPPs;
- Improve the creditworthiness and quality of PPP infrastructure projects thereby improving their bankability;
- Improve the governance, transparency and consistency of guarantee provisions by providing a single window for appraising, structuring and issuing guarantees as well as processing claims; and
- Ring-fence government contingent liability and minimize the impact to the State Budget.

IIGF's guarantees are expected to serve the following functions:

Indonesia	▪ Support economic development through PPPs that provide quality infrastructure projects ▪ Reduce the cost of infrastructure for end-users, due to lower cost of financing projects ▪ Limit Government's exposure to infrastructure-financing liability ▪ Encourage / stimulate further Government action on PPPs
Contracting Agency (CA)	▪ Attract more private sector participation, due to reduced risk perception of Indonesia PPPs ▪ Improve achievement of Contracting Agencies' goals ▪ Boost competition in tendering process, leading to better proposal quality and more competitive pricing
Private Sector	▪ Mitigate risks that are difficult for private sector to cover through other means ▪ Improve transparency, clarity, and certainty of guarantee provision and processes ▪ Reduce cost of capital for project sponsors, lengthen financing maturities ▪ Provide incentive for CAs to prepare good contracts and fulfill obligations ▪ Project risk monitoring framework by IIGF under RA brings better risk management

Guarantees can be issued for projects in 19 infrastructure sectors provided that the project is technically and financially feasible and in compliance with the laws and regulations relevant to the sector.

The IIGF provides coverage over various financial obligations of the contracting agency under the PPP agreement, based on a case by case assessment of the risk allocation under the PPP contract and a structured risk appraisal process. In principle, there are four categories of risks that can be covered:

- risks that occur due to any action or inaction of the CA or the government that is not a CA;
- risks that occur due to the issuance of a policy of the CA or the government that is not a CA;
- risks that occur due to unilateral decision of the CA or the government that is not a CA; and
- risks that occur due to inability of the CA in performing its obligations under the PPP contract (breach of contract).

Proposals for a guarantee from IIGF must be submitted by the CA and include:

- a detailed explanation of the proposed risk allocation between the CA and the project company;
- a description of the required government support for the project;
- the proposed scope of the guarantee, including the types of risks to be guaranteed, the percentage of the financial liability of the CA to be guaranteed and the proposed guarantee period; and
- the project risk matrix, draft co-operation agreement and financial model.

The IIGF then considers this proposal and determines the form and amount of guarantee it will offer.

The IIGF, as a state owned company, has its own assets separated from the government budget. The IIGF was capitalised from the Indonesian State Budget with approximately USD1billion. Over time, the IIGF aims to reduce its dependence on the state budget through partnerships with other guarantee institutions, bilateral and multilateral agencies.

A.3 Summary of Products

In Table A.1 below we compare the credit enhancement products offered in the three countries.

Table A.1: Summary of Credit Enhancement Products

Facility	FONDANIN	Banobras		Federal Guarantee Fund	Indonesian Infrastructure Guarantee Facility (IIGF)
Country	Mexico	Mexico		Brazil	Indonesia
Overview	The Mexican Government Infrastructure Fund, "FONADIN", was established in February 2008. Its mandate is to support private sector participation in the planning, design, construction and transfer of Mexican infrastructure projects. Its objective is to make infrastructure projects both attractive to private sector entities and bankable. Part of this role is to take risks that the market is unwilling, or unable, to take.	Financial guarantee products offered by Mexico's state owned development bank, established in 2007. . Part of the mission of the bank is to support the subnational public sector and private sector clients involved in infrastructure development through PPPs by offering a range of financial products and services.		Fund established to guarantee federal government financial obligations to PPP projects awarded by federal agencies. The main purpose of the fund is to prevent public payment defaults by guaranteeing payments to private PPP participants.	Established in 2009 as a State Owned Enterprise under the Ministry of Finance as a single window for provision of guarantees to PPPs in Indonesia. IIGF is designed to be the sole provider of government guarantees in Indonesia. This is ensured through a robust governance structure minimizing risk of political interference, high standards of transparency and disclosure, ring-fencing of IIGF's assets, and a mechanism to ensure full operational independence of IIGF.
Form of credit enhancement	Four types of partial guarantees (with a limit of 50% of the guaranteed obligation): ▪ First Loss ▪ Pari Passau ▪ Last Payment ▪ Mixed. Also offers performance guarantees and political risk guarantees. Performance guarantees cover a portion of the construction risk up to 15% of the investment budget. They may also cover initial operation, or ramp up, until	Partial Credit Guarantee ("timely payment guarantees"): ▪ Guarantee of timely debt repayment (principal plus interest) ▪ Banobras disburses funds to debt service payments when project cash flows are insufficient ▪ Coverage limit determined according to the level of credit enhancement that wants to be achieved up to 50% of the principal amount of the guaranteed obligation	Contract Payment Enhancement Guarantee: ▪ Guarantees payment of government obligations to a private participant under a "Service Rendering Contract" ▪ Provides credit enhancement over project revenue	Covers government financial obligations to private investors through ▪ non-conditional surety; ▪ pledges of chattel rights integrating FGP equity; ▪ mortgage of real estate belonging to the FGP entity; ▪ chattel mortgage; ▪ other agreements producing a guarantee effect;	Provides guarantees over the financial obligations of government contracting agencies (ministries, regional government and SOEs) in PPP contracts

Facility	FONDANIN	Banobras		Federal Guarantee Fund	Indonesian Infrastructure Guarantee Facility (IIGF)
	project revenues reach 40% of project revenues.			▪ guarantee, whether a mortgage of personal security, tied to a public interest.	
Objective	Improve the bankability of PPPs thereby making them more attractive to the private sector.	Improve the credit rating of the project to reach, as a minimum, the credit rating required by financiers.	Assist subnational entities to attract private sector entities to bid for PPP projects; and improve access to financing for these private sector entities.	To prevent public payment defaults by guaranteeing payments to private PPP participants.	To encourage private sector participation in PPPs and improve the creditworthiness of PPP projects.
Allocation of risks	▪ Guarantees focus on non-investment grade projects with higher probability of disbursement.	▪ Project must be investment grade ie able to achieve a minimum underlying rating ▪ Direct guarantee to debt so Banobras assumes revenue risk. ▪ Banobras does not assume any construction risk. Guarantee can be committed in advance but does not become active until the project is commissioned and able to earn revenue. This is considered a deterrent to the more widespread uptake of the product and is somewhat inconsistent as the bank assumes construction risk on the lending side[9].	▪ Revenue risk not covered by the guarantee. Still borne by the PPP financiers. ▪ Requires a counter guarantee from the government by means of a pledge of tax revenue to be placed in a reserve account ▪ Banobras does not assume any construction risk. Guarantee can be committed in advance but does not become active until the project is commissioned and able to earn revenue. This is considered a deterrent to the more widespread uptake of the product and is somewhat inconsistent as the bank assumes construction risk on the lending side[10].		In principle, there are four categories of risks covered: ▪ risks that occur due to any action or inaction of the CA or the government that is not a CA; ▪ risks that occur due to the issuance of a policy of the CA or the government that is not a CA; ▪ risks that occur due to unilateral decision of the CA or the government that is not a CA; and ▪ risks that occur due to inability of the CA in performing its obligations under the PPP contract (breach of contract). Risks are assessed on a case by case basis. A risk allocation report has to be prepared in

[9] World Bank Institute, January 2012, Best Practices in Public-Private Partnerships Financing in Latin America, Washington DC [http://www.ppiaf.org/sites/ppiaf.org/files/publication/BestPracticesroleofguarantees.pdf, accessed 24 July 2016]

[10] World Bank Institute, January 2012, Best Practices in Public-Private Partnerships Financing in Latin America, Washington DC [http://www.ppiaf.org/sites/ppiaf.org/files/publication/BestPracticesroleofguarantees.pdf, accessed 24 July 2016]

Facility	FONDANIN	Banobras		Federal Guarantee Fund	Indonesian Infrastructure Guarantee Facility (IIGF)
					accordance with IIGF guidelines as part of the application for a guarantee.

Appendix B: Project Risk Appraisal Framework

B.1 Introduction

The risk appraisal for a specific CEA application comprises three components:

- the evaluation of the project risk;
- an assessment of the creditworthiness of the local government in relation to the project; and
- applying the outcome of the project and creditworthiness risk appraisals together with the CEF's portfolio risk management policy to price and structure the CEA.

This annex provides draft guidelines for the project risk appraisal as an indication of the type of assessment the CEF would undertake to appraise project risk.

B.2 Overview of the Methodology

The project risk appraisal methodology systematically appraises the economic, financial, technical, legal, environmental and social merits of project proposals to identify risks to overall project feasibility.

The key questions to be answered include: is the project viable and are the project risks able to be adequately managed?

All projects have some degree of uncertainty but the appraisal process should focus on making sure the uncertainty does not result in significant project risks by:

- identifying uncertainties or unknowns in the proposal;
- determining if the uncertainty presents a risk to the project's viability;
- understanding if the risk can be managed; and
- determining the likelihood and impact of the risk occurring.

This risk-based approach will ensure that the appraisal process is focused and efficient, and avoid it from becoming misdirected by trying to understand and resolve all project uncertainties.

The framework will ask a number of key questions that determine whether the project is likely to be successful, independent of the CEF's support. These questions include:

- Needs analysis: does the underlying project makes sense? What problem is the project solving and how will people will react to the solution?
- Option analysis: is the project the best option? How does it compare to other possible solutions including the "do nothing" solution?
- Technical assessment: is the project technically feasible as proposed (e.g. location, size, technology)?
- Economic feasibility: does the socio-economic cost benefit analysis confirm that the project is viable?
- Financial feasibility: are the financial returns robust and reasonable? will they attract good quality sponsors? Is the project financially sustainable?
- Environment and social assessment: what are the potential impacts? What mitigating measures are in place and what do they cost?

- Legal and institutional assessment: are there any legal constraints to the development and implementation of the project?

The effort expended on appraising each aspect of the project should be proportionate to the risk of loss associated with an incorrect assessment. A full financial, technical and legal assessment for all options may not be necessary to prove that the proposal is the best option, or that it is viable.

B.3 Needs analysis

The assessment of project need is the first and most important step in the project appraisal. It will identify if there is a clearly defined problem, if there are benefits to solving the problem, the kind of project needed to solve the problem and finally, how people will react to the solution.

The assessment of project need does not require a high degree of technical knowledge, but will be improved with an understanding of:

- market failure – to provide explanations for problems and why government intervention is necessary
- program logic – the process of identifying the objectives of a program, the benefits that will follow and ways of measuring the benefits
- scientific uncertainty – to understand the quality of evidence.

Only projects that satisfy a clear and demonstrable public need should be supported by the CEF. Project proposals that do not address a problem may be superfluous. Without identifying a problem, it is difficult to deduce the benefits of the project, to make trade-offs in project design and to evaluate the project against other options.

B.3.1 Key considerations

- ✓ Has the problem been defined?
- ✓ Have the benefits of addressing the problem been described?
- ✓ Have the objectives of the project been outlined?
- ✓ Has demand been forecast?

B.3.2 Has the problem been defined?

The problem should be clearly articulated. Ideally the problem will be stated in terms of market failure, that is, why the problem cannot be solved by the market. Reasons for market failure include issues to do with public goods/service, externalities, imperfect information and market power, as described in Table B.1. Generally, government support is justified for infrastructure projects that provide a suite of public goods/services not captured by the market.

Table B.1: Market Failure

Public goods/services	Public goods/services are not naturally marketable as the product may be non-excludable (i.e. it is impossible to restrict use, like clean air) and non-rivalry (i.e. one person's use will not reduce the volume available for others, like a nice view). These properties make public goods impossible to sell, that is, without the design of an artificial market (e.g. carbon market).
Externalities	Externalities occur when an activity has an impact that is not directly priced in the market. An example of this is pollution by a manufacturing company.
Imperfect	Imperfect information occurs when one party to an exchange knows more

information	about the good/service than the other party. This leads to adverse selection. A common example of this is the sale of a used car where the owner knows far more about the car's history than the prospective buyer.
Market power	Market power occurs when there is insufficient competition for a company to behave competitively. This generally leads to an increase in prices and/or deterioration of service quality.

Having assessed the cause of market failure, it should then be identified whether this has led to problems with service affordability, availability, quality, or a combination of these.

- *Affordability*: Is the cost of the existing service more than users are willing to pay? Are there distributional impacts? How much lower does the price need to be before the problem is solved (in effect, what is the price elasticity)?
- *Availability*: Is the existing service constrained in terms of volume? Will the introduction of a new service represent an increase in supply or a transfer of supply from one source to another? What are the barriers to use of existing options? Are there social barriers to adoption?
- *Quality*: Are users willing to pay for a higher quality service? Is the new service differentiated from existing substitutes? Will the demand curve shift with changes in quality?

Where possible, the problem should be quantified in terms of the number or percentage of people affected and the extent to which they are affected.

The appraiser should be wary of misleading statements. For instance, the statement "50% of a population have no access to water" cannot be true as access to water is needed to survive. Instead this statement should read, "50% of a population cannot afford more than 2L of water a day" or "50% of a population source their water from the river".

All problem statements should be substantiated by evidence that has been tested for quality. This includes checking its relevance (is it in the right location?) and recency (are conditions still the same?), identifying any limitations of the scientific methodology and sampling approach and considering the uncertainty associated with the measurement technique.

Finally, the problem should be considered from a legal and political context. Are legal and institutional structures such that investment risk is minimised, labour is readily available, property rights are enforced, political sentiment is predictable? Are political constraints a possible cause of the problem? How does economic growth, employment, interest rates, government expenditure affect the problem? Is there any chance these will change in the foreseeable future?

B.3.3 Have the benefits of addressing the problem been described?

The next step of the needs analysis is to identify the benefits of addressing the problem. In itself, a problem is not justification for a project, but the benefits that are incurred from solving a problem may be. A benefits logic map, like that in Figure B.1, should be able to be deduced from all project proposals.

Figure B.1: Benefits Logic Map

Problem → Solved problem → Benefit → Indirect benefits

Example: No affordable access to clean water → Affordable access to clean water → Reduced health problems → Increased income

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The main reason for the benefits logic map is to differentiate between direct and indirect benefits. There is a large degree of uncertainty associated with indirect benefits as they have facilitating/contextual requirements not controlled by the project. For example, increasing the affordability of clean water won't necessarily result in increased income unless employment can be proven to be restricted by water borne diseases.

B.3.4 Have the objectives of the project been outlined?

Having identified the possible benefits of addressing the problem, specific objectives of the project should be identified. Project objectives should always be SMART – specific, measurable, achievable, relevant and time bound.

Project objectives help to provide scope and boundaries to project options. For instance, what are the minimum service requirements? Are there any other additional, preferred requirements?

B.3.5 Has demand been forecast?

Demand forecasting should be the final consideration under the needs analysis. Demand forecasting captures the *private benefit* of acquiring the good/service under question. It should show the sensitivity of consumers to price fluctuations and the premium consumers are willing to pay for a superior quality product. In essence, it shows how the market will react to the introduction of the new service.

Demand forecasting is extremely important in the economic and financial feasibly tests. In the economic analysis, it will be used to identify the consumer surplus - the difference between what a consumer is willing to pay and what they actually pay. In the financial analysis, it will be used to predict project revenue.

There are a number of methods to forecasting demand including historical demand trends, substitute or comparable product data, similar project data and/or survey data (willingness to pay). A combination of approaches can and should be used where possible to improve the understanding of the range of possible outcomes.

B.3.6 Uncertainty in project need

The project need will always have a degree of uncertainty. Understanding the likelihood that the project will actually solve the problem allows for a better understanding of the risk of project failure.

The degree of uncertainty will be defined by:

- The quality of evidence to support the problem definition
- The approach and underlying data used in demand forecasting.

There are two key ways to quantify the effect of uncertainty. The first is to undertake a sensitivity analysis. This shows how the final outcome will change by changing certain variables. The second is to undertake a scenario analysis. This indicates the *likelihood* of certain outcomes based on the distribution of input variables.

B.3.7 Risks to consider in the needs analysis

The appraisal of the project need will determine whether there is sufficient evidence to assess if there is a problem and if the problem can be solved with the project. If the project need is overstated the overall viability of the project may be compromised.

The needs assessment will start to highlight the presence of a variety of risks.

- The likelihood of demand risks can be understood by looking at the quality of demand forecasting – if the model is appropriate, the accuracy of data, the uncertainty of input variables and the uncertainty in the overall model.
- The presence of political risks will evolve from the strength of the project need argument. The weaker the need, the less the likelihood of political support.
- Possible operational risks, interface risks and force majeure risks may be highlighted. The needs assessment will identify why current output, quantity and quality are insufficient and the causes of this problem. Will similar problems exist for the new project?

These potential risks will be explored in detail in the following sections of the appraisal.

B.4 Option analysis

Project proposals inherently suffer from optimism bias. Proposals are known to overstate the benefits and understate the costs to improve the chances of the project going ahead. One of the best ways for the appraiser to understand the merits of a proposal is to compare it with other possible solutions. This will help indicate the extent to which the proposed option is superior.

Options should be assessed at a high level at minimum and rejected only when the outcome is clearly suboptimal. They should also be reappraised periodically when additional information about the project is revealed through economic, financial, technical, legal, environmental and social analysis.

The options appraisal should seek input from professionals with a range of backgrounds (e.g. legal, technical and financial) to make sure a comprehensive range of options have been assessed.

B.4.1 Key considerations

- ✓ Have other options been identified?
- ✓ Has a high level assessment of each option been conducted?
- ✓ Is there a reasonable basis for excluding alternative projects?

B.4.2 Have other options been identified?

The first step in the options analysis is to check that alternative options have been identified in the proposal. The alternatives should be realistic and not so extreme that they are immediately rejected. At a minimum, the following options should be evaluated:

- the proposed option
- a do-nothing scenario
- alternative technical solutions
- alternative locations
- refurbishing/expanding existing facilities.

B.4.3 Has a high level assessment of each option been conducted?

A high level assessment of each option should be conducted. The high level analysis will identify if the project is a viable alternative. The following should be considered:

- does it address the project objective and yield predicted benefits?
- are other, non-essential benefits generated by the solution
- what are the skills and capacity of the delivery agent?
- what is the project's technical, legal and environmental feasibility?
- are there negative externalities of the option?
- what is the financial cost of the option?

B.4.4 Is there a reasonable basis for excluding alternative projects?

Project alternatives should be accepted or rejected based on reasonable evidence. Where a project alternative has been rejected, the appraiser should consider the reason why the decision was made, and the degree of certainty around the variable that triggered the decision.

The appraiser should also consider the extent to which projects with commensurate benefits are seriously considered as an alternative to the original proposal.

B.4.5 Uncertainty in the options analysis

Uncertain elements of each option should be identified and the implications of this uncertainty on the decision to accept or reject the option understood. It may be that an option is feasible in certain circumstances or with more information.

B.4.6 Risks to consider in the options analysis

The options analysis will highlight if the project is taking on more risk than is necessary with reference to possible alternatives. Suboptimal choice of site or technical solution may unnecessarily increase the likelihood of project default. The options analysis will reveal:

- if the site is more easily secured than others (site risk)
- the relative operational cost and complexity (operational risk)
- if political systems are more supportive of the project than others (political risk)
- if the solution will more easily achieve financial close (financial risk)
- if the chosen solution is less exposed to natural disasters than others (force majeure risk).

B.5 Technical assessment

The assessment of technical feasibility is necessary to identify the capability of the proposed project technology to work, and its efficiency, viability, cost effectiveness, etc. The CEF's role therefore is to guide an engineering appraisal by asking the right questions. Is there evidence for statements being made? What is the quality of the evidence?

B.5.1 Key considerations

- ✓ How established is the technology?
- ✓ Is the project vulnerable to variable environmental resources?
- ✓ What is the quality of data used in the technical assessment?
- ✓ Have possible project constraints been evaluated?

B.5.2 How established is the technology?

The more established the technology, the less the risk of technical failure. Consider the number of times this kind of technology has been deployed, the location of deployment and the operating company's experience with the technology. The product may be suitable in certain environments, but not others.

Also consider the ongoing requirements of operating the technology. Parts and local technicians that are easily accessible will reduce the likelihood of ongoing performance problems.

B.5.3 Is the project vulnerable to variable environmental resources?

Projects that rely on variable environmental resources (like wind, water, sunlight) should provide evidence that the volume and quality of the resource is sufficient. Similarly, projects that require any earth moving or excavation should provide evidence that the soil type is suitable for the activity.

B.5.4 What is the quality of data used in the technical assessment?

The quality of data used in a technical assessment will be variable. The appraiser needs to understand the measurement technique that has been used, the number of samples taken and the degree of scientific uncertainty associated with the approach. Measurements should ideally be taken over multiple years to capture any seasonal impacts.

B.5.5 Have possible project constraints been evaluated?

A number of possible project constraints may restrict technical feasibility. These include, but are not limited to:

- whether the chosen technical solution is dependent on land acquisition. If so, can the CEF be sure the land can be acquired? Or are there zoning restrictions, unwilling sellers, environmental regulations (e.g. noise pollution)?
- the implications of not being able to acquire land. Can the solution still be implemented? What are the cost implications of this? Is the original solution still the best option?
- whether the solution is temporally constrained. Is there another project that it needs to precede, occur concurrently with, or wait for? For example, costs can be dramatically reduced by undertaking below ground piping before building a road

- whether there will be sufficient access to energy or other necessary utilities
- whether the management team have access to all the necessary skills.

B.5.6 Uncertainty in the technical analysis

The CEF needs to be able to understand the various components of the technical solution that suffer from uncertainty and the extent to which this may affect the project's viability. The key uncertainties in the technical analysis will be:

- Environmental flow forecasts
- Cost forecasts
- Timing forecasts

Technical uncertainty will influence the range of project costs, so economic and financial calculations should be updated to reflect this.

Technical uncertainty can be minimised by using well established technology, and/or by improvements in the sophistication of environmental measurement techniques.

B.5.7 Risks to consider in the technical analysis

The appraisal of the technical analysis will determine whether the proposed technical solution is feasible. If there is uncertainty to do with critical aspects of the project's technical design, the viability of the project may be undermined.

The technical analysis will capture a range of risks including site risks, design, construction and commissioning risks, operating risks, political risks, force majeure risks and revenue risks.

Site risks

In identifying the likelihood and impact of site risks, consider during the technical appraisal:

- key logistical barriers to securing the site and what's required to overcome these barriers (e.g. zoning restrictions, environmental restrictions)
- the technical suitability of the site for the project
- options to use an alternative site.

Design, construction and commissioning risks, operating risks

The technical analysis should indicate the level of confidence in the project's design, construction, project commissioning and operations. The likelihood and impact of these risks can be better understood by considering:

- the experience of all contracting agencies in delivering this kind of project
- the experience of all contracting agencies in working in this environment
- the relationship between contracting agencies
- the allocation of risk and incentives
- the option of using alternative suppliers in the case of failure.

Political risks

The technical analysis will consider the political risks associated with attaining planning requirements necessary for the project, the likelihood of approval and what may cause delays to obtaining approval.

Interface risks

Interface risks can be assessed by understanding the requirements for the project solution to fit within a broader network of public services and the impact of not complying with these constraints.

Force majeure risks

The technical feasibility should also help to identify the likelihood and impact of force majeure risks, consider the exposure of the site to natural disasters or extreme weather, and the extent to which the chosen technology can withstand extreme events.

Revenue risks

Revenue will be dependent on the technical solution providing a product that is demanded by the public. Uncertainty around the quality or quantity of output may lead to risk of loss of forecasted revenue.

B.6 Economic feasibility

The project proposal needs to provide compelling evidence that it generates an economic return.

An economic assessment is taken from the perspective of the national economy. Both private and public, market and non-market costs and benefits are identified and aggregated using a common unit of currency. In contrast, a financial assessment (see section B.7) is undertaken from the perspective of the local government and just considers financial costs and benefits.

To identify the extent to which the solution improves the status quo, the economic assessment compares the costs and benefits of the proposed solution with a do nothing scenario ('base case').

It is recommended that an experienced economist review the economic feasibility of the project. There are a number of nuances in economic assessments that can significantly affect the outcome of the economic appraisal, particularly to do with valuation. Provided here is simply a high-level outline of what should be considered.

B.6.1 Key considerations

- ✓ Have all costs and benefits been identified?
- ✓ Have costs and benefits been compared to a base case?
- ✓ Have appropriate valuation techniques been used?
- ✓ Is there reasonable evidence for future projections?
- ✓ Has the analyst avoided common pitfalls?
- ✓ Are economic returns sufficient for government support?

B.6.2 Have all costs and benefits been identified?

The first step in an economic analysis is to identify the costs and benefits of the project. Costs and benefits are to be viewed from the perspective of the entire economy that will be affected by the project.

To assess whether a comprehensive list of costs has been identified, first consider the monetary costs of the project to the economy (e.g. land, materials, labour). Then consider any negative externalities – that is, costs not captured by the market (e.g. displacement, pollution). On the benefits side, apply a similar approach and first consider the monetary

benefits of the project (e.g. reduced prices). Then consider any positive externalities like reduced time travel, reduced health costs.

There are some costs that should always be excluded from the economic analysis, including sunk costs, depreciation and capital charges.

B.6.3 Have costs and benefits been compared to a base case?

An economic appraisal should always be compared directly to a base case. The base case is simply what would happen without the project. The valuation of economic costs and benefits is not an exact science so by comparing the project to a benchmark that uses the same metric allows the relative merit of the proposed project to be identified.

Another important reason for comparing costs and benefits to a base case is that allocative ('real') effects can be distinguished from distributional effects ('transfer'). Transfers are not true economic benefits as they merely represent a shift of benefits from one individual to another.

B.6.4 Have appropriate valuation techniques been used?

There are a variety of valuation techniques that can be used for both market and non-market costs and benefits. The choice of valuation methodology can significantly affect the outcome of the project proposal. Market costs/benefits should be determined using either market prices, or shadow pricing. Different approaches need to be applied for non-market costs and benefits. Techniques include market-price-equivalent, cost of production, resource rent, replacement cost, revealed preference and stated preference techniques.

Where appropriate valuation techniques are not available, the benefit should be described and quantified where possible.

B.6.5 Is there reasonable evidence for future projections?

Forward projections are difficult. As a general rule, any projected costs/benefits that differ from the status quo should be supported by compelling evidence. For example, unless there is evidence that the cost of energy has been decreasing, assume the current cost. Note that in the economic appraisal, costs are to be measured in real, not nominal terms.

The demand forecasting approaches outlined above should be used to inform the economic benefits that may occur as a result of the project. Specifically, it can be used to identify the increase in consumer surplus (i.e. the difference between what a consumer is willing to pay and what they actually pay) from the base case.

Where there is uncertainty, a number of scenarios for future projections should be assessed. This gives the appraiser a range of possible outcomes, allowing them to better understand the overall risk of default.

B.6.6 Has the analyst avoided common pitfalls?

There are a number of common pitfalls in cost benefit analysis. It is the job of the appraiser to identify these errors, including:

- double counting – counting the same benefit twice
- optimism bias – the benefits of the preferred option are likely to be overstated and costs understated
- ignoring non-market impacts
- over-estimation of flow-on effects (e.g. employment multiplier effect)

- not adequately understanding uncertainty.

B.6.7 Are economic returns sufficient for government support?

The economic rate of return (ERR) is the rate of return required for the net present value to be equal to zero. The higher the ERR, the greater the expected benefits of the project. To determine whether the ERR is sufficient for the CEF to support, the ERR of the proposed project should be compared with the ERR of the do nothing scenario and other possible scenarios.

The appraiser may also want to evaluate the ERR with reference to other projects. In their *Guidelines for the Economic Analysis of Projects*, the Asian Development Bank recommends an ERR of no less than 10% is accepted for projects with substantial non-valued benefits, and an ERR of no less than 12% for projects with few non-valued benefits.

However, care should be taken when comparing ERR's across unrelated projects. A comparatively low ERR is not necessarily a poor project. This will certainly be the case where benefits accrue far into the future and where there is a large portion of non-valued benefits. Additionally, there is a risk when comparing ERRs of unrelated projects that different valuation approaches are used, affecting the overall return.

B.6.8 Uncertainty in economic analysis

Economic analyses are highly uncertain. The types of costs and benefits identified, the data used to predict demand, the model used to predict demand and the valuation techniques used are all imprecise sciences.

A sensitivity analysis is critical to evaluate how uncertainty with each of these variables impacts the ERR. Even more meaningful is a scenario analysis, where the likely range of ERRs can be predicted using knowledge about each variable's likely distribution. The distribution of possible ERRs will indicate the likelihood that the project will return an outcome better than the do-nothing scenario.

B.6.9 Risks to consider in the economic analysis

The risk assessment conducted during the economic analysis will again look at the project demand, but this time in relation to expected revenue and the extent to which it will cover the costs of the project. Specifically, the risks assessed in the economic analysis will include revenue risks, site and operational risks and political risks.

Revenue risks

The economic analysis will identify demand that can be expected at various tariff determinations. The *likelihood* of revenue risks can be evaluated by comparing the range of likely revenues with the range of likely costs in a scenario analysis. The *consequence* of revenue risks can be evaluated by calculating the difference between costs and benefits in the worst-case scenario.

Site and operational risks

When looking at the costs of the project and the uncertainty of those costs for the economic analysis, site and operational risks will inexplicitly be considered. For instance, to determine the price of the site, the costs of displacing residents may be considered. This in effect, identifies if there is a risk that land will not be able to be acquired.

Additionally, the economic analysis will identify the sensitivity of users to output quantity and quality. This will identify the constraints by which operational performance is bound and therefore the likelihood that operational output will be a problem.

Political risks

The economic assessment will identify the social benefits of the project which generally relates to the political will behind the project.

B.7 Financial feasibility

The CEF needs to assess the financial feasibility of the project to assess the ongoing financial sustainability of the project. The risk of project default is minimised with projects that clearly recover their cost of capital.

Financial assessments are taken from the perspective of the local government. All projected revenue and expenditure is taken into account. Unlike the economic assessment, non-market benefits are not considered.

The financial appraisal should be reviewed by an experienced financial analyst. As with the economic appraisal, there are technical nuances associated with valuation that may be overlooked by the inexperienced eye. Guidance on where this may occur is outlined.

B.7.1 Key considerations

- ✓ What is the cost of capital?
- ✓ What is the financial rate of return?
- ✓ Is there a need for viability gap funding?

B.7.2 What is the likely cost of capital?

The cost of capital is the annual return needed for the project to be attractive to investors and lenders. The most commonly applied approach is the Capital Asset Pricing Model (CAPM) that considers the weighted average cost of equity and cost of debt, commonly known as the weighted average cost of capital (WACC). The cost of equity is calculated by predicting the premium over the risk free rate necessary for equity investors, scaled by the riskiness of the project. The cost of debt is calculated by estimating premium over the risk free rate required by lenders. Table B.2 details the various components of the WACC formula.

Table B.2: Weighted average cost of capital (post-tax nominal vanilla)

$$WACC = \ E/V \times E(R_i) + D/V \times \ D(R_i)$$

Parameter	Symbol	Description	Common approach
Cost of equity	$E(R_i)$	Returns necessary to attract investors	Considers the premium over the risk free rate and the riskiness of the project.
Cost of debt	$D(R_i)$	Repayment rate for debt	Considers the premium over the risk free rate required by lenders.
Equity funding	E/V	Proportion of project value funded by equity	Actual equity funding (generally about 40%)
Debt funding	D/V	Proportion of project value funded by debt	Actual debt funding (generally about 60%)

Table B.3: Cost of equity

$$E(R_i) = R_f + \beta_i(E(R_m) - R_f)$$

Parameter	Symbol	Description	Common approach
Risk free rate	R_f	The investment return that can be achieved with no risk	40-day average of 10-year Government bond yield
Equity beta	β_i	Sensitivity of the returns to the market	Industry dependant: E.g. an Australian State government regulator uses the following equity betas: Water – 0.6-0.8 Transport – 0.8-1.0 Electricity generation – 0.95-1.15 Electricity retail – 0.9-1.1
Market premium	$E(R_m) - R_f$	Performance of the market above the risk-free rate	Historical arithmetic average market risk premium based on listed stocks. Generally, this is from 5.5-6.5%.

Table B.4: Cost of debt

$$D(R_i) = R_f + (D(R_m) - R_f)$$

Parameter	Symbol	Description	Common approach
Risk free rate	R_f	The investment return that can be achieved with no risk	40-day average of 10-year Government bond yield
Debt margin	$D(R_m) - R_f$	Debt premium above the risk-free rate necessary for funding	Credit spreads of a market-representative bond portfolio.

B.7.3 Financial internal rate of return

The financial IRR is the rate of return necessary for the local government to generate a financial net present value of zero. It is to be compared with the ERR to indicate the degree of public benefits generated by the project. The greater the surplus of the ERR over the IRR, the more likely the public will be willing to fund the project's financing shortfall. It is also to be compared with the WACC to determine if project revenues are sufficient to cover the cost of capital.

Calculating the IRR requires an understanding of the financial costs and income borne by the local government over the lifetime of the project, including:

- Capital expenditure
- Operating expenditure

- Project income
- Taxes, inflation
- Project income repayment profile
- Project cost profile.

The CEF should critically analyse the financial costs and income of the project. The CEF will need a detailed breakdown of all of the above components for an assessment to be undertaken.

B.7.4 Uncertainty in the financial analysis

Both WACC and IRR calculations are uncertain. The primary drivers of this are:

- Uncertainty in CAPM variables (e.g. equity beta)
- Uncertainty in revenue forecasts ($ and timing)
- Uncertainty in cost forecasts ($ and timing).

As with economic uncertainty, a sensitivity analysis is critical to evaluate how uncertainty with each of these variables impacts the financial returns and need for viability gap funding. Where possible, a scenario analysis for both the IRR and WACC should be undertaken to assess the likelihood that viability gap funding will be necessary.

B.7.5 Risks to consider in the financial analysis

The appraisal of the financial analysis will determine whether the project is financially viable. If financial returns are both marginal and uncertain, the project experiences a risk of default.

The specific risks that are reviewed in the financial analysis include financial risks, operating risks, revenue risks and political risks. All of these risks should be directly assessed when determining the cost of capital; the higher the risk exposure of the investor, the greater their expected returns. As with the economic analysis, revenue risks will be also be analysed in the uncertainty analysis of the internal rate of return.

B.8 Legal and institutional assessment

The project may have significant legal constraints affecting where it can be located, the types of technology that can be used and the amount of revenue that can be generated. Additionally, the way in which the legal structure of the project has been designed may influence project viability.

One of the final components of the CEF's appraisal is to ask the right questions to guide a comprehensive legal assessment.

B.8.1 Key considerations

- ✓ What economic regulations will affect the project?
- ✓ Is the project's contractual structure appropriate?

B.8.2 What economic regulations will affect the project?

The performance of large infrastructure projects may be constrained by economic regulations that control prices, performance standards and/or accessibility.

Economic regulation is not always predictable. Even if a service is not currently regulated, there may still be the risk of regulation in the future. The likelihood of regulation usually coincides with the interests and influence of negatively affected stakeholders.

B.8.3 Is the project's contractual structure appropriate?

The contract structure should be designed to incentivise all relevant parties to work in the interests of the project. A carefully designed project structure will filter out parties that do not have the capability to undertake their assigned role. Project accountability should be disseminated so that those who have control of the relevant section are also those that are rewarded for good performance or penalised for poor performance. Additionally, the project waterfall should be designed so that breakpoints are unlikely.

B.8.4 Uncertainty in the legal analysis

There is some uncertainty associated with the outcomes of the legal analysis. The appraiser should understand the likelihood of a change in the current legal status quo (i.e. changes in regulation) and the chance of contract default.

B.8.5 Risks to consider in the legal analysis

The legal analysis will indicate the extent to which the law and contracts can protect from all identified risks. Project risks should be allocated to the party best equipped to control or mitigate the risk. The legal analysis should make sure there is no ambiguity in how risks have been allocated.

Appendix C: Creditworthiness Risk Appraisal Methodology

C.1 Introduction

The risk appraisal for a specific CEA application comprises three components:

- the evaluation of the project risk;
- an assessment of the creditworthiness of the local government in relation to the project; and
- applying the outcome of the project and creditworthiness risk appraisals together with the CEF's portfolio risk management policy to price and structure the CEA.

This annex provides a draft methodology for the creditworthiness risk appraisal to be used by CEF.

The creditworthiness risk appraisal will assess the creditworthiness of the local government in the context of the PPP. It is an assessment of the prudency of the local government's exposure to the project from an economic, financial, institutional and governance perspective. This includes financial and non-financial (physical) support that the project requires from the local government to proceed.

The creditworthiness risk appraisal does not convey the value, suitability or merit of an investment. It does not, for example, address whether a project represents good value for money. This is done as part of the project appraisal and hence why this appraisal, and the project appraisal are considered together in the decision to offer credit enhancement and how this offer will be structured and priced.

C.2 Understanding the local government's risk profile

The creditworthiness of the local government relates to its *ability* and *willingness* to meet all of its obligations to the project:

- Ability to Pay – refers to the local government's ability to meet its obligations to the project. It includes its fiscal (financial) capacity to meet contractual obligations, and the existence of an institutional framework that facilitates payments.
- Willingness to Pay – refers to other factors that may prevent the local government from meeting its obligations despite having the ability to pay such as fiscal priorities or political will.

The obligations of a local government continue throughout a project and vary dependent on project phase, as well as how well the PPP is performing. As such, local government obligations can be considered in three categories:

- Obligations during the development and construction phase which might include activities such as site selection and acquisition, detailed project design and specification, and construction of interfaces such as transmission lines and connecting roads;
- Obligations during the operational phase which would of course include payment for the service, output or product of the infrastructure but might also include continued provision of fuel for a power station and provision or

operation of interfaces such as connecting roads and transmission lines at a defined level of service; and

- Obligations if the project performs poorly of fails which may include making the full quantum of termination and compensation payments to the private sector investors. It may also include making payments to the CEF under the Recourse Agreement if the social capital partner has made a claim.

Consistent with the approach adopted for the project appraisal, the assessment should take a risk-based approach. The objective is to identify the local governments' risk, focusing on five key questions:

- Is there sufficient flexibility to fund and manage project payments?
- Is there enough fiscal space on the local government's balance sheet?
- Are there economic risks that may affect a local government's revenues and future financial position?
- Does the local government have an established history of investment and does it have sufficient capability to manage the PPP procurement and implementation? and
- Does the local government have a strong willingness to meet its obligations or are there potential risks?

The methodology set up below provides a logical and consistent approach to answering these questions.

It should be noted that the risk appraisal will be done once, at the time that the application for credit enhancement is submitted. Although the assessment will consider the future prospects and plans of the local government, as well as wider factors (e.g. economic outlook) that could impact on the future position of the project, it will not be able to predict all future circumstances that could impact on the local government's ability to meet its obligations. This will need to be managed by the CEF through its procedures for monitoring projects.

It is also important to keep in mind that risk assessments are not an exact measure of risk. Rather, they convey a relative level of risk based on a wide range of contributing factors. For example, an assessment of a factor such as financial performance can suggest when difficult decisions to restore fiscal balance might become necessary. They do not, however, suggest whether prudent decisions will be made.

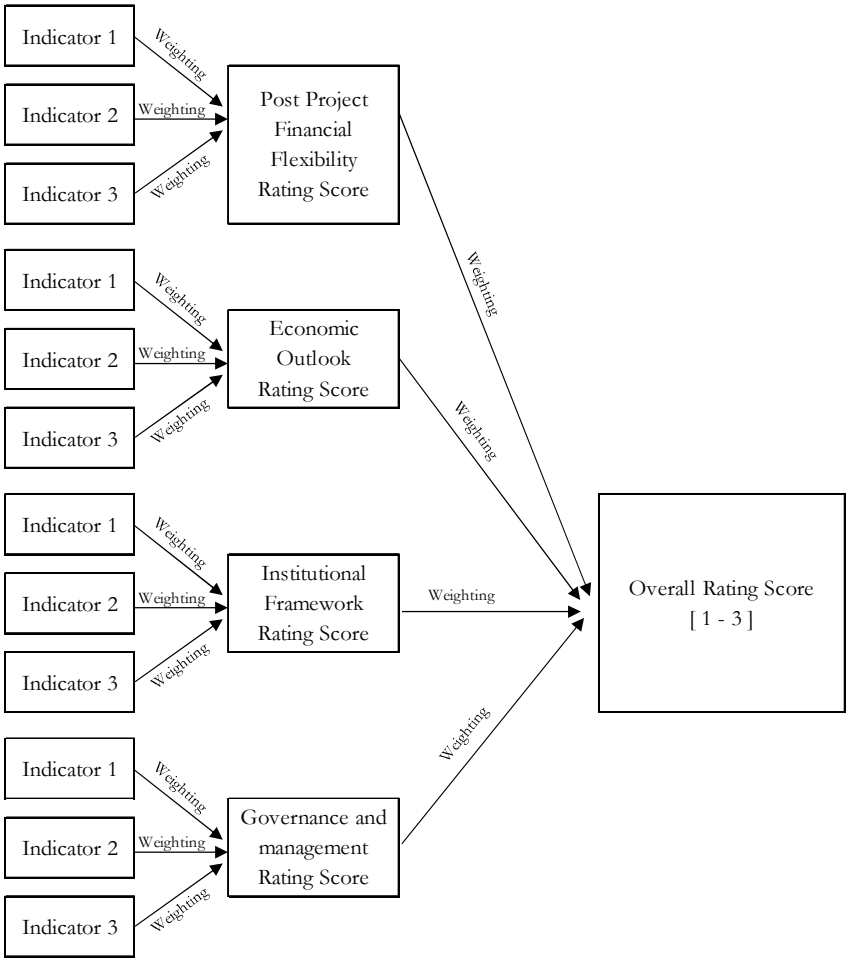
C.3 Methodology

C.3.1 Overview

Four key risk factors have been identified, considering the type and timing of a local government's obligations. These will form the foundation of the creditworthiness assessment.

For each risk factor, a range of indicators, both qualitative and quantitative have been identified. These indicators will be assessed for the local government using pre-defined criteria and the given a score between 1 and 3. Different indicators will be given different weightings, to reflect their relative importance in the determination of creditworthiness. The combination of scores and weights will be used to calculate a rating score for each of the five key risk factors. These rating scores will then be weighted to arrive at an overall rating score of between 1 (weakest) and 3 (strongest). The methodology is depicted in Figure C.1.

Figure C.1: Creditworthiness Assessment Methodology



C.3.2 Key risk factors

The four key risk factors are as follows:

- Economic outlook: including GDP growth, employment, diversification and demographic factors.

  Consider the future financial position of the local government. Is it likely to improve or deteriorate?

- Post project financial flexibility: the ability of the local government to fund the project and the maximum exposure in the event of termination.

  What are the size of the project commitments relative to the overall financial revenues and expenses of the local government?

- Institutional framework: the legislative framework for the local government and its power and obligations, level of reliance on central government and reporting and accounting procedures.

Does the local government have the appropriate authority and powers to manage and control the project and deliver on its obligations?

- Governance and management: the ability of the local government to manage and meet its future obligations.

  Will the local government be willing to use its authority and powers to manage and control the project and deliver on its obligations? e.g. organisational structure, risk controls and management.

  Does the local government have appropriate human resources and skills to manage the project?

The first two key risk factors are quantitative and more straightforward to assess. It is largely a computational process with little room to make subjective judgements. The third and fourth factors are qualitative and require a somewhat subjective based assessment. But it is still important to translate these qualitative factors (together with the quantitative factors) into an overall risk rating to allow the CEF to measure the relative level of risk compared to other local governments. It also allows the CEF to measure changes in risk as a result of any risk mitigation measures that may be developed.

The above factors are also often inter-related and this should be considered in the assessment. For example, a local government may face bleak economic prospects that will affect its revenues. It may also have a weak governance structure that lacks the political will to make unpopular decisions such as increases in its prices for services provided by either the project or the local government's other activities.

C.3.3 Information Requirements

The first step is to obtain necessary information from the local government. This information should be submitted as part of the application for credit enhancement. The information requirements will be discussed with the local government as part of the application and initial screening process (outlined in Appendix C.3.2). Information requirements are as follows:

Table C.1: Creditworthiness Appraisal Information Requirements

Data Required	Examples of Information Required
Project details	Detailed financial model – including project costs, availability payments, expected gap funding, sensitivity testing etc.
Economic justification	Economic model – willingness to pay, value for money analysis, economic assumptions etc.
Audited financial statements	Income Statement, Balance Sheet, and Statement of Cash flows
Plans and budgets	Relevant business and operating plans and budgets
Functions and powers	Legislative framework, powers, authority and functions that they may undertake. As well as the external approvals needed for the project. Also protocols and processes for making decisions and stakeholder engagement
Management and organisation structure	Company organization chart, including lines of reporting, areas of responsibility, and performance reviews of management staff
Staff numbers and	Qualifications, and experience of each

qualifications	key staff member

C.3.4 Indicators

The following tables to set out the indicators for each of the five key risk factors.

Table C.2: Indicators for economic outlook

Indicator	Method	Explanation
GDP Growth Rates	Compare the historical five year GDP growth rate within the local government region to the national GDP growth rate.	The economic growth that supports a regional economy is the fundamental indicator of a local government's economic potential. Gross domestic product combines both the population growth and income per capita growth. If the local GDP growth rate is higher than the national GDP growth rate, this indicates that there is more economic potential. All else being equal this indicates a sound financial outlook for the local government. It should be able to capture part of that economic growth through increased demand for its services, either from the project, its existing infrastructure or from other services.
Dependency Ratios	Calculate the relative dependency ratio be dividing the provincial dependency ratio by the national dependency ratio.	The dependency ratio is equal to the number of people under 15 plus the number of people 65 and over, divided by the working age population (between 15 and 64). Regions that have higher dependency ratios are likely to have lower economic growth (all else being equal). As the dependency ratio increases there may be an increased burden on the productive part of the population to maintain the upbringing and pensions of the economically dependent. This directly affects expenditures on social security and related services. It also has indirect consequences. A high dependency ratio can also indicate lower demand for infrastructure. Older people are likely to increase the demand for social infrastructure, such as hospitals, but decrease the demand in core infrastructure sectors including transport and energy.
Economic Diversity	Calculate the Herfindahl - Hirschman Index for the local government's region.	The HHI is a commonly accepted measure of market concentration. Economic concentration increases as the HHI increases. The HHI is calculated by squaring the percentage contribution of each sector to GDP and then summing the resulting numbers—as illustrated below: $$HHI = D_1^2 + D_2^2 + D_3^2 + \cdots + D_n^2$$ Sectors will correspond to economic subsectors in the PRC. For example: agriculture, construction, mining. A diversified economy provides a number of different revenue streams and supports economic growth by removing reliance on one economic driver. A lack of economic diversity leads to greater volatility to more risk of an economic downturn which would affect the local government's revenue and demand for its infrastructure and services. Measuring the HHI for the local government's province will

		provide an indication of the economic stability of the local economy.
Local Employment Growth	Compare the local employment growth for the province to the national average.	Employment growth directly influences both the demand and time-of-use of infrastructure. If local employment growth is above the national average, you can expect there to be greater economic activity and supporting infrastructure projects. Local governments in provinces with high employment growth are likely to have higher potential to support infrastructure investment through higher demand as well as higher revenue from other services that they provide.

Table C.3: Indicators for post project financial flexibility

Indicator	Method	Explanation
Exposure Risk	Two indicators:	Assess the type and amount of support the local government is providing to the project.
	Size of claims in the event of project default	Potential claim under a worst case scenario. Default conditions should be specified in the PPP contract. For example, if project revenues are 50% below expectations. Note this does not measure the likelihood of default occurring.
	Duration of contingent liability	Time horizon over which claims apply.
Financial Flexibility	Assess the ability of the local government to meet the direct financial commitments to the project. How much flexibility is removed by committing to the project and is this loss in flexibility manageable and acceptable? Need to consider the financial health of the local government post project and the size of the project relative to the local government. If the project is small, relative to the local government, its inclusion may have little impact on the financial position of the government and vice versa. Three indicators:	
	Debt structure: tenor of debt and reliance on short term debt	$$DS = \frac{short-term\ debt\ (less\ than\ 1\ year)}{total\ debt\ (in\ the\ most\ recent\ year)}$$ A local government must have a credible debt structure in order to manage its risk. Debt with relatively long maturity reduces refinancing risks whilst high levels of short term debt increases refinancing risk. The DS helps in assessing both re-financing risks and interest-rate risks over a one-year time horizon; the lower the DS the lower the risk.
	Operating Margin: after project related payments are considered	$$OM = 1 - \frac{operating\ expenditures\ (before\ debt\ \&\ investment)}{current\ (recurring\ revenues)}$$ Operating margin measures the government's ability to contain operating expenditure below operating revenues and generate surpluses needed for capital spending and debt

		amortisations. The higher the OM, the lower the risk. Multiple years (or a multi-year average) should be considered to determine whether the government has run persistent deficits.
	Debt burden: assumed debt to develop the project	$$DB = 1 - \frac{net\ direct\ \&\ indirect\ debt}{current\ (recurring\ revenues)}$$ Debt burden uses operating revenue as a proxy for its debt-servicing capacity. The higher the DB, the lower the risk. While debt is an important instrument for governments to bring forward investment, rising debt burden reduces balance sheet flexibility. The more volatile the revenue base the lower the debt burden that can be sustained.
Liquidity	Assess short term borrowings and credit facilities to manage liquidity	The local government should have a proven ability to manage its cash position to meet its direct financial commitments. This includes its cash balance and access to internal and external sources of liquidity to meet cash flow needs. Market access risk should also be considered. A local government with poor liquidity may not be able to meet its obligations under the PPP contract on time despite long-term solvency. This assessment will also provide an indication of the likelihood of the social capital partner needing to make a claim under the CEA. Liquidity should be assessed over several years to evaluate the local government's ongoing management of its cash flow.

Table C.4: Indicators for institutional framework

Indicator	Method
Legislative Framework	This is an assessment of legal capacity of the local government to carry out the project. That is whether the current powers, authorities and functions are sufficient to successfully perform and manage the project. The types of questions to be asked are: ▪ Is the project function something that is included in enabling legislation? ▪ Does the government have the ability to enter into PPP arrangements? ▪ Doe the government have control over its revenue? For example, what approvals does it require to vary user charges or taxes? ▪ Does the government have the power to undertake all of its obligations under the PPP? For example, to acquire land, to lease land or to subcontract services?
Political Environment	The local government may have a strong ability to meets its obligations but there may be little or no willingness to pay. Assessing this is difficult but there are a number of factors that can be looked at to understand the importance of the project and the level of support that the local government is likely to provide: ▪ Importance of the project – is it a key part of the local government's functions and/or obligations to its residents? ▪ Appeal of the project – is there strong support for the project from

	key stakeholders? Will the project appeal to the public? ▪ Background to the project – was the project initiated by the local government or was it under direction from higher level of government? Was the project part of publicised commitments? ▪ Political intervention – have there been any changes in leadership since the project was conceived and/or initiated?
Predictability	The frequency of changes in responsibilities or revenue raising capabilities can complicate decision making. The local government's ability to sufficiently plan and implement strategies to accommodate these changes can also affect its fiscal position. Predictability also relates to the local government's ability to finance the services they provide. When revenue raising capacity is limited, and there are significant unfunded or partially unfunded expenditure mandates, the local government is likely to have difficulty in meeting its obligations. A strongly predictable local government should have the autonomy to manage its budget.
Transparency and accountability	Public disclosure of financial reports is essential to efficient analysis, as well as to fiscal accountability. Strong transparency and disclosure practices, including timely and accurate reporting, are positive for the local government. The local government should be able to supply reliable reports (financial statements) that comply with Chinese laws and standards.

Examples of subjective scoring: judgement needs to be used to determine the score for each indicator (between 1 and 3).

Table C.5: Indicators for governance and management

Indicator	Method
Risk Management	Managing risk is fundamental to achieving financial sustainability. A local government must be sufficiently capable of managing risk as part of financial management (e.g. changing debt costs, foreign currency and interest rate risk). The assessment needs to consider: ▪ Whether there is a rigorous risk management system in place including things such as probability and materiality ▪ How closely the risk management principles align with those of the CEF ▪ Whether there is evidence of a comprehensive risk assessment of the proposed investment in the PPP
Investment policies and practices	A local government's policies and procedures on managing its investments and debt are also important to its long term financial stability. The assessment needs to consider: ▪ How does the government plan and manage its investments and debt? ▪ What type of debt and/or investment the local government undertakes and what standards/requirements has it had to adhere to? ▪ Does the local government adhere to conservative approaches on investment and debt management? ▪ Does it avoid exposure to high risk investments?
Organisational Structure/	The capability of staff is also a factor that affects the local government's credit-worthiness. The assessment needs to consider the ability of the local

Function of powers	government to: ▪ Identify good projects. In particular, this requires strong capability to manage the procurement of high quality willingness-to-pay surveys and to make judgements about realistic demand forecasts ▪ Realistically assess the engineering requirements for such projects and incorporate effective design into the contracting process ▪ Design projects with the view to minimising land acquisition risks ▪ Manage land acquisition in an efficient and timely manner ▪ Understand the financing requirements of PPPs and design contracts that will be bankable ▪ Conduct transaction processes in an effective and efficient manner ▪ Coordinate among various stakeholders in a way that enables the project to proceed in a timely manner ▪ Monitor the performance of contractors and enforce contracts to achieve the desired levels of performance. A lack of qualified staff will indicate a lack of capability to execute PPPs efficiently. This does not only include the number of staff, but their competence. The assessment should focus on the qualifications of key management staff, whether their responsibilities are clearly defined, and if management's performance is regularly reviewed. The assessment should also determine whether the government has the powers and functions to successfully manage PPP projects.

C.3.5 Scoring of Indicators

Each of the indicators will be assigned a score between 1 and 3. The CEF needs to tailor the assessment to the particular local government that has applied, and the project for which it has applied.

C.3.6 Weighting of Indicators and Key Risk Factors

Weightings are a subjective assessment of the relative importance of the main factors and sub-factors that determine the local government's creditworthiness risk. Suggested weightings are outlined below.

Table C.6: Weighting of indicators and key risk factors

Indicator	Weight	Key Risk Factor	Weight
GDP Growth Rates	25%	Economic Potential	25%
Dependency Ratios	25%		
Economic Diversity	25%		
Employment Growth	25%		
Project Exposure	10%	Post Project Financial Flexibility	35%
Horizon of Project Obligations	10%		
Debt Structure	20%		
Operating Margin	20%		
Debt Burden	20%		
Liquidity	20%		

Legislative Framework	20%	Institutional Framework	20%
Revenue Predictability and Flexibility	20%		
Financial Transparency	40%		
Political Environment	20%		
Risk Management and Internal Controls	25%	Governance and management	20%
Investment and Debt Management	25%		
Organisational Structure, Functions and Powers	50%		

Post project financial flexibility is assigned a weight of 35% reflecting the importance of assessing a local Government's ability to meet its financial obligations as well as its risk exposure to the project. Exposure risk is weighted lower than the financial flexibility factors reflecting the relative importance of a local Government's financial position on its ability to meet its payment obligation.

Since economic profiles and growth patterns strongly influence a local Government's future financial performance, a 20% weighting has been assigned to economic potential. While economic potential is an important indicator of a LOCAL Government's future economic prospects, it does not capture a local Government's immediate ability to fund a new project.

The local Government's institutional framework is assigned a weighting of 20%. Within this factor, the highest weighting is on financial transparency (40%) reflecting the importance of conforming to reporting laws and standards and releasing statements in a timely fashion. The remaining sub-factors— legislative framework, revenue predictability, and political history—are equally assigned a 20% weighting.

Governance and management is also assigned a weighting of 20%. The most weighting (50%) is assigned on a local Government's organizational structure, functions, and powers—reflecting the importance of managing and leading the PPP procurement and implementation process.

C.3.7 Overall Rating Score

Using the scores outlined in section C.3.5 and the weights outlined in section Weighting of Indicators and Key Risk FactorsC.3.6 a key risk factor score can be calculated by multiplying the indicator score by the assigned weighting. The overall rating score is then calculated by multiplying each key risk factor score by its assigned rating. The result will be an overall rating score between 1 and 3 – with 3 being the most attractive and 1 being the least attractive.

The CEF will have to decide how much risk it is willing to bear, but in principle the local government will 'pass' the creditworthiness assessment if it scores 2 and over.

In practice, the CEF should take a proactive approach during the risk appraisal and identify areas where the local government could improve its rating. An indicative scale is provided in the table below.

Table C.7: Overall Rating Score

Score	Category	Explanation
<= 2.0	High Risk	Not suitable for a CEA without major reforms and mitigation measures.
2.0 – 2.2	Medium Risk	Contingent approval – there are some areas of risk. Covenants should be issued to mitigate risk. Risk should be reflected in the price of the CEA.
>= 2.2	Low Risk	Suitable for credit enhancement subject to satisfactory outcome of the project appraisal.

Examples of the indicators to be assessed for each key risk factor are set out in the table below.

Table C.8: Indicators of Creditworthiness

Influence Factors	**Example Indicators**
Post project financial flexibility	▪ Financial Flexibility ▪ Debt structure ▪ Debt burden ▪ Operating margin ▪ Exposure risk ▪ Size of claim in event of default ▪ Duration of contingent liability ▪ Liquidity
Economic Outlook: Regional/Local	▪ Local GDP growth ▪ Dependency Ratio ▪ Economic diversity ▪ Employment growth
Economic Outlook: National	▪ GDP growth ▪ Dependency – national average ▪ Economic diversity ▪ Employment growth – national average
Institutional Framework	▪ Legislative Framework ▪ Political Environment ▪ Predictability ▪ Transparency and accountability
Governance & Management	▪ Risk controls and management ▪ Investment management ▪ Organizational Structure/Functions and power
Capability	▪ Experience with PPPs - number of PPPs ▪ Experience in sector - Number of this type of project

	▪ Relationship between parties – have they worked together before ▪ Private firms' experience in PRC (years, number of projects?) ▪ Staff capability

The outcome of the creditworthiness assessment will be a consistent measure of the creditworthiness of the local government, in the context of the project proposal. Although the outcome of the assessment will be a numeric score, it is not intended that this is an absolute measure of risk. The score will convey a relative level of risk based on a wide range of contributing factors.

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