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REPORT OF SCALABILITY REVIEW OF INVESTING IN INFRASTRUCTURE (“3I”)

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Abbreviation	Meaning
3i	Investing in Infrastructure
ADB	Asian Development Bank
AFD	Agence Francaise du Developpment
CMU	Contract Monitoring Unit
CWA	Cambodia Water Association
DFAT	Department of Foreign Affairs and Trade
EAC	Electricity Authority of Cambodia
EDC	Electricite du Cambodge
EIA	Environmental Impact Assessment
FTB	FT Bank
GRET	Groupe de Recherches et d'Echanges Technologiques
IFC	International Finance Corporation
IRR	Internal Rate of Return
LoS	Level of Service
MEF	Ministry of Economy & Finance
MIH	Ministry of Industry & Handicrafts
NISC	National Investment Steering Committee
PDF	Project Development Facility
PPP	Public-Private Partnership
RfP	Request for Proposals
RfQ	Request for Qualifications
RGC	Royal Government of Cambodia
ToR	Terms of Reference
VfM	Value for Money
VGF	Viability Gap Funding
WB	World Bank

EXECUTIVE SUMMARY

Investing in Infrastructure (3i) is an AUD45.6 million Australian aid investment which seeks to stimulate and accelerate private investment in essential small-scale infrastructure in Cambodia. The primary focus of the programme is to stimulate new, sustainable investments in private piped, treated water distribution and electricity distribution in rural areas. This Review considers whether (and, if so, how) 3i should be scaled up, and/or extended in timeframe, budget or sectoral focus.

In essence, 3i invites local companies to apply for support that is just sufficient to trigger a new investment in rural infrastructure that would otherwise not be made, and thus is “additional.” Following the principle of “blended finance” for infrastructure investments, limited amounts of public/donor capital can be used to attract, or leverage, new private capital to produce higher overall levels of investment in key public services. These are higher than either the public or private sector could have provided on their own.

The Review found that 3i’s financial offers are well calibrated, as a result of careful experimentation to determine the share of financing needed to trigger private investment. As part of this calibration, operating costs and likely revenues are calculated for each award; this ensures that the size of each grant is appropriate to the individual case. Given the high level of private sector interest in 3i’s grants now in the water sector, 3i’s Board could consider reducing the proportional size of its grants in future rounds. While the RGC has followed a clear and stable strategy in the water sector, pressures to reduce electricity prices have made new investments in electricity less attractive; the Board may consider increasing the proportional size of its grants in the electricity sector, to attract more interest.

Experience to date suggests that there is much unmet demand still for 3i support in both sectors, throughout rural Cambodia. There are inevitably uncertainties around 3i’s projections, as the context will change in various ways. Nonetheless, the projections appear reasonable; in addition, mitigation strategies can be identified, that would enable 3i to manage lower-than-expected uptake of grants offered in future rounds.

The component that aims to catalyse investment finance from institutional and international investors (‘Modality 2’) has not yet shown promise of scale, as the operators with which 3i typically works are too small to interest such investors. While opportunities remain and need to be explored, 3i’s capacity in Modality 2 may be scaled back.

3i has actively explored ways in which to enhance the gendered impacts of its work. Its research has shown that there are gendered benefits of improved access to piped, treated water and to electricity, particularly in terms of reducing the burden of household tasks. The Review Team met with several women who reported substantial benefits to their business and to their health, as a result of access to clean, piped water. Others eagerly awaited electricity connections, expected to transform their (women-owned) businesses. 3i has also made important steps in achieving gender-sensitivity in its own operations; half of the technical staff are women, and they hold positions of responsibility. Nonetheless, 3i may benefit from specialist gender expertise, to consider the feasibility of capturing the gendered results of its work.

The performance of 3i compares very well with other, similar programmes elsewhere, not least because of the conducive policy framework of RGC, and the active support and understanding of DFAT. In addition, the team is hard-working, and has achieved much in a short time because it has all of the skills required to assess and award grants, in-house. The Management Information System is thorough, up-to-date and easy to access. In future, the expertise and experience gained could be shared with others, including the RGC's emerging PPP programme.

Because the process of awarding grants, and then building the infrastructure, can take at least 18 months, and 3i has only been running for just over two years, actual connections are only now starting to come on-line. It is therefore too early to look for evidence of large-scale impact. Nonetheless, the programme is on course to achieve what it was expected to, in the Programme Design Document.

The Review recommends that 3i be extended for a further 2 years; it also finds that additional funds, if available, could be put to good use. Progress in the coming year can be monitored, to assess whether additional funds beyond that amount might be appropriate. In particular, metrics and milestones may be needed, to include actual connections achieved; the actual numbers can be used to further improve the projections. Potential risks of scale-up are itemised, but do not appear to be significant at this stage. 3i may also consider how it communicates its considerable achievements to the outside world, in accessible ways.

SCALABILITY REVIEW OF INVESTING IN INFRASTRUCTURE (“3i”)

1.1 INTRODUCTION: PURPOSE OF THIS REVIEW

Specialist consultants Jim Tanburn and Ned White visited Cambodia on two missions from 22-26 May and 24-31 October 2017, to conduct a Scalability Review of the Investing in Infrastructure (“3i”) Programme; this report summarises their findings. Investing in Infrastructure (3i) is an AUD45.6 million Australian aid investment which seeks to stimulate and accelerate private investment in essential small-scale infrastructure in Cambodia. The primary focus of the programme is to stimulate new, sustainable investments in private piped, treated water distribution and electricity distribution in rural areas.

As required by both 3i’s Project Design and by good project management practices, a Scalability Review of 3i needs to be conducted relatively early in the programme cycle, to determine how well 3i is performing and to recommend whether (and how) 3i’s size and the scope of its sectors and modalities should be scaled-up, or down. Based on this Scalability Review, a decision will be made on whether to close 3i after the designated 5-year time period, or extend and/or expand 3i’s timeframe, budget, and/or sectoral focus. DFAT and the 3i Programme Board will also regularly consider the potential for programme scale-up outside of this formal Scalability Review.

This report is based on the Terms of Reference for the Review; after describing 3i, it considers the question of whether 3i’s financial offers are well calibrated. It then considers ‘modality 2’ investments, and the gender dimensions of the programme. 3i is placed in its international context; the performance of the team is reviewed, and its results measurement processes discussed. Finally, Recommendations cover whether and how the programme should be extended, and other aspects.

1.2 SUMMARY DESCRIPTION OF 3I

3i was designed to put together three, internationally agreed aspirations, into an integrated and unique package that demonstrates the potential for a donor-funded project to catalyse new investments by local private businesses in Cambodia’s critical rural infrastructure sectors. These include:

- *Clean, accessible water for all is an essential part of the world we want to live in’ (SDG6).*
- *‘For jobs, security, climate change, food production or increasing incomes, access to energy for all is essential’ (SDG 7).*
- *‘A successful sustainable development agenda requires partnerships between governments, the private sector and civil society’ (SDG 17).*

This approach is explicitly consistent with, and encouraged by, the RGC¹; indeed, the Ministry of Economy and Finance (MEF) considers 3i to be an example of a model, to be scaled up where possible, as part of its emerging strategy and framework for Public-Private Partnerships (PPPs). 3i is also greatly helped by the long cultural and historical expectation in Cambodia that one pays for access to water. This is in contrast to many other similar developing economies, where public expectations and Government policies tend to favour cheap, below-cost tariffs, or even free piped water. This makes it very difficult to attract sustainable private (and even public) sector in the water sector.

In essence, 3i invites companies to apply for grants that are just sufficient to trigger a new investment in rural infrastructure that would otherwise not be made, and thus are “additional.” Following the principle of “blended finance” for infrastructure investments, limited amounts of public/donor capital can be used to attract, or leverage, new private capital to produce higher overall levels of investment in key public services. These are higher than either the public or private sector could have provided on their own. This is a simple and elegant concept, very much in line with national and international good practice for expanding access to infrastructure to more beneficiaries throughout the economy. However, actually achieving these projects and transactions in practice is very complex and challenging in its details. This report therefore aims to summarise and simplify, so that the key issues are clear.

3i’s offers to local private companies are customised to the specifics of each local situation and each individual project. At present, it offers a calculated average payback period for the private investment of 6 years, by contributing a maximum 60% of the total project cost. In the first two years, 3i has signed 38 contracts with companies to supply and distribute piped, treated water or electricity to rural households. These are expected to lead to 121,000 connections at an average cost of US\$57 per connection. Leverage of some US\$13m of private sector capital (i.e. not donor funding) is anticipated as a result of bidding rounds already completed.

To achieve this, 3i has established a configuration that provides supervising governance by RGC through the Board, while ensuring full technical review of all proposals through 3i technical staff and an independent Oversight Committee. It has also adopted a flexible approach to implementation, that is in line with good practice; the offer to service operating companies has been adapted over time, to ensure that it is appropriate.

However, at the time of writing, only the first round of water project grants have advanced to the construction phase, and relatively few connections have been physically established. This is also because constructing water treatment works and laying pipe take at least 18 months. Nonetheless, implementation to date is clearly on track to achieve what was expected. 3i also has the option, under what is termed ‘modality 3’, to provide funding for ad hoc, catalytic interventions which address infrastructure market constraints. Under this modality, for example, the programme has helped the Cambodian Water (industry) Association to support professionalisation in Cambodia’s private water sector.

¹ “Rectangular Strategy” for Growth, Employment, Equity and Efficiency Phase III Of the Royal Government of Cambodia of the Fifth Legislature of the National Assembly, Phnom Penh, September 2013 Paras 82.6 and 87.2

2. REVIEW FINDINGS:

2.1 ARE 3I'S FINANCIAL OFFERS WELL CALIBRATED AND ACHIEVING GOOD VALUE-FOR-MONEY?

Under Modality 1, 3i aims to use its own grant funding resources, as well as its project analysis, preparation, and due diligence capabilities, to attract additional investments by the private sector providers, that would otherwise not have been made. The key question this often revolves around is, “are these grants too large, mainly subsidizing private operators’ returns, or inefficient – spending too much in donor grants to achieve too little in overall benefits for rural consumers and beneficiaries?” Alternatively, there is also the possibility that 3i’s contributions may be too limited to induce private operators to undertake new investments. Ultimately this is a question of efficiency. Public expenditure on utilities – from donor funding, and over time national budget – is justifiable where it represents an efficient way of delivering essential services.

In the water sector, 3i’s Modality 1 grants have had the flexibility to set a range of grant-to-private-investment leverage ratios. The maximum ratio of 60:40 has allowed 3i to fund up to 60% of new water project costs, with the private operator providing the rest from private capital or bank loans. The 3i project has its own investment analysis model for estimating the investment and operating costs, the likely revenues, and the likely investor returns for each individual project. This has prudently allowed 3i to have considerable flexibility in determining the size of each grant and to prevent inefficiency in the use of grant funds. Future monitoring (considered further below) may consider in particular the number of connections achieved, and the sustainability of each project, over the long term.

It is impossible to completely ‘prove’ that investments stimulated by 3i would not have been made without 3i’s contributions. However on the basis of 3i’s detailed costing models, it is possible to prove that investments would not be profitable without public support of some kind. Also, there are trade-offs, for example, between additionality, Value for Money (VfM) and leverage. A grant representing a high proportion of the investment might have high additionality but low VfM or leverage. 3i has worked hard to fine-tune the offer over successive rounds (the offer within a given round must be the same, to ensure fairness). Another trade-off is that more marginal 3i offers may imply greater commercial risk, and therefore potentially wasted effort by the 3i team, and lower sustainability.

The best practical indicator of whether 3i’s contributions are too-big-or-too-small is the level of response 3i has received from the current marketplace of private operators and investors to each of its “rounds” of new grants. The fact that the level of private sector applications to 3i, especially in the water sector, has been so high (even risking a rising level of over-subscription) is a clear indicator that the terms of 3i’s grants are attractive. Given this high level of private sector interest in 3i’s grants, 3i’s Board could consider reducing the proportional size of its grants to water sector operators in future rounds, spreading its resources to support a larger number of projects with higher levels of leverage. It already has the flexibility to do this. Such a change, or trend, could allow 3i to reach an even larger number of projects, improving the additionality impact of the project. It would however involve greater risk for the operators.

3i's Oversight Committee makes an explicit judgement of the additionality of the investment; it is unusual for a programme of this kind to have such a formal, documented approach to additionality (Donor Committee for Enterprise Development, 2016).

As mentioned previously, the ability of 3i to contribute to and support new investments in sectors like water, electricity, etc. depends heavily on the foundation of the policy, legal, institutional, and regulatory framework as established by the RGC. The size and terms of 3i's contributions are a function of the RGC's policies and regulations on the allowed rate of return on private sector investments in these sectors. Simply put, the lower the rate-of-return allowed by the RGC, the less the incentive for private operators to invest in system expansion, and the greater the need for 3i contributions to trigger new projects. The higher the allowed rate of return for private operators, the higher the incentives for private operators to invest on their own, and the lower the need for 3i grants.

In the water sector, MIH has followed a clear and stable strategy of licensing more and more private operators, and allowing private operators to earn a fixed rate-of-return of 15% on their base of assets. The marketplace's response to this so far has indicated that this established Rate of Return (RoR) has attracted more interest and investments by private operators and investors. However, the electricity sector has recently seen policy changes by the RGC to reduce retail electricity prices since 2015, including reducing the allowed RoR for licensed private providers to 10%. Given that borrowing rates for private operators from commercial banks in Cambodia are currently in the range of 12% to 15%, many private operators see making new investments in electricity as less attractive. One option that 3i's Board may consider in the future is whether to increase the allowable, proportional size of its grants in the electricity sector to attract more private operator interest.

Rounds 1 and 2 of requests for proposals by 3i advertised that the offer would be calibrated, so that the awards would enable investors to achieve a 15% Internal Rate of Return over five years. This was in line with the RGC Prakas or regulation. However, 3i found that many rural investors struggled to fully understand the concept of Internal Rate of Return; they also found that it was very sensitive to the assumptions made. Rural investors could however relate more readily to the idea of ensuring a given payback period. Therefore, in Round 3, a six-year payback period was advertised as the benchmark financial performance on offer.

Some uncertainty around actual expenditures by 3i is inevitable, since all contract payments depend on co-investment by local companies. This in turn is dependent on availability of funds, procurement of the necessary permits and materials, etc. 3i has used its experience to date to maximise the accuracy of projected financial needs, going forward. It is also increasingly structuring contracts to penalise delays by reducing the 3i contribution; this acts both as an incentive to maintain schedules, and to mitigate delays in expenditure.

Nonetheless, some uncertainty remains on exact expenditures; it may therefore be appropriate for 3i to have a strategy in reserve for expending budgeted funds that are not needed (at short notice) for their original purpose. In this context, there are opportunities to invest in the expansion of existing water operators to outlying areas. These opportunities were initially put on hold due to the board's preference to initially support unlicensed operators, but could probably be activated at short notice if appropriate.

2.2 REVIEW OF 3I'S MODALITY 2

The ToR call on the team to form a view about whether 3i has made sufficient progress in identifying and prosecuting 'modality 2' investments²; the aim here is to catalyse investment finance from the private sector to expand what 3i can achieve through its grant mechanisms. The team found that, in general, the kind of investment opportunities being created by 3i are too small to interest institutional and international investors; opportunities should therefore be considered for scaling back 3i's capacity to implement Modality 2. There are, however, some opportunities in both water and solar electricity sectors. In the water sector, 3i has just signed a contract with a larger platform water company, which aims to attract investors, and to buy up less efficient water companies; this might play an important role in consolidating the sector over time.

2.3 HOW IS 3I PERFORMING ON GENDER DIMENSIONS OF PRIVATE SECTOR PROMOTION?

Performance on gender dimensions of private investment promotion can be divided into the gendered results of improved access to treated water and electricity, and the extent to which 3i's operations are gender sensitive. To form a view, the Review team interviewed almost all the female members of the 3i team, and spoke with female traders, food processors and householders. It also reviewed in detail the gender-related documentation of 3i.

Regarding the gendered impacts, 3i initially carried out desk research on the gendered effects of access (or lack of it) to treated water and electricity, in Cambodia and worldwide. 3i then commissioned original field research into the gendered effects of the transition to access; women's and men's responsibilities in the home; and small and medium enterprises (SMEs) and gender. This research involved 24 in-depth interviews, so findings are indicative rather than definitive.

In summary, it found that women typically bear much of the burden of household tasks in rural Cambodia, including for example fetching water, washing and cleaning, cooking and child care. Gaining access to treated water and electricity substantially reduces the burden of these tasks; this means that women have more time to spend as they choose – for example with their children, or running a small business. Women particularly appreciated the improved security and privacy, as a result of not having to go to the river for washing. The study also found some indications that access to water and power reduced domestic conflict and disagreements.

Business opportunities were created, largely along gendered lines, with women for example often involved in trade, tailoring, catering or hair salons. Perhaps due to increased competition, however, there was little evidence that connections improved the profitability of the business.

One question is how 3i resources can best be used to efficiently capture the gendered results of its catalytic work going forward? The program's success to-date has depended on focussed allocation of finite resources and a high level of professionalism in researching sectors and in negotiating contracts. This has been achieved through much hard work, and it would be important to ensure 3i maintains its focus in this area –

² For more information on modalities, see the 3i design goo.gl/wj32vU

as required by the PDD. Nonetheless, it is clearly delivering substantial gendered benefits in its work, and it could be helpful to capture at least some of those results, particularly once the workload involved in negotiating contracts has passed its peak.

It is also important to ensure that the way 3i operates is maximising the gendered benefits of its work, while minimising gender-related downsides. Some progress has been made in that, to date. Feasibility studies now include interviews with local women. Commune Councils, who issue permits, are required by RGC to include women in their composition; women may be expected to have more time to participate in councils and other governance processes, as a result of 3i investments.

Companies co-investing with 3i are often family businesses, run by a husband and wife (all partner companies met by the Review team came in this category); the collateral put up may also be owned by a woman (e.g. the mother of one of the couple). Division of tasks is along gendered lines, with the man often supervising construction and installation of the infrastructure, and the woman managing the finances and administration.

This apparent reality is not reflected in 3i contracting; the contracts are generally signed only by the man. It might be more indicative of actual responsibilities if contracts with family businesses were in future signed by both the woman and the man, to formally recognise the role of the woman, and involve her in 3i's processes. However, there are various potential risks associated with this idea, and it may not anyway prompt a change in behaviour. So it is only mentioned here as an apparent anomaly, for possible further consideration.

Half of the technical staff of 3i are women; the senior post of Deputy Team Leader is held by a woman. These appointments are likely to have an important demonstration effect. The Board consists only of Government representatives, at the request of RGC, and is almost all male (except for Australia's Deputy Head of Mission, representing DFAT). Nonetheless, DFAT could perhaps encourage RGC to nominate more female representatives, over time.

Promoting equality between women and men is not an explicit objective of 3i; the programme catalyses investment in access to clean water and electricity, which many consider to be basic human rights. Nonetheless, the programme may benefit from specialist gender expertise, going forward, to consider the feasibility of measuring the gendered impacts of its work. This might also include consideration of ways in which 3i's operations can be configured to optimise gendered impacts, and perhaps even the formulation of a Women's Economic Empowerment strategy for 3i.

Given the demanding nature of its current workload, this probably should not include any major adjustment to the way it works; the field research report, for example, proposes that 3i advocate for more equitable distribution of domestic responsibilities. There have also been suggestions that the impacts for women of access to clean water and electricity are enhanced if complementary training is provided, for example in household hygiene. The challenge will be to identify ways to illustrate successes, and harness opportunities which give effect to the Australian Government's focus on gender, without curtailing 3i's ability to achieve its core objectives. It would be better to collaborate with others already configured to provide complementary support, rather than add to 3i's mission.

2.4 ADVANTAGES AND DISADVANTAGES RELATIVE TO COMPARABLE INTERVENTIONS IN SIMILAR CONTEXTS INTERNATIONALLY

There are few direct comparators with 3i, since it blends a focus on rural access to utilities with the leverage of additional private capital. Similar public-private investment and facilitation funding projects have been tried by governments and international donors in India, the Philippines, Uganda and South Africa amongst other countries, with the support of multilateral development banks and bilateral donors including USAID and DFID.

A programme like 3i is feasible in Cambodia because RGC's rather unique policy and regulatory framework specifically encourages it. It does, however, require a highly adaptive management style, which is not typical of infrastructure projects. The format of the offer has already changed, in the light of experience gained, over the lifetime of the programme, to maximise VfM and leverage while maintaining demonstrable additionality.

3i also focuses on small-scale investments, meaning that international companies from outside of the immediate ASEAN economic community are unlikely to be interested in co-investment. Nonetheless, and now that the foundations are in place, there are likely to be opportunities for international companies in the future; there are already preliminary contacts established with the Australian Water Association, for example. Themes where companies from more advanced economies could add considerable value include maintaining water quality, ground water management, and sector governance.

Internationally, there have been many attempts by donor organisations to sponsor projects aimed at promoting new private investment as well as risk-sharing/management in small-scale and rural water, electricity, and other public services provision. Such projects have often been challenged by factors including:

- Existing water and electricity systems are already in public sector hands in terms of ownership, management and staffing
- Water, electricity, and other public services tariffs and rates have already been set below full costs, by Government policy

Lessons learned from comparable international projects include:

- Projects to incentivise additional private sector investment must first be based on a clear foundation of a policy, regulatory and institutional framework that incentivises private sector participation, especially allowing service providers to charge cost-recovering rates
- Lack of experience by private operators or awareness of the donor-sponsored project
- Lack of access to new financing, such as commercial debt or equity, by private firms
- Limited capacity by the project staff to manage and support the case load of projects.

The team finds that 3i is able to address all of these factors in the Cambodian context, thanks not least to the conducive policy framework of RGC, and the active support and understanding of DFAT.

2.5 3i PROJECT'S TEAM COMPOSITION & PROFILE

Overall, 3i's design has followed a strategy of creating a single, multi-disciplined, and integrated team of full-time professional staff who are capable of performing the tasks required in its project management cycle. This includes outreach & generating awareness of 3i's services among key stakeholders (especially private sector partners); managing "rounds" of 3i's requests for expressions of interest from private operators; conducting due diligence on private partners & projects; completing technical, financial, environmental and other key feasibility studies on its selected projects; reviewing & approving technical designs; managing contracts/ agreements; monitoring performance & dispersing funds, etc. Compared to many other similar small-scale public-private water and energy sector programmes internationally, this means that 3i's team performs nearly all of its functions "in-house," and it has built up a centralised knowledge base, project management capacity, and institutional memory for the analysis and implementation of its public-private infrastructure projects.

Sometimes such institutional approaches are questioned, especially by donors and by the private consulting/advisory services market, for being overly-centralised, monopolistic, and for incurring higher overhead costs to sustain such a project. Some similar international projects come under pressure to reduce their management costs by outsourcing technical services (engineering, financial, legal due diligence, environmental assessments, etc.) to multiple firms and having only a small staff of Project Managers and contract administrators. Such approaches may be worth considering more carefully after the market for public-private provision for small-scale water and electricity matures in the future. However, given the innovative nature of the products and projects that 3i is trying to support, the numerous uncertainties that must be carefully analysed and addressed (technical, financial, social, environmental, etc.) with each specific project – it is a clear strength that 3i's single team can quickly and clearly provide these functions internally with a capable, multi-disciplined and integrated team of staff.

The team is hard-working and capable; the written outputs are of high quality, and the team has successfully navigated the stringent requirements of RGC, DFAT, service operating companies and Palladium. The Management Information System is thorough, up-to-date and easy to access. For example, it logs all contacts with partner companies, in an impressive way.

Once all the contracts are signed – still some years away - work for 3i's engineers (about half of the technical staff) will reduce significantly. On the other hand, it may need more capacity in monitoring outcomes, optimising development impacts, and perhaps other skills, to build on the networks and reputation it now has. For example, specialist staff might be needed, to maximise the potential for 3i-facilitated engagement between Cambodia's and other countries' water or energy industries.

One option that 3i's team of staff should consider going forward is how to strengthen its knowledge-sharing and cooperation with RGC's emerging public-private partnerships (PPPs) programme, being led by the MEF. The kind of inter-disciplinary capacity to analyse, prepare, and implement sustainable public-private investments is nearly exactly the kind of capacity that national PPP units and sectoral PPP nodes require. During the remainder of 3i's tenure, as well as beyond, the 3i team should consider specific outreach initiatives to share its first-hand experience, its models, its skills, and its practical lessons learned with the other key stakeholders in RGC's PPP programme.

2.6 ARE 3I'S PROJECTED RESULTS CONSISTENT WITH LIKELY RESULTS?

3i devotes substantial staff time to monitoring progress in implementing contracted commitments. Nonetheless, delays are inherent in the approach; thorough preparation and implementation of the bidding rounds requires extensive research and documentation. Early bidding rounds have involved a process of experimentation, to meet the requirements of RGC and to stimulate a manageable number of appropriate proposals. Once the contracts have been negotiated and signed with the partner companies, obtaining all the permissions and building the works and distribution networks generally takes at least 18 months. Given that 3i has been running for just over two years, actual connections are only now beginning to come on-line.

To illustrate, and as outlined above, contracts that have been signed are anticipated to result in about 121,000 connections; at the time of this Review, however, only 5% of those have been achieved to date. While this is to be expected, 3i will need to continue monitoring progress with actual connections, going forward, through its own data collection.

The Review raised the question of whether an influencing strategy could help to achieve broader impact. 3i has not yet managed to communicate its work in simple and accessible terms. This is not surprising; all attention has necessarily been on researching and negotiating contracts. Going forward, however, the Review recommends that more attention is paid to how 3i communicates its considerable achievements to the outside world, in accessible ways.

It might also be noted that the PDD does not attempt to estimate precise economic or social wellbeing outcomes from 3i's investments. Instead it considers, as primary outcomes: increased access to electricity and piped, treated water, and co-investment leveraged. Because of this focus, 3i probably needs to have a more explicit system in place for monitoring physical connections achieved, and their sustainability. Measuring empirically the impacts which flow from improved access to these services (e.g. the potential secondary outcomes listed in Annex 1 of the PDD) is challenging. The development impact of connections catalysed by 3i may take many different forms, including for example improved health or security, reduced domestic workload, or economic opportunities created.

Nonetheless, at this early stage connections appear to be having significant qualitative impacts. The Review team were told by one woman, for example, that when she washed in the untreated water previously supplied, she had to go to hospital for costly injections to heal skin complaints (skin complaints were also mentioned in the 3i gender study, above). With the newly available treated water, she no longer has this problem. Similarly, another woman who produces noodles for sale noted that previously, the water made her noodles fragile, whereas now the treated water enables her to make a much improved product. Women traders interviewed by the Review team for their views about forthcoming electrification of their village hoped that the connections would come as soon as possible, anticipating a range of new economic opportunities, for example relating to refrigeration and water pumps.

The question is how 3i captures these potentially impressive impacts at reasonable cost and with credibility – given the many possible dimensions of impact, the distances between projects, the unpredictable rate at which connections are made, and the risk of contamination of control groups. 3i has already launched a number of cross-sectional, before-and-after and longitudinal studies, although the initial findings are largely

inconclusive. This is broadly consistent with international (and much larger) studies, that find that the effects of access to piped, treated water can be diverse, and may be small or even negligible in some dimensions, depending on local circumstances. It is therefore suggested that, in line with the SDGs, it is accepted that access to clean water and electricity are beneficial, so that 3i can dedicate as much time as possible to its 'core business' of catalysing further investment, and to monitoring performance of the private sector partners.

In particular, it would be helpful for 3i and the Board to agree metrics for this monitoring, to ensure that implementation is broadly on track and in line with the funding available and anticipated. Monitoring should focus on the parameters outlined below, leaving service quality to continue to be monitored by RGC:

- Awards made, value and leverage
- Physical connections actually achieved
- Sustainability of the investment

Note that the incentives are aligned to encourage as many physical connections, with as much sustainability, as possible; nonetheless, it would be important to confirm that this is realised in practice.

3. RECOMMENDATIONS

The Programme Design Document (Section 9.2) provides for the options of extension and possible expansion, to be considered by this review. The team concludes that excellent progress has been made towards implementation to date, and that a two-year extension is justified. Indeed, it would be important to confirm it as soon as feasible, to fully capitalise on investments now in motion, the team now in place and the procedures already established.

Three scenarios were tabled: a no-additional-cost extension, an extension with additional funds of AUD7m, and an extension with additional funds of AUD26m. These options were presented to allow consideration of lower and upper additional funds scenarios, and do not represent a financial commitment by DFAT or agreement by the 3i program board. The team considered these in detail; in particular, it considered the evidence that additional funds could be put to good use. It found that eligibility parameters for the advertised rounds to date had been tightly controlled, in an effort to avoid the funds being over-subscribed. In the event, they were broadly fully-subscribed, indicating good judgement.

Nonetheless, the limitations could be relaxed, for example to allow for much wider geographical coverage and less strict licensing qualifications; it seems that this would lead to a substantial expansion in demand for 3i's offer, with viable and pro-poor investment opportunities. Early indications are that extension with the smaller amount would already be justified; progress in the coming year needs to be monitored to assess whether additional funds beyond that amount might be appropriate - for example in light of the potential to make proportionally smaller awards with greater leverage in the water sector, but larger grants with more outreach in the electricity sector. Specifically, key risks specifically associated with scale-up may include:

- Suitable partners do not apply in practice, because the offer is not sufficiently attractive (the opposite risk is that the rounds are very over-subscribed - calling for continued good judgement)
- The tariff regimes become unattractive, for example because of pressures to lower utility prices
- The cost of borrowing the counterpart funds from commercial sources becomes too high
- Commercial and other loans become unavailable due to a credit squeeze or similar
- Other developmental initiatives make competing offers that appear more attractive

None of these risks are currently considered to be significant, but clearly the situation should be continuously monitored.

It would also be appropriate to consider ways to scale back 3i's capacity in implementing Modality 2; some capacity should be retained, to take advantage of chances to leverage private investment into future investment opportunities.

There are potentially opportunities for 3i to help leverage for example Australian industry groups and technical institutions or NGOs to bring important expertise, especially in the water sector, to Cambodia in the future. Modalities 2 and 3 still may offer avenues to prompt or facilitate such engagement, and 3i should stay alert to opportunities. But the general size of current operations among 3i's typical partners does not justify major roll-out of Modality 2 to private investors at this time.

The review team was also asked to consider whether processes currently performed by 3i could be suitable for partial or eventual handover to public or private institutions in Cambodia. As mentioned above, the team recommends that the skills and knowledge of the 3i team be made available in support of the RGC's emerging PPP programme. Beyond that, however, it is not obvious that these processes could readily be handed over to local organisations; efforts to achieve that in other countries have not always been successful. The situation should be monitored over time, since the institutional setting will mature in the coming years, and there may be emerging opportunities in the future.

Other recommendations made in the report include that:

- 3i commission specialist gender advice to consider the feasibility of 3i capturing the gendered impacts of its work to improve rural access to infrastructure; an expert could also advise on ways in which 3i might operate, that would optimise such impacts over time
- 3i place more deliberate focus on monitoring the physical connections being achieved, and their sustainability over time; correspondingly less effort could be placed on the broad research effort to demonstrate the positive developmental impacts of access to clean water and electricity.
- 3i consider how it can 'package' and communicate what it does more simply to external parties, so that the impressive achievements are not obscured by a need, for example, to fully understand the permitting system in Cambodia.

ANNEX A: PEOPLE & ORGANISATIONS MET DURING THE MISSIONS

Organisations & People met during October 2017 Mission:

- DFAT: Ruth Stewart, Simon Buckley, David van der Zwaag, Ms. Sopeat Mer
- 3i staff: Peter Roggekamp, Ms. Mola Tin, Ms. Navy Hort, Ms. Soryda Ean, Ms. Chandaly Seng, Ms. Keavatey Srun, Ms. Stefanie Lymm, Morten Kvammen
- Palladium: Alwyn Chilver
- Council for the Development of Cambodia (CDC): H.E. Im Sour, Deputy Secretary General; Kang Sung Chheang, Office Chief
- Solar power lunch: Cécile Dahomé (Sevea Consulting); Cyril Monteiller (Solar Energy Association Cambodia); Stephen Higgins (Mekong Strategic Partners); Sov Leang (Sun-eee Pte Ltd.); Jim Gramberg (Solar Partners)
- Kampong Chhnang Province: Ms. Yung Pannary, Mr. Sok Khemera, water company (plant under construction); Phon Sokun, water company (plant completed); 3 women food processors / householders in nearby village
- Kampong Cham Province: Mr. Sambo Khum, electricity supplier; 2 women traders in nearby village

Organisations & People met during May 2017 Mission:

- DFAT: Ruth Stewart, Deputy Head of Mission; David van der Zwaag, Second Secretary; Sopeat Mer, Senior Programme Manager
- Council for the Development of Cambodia (CDC): H.E. Im Sour, Deputy Secretary General; Kang Sung Chheang, Office Chief
- Ministry of Economy and Finance (MEF): H.E. Hem Vanndy, Under Secretary of State
- Ministry of Industry and Handicraft (MIH): H.E. Ek Sonnchan, Secretary of State; Kim Thunsamng, Deputy Director General, General Dept. of Potable Water Supply
- Electricity Authority of Cambodia (EAC): Yim Viseth, Director, Supply and Consumer Affairs Dept.
- Oversight Committee: Andrew Thomson, Geoff Revell
- Electricite du Cambodge (EDC): Dr. Loeung Keosela, Director
- Cambodian Water Supply Association: Hor Khykeng, Executive Director
- GRET: Clement Frenoux
- AFD: Marion Allimant, Borin Pin
- ADB: Januar Hakim

The Review Team spent 13 days in Cambodia, and is grateful to all those met for their time and patience in explaining the operations and achievements of 3i. Nonetheless, 3i is a complex programme that is ambitious and extensive; in the time available, it was only possible to gain a broad understanding, coupled with anecdotal evidence and some 'drilling down' to check key variables (notably during short visits to the field). The Review Team did not conduct original research, nor was it possible to validate or confirm much of what they were told. This report represents an external and objective consideration of 3i's progress, within these practical constraints.

DFAT Management Response to the Scalability Review of 3i

DFAT thanks the independent reviewers, Mr Jim Tanburn and Mr Ned White, for their thoughtful and rigorous consideration of 3i's progress, and constructive recommendations for the project's future efforts.

At its outset, 3i was considered a relatively new approach for both DFAT and the Cambodian Government. It was, and still is, a fresh and unique approach to Australian and Cambodian partnership with the private sector to expand reliable, affordable and sustainable utility services.

Because of the untested nature of 3i's approach, this Scalability Review was included in the 3i design as a way of assuring, at a relatively early stage, whether plans to scale up spending remained suitable following experience through 3i's inception phase.

DFAT is pleased to learn of the reviewers' central assessment that 3i is performing well, and that its financial offers to companies appear to be well-calibrated to achieve value-for-money. This is a firm endorsement of the hard work and constructive cooperation between the 3i team and officials from respective Cambodian Government ministries over the program's first 26 months of operation.

The Scalability Review also offers assurance to the 3i program board, consisting of DFAT and Royal Government of Cambodia partner ministries, that 3i's performance and activities are in line with expectations for this stage of the project.

The Australian Government has a Memorandum of Subsidiary Arrangement with the Royal Government of Cambodia for 3i which describes the program board as being responsible for the approval of Annual Work Plans and budgets.

Accordingly, responses to recommendations on program duration and budget will need to be considered and, if suitable, agreed by the board in early 2018.

Adoption of recommendations regarding program implementation will be at the discretion of DFAT and the 3i Managing Contractor, Palladium.

The following page outlines individual recommendations, DFAT's response and explanatory notes for follow-up actions.

#	Recommendation	Response	Explanation	Timeframe
1	Consider increasing investment budget of 3i to maximise private investment leveraged, and thereby beneficiaries reached by 3i	Noted	DFAT will consider this recommendation with regard to other development assistance priorities prior to determining whether to commend this option, and the value of any increase, to the 3i program board in early 2018.	For decision at early 2018 board meeting
2	Consider increasing duration of 3i to allow completion of all investment contracts	Noted	Dependent on the 3i program board's response to recommendation 1 above.	For decision at early 2018 board meeting
3	Increase the allowable proportional size of grants in the electricity sector	Agreed	This option should be pursued on a case-by-case basis, in particular where higher than average social and economic outcomes are expected from expansion in the relevant service area.	2018 Annual Work Plan onwards
4	Decrease the proportional size of grants in the piped, treated water sector	Agreed	This option should be pursued on a case-by-case basis, but with due attention to risks of prompting riskier borrowing behaviour by making 3i's contributions more marginal. After supporting informal water companies in early rounds, 3i is well-placed to now support licensed water companies expand to more remote areas.	2018 Annual Work Plan onwards
5	Scale back 3i's capacity in implementing Modality 2, but retaining some capacity to take advantage of emerging opportunities	Agreed	Retained capacity for Modality 2 should ensure lessons learned to-date are documented and disseminated appropriately, and access to on-call support is maintained for any new Modality 2 opportunities if they arise.	As soon as practicable
6	Monitor prospects to partially or fully hand over 3i processes to Government of Cambodia	Noted	Noting similar efforts have not always been successful in other countries, DFAT nonetheless supports the idea of exploring ways to transfer certain functions to government over time. This recommendation will be discussed with 3i program board ministries in due course.	Open timeframe More feasible toward end of program
7	Consider opportunities to leverage, for example, Australian industry groups and technical institutions to enhance expertise in target sectors	Agreed	Industry professionalisation and knowledge transfer could be supported through deeper links between Cambodian utility industries and more advanced industries abroad. Any engagement should be self-sustaining beyond initial support from 3i, and be able to demonstrate expected benefits to Cambodian partners.	Open timeframe
8	Commission specialist gender advice to augment 3i capabilities	Agreed	DFAT considers suitable specialist advice could probably be sourced domestically in Cambodia.	2018 calendar year
9	Place heightened focus on monitoring physical connections and their sustainability over time	Agreed	3i should ensure team responsibilities and work plans are adjusted as early as possible to integrate this focus, and identify additional resources to assist as necessary.	As soon as practicable
10	Consider how to package and communicate consistent narrative to highlight achievements to date	Agreed	This will be addressed through ongoing management communications between DFAT and 3i.	As soon as practicable