

Independent Review: Investing in Infrastructure Program Cambodia

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Acronyms

ADB	Asian Development Bank
AWA	Australian Water Association
CAP-RED	Cambodia-Australia Partnership for Resilient Economic Development
CWA	Cambodian Water Association
DFAT	Department of Foreign Affairs and Trade
EAC	Electricity Authority of Cambodia
EDC	Electricite du Cambodge
EOPOs	End of Program Outcomes
GESI	Gender Equality and Social Inclusion
GoA	Government of Australia
GPS	Government of Preah Sihanoukville
PDD	Program Design Document
PIP	Provincial Investment Plan
MEF	Ministry of Economy and Finance
MITSI	Ministry of Industry, Science, Technology and Information
MLMUPC	Ministry of Land Management, Urban Planning and Construction
MME	Ministry of Mines and Energy
MSA	Memorandum of Subsidiary Agreement
M&E	Monitoring and Evaluation
NSDP	National Strategic Development Plan
P4I	Partnerships for Infrastructure
REAI	Renewable Energy Assessment and Integration Strategy
REEs	Rural Electricity Enterprises
RGC	Royal Government of Cambodia
SDGs	Sustainable Development Goals
SERC	Securities and Exchange Regulator of Cambodia
SMEs	Small and Medium Enterprises
TA	Technical Assistance
VGf	Viability Gap Financing
WHS	Work Health and Safety
WUIP	Water Utility Improvement Program
3i	Investing in Infrastructure Program

Executive Summary

As Cambodia moves towards achieving high rates of economic growth and improving development outcomes, infrastructure has remained a key area of investment for the Royal Government of Cambodia (RGC). Under the country's National Strategic Development Plan (NSDP) 2019-23, the RGC has committed to spend USD 5 billion on infrastructure to finance public investment projects across the transportation, water and sanitation, power and energy, and postal and telecommunications sectors.

Australia is committed to supporting Cambodia fill its infrastructure gaps. The Investing in Infrastructure Program (3i) (2015-2022) is the Australian Government's flagship AUD 51.7 million infrastructure investment Cambodia, aimed at promoting and catalysing business growth in infrastructure through creating a more enabling environment for private sector investments. The primary focus of the 3i program was initially to stimulate new, sustainable investments in private piped, treated water distribution and electricity distribution in rural areas, using a Viability Gap Financing (VGF) model. The program has since expanded its scope to also look at policy support across the energy, infrastructure bond financing, smart cities and building sectors.

The 3i Review intends to help the Department of Foreign Affairs (DFAT) assess 3i's performance to date, make recommendations on what changes, if any, are needed to ensure 3i meets its EOPOs, and support informed decision making around future program activities that will be transitioned to the new Cambodia-Australia Partnership for Resilient Economic Development (CAP-RED).

The Review adopted a mixed-methods approach, which involved collecting and analysing both qualitative and quantitative data. Approximately 70 consultations with government officials and private sector water and electricity operators were held between April and August 2021 and over 50 documents analysed, guided by six key evaluation questions (KEQs). As a result of restrictions on movement and prohibitions against in-person meetings during the review period as a result of COVID-19, the review team was unable to interview program participants/end users (i.e., households who now have access to piped water or electricity as a result of 3i's interventions). Though every effort has been made to triangulate results, this has unavoidably resulted in a significant gap in the report findings and the omission of participant perspectives—and may have skewed the findings to reflect the perspectives of water providers. The Review found the following key lessons:

Findings on Effectiveness

The Review team found that the VGF model appeared successful, in the way that it leveraged private sector investment as a means of delivering increased piped water and electricity to targeted beneficiaries, on the basis of both stakeholder consultations and a review of 3i's program reporting. Anecdotal evidence from the consultation process revealed that the VGF model had successfully supported operators to expand infrastructure to uneconomically attractive areas and support regional investment. The Review team did however note a few concerns around the VGF verification process, a lack of information sharing between 3i and local government agencies that was leading to broader sector inefficiencies (i.e., tariff levels) and a lack of data collection that made it difficult to evaluate certain aspects of the program's performance. While there appears to be a consistent demand for VGF in the water and electricity sectors, it remains vital that the remaining program of work addresses concerns around the following:

- The lack of information sharing with key regulators (e.g., MITS, EAC) after grants are successfully disbursed so that tariffs can be adjusted accordingly to benefit the end users
- Better cooperating with other institutions (e.g., EAC) on investment projects to better embed technical practices and processes into domestic agencies
- Mainstreaming GEDSI considerations in the due diligence and VGF selection criteria, and to ensure that VGF funding is more inclusive and equitable.

3i's policy support across the water and energy sectors was also seen as broadly successful, with positive reviews from stakeholders on 3i's ability to support sector policy development and support local capacity building efforts. Involvement in the policy space also provided an opportunity for 3i to gain deeper sector knowledge, support private sector involvement in piped water and energy, and support DFAT's program design for the sector.

While 3i has also provided support across the Infrastructure Bond Financing, Smart Cities and Building Standards sectors in Cambodia, the program's ability to influence substantial change in these sectors has been more limited. The Review Team notes that the program's involvement specifically across Smart Cities and Building Standards should come to natural conclusion at conclusion of the program.

Findings on Livelihoods and Economic Impact

The goal of 3i is to 'unlock opportunities for economic growth and trade by increasing investment in private sector-led small-scale infrastructure', with the target outcome of 'new and improved opportunities for trade-

related businesses and industries.’ Therefore, the degree to which the program has ‘unlocked’ economic growth is an important measure of relevance and effectiveness. While the program was required to collate information to address this indicator, the report that detailed these findings (‘14: Qualitative business impact study’) was not available at the time of this review, making it difficult for the Review team to assess the program’s performance under this criterion. Anecdotal evidence suggests that the availability of piped water had little impact on how the household operates their enterprise, whereas the prospect of a reliable electricity supply is more likely to entice people into starting energy intensive businesses. However, the secondary impacts these may have had on livelihoods could not be evaluated based on the information made available for this review.

Connecting all households to electricity and water has significant economic benefits through poverty alleviation, improved health and education outcomes, and increased opportunities for economic participation. The challenge for 3i was how to reconcile the target of universal coverage with a model that was based on attracting private sector investment in a system that relies on cost recovery and business viability. The ID-poor subsidy scheme was a well-intentioned attempt to widen coverage, but it was not entirely successful.

Accordingly, to improve the program’s livelihoods and economic impact, the following recommendations are made:

- Programs that use subsidy to private enterprises should develop an independently assessed test of development impact. This should demonstrate how the subsidy will lead to universal service provision. This could include using established social and economic impact indicators, such as the Global Impact Investing Network.
- Subsidy schemes such as the VGF model (and others like it) must be transparently designed and evaluated, in order to work with other development partners to continually refine the model.
- Considerations such as ‘affordability of the tariff’ or ‘promotion of equitable’ household connection should be included in the VGF Model.
- Coordination across relevant actors and local authority should be made to promote connection in the overlapping investment areas. Also, in the policy space, proper rationale for workstream prioritization (as seen from the Smart Cities activity) should include consultations at all levels specially with local people to ensure complementarities (as seen from the Building Standards activity) and the delivery of on-need projects.

Findings on Governance and Implementation

The program’s governance arrangements remain generally sound, and the program has shown evidence of working as a trusted advisor to RGC. The consultation process revealed that the 3i program was generally well regarded by line agencies and seen as a reliable source of advice when it came to infrastructure development and policy reform.

DFAT’s Aid Quality Check (AQC) reporting found that despite challenges, including a reduction in the program budget and changes in leadership, the 3i program has continued to perform efficiently due to strong financial and operational systems embedded within the program. Likewise, the program invested heavily in establishing the right protocols and approach to risk management, which has proven successful throughout the program, and helped identify and address risks ranging from COVID-19 to Work, Health and Safety.

The main concern of the Review team was around the program’s M&E reporting. The program notes the need to more clearly explain how 3i’s M&E system functions and revise 3i’s M&E system to enable the systematic gathering of data – addressing both current data gaps and to evaluate primary and secondary round impacts of the program. This includes painting a more convincing picture of how the 3i program is contributing to high-level outcomes in the water and energy sectors and sustainable and inclusive development more broadly.

Findings on Gender Equality and Social Inclusion

3i delivered against some of the GESI objectives outlined in the initial program design document but did not adapt to changing priorities to better integrate GESI considerations throughout the life of the program. The absence of comprehensive M&E reporting that included gender sensitive and inclusive indicators, further meant that the transformative secondary impacts of the program could not be evaluated. The Review team acknowledges that integrating GESI into development programming is an evolving discipline among all donors, and whilst DFAT has consistently been a leader in this area, effective design and implementation is still a work in progress, especially in traditionally ‘gender-blind’ sectors such as infrastructure. The Review team notes that the program should have better internalised guidance from the 3i governing board and DFAT to integrate GESI considerations across program activities and reporting to support better GESI outcomes in Cambodia. The Review team notes that the program should:

- Include GESI targets in the ‘guiding principles’ and due diligence process to ensure that cross-cutting

themes are conveyed into the work done by program partners, especially private sector grantees.

- Integrate GESI in the M&E framework to track program performance against GESI targets, understand the dynamic of GESI implementation, and offer solutions for any challenges during the implementation. This also includes responding to challenges of integrating GESI in a way to cultivate a climate of innovation and inquiry
- Develop a GESI screening tool to rapidly assess new program activities (such as policy work), to scan for risks and unintended consequences.

Findings on Program’s COVID-19 Response

The impacts of COVID-19 were varied across the 3i program, but broadly managed relatively well. With most of the 99 water and electricity investment projects completed (>60) or construction significantly advanced, 3i was able to minimise any impacts COVID-19 may have had on activity completion by acting quickly to understand the potential impacts of the pandemic on the program. The Review team notes that there are opportunities for 3i to continue providing COVID-19

specific policy support across its active sectors, and to look for opportunities through established programming to contribute to the COVID-19 response and recovery in Cambodia.

Future Program and Recommendations

Supporting Cambodia’s economic resilience and growth through infrastructure will remain an important focus of the new CAP-RED. The Review team proposes that the new program of work should capitalise on the work already done by 3i but also examine and develop new models for support of investment in infrastructure. This should build on existing relationships, reputation and workstreams, to further contribute to the development of resilient infrastructure policies and support investment in critical infrastructure in Cambodia. Improving access, reliability and the affordability of critical infrastructure will be vital to the country’s development and inclusive growth going forward, and remains a development priority for RGC. Specific recommendations for CAP-RED are provided at the conclusion of this Report.

1 Introduction

1.1 Infrastructure Development in Cambodia

Over the last decade, the Royal Government of Cambodia (RGC) has been focusing on promoting a high rate of economic growth and poverty reduction, following a period of extreme political instability. Government reforms have been centred around increasing economic productivity, building institutional capacity, improving socioeconomic infrastructure and attracting domestic and foreign investment to ensure long-term, sustainable growth. Between 1998 and 2019, Cambodia sustained an average real growth rate of 7.7 per cent, making it one of the fastest growing economies in the world. This progress however has been most recently threatened by the impact of COVID-19, which has caused a sharp deceleration in Cambodia’s growth rate.

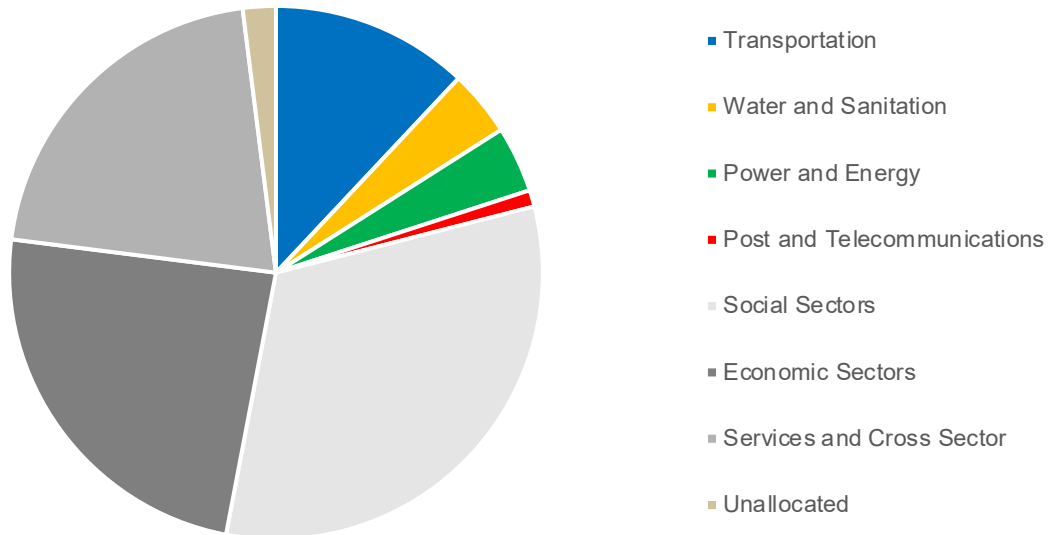


Figure 1: Allocation by Sector of Public Investment in the NSDP 2019-23

As Cambodia’s economy is expected to start recovering, infrastructure will remain a key pillar for the country going forward, promoting inclusive growth, facilitating trade and boosting the local economy.

As part of its National Strategic Development Plan (NSDP) 2019-23, the RGC has committed to spend USD5 billion on infrastructure to finance public investment projects across the transportation, water and sanitation, power and energy, and postal and telecommunications sectors (See Figure 1). This represents 21% of the allocated capital expenditure for the NSDP.

However, significant gaps in infrastructure financing remain. The Global Infrastructure Hub estimates that by 2040, Cambodia will face an investment gap of roughly USD28 billion across these same critical sectors: Transportation, Water, Energy and Telecommunications. While exact estimates of Cambodia’s investment need vary, the fact remains that the RGC will heavily rely on external sources of finance, including bilateral and multilateral donors, to service this gap in infrastructure investment.

Although Governments have traditionally been the primary source of investment infrastructure, global actors including the Asian Development Bank (ADB) and World Bank, have increasingly pointed out that Governments alone will be unable to provide the financial and technical resources necessary to plug such significant infrastructure needs into the future, and that private sector investment will be necessary. This raises a number of other considerations, as the NSDP notes the uneven implementation and enforcement of existing policies and regulations, in addition to the lack of overarching frameworks in sectors such as water, are hindering infrastructure investment. Creating a better ‘enabling environment’ with both the relevant policies, and capacity to implement these policies, will be central to facilitating greater private sector investment in Cambodia.

With these considerations in mind, the Australian Government’s Investing in Infrastructure Program (3i) program has sought to “unlock opportunities for economic growth and trade by increasing investment in private sector-led small-

scale infrastructure,” and accelerating access to piped, treated water and reliable electricity. Further detail is provided below.

1.2 Background of the 3i Program

The 3i Program (2015-2022) is the Australian Government’s flagship infrastructure program (valued at AUD 51.7 million) in Cambodia. The program has been designed to promote and catalyse business growth in the infrastructure sector of Cambodia by creating a more enabling environment for private sector investments.

To stimulate infrastructure development, 3i activities have been guided by the following modalities outlined in the original program design document (PDD):

- **Modality 1:** Co-funding infrastructure investment in direct partnership with private companies.
- **Modality 2:** Providing support to stimulate third party investment, attract large local, regional or international investors, and developing larger financial tools to increase rural infrastructure investment.
- **Modality 3:** Focusing on sector-wide approaches using catalytic interventions to address infrastructure market constraints.

The primary focus of the 3i program was initially to stimulate new, sustainable investments in private piped, treated water distribution and electricity distribution in rural areas. The principal approach by 3i has been through a Viability Gap Financing (VGF) model that supports smaller-scale businesses. The program typically supported infrastructure investments that would have otherwise been unprofitable, even under concessional financing conditions, and in areas where no public service provision was planned. In recent years, the program has expanded its focus on sectoral policy and regulatory support, to facilitate private investment, upgrade technology and strengthen public management in an increased range of sectors including energy, smart cities and infrastructure bond financing.

By 2022, 3i aims to have achieved the following end of program outcomes (EOPOs):

- **Outcome 1:** Increased access to utilities and other infrastructure services for households and businesses;
- **Outcome 2:** New and improved opportunities for trade-related businesses and industries; and
- **Outcome 3:** More resilient infrastructure policies in Cambodia.

In line with RGC priorities, the 3i program activities support three international development aspirations, including ensuring availability and sustainable management of water and sanitation for all (SDG6); ensuring access to affordable, reliable, sustainable and modern energy for all (SDG 7); and strengthening the means of implementation and revitalize the global partnership for sustainable development (SDG 17).

1.3 Overview of the Review Process

The 3i Review intends to help the Department of Foreign Affairs (DFAT) assess 3i’s performance to date, make recommendations on what changes, if any, are needed to ensure 3i meets its EOPOs, and support informed decision making around future program activities that will be transitioned to the economic cooperation program in 2022. The review will accordingly focus on:

- Reviewing progress and achievements to date
- Verifying livelihood impacts among beneficiaries
- Assessing the effectiveness and efficiency of current or proposed COVID-19 responses
- Identifying elements of the 3i program suitable for integration into the proposed new economic cooperation program.

To achieve this, the review will capture concrete examples of how 3i has supported infrastructure investment in Cambodia, and identify any areas where 3i is not meeting, or is at risk of not meeting, its EOPOs. This Review is also forward looking, aiming to provide recommendations on how the 3i program could more effectively deliver its mandate to support business growth in the infrastructure sector in Cambodia, advance gender equality and social inclusion (GESI) and support RGC and Government of Australia (GoA) priorities.

Scope and Focus

The review focuses on the following areas in line with the Review's Terms of Reference:

Component and theme	KEQs
Effectiveness	Review of progress against planned end of program outputs and outcomes. To what extent is 3i's policy work likely to support positive behaviour change in the areas in which it is engaging?
Livelihoods and Economic Impact	What evidence is available of 3i's impact on the livelihoods of program beneficiaries? What evidence is available to demonstrate that new or expanded business and employment opportunities have been generated through 3i support among service-connected households and communities?
Governance and Implementation	Inquiry around structures, processes and personnel. Is the program functioning efficiently? How well is the program's monitoring and evaluation system functioning? Have risks been appropriately managed?
Gender Equality and Social Inclusion	To what extent has 3i furthered GESI including equity in delivery of its outputs and outcomes and transformative secondary impacts?
Assessment of COVID-19 Responses	What are the COVID-19 factors affecting the 3i program and what effect have they had on implementation? How well has the program pivoted to respond to COVID-19 in terms of timeliness and quality of agreed responses? What are the forecast implications for the remaining 3i program timeframe due to the COVID-19 pivot?
Future Program	To what extent are 3i's current operations sustainable? Which activities could transition to the new economic cooperation program, and to what extent is direct support for infrastructure and service delivery still necessary? Which activities are more likely, as a secondary objective, to advance Australia's national interest as articulated in the 2017 Foreign Policy White Paper? What do 3i and DFAT need to do to prepare effectively for the transition?

See a full list of Review Questions at Annex 2.

Approach

The Review seeks to test the program logic underpinning the 3i program; that by partnering with the private sector to stimulate investment in key infrastructure services (namely water and electricity), this will create new enterprise opportunities in more remote parts of Cambodia, and generate broader welfare benefits for all Cambodians.

The Review team adopted a mixed-methods approach to answering the review questions, which involved collecting and analysing both qualitative and quantitative data. Examples include conducting consultations with RGC and the 3i team as well as other relevant stakeholders (qualitative), analysing program data (quantitative), and reviewing key documents provided by DFAT and 3i (qualitative and quantitative).

Approximately 70 consultations were held between April and November 2021, usually with multiple stakeholders present (see Annex 1 for a full list). As a result of restrictions on movement and prohibitions against in-person meetings during the review period as a result of COVID-19, the review team were unable to interview program participants/end users ((i.e., households who now have access to piped water or electricity as a result of 3i's interventions). The team adapted to virtual ways of working where possible. All consultations involving Cambodian stakeholders were conducted via videoconference, with some in-person consultations taking place in Adelaide and Canberra. These consultations were complemented by the extensive document review of over 50 documents, including analysis of all 3i Annual Reporting, Work Plans, Design Documents, Sectoral Assessments, Quality Reporting and Frameworks.

Limited field visits, initially scheduled for July 2021 but postponed twice due to COVID-19, took place in November 2021.

2 Program Effectiveness

As of 2020, 3i had signed a total of 99 contracts for piped water and electricity projects with a total funding commitment of AUD23.9 million and leveraging AUD36.8 million of private sector investment as per 3i's Annual Reporting.

3i Results for Water and Electricity Connections: 2106-2020

Indicators	Jul-Dec 16	Jan-Dec 17	Jan-Dec 18	Jan-Dec 19	Jan-Dec 20	Total
Overall value of 3i investment committed (AUD)	860,843	9,219,819.00	8,103,765	4,356,056	1,377,459	23,917,942
Overall value of private investment leveraged (AUD)	976,353	171,126,975	12,376,238	4,808,444	1,539,494	36,827,504
Number of contracts signed	8	36	36	15	4	99
Total committed household connections	12,220	107,313	84,274	46,286	15,141	265,234

Note: Figures include both water and electricity distribution and have been recorded as per 3i's 2020 Annual Report.

Based on information collected during the consultation and document review process, the Review team found that the outcomes of the program across both infrastructure development and wider policy support have been broadly effective in supporting infrastructure investment and Cambodia's economic growth. Detailed descriptions of the program across the key workstreams of water, electricity and energy, infrastructure bonds, smart cities and building codes are detailed below.

2.1 Water

A core part of 3i's mandate involves supporting access to piped, treated water in Cambodia. In the water sector, the 3i program has invested and provided technical support to:

- Strengthen management information systems to increase the accuracy of data inputs for planning purposes;
- Expand coverage of piped water through co-investing with water operators, exploring new business models (bulk water, bundling etc.) to enable the integration of piped water infrastructure;
- Support the development of a national water strategy (e.g., Provincial Investment Plan); and
- Conduct technical training to all licensed water operators as well as support for exchange of knowledge and technology between Cambodian and Australian water associations.

Among these, piped water accounts for the largest proportion of the 3i program which co-funds infrastructure investment in direct partnership with private companies through its viability gap funding (VGF) approach. The program was able to catalyse investment in piped water infrastructure to uneconomically attractive areas. **However, while water infrastructure is available in 3i's investment areas, the household connection rate remains low, below that of the 3i feasibility study¹. The program should have also included criteria such as equitable access/connection to infrastructure as well as affordability of tariff into the VGF model so that EOPOs could be directly linked and measured.**

During the field trips undertaken by the Review team, we found examples of the water tariff charged by the operators to end-users being even higher² than the maximum rate capped by MISTI, thus creating a suppressed demand barrier to poor households (usually consuming between 1-2 m³/month). However, reduced household expenditure on water bills was evident compared to households in water-scarce or water-contaminated areas that purchased untreated water for drinking purposes from mobile water vendors at 10,000-15,000 Riels/m³. In this later case, savings against the baseline situation were also observed³. In addition, misconceptions and misinformation saw some households

¹ Based on actual connection data of the interviewed operators, connections are sometimes below 5% per annum after 4-6 months of infrastructure completion.

² According to the MISTI, the maximum allowable tariff of piped water is 2,300 Riels/m³ which is also the basis used by 3i when preparing the feasibility study. During the field trip, however, all interviewed households who are connected to the utility pay 2,500 Riels/ m³. Though the difference looks minor, but it presents a suppressed demand barrier to poor households. For example, a woman who owns a beansprout business in Chamkar Leu District, Kampong Cham Province only spend 3,000-4,00Riel/month on the piped water only for her business. She wanted to use this clean water for other activities including drinking, cooking and bathing but could not afford to pay. Therefore, she remains to use her deep well which is contaminated (by electrically pump the water and store in tanks, mix it with alum and keep it 1-2 days for using it).

³ Also, during the field trip, a woman living in water-constraint area within Samroang District, Takeo Province report monthly savings between 2.5-5\$/month after connecting to the piped water if compared to the baseline situation in which she purchased raw water from a mobile water vendor.

who could afford to connect to the piped water network instead purchasing bottled water (usually sold in 20-litre bottles at 2000-2,500Riel)⁴.

Infrastructure Financing and VGF

From our consultation process with 3i stakeholders and VGF grant recipients, we found evidence that VGF had successfully attracted significant private sector investment in the piped water projects. This was verified by 3i reporting, which showed that as of July 2021⁵, the program was on track to achieve the “expected” number of 232,000 home water connections, leveraging over AUD27.8 millions of private infrastructure investment in water distribution through 80 contracts (see table above). Of this, 50 projects were completed, 30 ongoing and 1 dropped out (due of the operator’s concern around households’ willingness to connect). With most of the investment projects completed or construction significantly advanced at the time of this Review, no major delays are expected to affect their completion.

The Review team found that the VGF model was successful based on the private sector investment it leveraged as a means of delivering piped water connections to targeted areas. Interviews with some operators explained their appreciation of the grants which enabled them to expand the infrastructure to uneconomically attractive areas, even sooner than planned. MISTI considered VGF as a very positive tool to catalyse the investment in infrastructure that supported rural or poor families. This strong support has not translated into any RGC preparedness to adopt any of this approach into its own budget priorities. The MISTI view also contrast sharply with 3i’s own finding that VGF and the subsidy were not effective in catalysing access to utilities for poor households.

The technical support and guiding principles for 3i co-investment and milestone-based payments (i.e., payback period, achievement of investment milestones, etc) were positively received by operators. Discussions with stakeholders revealed that the “adaptive design” of 3i enabled the program to be flexible and achieve the program targets.

Despite the program’s conceptual focus on equity and inclusivity, the investment component of the program has not significantly integrated inclusivity and GESI considerations as part of its operations, with the exception of the connection subsidy for the poor (refer to Chapter 4 for greater detail). In addition, there are some other water donors/organisations⁶ in the 3i intervention areas that provide connection subsidies to the poor. In discussion with 3i, the exchange with such organisations has been limited to sharing of ID Poor household lists to avoid double counting of subsidy. No meaningful dialogue has been attempted or made to ensure a coordinated, coherent and comprehensive approach on connection subsidies in the overlapping areas. By and large, the operators interviewed tend to prefer whatever donor scheme maximises their benefits.

Despite the success of the VGF model in simulating greater private sector investment, there were other considerations that came out of the Review process.

- **VGF Assessment Model:** The Review team noted that 3i had in place a detailed assessment process that was used to assess the level of VGF in each investment. However, initial analysis raised questions around whether the level of VGF calculated through this process provided the ‘right’ level of financial support to private investors (in other words, the ‘goldilocks option’ - enough, but not too much, to incentivise investment). The assessment criteria do not integrate criteria that promote access to the infrastructure such as connection and affordable tariff into the model. Considerations such as ‘affordability of the tariff’ or ‘promotion of equitable’ household connection⁷ do not exist in the VGF Model in all the rounds of applications. In discussion, 3i explained and insisted that the program’s objective is to make the infrastructure “available” without intervening on the tariff side or the connection, otherwise the program would be called a “connection promotion or poverty targeted program”, not an “infrastructure investment program”.

⁴ During the field trip, there were many myths or misconceptions about the piped water such as i) the piped water contains chlorine, thus it cannot be used for cultivating good-quality bean sprout or making Khmer noodle, *Num Banhchok*, or the chemicals could lead to chronic disease; ii) the piped water is only for better-off families, not for the average or poor.

⁵ Reference: 3i Extension Proposal January to June 2022 (Draft v3 for consultation – July 2021)

⁶ For example: NGO East Meets West has provided a subsidy of USD30/household while 3i provided USD25/household

⁷ The program introduced the Poor connection subsidy later, at the request of the Program Board

- Information Sharing and Tariff Rates:** MISTI also commented that lack of information sharing around the level of VGF provided to each grant recipient was leading to higher tariffs. For instance, MISTI highlighted that each operator could access debt financing, however, this impacted the level of the water tariff to the end-users, as the Ministry has an objective to keep tariffs affordable where possible. In cases where the Ministry had not been advised of the level of VGF to grantees, this prevented them from being able to determine the VGF-reduced investment on which a tariff would be calculated, leading to a higher cost base being used and consequently a higher-than-warranted tariff. However, in a discussion with 3i team, some of the operators notified the program of the cases that they were asked to share the grant in exchange to have their case accepted by the program during the VGF application stage. 3i informed DFAT/Post of this and both agreed to only provide the aggregated information. In due consideration of the advantage and disadvantage of sharing such information, the Review team recommends sharing on VGF investments only when the grant approval process is complete and the disbursement to each grantee is successfully made so that room for such manipulation can be minimized. The intention of information sharing is not just for tariff re-adjustment purposes, but to promote broader learning processes for the Ministry and also to facilitate policy dialogue.
- Verification Processes:** On VGF verification, 3i adopts a technical engineering or inputs basis to measure program success (i.e., have the facilities been constructed as designed). 3i's modes of communication with the operators seems to work reasonably well, even in the context of COVID-19, and accommodate the operators to achieve the milestone, despite delays. However, the Review team notes that an **outputs** basis on the availability and quality of the service (i.e., piped water) could also mesh with a more targeted approach to measure the impact of the program on end-users/beneficiaries. This has been a highly effective approach adopted by the World Bank through its Global Partnership for Results-Based Approaches (GPRBA) which provides innovative financing solutions that link funding to achieved results for basic services like water and sanitation, energy, health and education for low-income families and communities that might otherwise go unserved. As seen in some 3i intervention sites, connection rates have (unsurprisingly) been very low especially in areas with plentiful water sources. If output would be otherwise linked to the funding, both the availability and quality of the service could gain more attention and the program impact to the end-users/beneficiaries is more measurable.
- Data Collection:** Actual connection data is available to operators as part of their billing systems and can be requested by 3i. In terms of GESI, data collection and verification by 3i have not been comprehensive as its monitoring framework relies heavily on national/subnational statistics, rather than at the level of the beneficiary and by sex-disaggregation (refer to Section 4 for further detail), to assess the second and third round impacts of the program on communities and beneficiaries. Some operators expressed willingness to follow the requirement of the 3i program if imposed.

Capacity Building and Policy Support

In terms of capacity building, 3i has facilitated collaboration between the Australian Water Association (AWA) and Cambodian Water Supply Association (CWA) on a range of topics including, database management, water quality, financial training, and piloting new technologies, which have shown some potential impacts for local livelihood improvement. In addition, the CWA delegation's visit to OzWater 2019 was also seen as a highly effective initiative for information sharing between RGC and GoA, as was the involvement of Australia's Southeast Water in the Water Utility Improvement Program (WUIP).

Since late 2019, 3i has also focused more broadly on creating an enabling policy environment, through activities such as the Provincial Investment Plan (PIP), involvement in a proposed Water Fund and several pilot initiatives, including bulk water and small-scale bundling. Based on consultations, there has been traction with key stakeholders on these, especially MISTI which rated many of these activities as very helpful in supporting positive changes in areas such as the draft water law and licensing processes and policies. However, we note from consultations that there has been little interest for a Water Fund from the RGC (due to potentially competing demands on the national budget) or potential donors/sponsors. 3i is well placed to continue supporting further legislative and regulatory work that would likely require few resources, while the Water Fund concept has yet to be taken any further.

The Review team notes that pilot activities (i.e., bulk retail water supply and small-scale bundling models) have provided opportunities for 3i to gain deeper sector knowledge, support private sector involvement in piped water, and support DFAT's program design for the sector. Subject to assessment results, 3i should still look to conduct a site assessment and extract any lessons learnt from the pilot projects and provide recommendations for involvement going forward. We note that this will likely take some time until mid-2023 to complete and eventually plans need to

be made on how these will be transitioned across to DFAT's new investment. As 3i has only been extended to June 2022, it is critical to allocate the sufficient resources⁸ to handle the pilots during this gap and ensure the activities are transitioned as necessary. However, the continued reliance on only a VGF driven model for such projects would be a lost opportunity to trial other (multi-criteria) funding models.

2.2 Electricity

Similar to its involvement in the water sector, 3i plays a core role in supporting the expansion of electricity supply in Cambodia by encouraging investments in electricity distribution networks by rural electricity enterprises (REEs) using the VGF model. As of July 2021, 3i reported that it was on track to achieve "expected" electricity connections (33,500 homes) leveraging AUD8.9 millions of private infrastructure investment in electricity distribution through 19 contracts. Of this, 18 projects were completed and 1 ongoing. As there is only one ongoing project, no major delays in completion are foreseen.

Unlike piped water, willingness to connect to electricity is very high in all sites visited on the field trip, even among poor households. Grid-connected electricity is widely supported. The interviewed operators witnessed the quick uptake of connection requests made by the clients even in the first few months of its availability. Actual connection data is available from the operators (80-90%+).

Infrastructure Financing and VGF

The Rural Electrification Fund (REF) managed by Electricité du Cambodge (EDC) currently operates in the electricity sector. 3i's VGF additionality criteria appear to be less applicable in this sector as i) the electrification rate has been high⁹ and there has been a strong willingness of households to connect; ii) REEs are in a strong position-imposed by EAC-to accelerate the expansion of the electricity distribution network; iii) the REF already provides subsidy and non-interest loans to REEs; and iv) the electricity business is very lucrative¹⁰ compared to piped water. This situation is different for the off-grid electrification segment with the low appetite of private sector investment, and generally no subsidy support (except some donors) or concessional loans from REF as the technology (especially AC distribution system) is dissimilar.

3i initially took the same approach as in the water sector when it came to determining the level of VGF in an investment. The program then discontinued and simplified the calculation by triggering a grant of USD50-70 per household to be connected under 3i co-investment. Like the VGF for piped water, the approach does not embrace criteria that promote equitable access to the infrastructure. Fortunately, electricity tariff is highly regulated and EAC applies cross-subsidies to tariffs.

In interviews, some operators expressed their appreciation of 3i's technical and financial support which enabled them to i) better understand the demand in their sector (especially water); ii) secure sufficient raw water supply; iii) expand the infrastructure (treatment plant and network) to uneconomically attractive areas, even sooner than planned.

At the operator level, the pandemic impacted their monthly income (estimated at a 10-20% reduction) due to closures of other business or unpaid bills. Most operators reported they continued to supply water or electricity even in the face of unpaid bills (but accrued to subsequent months).

All operators interviewed had positive outlooks for their businesses against low connection rates for water businesses or a highly regulated tariff for electricity businesses. They believed this because such investments usually need quite some time to secure prospective customers, and electricity businesses saw that EAC would allow reasonable profit margins. These arguments are valid when a water or electricity business has a long-term operational strategy (not looking to move to another business sector), is profitable and efficient. Continuous improvement or innovation was a prominent characteristic of efficient water and electricity businesses, and a platform for peer-to-peer learning¹¹ can promote such improvements and innovations. Such a platform has been mainstreamed in the existing sector associations.

⁸ To be managed by Post? or the Managing Contractor for EGIPP

⁹ Covered 82% of villages in 2017 and 97% in 2021

¹⁰ All REE interviewed expressed no concern about bankruptcy and strong believe in EAC in maintaining the reasonable profit margin.

¹¹ During a field trip, an electricity operator in Takeo Province adapted a concept of semi-automation which i) pre-assembles parts for quick installation of electricity meters; ii) reduces cost and loss; iii) simplifies the complex work which allows local low-skilled women to do the work.

The verification process of an investment also relied on a technical engineering or inputs basis due to milestone-based contract. However, similar problems with the model were cited as in the water sector, including:

- **Information Sharing and Subsidies:** Based on consultations with the Ministry of Mines and Energy (MME) and EAC, there were frustrations that 3i 'worked in a silo' and 'did not share information' on each REE's investment, including the VGF-reduced component. The agencies felt that 3i was more concerned with licensees than the users (households). However, 3i has responded that such a decision was made at the beginning of the program to i) avoid potential issues of rent-seeking behaviour from related government agencies; and ii) if the grant amount is incorporated in calculations of subsidies, it would have largely offset and eroded the benefit of 3i support to REEs as the grants were designed to increase returns to REEs by funding a portion of CAPEX. In due consideration of the advantage and disadvantage of sharing such information, the Review team recommends increased sharing on VGF investments only when the grant approval process is complete and the disbursement to each grantee is successfully made so that room for such manipulation can be minimized. Moreover, without detailed data on grants made to each operator or the subsidy rate per connection from 3i, the regulator was unable to create a subsidy regime that supported universal coverage of electricity specifically for those locations.
- **GESI:** From various consultations, the Review team found that the investment component had not substantially included GESI considerations in its model, with the exemption of the connection subsidy for the poor. Refer to Chapter 4 for a fuller discussion of GESI-related issues.
- **Mainstreaming:** VGF has supported the operators to expand their distribution networks within their license areas. RGC currently has no stated plan to scale-up or mainstream the VGF model for the remaining grid expansion. However, in consultation with MME and EAC, the government is eager (but will not fund) for the expansion of the concept for the off-grid rural electrification segment. In Q3 of 2021, 3i kicked off the off-grid electrification work stream with a VGF investment component known as a "cost-sharing grant," which was being administered through a competitive fund process. Upon working on the initial development of this model, 3i expects to provide a blueprint for electrifying additional sites and to support the development of the remaining sites. As this work is still at a nascent stage, there is insufficient evidence to evaluate its effectiveness. We note there is an opportunity for GESI considerations to be mainstreamed in the due diligence and VGF selection criteria, and to ensure that VGF funding is more inclusive and equitable, alongside being better coordinated with the sector regulator (EAC) to ensure tariff consistency and quality. As noted previously, the continued reliance on only a VGF driven model for such projects would be a lost opportunity to trial the effectiveness of other (multi-criteria) funding models as part of future programming.

The Review team notes that the RGC model in the REF could be considered for VGF for off-grid electrification to ensure ownership, sustainability and coherence.

Capacity Building and Policy Support

3i expanded its support to RGC's electricity sector to focus on energy policy in late 2019, at a similar time to it adopting a policy focus in the water sector. The program has since worked on a number of transaction-led policy initiatives within the Cambodian Government's Renewable Energy Technical Working Group, funding four studies on wind energy, rooftop solar, waste-to-energy and off-grid electrification. These studies have provided the evidence base for 3i's support to the RGC to develop a renewable energy strategy, which will inform Cambodia's energy planning to 2040. In consultation with UNDP Cambodia, 3i's policy work on the renewable energy (RE) agenda has been appreciated by government. As 3i commissioned many RE and electrification assessments, UNDP indicated that the reports were only made available to the RE Technical Working Group (TWG) channel. **Sharing the information and documentation among the development partners is highly recommended.**

The program has also been working with EnergyLab Cambodia since April 2020 to strengthen advocacy efforts for RE, provide technical inputs for renewable energy related works, and support Clean Energy Week. These will serve as key inputs for MME's Renewable Energy Strategic Plan. The infrastructure (and service provision) benefits of the policies and Strategic Plan will be longer term.

3i has followed the traditional technical assistance (TA) model for policy support in the energy sector, commissioning technical services that were shared with RGC counterparts. The Review team found were that this model was helpful to inform, but that it did not necessarily build local capacity. EAC explained that while useful, this TA did not involve much capacity building of Cambodian counterparts, and EAC would not be able to replicate the work itself in the future.

We recommend that the 3i program could be strengthened by cooperating with other institutions (i.e., EAC) on investment projects to better embed technical practices and processes into domestic agencies. For instance, 3i's recent Renewable Energy Assessment and Integration Strategy (REAIS) work which was a more collaborative effort has attained traction with MME and was cited as being helpful for the Ministry to plan follow-up activities concerning renewable energy, energy storage and Cambodia's climate objectives.

2.3 Infrastructure Bonds

In the financial sector, 3i has supported the Securities and Exchange Regulator of Cambodia (SERC) to develop recommendations to catalyse market growth in long-term debt instruments through infrastructure bonds. 3i has helped the SERC on the initial assessment and feasibility of developing an infrastructure bond market through interviewing stakeholders, matching potential issuers and underwriters, and facilitating discussions with SERC and potential investors.

The effort for the development of a market for traded infrastructure bonds is extremely ambitious given the context of a pre-embryonic market such as Cambodia, where a number of fundamentals (such as issues around creditworthiness, issuing entities, institutional and regulatory development) are still in gestation. The 3i Program Board confirmed that such a bond market "may not" yet be a high priority as Cambodia is still able to borrow from international sources.

It is also worth noting that this space is already occupied by the ADB's Asian Infra Bond Market initiative and the World Bank. SERC confirmed that the roles are clearly defined among these entities. 3i's transaction-led approach in this area is a model that has been used by the World Bank and ADB, for instance, in supporting countries in the development and implementation of new financing mechanisms as models for further replication. That approach has involved significant longer-term programmatic TA support (e.g., World Bank's Subnational Technical Assistance [SNTA program], implemented under PPIAF¹²) and clear links to broader poverty reduction aims and outcomes. However, in taking a transaction-led approach here, there is the danger that it may be a 'solution looking for a problem'.

3i itself has recognised that current support could go as far as only regulatory and policy advice within the available extension period. However, it is unclear what role the successor program to 3i may want to play in the infrastructure finance space in Cambodia. The Review team recommends that this approach could be developed in concert with P4I to bring the necessary expertise, consistency, and scope across the sector and ensure efforts are not duplicated. Well-designed finance instruments could (eventually) fund infrastructure that satisfies (emerging) market demand while also meeting welfare goals. Of most interest is how a future program could adapt the transaction-led approach to account for GESI and equity considerations as inherent parts of the approach. Future consideration could be given to support to SERC to design a model, for instance, of Social Impact Bonds that could fill the funding gap for basic service provision.

2.4 Smart Cities

3i has provided significant policy support to the Government of Preah Sihanoukville (GPS) to complete a draft Smart City Strategy for Sihanoukville, alongside providing transaction support for a "smart parking" pilot project. However, **based on both the review and consultation process, the Review team strongly recommends that a withdrawal plan should be drafted to discontinue the 'Smart City' workstream, detailing how relationships at the provincial and national level will be handled.** While there remain significant pressures on urban infrastructure from the increasing levels of urbanisation in Cambodia, we note there are areas of work which could yield more positive societal benefits for Cambodia, including: access to physical infrastructure and services (e.g., congested roads, lack of utilities); understanding and capacity of provinces and cities to identify, develop, procure, and implement these projects; and their ability to appropriately finance these projects.

Meetings with 3i program and relevant stakeholders including UN Habitat, the Review team concluded that the process undertaken to prepare the "Smart City" strategy was not comprehensive and missed the opportunity to mainstream local community needs. The planning process, which led to the identification of car parking as a priority for the Smart City strategy, appeared to be "top down" with no substantive engagement and consultation with residents. GESI, equity and safeguarding considerations are not mentioned and essential services, including

¹² For PPIAF, see <https://ppiaf.org/supporting-sub-national-entities>

sanitation, waste management, health services and electricity receive little focus. In addition, the concept did not explain why the problem of car parking in Sihanoukville was a pressing development priority, deserving of cash support from DFAT to develop a “bankable pilot investment project”, focusing on “design and implementation of a dynamic smart parking platform.” The Review team further notes that there should be a defensible rationale for the location of the pilot project in a city that is relatively unrepresentative of Cambodia as a whole.

We also note that the intention to develop ‘technology platforms’ raises risks around data security, surveillance, privacy, rights, and accountability. The focus on car parking could lead to crackdowns on microenterprises (e.g., market traders, the majority of whom are women), to ‘tidy up’ the city for the 2022 ASEAN Tourism meeting, which may in turn negatively impact equality, political and gendered considerations that are not currently factored into decision-making and may undermine DFAT’s development objectives and cause reputational risks.

2.5 Building Standards

Another workstream of 3i’s urban infrastructure development support is the enhancement of construction quality and safety. In an aftermath of the building collapse in Sihanouk Province, the Ministry of Land Management, Urban Planning and Construction (MLMUPC) requested that the Embassy of Australia support on building codes and standards – a task which 3i quickly responded to. During the consultations, the 3i team noted that many donors initially provided overlapping and duplicative support to RGC in this sector. The consultation process verified that 3i managed to carve out a clear mandate with MLMUPC by drafting a Memorandum of Subsidiary Agreement (MSA) between GoA and MLMUPC, outlining the scope of cooperation and implementation arrangements, particularly on Work Health Safety (WHS) guidelines and capacity building on this sector.

These initiatives have quickly gained traction, particularly on the capacity building and training front, and WHS guideline development. 3i, in collaboration with MLMUPC, facilitated a course whereby RGC officials attended an in-person training program in Canberra, and subsequent online training sessions, before being involved in the preparation of new WHS guidelines. The Ministry has since requested further support on the development of guidelines and standard form contracts across other parts of the sector, indicating the success of demand-driven and capacity building focused initiatives. Here, positive relationships were identified as a key success factor. However, as reflected in advice on the Draft 3i Extension Concept Note, **there is a clear view on 3i’s next-stage deliverables in this Workstream through to June 2022. This provides a sensible conclusion to 3i’s effort here.**

3 Livelihoods and economic impact

The goal of 3i is to ‘unlock opportunities for economic growth and trade by increasing investment in private sector-led small-scale infrastructure’, with the target outcome of ‘new and improved opportunities for trade-related businesses and industries.’ Therefore, the degree to which the program has ‘unlocked’ economic growth is an important measure of relevance and effectiveness.

The PDD required the program to ‘collate information and devise appropriate methodologies to deepen understanding of 3i’s contribution to economic growth’, including ‘a study to better understand the link between the availability of infrastructure services, and income generating activities. This will likely involve tracking household behaviours and investments, as well as business growth and start-ups following connection’. The proposed report that seeks to answer these questions (‘I4: Qualitative business impact study’) was not available at the time of this Review. It is marked as ‘ongoing’ on the table of studies in the 2020 Annual Report. However, some brief preliminary results were summarised in 2019 Annual Report.¹³ The survey is based on six locations, although it is not explained how these were selected, or how they represent different user segments (e.g., rural, peri-urban, middle class, poor etc.). Although the 3i report does not include any analysis of the data, the Review team’s reading of the findings of the survey is that they imply availability of piped water has little impact on how households operate their enterprise, whereas the prospect of a reliable electricity supply is more likely to entice people into starting energy intensive businesses. This is useful information, but as the report has not been completed (the 2020 annual report contained no update), it is unclear how these insights about livelihoods are informing how the program operates. For instance, nearly three-quarters of respondents ‘cited a future plan of starting an electricity-intensive business’ if they could connect to a power supply. This would lead to an increase in power demand over and above the current usage, which increases the revenue for the operator, which in turn has an impact on the assumptions in the VGF model.

¹³ 3i Annual Report 2019 (page 20)

While 3i has collected household connection data using reports from the operators validated with spot surveys, there is no equivalent connection data for businesses. This is understandable: the nature of the informal sector is that the line between household and business premises is blurred, and many businesses are seasonal. There is also, as far as the Review team can ascertain, no data collection to measure the number of business start-ups following connection, but presumably this will be covered in the impact study report¹⁴ when it is eventually completed. However, without baseline data, for example from structured surveys, it is hard to see how 3i will be able to measure the economic impact of the program. There is mention of a typology of 21 different types of enterprises¹⁵, but this may need to be streamlined to enable a comparison between the program sites (the treatment group) and similar communes that were not covered by the program (the control group).

One of the most fundamental ways the program could have economic impact is through extending utility connections to poor households, unlocking their economic potential whilst supporting RGC to reach the goal of universal coverage. Indeed, there was a request from the 3i Board for the program to find ways to support access of water and electricity to poor households.¹⁶ This is an economic impact factor, although there is crossover with GESI, as discussed in the previous section. Connecting all households to electricity and water has significant economic benefits. 3i's own reports correctly refer to the many benefits of utility provision in terms of poverty alleviation, improved health and education outcomes, and increased opportunities for economic participation. The challenge for 3i is how to reconcile the target of universal coverage with a model that is based on attracting private sector investment in a system that relies on cost recovery and business viability. The pro-poor scheme was a well-intentioned initiative, although it was not entirely successful.¹⁷ The design was not well-informed by research and analysis into the constraints facing poor households. For instance, 3i was already aware that some poor people – especially women – were not listed on the ID Poor database and were particularly disadvantaged.¹⁸

3i is right to point out that the act of installing water or electricity infrastructure in a neighbourhood lowers the theoretical marginal cost of connection for subsequent households, so has the potential to help poor households at some point in the future. 3i explains that “all poorer households are expected to be late adopters a few years after the infrastructure is available”, but advances no evidence to support this claim.¹⁹ Whenever subsidies are deployed (in this case, via the VGF), there is a risk of market distortion and misallocation of benefits. For example, a recent study by the Institute of Fiscal Studies concluded that subsidies for piped water are captured by the richest households and “largely fail to achieve the goal of improving the accessibility and affordability of piped water among the poor”.²⁰

An internal evaluation by the 3i team outlined the constraints that had impeded poor households from connecting to piped water, despite the subsidy on offer.²¹ For example: “...the poor households are reluctant to ask for permission to dig the trench across the land or houses of others.”; “The alternative water source and seasonal effect plays a role...”; “Some poor households migrated...” etc. These issues could have been anticipated earlier in the program, yet they are advanced as ex-post explanations for why it was hard to connect poorer households. These show how ability to pay is not the only (or even main) constraint to becoming a piped water customer. Obtaining permission to dig trenches across boundaries is an infrastructure challenge as old as there have been pipes. Seasonal effects can be dealt with through flexible contracting and price plans. The fact that some poor people indicated a likelihood to migrate for work is an indicator that they are transient, so were unlikely to pay front-loaded costs to connect a water supply (even with the subsidy) that they would not enjoy. For example, four of the 10 poor households 3i spoke to said they would have connected without subsidy, and a number of water providers already offered a variety of fee reductions and payment schedules more generous than 3i. Interviews during the field trip revealed that other organisations were working on enabling piped water connections for poor households. However as referenced elsewhere in this Review, no meaningful dialogue had taken place to coordinate efforts between 3i and other organisations to learn how to make the connection subsidy effective and scalable.

¹⁴ 3i Annual Report 2019 (page 21)

¹⁵ 3i Annual Report 2019

¹⁶ Interview with Deputy Head of Mission

¹⁷ 2017 Annual Work Plan (page 9)

¹⁸ ‘According to the commune chief, many women living on the brink of poverty do not have a Poor Card as they somehow slipped through the identification process that would qualify them. This puts them in a vulnerable position without any safety nets.’ G2 - Gender engagement in electricity and water infrastructure development’

¹⁹ ‘3i Independent Review Report – 3i Response, 17 Nov 2021

²⁰ Abramovsky, L. et al. (2020), ‘Unpacking Piped Water Consumption Subsidies: who benefits? New evidence from 10 countries’, Institute of Fiscal Studies, London

²¹ 3i: ‘Effectiveness of ID Poor Household Connections’

It is regrettable that 3i did not develop a more convincing evidence base to support the program methodology, and set out actions that would ameliorate the risk of benefits being captured by richer households. The 3i report that evaluated the effectiveness of the pro-poor subsidy could have been strengthened by an international perspective and stronger research expertise.²²

Cambodia has targets for near universal service provision for piped water and electricity by 2030 and these targets were described during the review process by most RGC counterparts as policy priorities. Although informants expressed appreciation for 3i supporting RGC to work towards these targets (for example the off-grid electrification project), they also highlighted areas where 3i could have been more effective. For example, the EAC sector regulatory authority expressed concerns about inclusion and affordability and felt 3i was more concerned with the licensees (private operators) than the ultimate beneficiaries: the people using the electricity. The consultation with MME also highlighted unmet demand from RGC for technical advice on how to make connections to poor households sustainable if those households cannot afford to pay. It drew attention to RGC's REF which aims to support poor households to get connected. This is an area 3i could have been exploring through a more inclusive approach to VGF (and other modalities) modelling, using the data and insights they were able to glean from the performance of the private sector operators. This was a missed opportunity for policy engagement in a priority area, which should be addressed during the remainder of the program.

4 Governance and Implementation

4.1 Structures, Processes and Personnel

The 3i program is governed through a Program Board that meets at least once a year. The Program Board is co-chaired by DFAT and the Council for Development of Cambodia (CDC) and includes representatives of MITS, MME, and Ministry of Economy and Finance (MEF).

The program's governance arrangements remain generally sound, and the program has shown evidence of working as a trusted advisor to RGC. The consultation process revealed that the 3i program was generally well regarded by line agencies and seen as a reliable source of advice when it came to infrastructure development and policy reform. 3i's Oversight Committee provided strong project-related expertise and insights which has decreased as the program's direction began to focus more on a portfolio of activities mainly related to policy and expanded its mandate beyond water and electricity project-focussed work.

On an operational level, 3i has shown evidence of being able to flexibly adjust and re-structure human resources and personnel to meet the changing needs of the program. For instance, in 2020 the program scaled down the number of engineers and investment managers contracted for early-stage project appraisal and feasibility work, as these functions were no longer in high demand as the program reoriented towards more policy support. Correspondingly, the program recruited an Infrastructure Policy Advisor at the latter end of 2019 to support the program's expanded focus on infrastructure policy. A relatively flat management structure has supported flexibility in resourcing across work streams.

4.2 Efficiency

DFAT's Aid Quality Check (AQC) reporting found that despite challenges, including a reduction in the program budget and changes in leadership, that the 3i program has continued to perform efficiently due to "*strong financial and operational systems embedded within the program*" (AQC, 2020). The program's financial management has been accountable and transparent, with robust financial systems. The managing contractor's ability to provide current expenditure and financial information (including on-demand forecasts and breakdowns on program expenditure) as required by key stakeholders, in a way that supports effective financial monitoring and decision-making, was further supported by DFAT.

As of December 2019, total program expenditure was 64.8% (AUD31.9 million) of the total contract value, with all of the planned contracts signed. The program's disbursement rate remains dependent on the operators' construction activities and remaining milestone payments. As of 2020, DFAT remained confident that 3i will be able to disburse the remaining program funds by end of program, however the program's consistent underspend remains a risk as 3i

²² C3-Effectiveness of ID Poor household connection subsidy (August 2020)

reaches its final stages of the program cycle. This is particularly relevant given that no major COVID-19 related delays and corresponding financial risks have been identified.

4.3 Monitoring and Evaluation

The primary purpose of this brief overview is to assess the efficacy of 3i's M&E system and to ascertain if that system can generate the data required to track performance against key indicators required by DFAT. The secondary purpose is to suggest whether there is a need to modify the M&E system to ensure it can better meet DFAT's requirements and 3i's monitoring, evaluation and learning needs.

Background

The 3i design required an M&E Plan to be developed during the inception stage, based on the Donor Committee for Enterprise Development (DCED) standards.²³ These standards were, and are, widely used for market systems for development type interventions like 3i. The DCED standards focus on articulating results chains, indicators, and the systems' level effects of interventions. Programs that use the DCED system can be audited to ensure they comply with these standards. The design also outlined the other general M&E requirements, which included: monitoring utility connections and the leveraging of private sector funds; and evaluating secondary outcomes

Despite these requirements, an M&E 'framework' for the program was not fully developed until almost 3 years after implementation. The DCED approach was not adopted in its entirety, but instead a customised M&E system was developed that built on how the program actually worked on the ground. This system was focused at the project level, i.e., monitoring various aspects of the project cycle as is typical of engineering projects. It should be noted that there were DFAT M&E standards in place at the time of project inception, but it seems there was no attempt to meet these standards (or to enforce them).²⁴ As such it seems that, from an M&E perspective, the program fell through the cracks between the DFAT M&E standards and the DCED standards.

Issues with 3i's M&E 'Framework'

Despite the above comments, a review of the existing 'framework' suggests that while it may not look like a typical DFAT M&E system (or a DCED system), the basic requirements of an M&E system are in place; the functioning of that system is just not very well explained. The reasons for this and the implications are discussed below.

First, the overarching document that describes the M&E system is referred to as an M&E 'Framework' when in fact it could more usefully be termed an M&E Plan. An M&E Framework is an organising framework for the collection of data against outcomes. It includes program-wide indicators and targets. It helps ensure that the results of a multitude of activities can be aggregated to tell a story of program-wide performance – this is what is missing from the program at present. In contrast, an M&E Plan describes how the system functions and includes: a program logic or Theory of Change; a definition of monitoring, evaluation and research; asks key questions in all these areas; details of how data will be collected; outlines of roles and responsibilities; an annual M&E workplan (amongst other things); and an M&E Framework (usually as an appendix). 3i's M&E 'Framework' (Plan) has some of these elements but not others. This means that, while 3i might understand how its customised system works, others may not because it is not clearly explained. Further, its current M&E 'Frameworks' (in the proper use of the term) are for activities – see Annex 1 of the 3i M&E 'Framework'.

Second, despite the above there is a significant amount of quality data collection taking place – see 'research areas' outlined in the Table on pages 7-10 of the M&E 'Framework'. The confusion arises because these are, in fact, not 'research' areas at all, but discrete 'monitoring²⁵' and 'evaluation²⁶' activities. However, they are not described at such, nor is their role in the broader M&E system explained sufficiently. The absence of key monitoring and evaluation questions, which these data would be collected to answer, is a problem.

Third, the overarching program logic is not clearly explained. While there is a simple 'results chain' for Modality 1 (See Figure 3 of M&E Framework), this does not conform with standard program logic format – the articulation of the 'outcomes' is weak – nor is there a higher-level program logic for 3i as a whole. This is a significant issue as one

²³ Guidelines for implementing the Standard – DCED (enterprise-development.org)

²⁴ New DFAT M&E Standards were released in April 2017, but they were also updated after the 2012 Peer Review

²⁵ Monitoring is a continuous function that uses the systematic collection of data on specified indicators to provide management, and the main stakeholders of an intervention, with indications of the extent of progress and achievement towards objectives. Data might include financial data pertaining to spend and allocation, input and output-related data, process data, or contextual data of relevance to the intervention.

²⁶ Evaluation involves making judgements about the performance of a project or program with reference to some pre-determined evaluation criteria. For example, the OECD-DAC evaluation criteria of relevance, efficiency, effectiveness, sustainability, and impact (amongst others). The data gathered through the monitoring process can be used for this purpose, alongside other data.

imagines that both modalities are seeking to contribute to these higher-level outcomes. How Modalities 1 and 2 are doing this together is not clear. There is also a need to compare and contrast the effectiveness of the different modalities, which the M&E system does not presently accommodate.

Fourth, there are some significant constraints to the collection and reporting of data on the ground (e.g., incentives of private sector companies), and valid reasons why some indicators of progress may change over time (see fluctuations in various connection rates/financial leverage over the years), and these issues have been queried by DFAT. Such issues are not uncommon in MSD-type development interventions; the problem is that the existing M&E 'Framework' (Plan) does not sufficiently explain why these things happen and the assumptions that underpin them. This casts doubt on the validity of the data reported. Again, the implementation team understands these issues very well, but they are not clearly explained in the M&E system.

Observations about how M&E was executed in practice by the program

3i's M&E has been strongly focussed on investment and project inputs. As with many other investments in the infrastructure sector, there has been a pervasive over-simplification of gender (and other outcomes) impact assessments of 3i's infrastructure expenditure. Attempts by 3i to survey its water and electricity operators more widely to better identify and assess these outcomes have resulted in low-number responses that have not given a sound evidence base for conclusions. For instance, assumptions of the benefits to women and children of infrastructure expenditure have been largely based on benefits allocated on a demographically calculated per capita basis. This is further discussed in section 4.4 below. The work of the International Women's Development Agency (IWDA) and partners on the DFAT-funded Individual Deprivation Measure (IDM) clearly demonstrate that both deprivation and plenty are never uniformly experienced within a household.

3i's Program Design Document (PDD) foreshadowed three models of partnership with businesses and other actors in chosen sectors:

Modality 1 – Co-funding Infrastructure in Direct Partnership with Private Operators

Modality 2 – Co-investment with Private Equity and or Social Impact Funds

Modality 3 – Catalytic Interventions to Address Infrastructure Market Constraints

3i has focussed exclusively on Modality 1, entering contracts with private infrastructure operators so that these operators design and build new infrastructure such as water treatment plants and pipe networks, or electricity distribution structures and household connections. While the PDD sees that 3i's funding would typically use output-based contracts, all the VGF contracts implemented have been on an input (i.e., funds disbursed) basis.

3i has defended its approach as practical, allowing grant recipients to overcome cashflow issues. Exchanges with operators interviewed also confirmed this. The 3i team added that an outcome-based approach is more practical for existing operators, and the intervention should be on the "connection" side given the 3i contract period of 2 years. It should be noted that a number of output-based programs have successfully promoted new systems and connections (e.g., USAID's MSME program, the Stone Family Foundation, Global Program for Output-Based Aid [GPOBA] and its successor the Global Partnership for Results-Based Approaches [GPRBA]).

Reflecting this input focus, the M&E Framework does not define indicators for outcomes. Instead, each annual work plan has targets and indicators, but not as part of an overall program results framework. For instance, progress for electricity and piped water (Output 2.1) was measured on the amount of program funds disbursed as "investment outcome payments to operators".

Recommendations

There is a need to more clearly explain how 3i's M&E system functions and to revise M&E documentation. In this way 3i will be able to draw on the data it has already collected to paint a more convincing picture of how it is contributing to high-level outcomes in the water and energy sectors. It will also signal the gaps in data that need to be addressed before the program closes. This is particularly important as the program draws to a close as there will, no doubt, be some important lessons that can be learned from 5 years of implementation. Recommendations to achieve this are listed below:

- Develop a simple program logic that provides details of the end-of program outcomes, the intermediate outcomes that are necessary for the achievement of those higher order outcomes, the activities and modalities that support such achievement, and the outputs of these activities. This can include reference to the principles guiding implementation (e.g., additionality, etc) and cross cutting issues such as gender. ^[L]_[SEP]

- Re-cast the M&E 'Framework' as an M&E Plan and ensure it includes the basic elements of such a Plan that conforms with DFAT standards – this is a relatively straightforward exercise as most of the elements of such a plan are in place. This recasting should focus on: defining 'monitoring' and 'evaluation' in the context of the program (explaining what you are monitoring and why, and what you are evaluating and why); developing some key monitoring and evaluation questions to guide data collection; reshaping the 'research areas' table and allocating activities as 'monitoring' or 'evaluation' activities (and linking such to questions above); describing in more detail some of the constraints to data collection and how these are being dealt with (small utilities collecting data, etc); outlining how progress is being reported and why data changes year-on-year (assumptions); outlining M&E roles and responsibilities; and outlining yearly M&E activities in a workplan.
- Develop a proper M&E Framework at the program level and include this as an annex in the new Plan. This will ensure 3i can give DFAT the type of program level data it needs. The data is available to support this aggregation. This should include columns as follows: 'outcomes', 'indicators', 'modalities', 'activities', 'targets', and 'data sources'. The data sources column is particularly important and should provide precise information on where the indicator data is coming from.

4.4 Risk Management

3i has managed its risk issues in accordance with the DFAT risk management requirements²⁷:

Implementation and performance management

Monitoring and reporting on risk and safeguards

- Regular risk discussions in team and partner meetings, in line with management plans, agreements, etc.
- Updating risk register every three months
- Reporting on risks and safeguards in investment quality reporting and annual program performance reports

3i regularly updates its Risk Registers outlining a range of risks relating to infrastructure development in Cambodia. Risks range from child labour and protection to environmental safeguards. The most recent Risk Management Plan available to the Review team from November 2020, covered the following key themes: COVID-19, business and political uncertainty, WHS concerns, staffing and reputational considerations. A summary of the document provides a useful insight into 3i's risk management practices:

- **COVID-19:** A range of risks were identified from the macro/fiscal risk level, operational, through to workplace and personal health of staff. To this point, 3i has managed COVID-19 risks well, as confirmed by GoA and RGC stakeholders.
- **Reputational considerations:** 3i works with a number of Government and private stakeholders by virtue of its operational mandate of co-investing in infrastructure projects. This raises a number of risks when it comes to managing the quality and activities of Government and private sector partners, and ensuring delivery quality. The Review team found that this transition was being managed as effectively as possible.
- **Business and political uncertainty:** This included consideration of a variety of issues, ranging from the impact that slower growth might have on business confidence to regulatory changes (i.e., tariffs, licensing terms or conditions for electricity or water operators) that could be made by RGC that reduce the likelihood of business investment in 3i. While a low risk, the Review team observed that the program had established close relationships between donors, programs, businesses and relevant stakeholders to ensure productive working relationships and mitigate any risks that might be associated with changes in regulation or an uncertain economic environment.
- **Coordination and engagement:** 3i had undertaken a number of activities, particularly in the policy space, that required a high level of coordination across various stakeholders to avoid duplication and ensure overarching cooperation. The risk here was that RGC or other development partners may otherwise see 3i to be duplicating the work of other organisations, or policy support activities may not translate into longer term policy engagement if the proper level of engagement were not achieved. 3i had demonstrated its ability to effectively carve out its niche in the presence of competing actors in the Building Codes workstream. Ensuring the continuity and relevance of policy support activities will however largely depend on how effectively current activities lay the foundation for Australia's future planned program of work.

²⁷ Risk Management for Aid Investments (DFAT Australian Aid, January 2019)

- **WHS:** 3i personnel are exposed to significant WHS risks, characteristic to the challenging operational environment in which they operate. These include the conditions of the 3i project office, travel in rural areas and road accidents, and exposure to security incidents including low-level violence in communities, sexual exploitation, abuse and harassment. Other risks exist to the health and safety of staff engaged by the partner business, and community people in places nearby and adjoining construction works. These appeared to be exceptionally well managed by 3i and DFAT with minimal incidents reported, after significant resourcing had gone into establishing the right protocols and approach to risk management (including a unique UXO risk management system) to address these concerns.

Appraisal of the risk-related documentation from 3i leads the Review team to see that the program has actively and effectively managed its risk exposures, consistent with the risk principles from DFAT's guidance, namely that an aid investment:

- identifies risks early
- is objective based
- is fit for purpose
- is actively managed
- is accountable.

An example from 2019, where 3i identified a 14-year old child operating an excavator on a piped treated water sight during an M&E visit, speaks to their robust risk management procedures. The incident was reported within the next 24 hours and a child incident notification was immediately sent to DFAT's Child Protection and Compliance Section for consideration on whether any further action needed to be taken. This incident was used by 3i to remind operators of their child protection responsibilities, review their own procedures and increase the amount of announced site inspections, supporting the Review team's findings that 3i was able to effectively manage program risks.

5 Gender Equality and Social Inclusion

Evaluating 3i's performance on GESI is considered both in terms of the extent to which 3i's operations are gender sensitive and advance GESI principles, and the extent to which the 3i program leads to greater equity for women and disadvantaged groups. To form a view, the Review team used information from the comprehensive consultation process, reviewed 3i program reports in detail, analysed spreadsheet data provided by 3i and engaged in correspondence with the 3i team to clarify issues. This was supplemented by background reading of the latest research on integrating GESI into infrastructure programs, about which the Review team has significant prior experience.

The primary questions guiding the Review were:

- To what extent has the 3i program furthered gender equity and social inclusion (GESI) including equity in delivery of its outputs and outcomes and transformative secondary impacts?
- How has the 3i program accounted for the specific needs of women, people with disabilities, and other marginalised communities?
- Are there more options 3i could consider for using its investment to achieve more effective and sustainable outcomes for the economic empowerment of women and marginalised groups?
- How has the program collected data, disaggregated by gender, as evidence of the impact of projects in the areas where 3i private sector partners operate?
- In what specific ways did 3i introduce GESI themes into policy dialogue, technical training and investment design.

3i delivered against some of the GESI objectives in the PDD but did not adapt to changing priorities to better integrate GESI considerations. The Review team acknowledges that integrating GESI into development programming is an evolving discipline among all donors, and whilst DFAT has consistently been a leader in this area, effective design and implementation is still a work in progress, especially in traditionally 'gender-blind' sectors such as infrastructure. Nonetheless, the performance of the program in advancing GESI goals should be measured against the objectives set out in the PDD, the M&E results framework and the instructions from DFAT and the 3i Governing Board. Based on the evidence available, 3i took steps to account for some of the GESI themes raised in the PDD. However, the program did not adapt to changing priorities, nor fully internalise guidance from the 3i governing board

and DFAT to integrate GESI considerations. As the program evolved, the shortcomings of the original PDD, especially concerning the importance of integrating GESI, would have become more evident, and should have been addressed.

Many of the shortcomings regarding GESI integration outlined in this section are within the capacity of the 3i team to address, particularly as there is now a technical advisor available. **The Review team recommends that for the remainder of the program, 3i should make it a priority to: support the RGC target of universal coverage of piped water and electricity; review the opportunities to improve data collection; and explore entry points for GESI integration into policy work with RGC. The team should also revisit the Provincial Investment Plan to identify how RGC can be supported to integrate GESI.**

5.1 Integration of GESI in design and execution

GESI perspectives were not meaningfully integrated into the 3i program design, outcomes, guiding principles or M&E framework. The goal and intended outcomes of the program (PDD, page 25) do not mention gender equality, the needs of poor people or disadvantaged groups, such as rural communities. Taken at face value, the program is wholly designed to subsidise the private sector to invest in infrastructure for utilities. The PDD identifies gender equality as a cross-cutting issue that should be taken into account during program implementation to ensure that program outcomes are gender sensitive. However, GESI is not included in the list of 'guiding principles' that inform the way 3i operations are designed and how decisions are made. This is an important omission, as this list constitutes the governance 'backbone' of the program. Indeed, the consistent and intelligent use of these principles by 3i is commendable. Had GESI been included in this list, then it would have had a positive effect on the program's ability to deliver its goals. For instance, the due diligence process reported to the Oversight Committee measures each piped water and electricity operating company against the guiding principles, so including GESI at this stage would have ensured these cross-cutting themes were properly discussed at the contract stage, which would have been a good example of effective GESI integration.

The absence of attention to GESI arises partly from how the PDD frames the choices the program needs to take to deliver the private sector development model, emphasising that it 'is driven by business priorities' acknowledging that the poorest households in 'non-viable' remote areas could not afford piped water or electricity and were, therefore, not intended to be target beneficiaries for the program.²⁸ It was always going to be challenging for 3i to consider social inclusion in a project that was not designed to be inclusive. The PDD anticipated the 'difficulty in directly controlling gender equality issues that concern private sector management.' It then goes on to say, 'This is because most private infrastructure businesses will have little understanding of, or interest in gender issues.' This seems to position GESI considerations as somehow being outside the sphere of influence of 3i. The Review team considered if this view was appropriate and found that, on the contrary, there has been a trend among bilateral donors to integrate GESI into infrastructure projects. This was inspired by the Beijing Platform for Action (1995) that called on governments to 'ensure that women's priorities are included in public investment programs for economic infrastructure, such as water and sanitation, electrification and energy conservation, transport and road construction; promote greater involvement of women beneficiaries at the project planning and implementation stages to ensure access to jobs and contracts.'²⁹ The Australian Government recognises the importance of infrastructure development for inclusive economic growth, poverty reduction and women's economic empowerment.³⁰ Furthermore, Australia is a signatory to the G20 Principles for Quality Infrastructure Investment, which declares that 'Infrastructure should be inclusive, enabling the economic participation and social inclusion of all'.³¹

Therefore, considerations of gender equality and inclusiveness (both economic and social) are well within the remit and influence of an infrastructure program, especially one that is engaged in delivering essential utilities such as electricity and piped water. The PDD partially acknowledges this, explaining that within private sector focused programs '...it is still possible to ensure gender equality is promoted and other marginalised groups – such as people with disability – are properly considered.' The design outlines the need to do this through '...market analysis that unearths the key drivers of gender inequalities, the judicious use of business selection criteria that can help address

²⁸ Note that attending to the needs of the poor is not the same as improving gender equality. Not all women are poor, and not all poor people are women. However, as a cross-cutting theme, GESI is often the place where concerns of economic equity are discussed. In this review, we cover some aspects of inclusiveness in the GESI section, and consider the economic equity aspects in the 'livelihoods and economic impact' section. Inevitably, there is an overlap.

²⁹ UN Fourth Conference on Women, "Platform for Action", 1995. <https://www.un.org/womenwatch/daw/beijing/platform/economy.htm>; (Para 167d)

³⁰ DFAT (2017) Investing In Roads: Lessons From The Eastern Indonesia National Roads Improvement Project. Complete Evaluation, Office of Development Effectiveness (ODE)

³¹ G20 Principles for Quality Infrastructure Investment, section 5

these [...] and incentivising partners to properly consider issues such as gender and disability'. However, this analysis was not conducted by 3i. There was also an inadequate amount of formative research to guide implementation and research surveys used too small a sample size to produce meaningful data (also see remarks in the M&E section). This inconsistent approach in the PDD - and subsequent DFAT reviews of the program - suggest that 3i accepted as axiomatic that infrastructure is a gender-blind sector, that provision of services such as piped water is inherently beneficial to women and, therefore, activities related to GESI and extending services to poor households are peripheral to the core business of the program. 3i accepts that opportunities to integrate GESI were missed 'especially at the grantee level'.³² Ironically, some of the grantees may have been more attuned to GESI issues than 3i anticipated. For example, a finding from the Review team's field trip was that one of the electricity operators they visited has employed some forms of gender mainstreaming in their business operation. However, there was no mechanism for sharing this good practice with other operators or even with the 3i team.

The 3i program progressed with little sense of how gender relations and structural inequality are relevant to delivery of utilities such as water and electricity. In 2017, 3i commissioned a report to research gender perspectives in piped water and electricity infrastructure. This was based on qualitative data from a very small sample of respondents, whose selection was not based on statistical methods. The findings of the report are, therefore, only anecdotal and cannot be used as evidence of program achievements, except with caveats. For instance, in some cases the report draws conclusions from the comments of just one interviewee. The report does not engage deeply with the underlying causes of gender inequality. It reports on the different roles that men and women play in the household, which are perpetuated through social norms. However, when drawing on wider literature the report holds useful lessons for 3i. For instance, it cites World Bank evidence to explain the limits of infrastructure in contributing to poverty alleviation without 'complementary inputs'. The report also emphasises that the 3i model for delivering piped water and electricity brings benefits only to those households **who can afford it**. These messages should have been taken on board by the program, however there is no evidence that they informed the annual work plans.

There has been no attempt to calculate how the cost of the subsidy via the VGF model is proportionate to the benefits for poor and disadvantaged communities or progress towards GESI goals. The 2020/21 AIMR states 'there has been no independent assessment of the effectiveness and efficiency of the viability gap financing employed by the program'. It is notable that using program funds to fill the viability gap, by subsidising private enterprises, is considered acceptable even without evidence of effectiveness, yet subsidising poor homes to connect is reported as too difficult to design and too expensive to cover. To advance GESI goals and ensure the water and electricity projects had more development impact, 3i could have done more to explore options for universal coverage by the private sector providers. For instance, they could have examined universal service obligations or 'bundling', whereby franchises are allocated to balance wealthy neighbourhoods with poorer ones, to maintain average profit margins whilst ensuring broader coverage. In correspondence with the Review team, 3i pointed out that tariff schemes charge 'lower tariff for low consumption users and higher consumption for larger customers to cross subsidize and help poor households'.³³ However, this model for cross subsidy is not mentioned in any formal 3i documents, nor is it included in the VGF model (as far as the Review team can ascertain). Without a concrete method of evaluating the costs, benefits and scope of this cross subsidy, neither the program nor the Review team can draw any useful conclusions.

The program overlooked opportunities to update the program design to more effectively integrate GESI goals. The 2019-21 work plan³⁴ and the 2021 program extension concept note³⁵ were opportunities to learn from experience and strengthen the GESI aspects of the program and the way results are monitored. However, there is no evidence that this took place. For example, the draft results framework (2019) includes comments from DFAT asking for 'actual number of beneficiaries in each calendar year', with 'data disaggregated by men, women, boys and girls', but this data is not yet available (as discussed in more detail below).³⁶ The 2019 strategy document for FY2020-21 includes a reference to deliverables which are 'pro poor (including promoting gender and inclusive growth)',³⁷ however, the strategy does not describe any steps by which these outputs will be achieved.

Arising from the 2019 strategy, 3i initiated policy work that lacked clear parameters from DFAT and was not consistent with the original PDD results framework, leading to disparate policy initiatives of varying relevance, with integration

³² '3i Independent Review Report – 3i Response', 17 Nov 2021

³³ '3i Independent Review Report – 3i Response', 17 Nov 2021

³⁴ 3i Work Plan Activities for January 2019 - December 2021

³⁵ 3i Extension Proposal January to June 2022: Draft v3 for consultation – July 2021

³⁶ 'DFAT comments on 3i indicators – final' (undated and incomplete document, but assumed to be 2019)

³⁷ 3i: 'Strategic Framework for Intervention Investing in Infrastructure Program', 25 Feb 2020

of GESI currently absent from most policy areas. 3i documents refer to how these activities exhibit a ‘transaction-led’ approach. The Review team found that DFAT and 3i did not share a common understanding of what this term means. In some cases, it appears to mean that 3i pursued projects that responded to RGC requests and support policy. But it could also refer to projects that involve a transaction (for instance between a customer and a utility company). The risk is this approach may not properly identify how power is distributed in market relationships (e.g., between buyers/sellers, producers/processors), and may fail to anticipate how monopolistic power can be used to disadvantage poor households. It is notable that in the due diligence review of an electricity company, the prospect of monopoly power is portrayed as a positive aspect of the deal: ‘As the grant is provided to a REE who has a legal license to operate monopolistically in his/her license area, this grant will not have any displacement effect on any other REEs’.³⁸ The risks of monopolistic behavior are inherent to enterprise that require an installed network of distribution infrastructure (such as water pipes) with high barriers to entry for competitors. Therefore, the program needs to anticipate how regulation and oversight will contain these impulses and ensure policy support for RGC is in place, and an independent accountability mechanism is available to protect households from unfair practices. However, the Review team has been unable to find mention of these risks in the PDD, or subsequent work plans.

In 2021, responding to DFAT feedback, 3i engaged a GESI advisor. This is a welcome development, leading to a further GESI report which the Review team did not receive until 17th November 2021, which was after submission of the first draft of the 3i Review report. This new GESI report does not state its objectives, or terms of reference, making it hard to ascertain if it is intended to merely validate the GESI performance of 3i to date, or to engage critically and recommend changes in strategy. It does not introduce any new data or evidence, fails to discuss the weaknesses in GESI data collection (as identified in this Review) and restates the generic case for integrating GESI in infrastructure, which adds little to the existing canon of work available to 3i or DFAT. Furthermore, by working in parallel to the 3i review process, yet without informing either DFAT or the Review team, this was a missed opportunity for the report’s authors to collaborate with partners on the scope and objectives of this report.

5.2 Learning and adaptation

The 3i program failed to allocate adequate resources to mainstream GESI throughout the program cycle reflecting the low priority placed on GESI in the PDD and subsequent work plans. As discussed above, the main work of the program in piped water and electricity was regarded as likely to have some positive impact on women and girls almost regardless of how it was implemented, whilst the policy work was following a workplan that did not define any entry point for GESI.

There were opportunities to correct the course of the program, by responding to DFAT feedback. For instance, the Scalability Review (2017) suggested that 3i consider engaging specialist gender expertise to better measure the gendered impacts of 3i work, following which the AQC2020 recommended that ‘[DFAT] Post to work with 3i to ensure findings from gender studies are translated into inputs for new policy work streams and are broadly disseminated to improve our position to influence stakeholders’ behaviours.’ The report recognized that expertise and budget allocation to achieve gender equality-related outcomes of the 3i investment remained less than adequate.

In interviews, 3i team members believed that they responded to the change in DFAT expectations in regard to GESI, but noted (with some justification) that it was a departure from goals and target outcomes in the original PDD. It is also notable that the 2019 strategy, agreed by DFAT, included almost no reference to GESI (as explained above). Responsibility for this oversight does not rest wholly with 3i, as DFAT could have been clearer in how it communicated (e.g., through AQCs and review of workplans) the need to better embed GESI and then hold 3i accountable for their response. The exception is the most recent AIMR 2021 which is clear about GESI shortcomings in 3i, but this has left it very late in the program to address.

It is only very recently that 3i has begun to take GESI more seriously. For instance, it is encouraging that 3i has contracted a Gender Specialist. Whilst this is a positive step, for the Gender Specialist to be successful in her role she will need an appropriate degree of authority and influence across the wider 3i team, including technical consultants. This will be challenging given the position is remote and short-term. Furthermore, the configuration of the 3i senior management structure may pose additional challenges to meaningfully embedding GESI across the

³⁸ ‘Recommendations for the Oversight Committee to Approve an Electricity Infrastructure Grant for the Extension of the Distribution Network of Electricity Ang Roka Enterprise in Takeo Province’, 23/8/17

program. For instance, the absence of a single Team Leader may make it challenging to identify who is accountable for delivering GESI goals.

5.3 Integrating GESI into policy

RGC stakeholders expressed their satisfaction with the 3i program and viewed it as a complement to their investments to expand the electricity and water infrastructure to rural Cambodia.³⁹ However, **RGC stakeholders did not believe GESI issues were prioritised by 3i**. A few government representatives raised that the 3i has not targeted GESI when engaging with the ministries. It was a similar finding with other program partners, for example the AWA stated they employed their own GESI approach to work conducted under its contract and could not recall the topic being raised by the 3i team. 3i has attributed this low-key approach to their belief that they could see 'limited opportunities to meaningfully integrate GESI' into policy work.⁴⁰ Better quality GESI-led research and analysis earlier in the program would have helped to challenge this belief and guided the 3i team towards effective entry points for policy.

Starting from 2019, the 3i program shifted to explore policy reforms that could support infrastructure development. However, GESI components remained weak throughout this engagement process. The 3i program has engaged with only the supply-side and appears to lack meaningful consultation with civil society organizations or communities representing beneficiaries. Below is an example of the Smart City policy engagement of the 3i program:

Gender equality and social inclusion absent from 'Smart City' concept

The 3i program sketched out 12 concepts for the Sihanoukville provincial authority to initiate a smart city strategy.⁴¹ However, the concepts neither mention gender equality and social inclusion, nor consider the needs of poor households. Notably, the concepts barely refer to national economic growth and prosperity goals. The rationale for selecting 'Smart Parking' as the most pressing need for the city is not clearly explained, and it does not seem to be relevant to 3i's work in utilities. Despite one brief mention of 'water, sanitation, electricity', as being under stress as the city grows, there is no other reference to these utilities in the invitation to tender (ITT) issued by 3i in August 2021 to advance the Smart City concept.⁴² Throughout the process, there was no consultation with communities living in Sihanoukville, and the ITT made only passing reference to the need for stakeholder consultation, and had no requirement for incorporating GESI considerations into the design. 3i argues that 'subsequent procurements' would address safeguards,⁴³ but unless these issues are considered at the early design stage, there is a risk the concept is fundamentally flawed and unimplementable.

The lack of proper analysis into development impact (not just GESI) is reflected in the way the 'smart parking' concept is narrowly defined and seemingly disconnected from social or economic concerns. A more thorough analysis would have investigated how formalising car parking could lead to crackdowns on microenterprises (e.g., market traders, the majority of whom are women), which is already a risk due to the urge to 'tidy up' the city for the 2022 ASEAN Tourism meeting. Combined with the inherent risks of electronic surveillance (a feature of the project presented uncritically in the concept note), this project is likely to undermine DFAT's GESI objectives. By increasing inequality this could have a disproportionate negative impact on women and poor people. Had the 3i team included a GESI specialist, and if the program had a more systematic method of developing and testing concepts, the shortcomings of the 'smart city' idea would have been highlighted at an earlier review stage, saving on resources and avoiding disappointing RGC counterparts.

5.4 Measuring GESI impact

The absence of comprehensive M&E reporting that included gender sensitive and inclusive indicators, means that the transformative secondary impacts of the program cannot be evaluated. 3i program goals and outcomes did not include a specific consideration of equity, or the needs of lower socioeconomic households. The claim that 3i has benefited women and marginalised groups is based on the assumption that 'women typically bear much of the burden of household tasks in rural Cambodia, and therefore access to treated water and electricity substantially reduces the burden of these tasks', but this has not been tested by data, for instance to find out if access

³⁹ Based on several interviews with RGC counterparts

⁴⁰ 3i Independent Review Report – 3i Response', 17 Nov 2021

⁴¹ 'Concept Notes for Smart City Project Development Options' Prepared for Government of Preah Sihanouk, 9 March 2021

⁴² Consultancy Services for Design of Sihanoukville Smart City Enterprise Architecture and Pilot Smart Parking Project: Invitation to Tender, 20 August 2021

⁴³ '3i Independent Review Report – 3i Response', 17 Nov 2021

to water reduces burdens for women overall. Indeed, it is contradicted by 3i's own gender report, which concluded that 'there is no concrete link between access to water and electricity and higher household incomes or women's economic empowerment.'⁴⁴

The same can be said about other similar propositions put forward by the program, for instance, that companies co-investing with 3i are family businesses (run by a husband and wife), thereby benefiting women as much as men. Without measurable indicators, the tangible impacts of these statements cannot be verified. A lack of indicators and tools to collect data leads to a lack of disaggregated actual data on users connected with the pipe water or electricity under the support of the program. The M&E framework laid out a template for the progress report. However, the template has not addressed other issues related to gender equality and social inclusion arising during the implementation, despite having a section for child protection. 3i program goals and outcomes did not include a specific consideration of equity, or the needs of lower socioeconomic households.

The way GESI data is reported in annual reports does not accord with good statistical practice. The Review team observed that 3i's reporting on the beneficiaries of the program was extrapolated from national census data, instead of arising from field research or data from the operating companies. For instance, Annex 1 of the 2020 annual report claimed that 534,482 'Women and girls who will directly benefit from a new water connection'.⁴⁵ This seemingly precise number is calculated by stacking several assumptions: the total number of signed contract connections multiplied by the assumed occupancy per household (4.5), multiplied by the ratio of women in the population (51.2%). Note 5 explains that 'Data from World Bank Development Indicators for year 2016 is used to calculate the number of women, girls, men and boys getting connected to piped water and electricity distribution.' There are two problems with this approach: firstly, data that rest on several variables result in numbers that are prone to 'precision bias', whereby seemingly precise numbers are mistaken by the reader as accurate data, whereas they may bear little resemblance to facts on the ground. When data is calculated in this way, it is good practice to explain the formula used, the provenance of the variables, and then use rounding to indicate where a broad estimate is being used. The way data is presented in the annual report does not meet this standard. The Review team notes that beneficiary data from the 3i annual reports contributes to DFAT's Aggregate Development Results reported in Senate Estimates, so must be robust and defensible.

Even accepting that connected households match the national profile of gender balance, a more important measurement for GESI purposes is the degree to which women-headed households and disadvantaged households are proportionately represented as customers of the utility companies. It has been difficult for the Review team to evaluate this indicator, as it requires the utility operator's customer database to record this information and 3i to maintain an ongoing dataset. As the companies do not collect such data, the 3i team explained that 'disaggregating this data by gender and disability is therefore impossible for actual connections'.⁴⁶ However, despite the impossibility of disaggregating data, 'the program has always planned to capture data on connections disaggregated by gender of household head, poverty level, and existence of family member with disability in its universal **counting of actual connections by the end of the program to verify grantee's reported data.**'⁴⁷ Indeed, the PDD declared that '3i will ensure that such data is sex-disaggregated, particularly to monitor the number of female-headed households'.

The Review team agrees with 3i that assembling disaggregated data is challenging and acknowledges their ambition to collect and analyse such data before the program ends. However, it is hard to envisage how this ambition can be achieved at the end of the program unless a system has been in place from the start to collect and validate such data. The 3i team have made some steps towards this end, using a sample of nine companies to triangulate the data reported by them with commune census data.⁴⁸ This concluded that the connection data reported is broadly in line with the facts on the ground. However, this report is very brief (it appears to be a summary of data reported elsewhere) and acknowledges that 'Connection can be considered as a sensitive information for the water operator to share'. It is not clear why the grant agreement between 3i and the private operators did not include an obligation to collect data to an agreed standard, indeed, the PDD anticipated this, noting that private companies may not 'be comfortable with collecting and sharing some of this data, particularly information on poverty, gender, and revenue/profit', and therefore 3i should '**agree suitable terms with partners to get the information it needs**'. There is no evidence that these terms were agreed with partners and correspondence between 3i and the Review team

⁴⁴ G2 – 'Gender research in piped water and electricity infrastructure', Indochina Research Ltd, 2017

⁴⁵ 3i '12-month Progress Report #5, January – December 2020'

⁴⁶ Email from 3i to Review team, 28 Sept 2021

⁴⁷ '3i Independent Review Report – 3i Response', 17 Nov 2021

⁴⁸ 3i: 'C1-Actual connection measurement'

indicates that a decision was taken to instead rely on qualitative longitudinal studies and spot surveys. As discussed in the M&E section, the surveys conducted by 3i are not statistically rigorous, the analysis that accompanies them is superficial and suffers from a lack of quality assurance. However, the Review team acknowledges that field research can be expensive, and resources directed to this aspect would have been at the expense of other program activities.

The exercise to validate customer data with commune census (provided by the village chiefs) included a question on women headed households. However, through failing to agree a definition, 3i admits that 'Due to slight misinterpretation, the female headed households recorded by the village chiefs were only those with widows as household heads'.⁴⁹ Based on this definition, among the nine companies surveyed, approximately 8% of the connected customers are women-headed households. The true number of female headed households connected by the utility operator may be higher than 8%, but with the data supplied there is no way to estimate by how much. According to the commune data provided by 3i, the average prevalence of female headed households (FHH) is about 16%. Therefore, this difference between the general population and the connected customer segment indicates that female headed households are underrepresented as customers. The alternative explanation is the survey of commune data in the 'Actual Connection Measurement' report is unreliable because of the mistake in the definition of WHH used by the survey, as admitted by 3i. The Review team notes that 3i does not accept that women are under-represented as customers, even though this is evident from the data in their own report, suggesting that 'the Review team wrongly interpret data from the C1 study...and this wrong interpretation leads to wrong conclusion'.⁵⁰ However, the data in the C1 study consists of one table of data from eight commune surveys, with no links to background data, and no proper analysis (the whole report is only three pages long). The reasoning advanced by 3i is contradictory: whilst claiming that the connection rate to female headed households is no different to the rate for male headed households, 3i also explain that 'there is a significant trade-off focusing directly on FHH and broader community benefits', claiming that far fewer households overall would have been able to connect 'had we taken this approach'.⁵¹ The Review team does not accept there is a trade-off between serving the needs of women in the community and achieving broader benefits, and access to GESI advice would have been useful for teasing out the meanings of this apparent trade-off. The 3i team states that their data and analysis support their approach, but has provided no further evidence to refute the basic point: The large variance of female headed households between connected and unconnected households should have prompted 3i to validate their findings, and if confirmed, examine the root causes of this inequality and amend its reported data to clearly show that program beneficiaries are skewed towards men, and justified why (as they claim) this was a desirable outcome for the program, as this would be an important finding for DFAT to consider, and to discuss with RGC counterparts.

6 Assessment of COVID-19 Responses

3i has successfully continued operations through COVID-19. The program has shown good flexibility in its response to the pandemic, pivoting activities to ensure program continuity and providing support to the RGC as required.

6.1 COVID-19 factors affecting the program and impact on implementation

The impacts of COVID-19 were varied across the 3i program, but broadly managed relatively well. Exchanges with operators interviewed revealed that 3i's modes of communication helped them to be able to achieve project milestones, despite delays and cashflow issues. With the most of the 99 water and electricity investment projects completed (>60) or construction significantly advanced, 3i was able to minimise any impacts COVID-19 may have had on activity completion by acting quickly to understand the potential impacts of the pandemic on the program.

3i completed several rapid surveys to investigate how COVID-19 might affect investment projects and identified marginal constraints around supply chain disruptions (i.e., construction supplies), labour risks and financial access. The surveys also found some negative COVID-19 impacts on supported water projects, such as lower fee collection rates, lower sale volume of electricity, lower connection increase rates and slower pipe delivery. However, the magnitude of these impacts was small and not expected to impact the sustainability of the supported clean water supply.

In addition to conducting surveys to understand the impact of COVID-19 and adjusting operations, 3i also initiated a number of further activities to pivot program implementation as required. Examples of these activities include

⁴⁹ 3i: 'C1-Actual connection measurement'

⁵⁰ '3i Independent Review Report – 3i Response, 17 Nov 2021

⁵¹ '3i Independent Review Report – 3i Response, 17 Nov 2021

implementing a virtual procedure to monitor construction activities and verify completed infrastructure output, pivoting its support to provide free access to piped clean water for schools for 6 months, and conducting various meetings and workshops online. Where activities required face to face interaction, such as training, the program ensured that appropriate protocols were followed including wearing masks, providing hand sanitiser, and implementing social distancing.

Out of 3i's work priorities, local capacity building was the most impacted by COVID-19. For instance, work between MISTI and the AWA to provide training to piped water operators and the CWA and increase knowledge and innovation exchange between Cambodia and Australia was impacted, due to the need for large gatherings and international travel. MISTI was able to deliver only three of initially planned 12 training sessions for private water operators during 2020, while other knowledge transfer activities between AWA and CWA (i.e., a water policy conference) had to be conducted virtually. Innovative means of delivering sessions during COVID-19 were adopted, such as the use of VR technologies for AWA-CWA activities. Through AWA, Australia's South-East Water was also involved in the WUIP however for similar reasons, COVID-19 has reduced the impact of the SE Water-WUIP initiative. Policy interactions with RGC counterparts on water, energy, and building codes have been delayed but not foregone, while the capacity building work has moved online as an alternative approach, which seems acceptable in response to the pandemic.

6.2 Timeliness and quality of COVID-19 responses

The Review team found that 3i adapted well to virtual ways of working to limit travel and interaction, while also minimising disruption to ongoing activities.

3i has shown evidence of supporting RGC responses to COVID-19 through existing activities that are delivering outcomes in water and energy and economic development. For instance, 3i's 2020 Annual Report observed that the water and electricity projects *"played important roles in supporting households responding to the COVID-19 pandemic by enabling more frequent hygiene practices and making it more convenient to stay at home."* 3i further supported various of RGC's policy sector initiatives, such as evaluating business impacts from COVID-19 for the energy sector, and providing support to strengthen planning, delivery and management of sustainable infrastructure.

The Review team does however note that many of the outputs yielded by the 3i program, such as delivering critical household-level water and electricity infrastructure and supporting PPPs with small and medium-sized businesses, are a function of the program's normal mandate rather than targeted COVID-19 activities. Accordingly, there is space for 3i to play a more significant role in supporting RGC's COVID-19 response, by implementing COVID-19-specific activities in line with the Government's COVID-19 priorities and economic recovery. This has been done with other Australian infrastructure investments such as the Indonesia Australia Partnership for Infrastructure (KIAT) program, which adopted a targeted COVID-19 activity response to support the Government of Indonesia.

The RGC faces significant challenges with the COVID-19 pandemic. Our consultation process revealed that there is significant demand for support in terms of immediate response and recovery initiatives across tourism areas, small and medium enterprises (SMEs), informal sectors and to the most vulnerable groups. However, there is no evidence to suggest that 3i has shifted their interventions to target to these heavily impacted sectors.

For instance, 3i's policy interactions and several policy pilot activities, including bulk water supply, small-scale bundling, and support to Ministry of Rural Development are relevant for Cambodia to reach water and sanitation related targets (SDG-6) in the future, and were also essential to contain the spread of the virus at the household level. Similarly, the Renewable Energy Strategic Plan and Work Health and Safety (WHS) guidelines for the construction sector provided recommendations to promote future infrastructure development (given that energy is included in the government's Resiliency Plan to Post Covid-19 Economic Recovery⁵²) and also on how to contain the pandemic at the construction site. Accordingly, while 3i has provided satisfactory COVID-19 support, interventions have not been heavily targeted. Instead of only integrating in COVID-19 considerations to ensure continuity in program delivery, the 3i program can consider providing COVID-19 specific policy support across its active sectors, and look for opportunities through established programming to contribute to the COVID-19 response and recovery in Cambodia. We do note that 3i is currently seeking to collaborate with WaterAid, a non-profit organization to provide a specific COVID-19 support to migrant workers, construction workers, people with disabilities and senior citizens.

⁵² The (draft) Plan (dated: 26 August 2021) focuses on Recovery, Reform and Resiliency. The "Resiliency" components focus on Inclusiveness and Sustainability in which key physical infrastructure such as electricity and renewable energy is highlighted.

6.3 Forecast implications for the remaining 3i program timeframe

No significant program delays are expected by 3i as a result of COVID-19 disruptions when factoring the Extension Phase January - June 2022.

Despite the challenges presented by the COVID-19 pandemic, including restrictions on international travel and face to face interactions, 3i's 2020 Annual Report reported that policy work in all sectors including energy, water, smart cities, building standards and infrastructure bonds proceeded with good progress. Likewise, there were no significant disruptions in construction across the water and electricity sectors, with most of the investments being near completed.

7 Future Program

7.1 Long-term sustainability of 3i's operations

Overall, 3i's operations have helped meet the need for infrastructure in Cambodia. Supporting quality infrastructure remains a major priority for the RGC and is expected to play a key role in supporting economic growth, especially as part of the Government's post-COVID-19 recovery plan and commitment to poverty reduction. The focus on infrastructure is also consistent with the priorities highlighted for Australia's development partnership with Cambodia.

However, there has been no enthusiasm by RGC (or any potential donors, to date) to take up any of the funding required for continuing a VGF approach such as that developed and implemented by 3i. The only prospect would seem to be ongoing GoA funding. This would seem to provide a rationale for examination and possible future development of other funding/subsidy approaches, including RGC policy involvement and contribution.

As the program nears completion, it is important that the focus of the program remains on properly embedding the policy support to date, instead of progressing new ideas. The broad nature of the EOPOs, particularly across EOPO 3 (more resilient infrastructure policies), means that 3i's remaining efforts should be focused on where it can exert maximum influence and inclusively maximise beneficiary impact, within its existing horizon of activities.

Across all program activities, we note there needs to be a more specific and comprehensive approach to delivering services to priority target groups. GEDSI, equity and community considerations are not incorporated into program activities, and appear to rarely surface in 3i's program planning, implementation and reporting cycles. Additionally, there should be an ongoing conversation among core governance stakeholders about:

- What additional information is required from a reporting perspective to demonstrate how 3i's activities are contributing to the program's EOPOs?
- How can key beneficiaries and second round program impacts be better measured through additional research, evaluation or information gathering actions?
 - The 3i team has performed some studies however, the scalability of the studies is limited due to the small sample sizes and limited independent researchers.

7.2 Recommendations across the workstreams

The Review team has identified several recommendations for the remaining period of 3i's operation to June 2022:

- **Water:** There appears to be consistent demand for VGF support from 3i in the water sector. However, further VGF commitments in the remaining months will necessarily lead to commitments (both in a funding a policy-constrained sense) for a future program. Also as mentioned through this Review, there are other modalities that were the intent of the PDD that to this day remain unexplored. Exploration of these modalities would provide an opportunity for a broader canvas of options for a future program. We also note the following improvements can be considered:
 - It remains vital that the remaining program of work addresses concerns around the lack of information sharing with MITSi after grants are successfully disbursed, so that water tariff is adjusted to benefit the end-user, and incorporates targeted equity and GEDSI considerations, as was originally meant to occur as per the program design.
 - Noting that actual connection data is available to operators (including on beneficiaries, disaggregated by sex etc) as part of their billing systems and can be requested by 3i, we note that the program should require operators to track and provide this data for the more comprehensive evaluation of program impacts,
 - The Water Fund development framework should also look to learn from the government-run REF while engaging, if-and-when-realised, with potential development partners who are interested in universal

water access. A peer-to-peer learning platform should be established in collaboration with CWA so that good practices are heard and learnt.

- **Energy:** Much like for the water sector, we note the consistent demand for VGF support for electricity. However, there is a comparable need to explore other modalities of funding in this workstream as well. For the continuation of activities in the energy sector, we recommend the following improvements:
 - Information on individual investment grants already disbursed to REEs should be made accessible to EAC so that the tariff to power subscribers (end-users) is adjusted to reflect the portion of grant in the overall tariff calculation.
 - Close engagement with MME is encouraged so that the key recommendations proposed in the REAIS are well received by government, and align with the forthcoming program.
 - Criteria such as equitable access/GESI and affordability should be embodied in the current process for off-grid electrification.
 - A peer-to-peer learning platform should be established in collaboration with REF or EAC so that good practices are heard and learnt, including among development partners operating in the same space.
 - We also note that the impact of the program could be strengthened by cooperating with other institutions (i.e., EAC) on investment projects to better embed technical practices and processes into domestic agencies.
- **Infrastructure Bonds:** As part of the overall reforms being developed in the infrastructure investment stream and given the knowledge gaps at both SERC and GPS, we would suggest the need for a capacity building program and TA support with IFIs active in at least two areas: bond development and financing, and project identification and prioritisation/bidding/procurement. 3i could also investigate other infrastructure funding models by supporting SERC to consider a model for Social Impact Bonds that could fill the funding gap for 'Base-of-the-Pyramid' service provision. 3i could offer assistance to RGC to prepare the Cambodia contribution to COP26 in Glasgow (or in its wake), in particular designing financial instruments (with SERC) to fund green infrastructure and low carbon energy (building on REAIS).
- **Smart Cities:** The rationale for why smart parking was the focus of this workstream remains unclear, particularly given that the interview process (including with the Deputy Governor of Sihanouk Province) revealed that there are a number of other pressing priorities for the city such as solid waste management. With this in mind, we suggest a plan is drafted for 3i's withdrawal from this workstream, including consideration of how local relationships can be appropriately managed. Sound infrastructure planning and prioritisation processes, at all levels, are essential to the delivery of on-need projects.
- **Building Standards:** The overall workstream did highlight the success of demand driven and capacity building approaches, when supported by positive stakeholder relationships and buy-in. However, with a number of donors already operating in this space, and 3i's remaining deliverables clearly mapped out through to June 2022, we suggest that the existing plan is a sensible conclusion to 3i's effort in this sector.

Across all program activities, we note there needs to be a more specific and comprehensive approach to delivering services to priority target groups. GEDSI, equity and community considerations are not incorporated into program activities, and appear to rarely surface in 3i's program planning, implementation and reporting cycles. Additionally, there should be an ongoing conversation among core governance stakeholders about:

- What additional information is required from a reporting perspective to demonstrate how 3i's activities are contributing to the program's EOPOs?
- How can key beneficiaries and second-round program impacts be better measured through additional research, evaluation or information gathering actions?
 - The 3i team has performed some studies however the scalability of the studies is limited due to the small sample sizes and limited independent researchers

7.3 Recommendations for GESI in future programs

Below are recommendations that have been drawn from the lessons learned in the 3i Review:

- It is essential to have GESI advisors involved in the design, implementation and M&E teams.
- There is the opportunity for GESI considerations to be mainstreamed in the due diligence and VGF (and other modalities) selection criteria, and to ensure that VGF funding is more inclusive and equitable, alongside being better coordinated with the sector regulators (EAC and MISTI) to ensure tariff consistency and quality.

- Including GESI targets in the 'guiding principles' and due diligence process will ensure that cross-cutting themes are conveyed into the work done by program partners, especially private sector grantees.
- Integrating GESI in the M&E framework is crucial to track program performance against GESI targets, understand the dynamic of GESI implementation, and offer solutions for any challenges during the implementation.
- GESI objectives need to be present in the theory of change and results framework (or logic model), represented by intermediate outcomes and verifiable indicators.
- Building constructive working partnerships with government agencies and private sector companies means having the confidence to discuss shared values, such as gender equality. Besides training and mentoring, DFAT programs can achieve a shared discourse about the issues through leading by example, exemplifying the values of equality and inclusion.
- Continuous review and learning are essential for successful implementation. The M&E team should lead the process of formative evaluation, facilitating the team to fully understand the data, question assumptions, and adapt activities. This not only makes the program more agile in responding to the challenges of integrating GESI, but it is also a way to cultivate a climate of innovation and enquiry.
- Develop a GESI screening tool to rapidly assess new program activities (such as policy work), to scan for risks and unintended consequences.

7.4 Recommendations for livelihoods and economic sustainability in future programs

- Programs that use subsidy to private enterprises should develop an independently assessed test of development impact. This should demonstrate how the subsidy will lead to universal service provision. This could include using established social and economic impact indicators, such as the Global Impact Investing Network (GIIN).⁵³
- Subsidy schemes such as the VGF model (and others like it) must be transparently designed and evaluated, in order to work with other development partners to continually refine the model.
- Considerations such as 'affordability of the tariff' or 'promotion of equitable' household connection should be included in the VGF model (and other modalities under consideration). Making the infrastructure "available" does not guarantee equal and inclusive access to all as discussed in the section 2.1 (Water). Such criteria are important so that EOPOs could be directly linked and measured.
- Coordination across relevant actors and local authorities should be made to promote connection in the overlapping investment areas. Also, in the policy space, proper rationale for workstream prioritisation (as seen from the Smart Cities activity) should include consultations at all levels specially with local people to ensure complementarities (as seen from the Building Standards activity) and the delivery of on-need projects.
- Peer-to-peer digital learning platforms should be established in collaboration with the existing bodies so that good practices are heard and learnt.

7.5 Activities for transition to the new Economic Cooperation Program

Supporting Cambodia's economic resilience and growth through infrastructure will remain an important focus of the new Cambodia-Australia Partnership for Resilient Economic Development (CAP-RED). The Review team proposes that the new program of work should capitalise on the work already done by 3i, including existing relationships, reputation and workstreams, to further contribute to the development of resilient infrastructure policies and support investment in critical infrastructure in Cambodia. Improving access, reliability and the affordability of critical infrastructure will be vital to the country's development and inclusive growth going forward, and remains a development priority for RGC.

Building on the work of 3i and complementing the contributions that will be made by the new Partnerships for Infrastructure (P4I) program, it is proposed that CAP-RED focus on activities across water, energy, infrastructure financing and logistics. This focused is proposed with the aim of:

- Supporting RGC meet its goals with respect to universal access to critical infrastructure services
- Trialling and supporting the mainstreaming of innovative financing models of infrastructure delivery
- Assisting RGC ministries to develop and implement strengthened policies for effective infrastructure identification, prioritisation, development and funding – including support for ongoing Public Investment Management and PPP reforms

⁵³ <https://thegiin.org/imm/>

- Helping RGC establish efficient and effective pathways for private sector participation in infrastructure delivery

We propose the following activities be for transition and built upon for CAP-RED:

Water

- **Expansion:** Provide technical and policy support to MITSi for the development and implementation of the Provincial Investment Plan, encouraging the efficient and effective expansion of Cambodia's water supply.
- **Financing:** Demonstrate the effectiveness of new financing models and technologies for the cost-effective expansion of water access, including bulk water provision and network clustering. This would take 3i's VGF model as a point of departure to find ways of providing smarter subsidies linked to achieving access and service goals.
- **Quality:** Support MISTi to build its capacity to effectively develop and implement the Water Act to regulating water quality (i.e., testing, capacity support to water operators), and continue to support the Australian Water Association's work on introducing / disseminating upgraded technologies and management systems for water supply.
- **Private sector:** Provide policy advice on how to use licensing, clustering, tariffs, and bulk water models to make investment more attractive to the private sector.
- **Mainstreaming:** Engaging, advocating and supporting RGC ministries on sustainable models that can be taken from CAP-RED trailing through to RGC mainstreaming
- **Targeting:** The future program should give careful consideration to the program beneficiaries, and consider the trade-off between promoting private sector (economic viability) and access to basic utility to poor households, as was realized during the implementation of 3i

Energy

- **Renewable energy:** Assist in the progression and implementation of the Renewable Energy Assessment and Integration Strategy (REAIS) providing technical assistance to increase RGC confidence in and capability for integrating renewable energy into the national energy supply system, and improving the regulatory environment for private investment in renewable energy. This includes tariff regulation and structuring of PPAs.
- **Energy market:** Support reforms to reduce energy costs to consumers by working with MEF on shorter term reforms such as improved PPAs, more competitive tendering and medium to longer term changes to the way that energy is procured.

Infrastructure Financing

- **Financing:** Expand and deepen financial markets for infrastructure, and introduce new financing modalities. This includes:
 - Building on 3i work to explore introduction of new financing modalities such as results-based financing;
 - Working with relevant Ministries (e.g., MEF) to build provincial and municipal capabilities to plan and manage infrastructure identification, prioritisation, development and funding models;
 - Working with MEF and relevant Ministries to trial new approaches to procurement; and
 - Supporting the work of the new Cost Effectiveness Department.

Logistics

- **Value Chains:** Infrastructure-related logistics gaps have not been a focus for 3i but are often cited by producers, importers and exporters as impeding the development of value chains and emerging industries. 3i could initiate early-stage exploration of activities to catalyse such investment, such as:
 - Complementing the work on efficient markets and agricultural value chains to identify missing infrastructure-related logistic services (e.g., crop storage, cold chains, warehousing, inland waterway transport gaps);
 - Exploring the factors impeding investment in logistics, alongside solutions to de-risking and encouraging investment;
 - Establishing relationships with banks and relevant actors to improve sectoral familiarity and capacity to attract finance; and
 - Developing feasibility studies and relevant research pieces to support engagement with institutional and impact investors, and encourage participation.

We also note that based on the findings of the 3i Review, a political economy analysis of the impediments and obstacles to accessing infrastructure for each of the program's target groups be conducted as part of the design process for all future infrastructure investments.

Annexes

Annex 1: Stakeholder consultations list, independent review of the Investing in Infrastructure (3i) Program

Approximately 70 consultations were held between April and November 2021, usually with multiple stakeholders present. All consultations involving Cambodian stakeholders were conducted via videoconference, with some in-person consultations taking place in Adelaide and Canberra.

Key informant	Position, affiliation
Mr. Luke Arnold	3i Board Member, former Deputy Head of Mission, Australian Embassy Phnom Penh, DFAT
H.E. Hem Vanndy	3i Board Member; Secretary of State, MEF
Mr. Alexander Nash	ASEAN Australia Smart Cities Trust Fund, ADB
Ms. Stephanie Lymn	Chief Operating Officer, 3i
Ms. Mola Tin	Chief Technical Officer, 3i
Mr. Alwyn Chilver	Contractor Representative, Palladium
Mr. Vanna Sok	Country Programme Manager, UN Habitat
Mr. Vom Kim	Customer (with ID Poor) of grid electricity in Chrey Kreum Village
A group of women	Customers of grid electricity operated by Mr. Chhit Ponarith
Ms. Ngin Sam Oun	Customers of Ms. Siemny Sim's water enterprise
Mr. He Phanny	Deputy Bureau of the Department of Construction, MLMUPC
Mr. Lor Sathya	Deputy Director General, General Department of Small & Medium Enterprises and Handicraft, MISTI
Mr. Nou Thara	Deputy Director General, Institute of Standard of Cambodia, MISTI
H.E. Sok Dara	Deputy Director General, Securities and Exchange Regulator of Cambodia (SERC)
Dr. Nhar Heng	Deputy Director of Research Technical Construction Department, MLMUPC
Mr. Yan Vandalux	Deputy Director of the Department of Construction, MLMUPC
Mr. Chiphong Sarasy	Deputy Director of the Department of Renewable Energy and other Energy, MME
H.E. Ngeth Vibol	Deputy General Director, General Department of Industry, MISTI
H.E. Kong Vitanak	Deputy Governor of Preah Sihanouk Province
H.E. Dr. Chhan Sorphal	Director General of the Department of Construction, MLMUPC
H.E. Tan Sokchea	Director General, General Department of Potable Water, MISTI
H.E. Hul Siengheng	Director General, General Department of Science, Technology & Innovation, MISTI
H.E. Kuok Fidero	Director General, National Institute of Science, Technology & Innovation, MISTI
Mr. Samphy Kep	Director of Securities Market Supervision Department, SERC
Ms. Hor Likea	Director of the Department of Research, Planning and Securities Market, SERC
Mr. Seng Chhang	Director, Department of Certification, Institute of Standard of Cambodia, MISTI
Mr. Ngi Polineavith	Director, Department of Industry Metrology, Institute of Standard of Cambodia, MISTI
Mr. Som Setthy	Director, Department of Regulation, General Department of Potable Water, MISTI
Mr. Touch Sovanna	Director, Department of Renewable Energy and Other Energy, MME
Mr. Sreng Sokvung	Director, Department of Technical and Project Monitoring, General Department of Potable Water, MISTI
Mr. Him Phaneth	Director, National Productivity Center of Cambodia (NPCC), General Department of Industry, MISTI
Mr. Morten Kvammen	Financial Adviser, 3i

Key informant	Position, affiliation
Mr. David van der Zwaag	Former Second Secretary, Australian Embassy Phnom Penh, DFAT
Mr. Peter Roggenkamp	Former Team Leader, 3i
Ms. Annmarie Reerink	Gender Equality Branch, DFAT
Mr. Meas Sophea	General Manager for Mr Khun Sambo's electricity enterprise
Mr. Pheng Piseth	General Manger for Touch Vy Piped Water
Mr. Paul Smith	Head of International and Industry Programs, Australian Water Association
Mr. Jim Tanburn	Independent reviewer for 3i's scalability review
Mr. Ned White	Independent reviewer for 3i's scalability review
Mr. Rahzeb Chowdhury	Infrastructure Policy Adviser, 3i
Mr. Heng Chamran	Manager for Special Supply, Electricity Authority of Cambodia
Mr. Nget Bunna	Manager for Sun EEE electricity
Mr. Geoff Revell	Member of the Oversight Committee, 3i
Doctor (unknown name)	Piped water user (health center) in Takeo Province
Ms. Nou Siphou	Piped water user (household) in Takeo Province
Mr. Chhit Ponarith	Private electricity operator
Mr. Khun Sambo	Private electricity operator
Mr. Kim Chandara	Private electricity operator
Mr. Leang Sovarong	Private electricity operator
Mr. Chay Lo	Private water operator
Mr. Chhun Hor	Private water operator
Mr. Dy Piseth	Private water operator
Mr. Hem March	Private water operator
Ms. Sim Siemny	Private water operator
Ms. Siemny Sim	Private water operator
Ms. Touch Vy	Private water operator
Mr. Anthony Samson	Second Secretary, Australian Embassy Phnom Penh, DFAT
H.E. Leang Monirith	Secretary of State, Ministry of Land Management, Urban Planning and Construction, (MLMUPC)
Mr. Scott Hackney	Team Leader Building Standards, 3i
Mr. Chiva Thlang	Technical Adviser, 3i
Mr. Ratanak Hoeun	Technical Adviser, 3i
Dr. Butchaiah Gaddle	Technical Advisor on Energy, UNDP
H.E. Dr. Bun Narith	Under Secretary of State, Ministry of Mines and Energy (MME) and 3i Board Member
H.E. Chan Borin	Under Secretary of State, MISTI and 3i Board Member
H.E. Serey Soriya	Under-secretary of State, MLMUPC
H.E. Roth Hok	Under-secretary of State, MLMUPC
H.E. Chem Phalla	Vice Chair of Advisory Board, National Council of Science, Technology & Innovation, MISTI

Key informant	Position, affiliation
Mr. (unknown name)	Village Chief of Chrey Kreum
Ms. Thavy	Water quality technician for private water operated by Ms. Siemny Sim

Annex 2: ToR Questions for the 3i Review

Component A: Effectiveness

Review of progress against planned end of program outputs and outcomes

- QA1. To what extent is the 3i program on track to achieve its end of program outcomes by December 2021?

Services Connections

- QA2. Have service connections progressed as forecasted? If not, why not?
- QA3. Based on the rate of completed service connections, is it likely current workplan (2021) targets will be met?
- QA4. Is the quality and sustainability of completed installations (construction of piped water and energy systems) aligned with the specified and reported asset standards?
- QA5. Are the technologies adopted for delivering services appropriate for the environmental context and fit for purpose?
- QA6. What opportunities exist to improve the technical efficiency and/or quality of services supported by 3i? What additional resources are required to support such enhancements?
- QA7. Are 3i's reported results valid?
- QA8. Will the primary outcomes be achieved?

Enterprise

- QA9. Did the financial performance of 3i supported piped water and energy enterprises align with original projections?
- QA10. Were the viability gap financing (VGF) guiding principles for assisted enterprises adhered to?
- QA11. Is the VGF model well calibrated, fit for the COVID 19 recovery context, and enabling achievement of value-for-money?
- QA12. To what extent does the programs model's assumptions on payback periods, internal rates of return, etc) remain sufficient to allow for adequate asset maintenance and operation; b) remain consistent with commercial returns on unsubsidised investments in the same sector; and c) ensure additional investment in the sector remains attractive?

Policy Dialogue and Enabling Environment

- QA13. Have RGC counterpart agencies acted upon the findings and recommendations of 3i's water and energy policy work streams? If not, why not?
- QA14: To what extent have 3i's organising frameworks (including horizon scanning, policy work scoping criteria, etc) been effective in guiding 3i's new policy work?
- QA15. To what extent have decisions on new policy work been logical and supportive of program objectives?
- QA16. Have these frameworks supported adaptation in the COVID-19 response and recovery context?

Component B: Livelihoods and Economic Impact

- QB1. What, if any, evidence is available to show 3i impact on the livelihoods of program beneficiaries (with due attention to intra-household differences and to female-headed households)?
- QB2. What, if any, evidence is available to demonstrate that new or expanded business and employment opportunities have been generated through 3i support among service-connected households and communities?
- QB3. What is the evidence of cost savings for households, whilst increasing distribution of clean water and reliable power?

- QB4. To what extent is evidence available that the technical and commercial performance of the licensed operators (water and energy businesses) has been enhanced by 3i support? How will the changes be maintained beyond the life of the program?
- QB5. To what extent is 3i's policy work likely to support positive behaviour change in households and businesses?

Component C: Governance and Implementation (remaining questions after selection in Phase 1)

Inquiry around structures, processes and personnel

- QC1. Are the 3i program governance, management team structure and implementation arrangements fit for purpose / appropriate and appropriately resourced for the remaining period and current 2020/21 workplan? What changes might increase the program's effectiveness against objectives / outcomes?

Efficiency

- QC2. Has the program been efficiently implemented? How effectively has the program coordinated with similar or related initiatives?
- QC3. Has the program represented good value for money thus far?

Public Diplomacy

- QC4. How effective have public diplomacy and project communication strategies been to date?
- QC5. Has the level of resourcing allocated to public diplomacy and communication with key stakeholders been adequate to meet need and what if any adjustments would add value?

Component D: Gender Equity and Social Inclusion

- QD1. To what extent has the 3i program furthered gender equity and social inclusion (GESI) including equity in delivery of its outputs and outcomes and transformative secondary impacts?
- QD2. How has the 3i program accounted for the specific needs of women and marginalised communities?
- QD3. Are there more options 3i could consider for using its investment grants to achieve more effective and sustainable outcomes for the economic empowerment of women?
- QD4. (linked to QC9). How has the program collected data, disaggregated by gender, as evidence of the impact of projects in the areas where 3i private sector partners operate?
- QD5. In what specific ways did 3i introduce GESI themes into policy dialogue, technical training and investment design

Component E: Assessment of COVID-19 Responses

- QE1. What lessons has the pandemic provided about the effectiveness of meetings, modes of communication and the value of keeping technical advisers in country?
- QE2. How have supply chain, travel and social distancing restrictions due to the pandemic impacted 3i's effectiveness?
- QE3. How well has the program pivoted to respond to COVID-19 in terms of timeliness and quality of agreed responses? What are the forecast implications for the remaining 3i program timeframe due to the COVID-19 pivot?
- QE4. What, if any, further adjustments are needed to both remain true to the 3i program design and seize opportunities to play a meaningful role in the post-COVID-19 context?

Component F: Sustainability and Scale

- QF1. To what extent will the water and energy operations supported by 3i be sustained over the longer term?
- QF2. To what extent is 3i's viability gap financing model sustainable in Cambodia without continued Australian/other donor support? What can 3i do to March 2022 to improve the model's sustainability?
- QF3. To what extent can the 3i model be scaled up with other sources of finance (e.g., RGC funds)?

Component G: Future Program

- QG1: Which activities would be appropriate for transition to the new economic cooperation program, noting its likely focus on Cambodia's economic resilience, economic diversification, and the enabling environment for people focused infrastructure?

- QG2: Which activities are more likely, as a secondary objective, to advance Australia's national interest as articulated in the 2017 Foreign Policy White Paper?
- QG3: Of the activities which are suitable for transition, to what extent is direct support for infrastructure and service delivery still necessary?
- QG4: What do 3i and DFAT need to do to prepare effectively for the transition?