

Infrastructure  
transforming economies  
changing lives



Front cover: Coc San hydropower, Vietnam

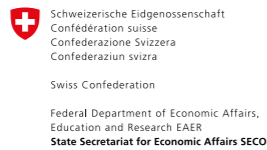


---

**PIDG 2016**

---

PIDG is a multi-donor organisation with members from seven countries and the World Bank Group



## Contents

<b>PIDG 2016</b>	<b>3</b>
About PIDG	5
PIDG in action	7
PIDG in numbers	8
PIDG in pictures	9
<b>PIDG introduction</b>	<b>11</b>
A message from PIDG's chair	12
A message from PIDG's CEO	14
How PIDG transforms economies and improves livelihoods	16
PIDG member and other donor funding	18
Other sources of capital	19
PIDG commitments by infrastructure sector	21
<b>PIDG development impact</b>	<b>25</b>
Measuring PIDG's development impact	26
Key Development Result Indicators	27
Additional support	29
Investment mobilised	30
Access to infrastructure	32
Employment	34
Developing local supply chains	35
Wider economic impact	36
Demonstration effect	37
<b>PIDG companies</b>	<b>43</b>
How PIDG companies support the infrastructure development cycle	44
Technical assistance – adapting the model of PIDG's technical assistance work	46
<b>TAF</b>	<b>48</b>
<b>DevCo</b>	<b>52</b>
Early stage development – building a pipeline of bankable projects	56
<b>InfraCo Africa</b>	<b>58</b>
<b>InfraCo Asia</b>	<b>62</b>
Debt and guarantees – using innovative financial instruments to leverage private sector investment ahead of financial close	66
<b>EAIIF</b>	<b>68</b>
<b>GuarantCo</b>	<b>72</b>
<b>ICF-DP</b>	<b>76</b>
Equity and mezzanine – closing the gap with equity and mezzanine financing at financial close to boost development impact	80
<b>GAP</b>	<b>82</b>
<b>PIDG contacts</b>	<b>86</b>

Find this report and supporting annexes online at [www.annualreport.pidg.org](http://www.annualreport.pidg.org)

Dollars are US dollars throughout and all figures are as at 31 December 2016

## About PIDG

The Private Infrastructure Development Group catalyses private investment in infrastructure in the frontier markets of sub-Saharan Africa and south and south-east Asia to boost economic development and combat poverty.

PIDG makes it viable for private investors to participate in high quality infrastructure deals using limited sums from its publicly funded trust to crowd in many times that value in private capital. It does this through its specialist companies, which work along the infrastructure development cycle and across the capital structure.

The group was an early proponent of 'blended finance', encouraging public and private interests to work together, target investment where it is most needed, support local capital markets where possible and maximise development impact.

For every \$1 of PIDG member contributions, it mobilises \$23, \$17 of which comes from private sector financing.





## PIDG in action

### Innovating to transform hazardous methane into life changing power

PIDG's unique focus on delivering high quality infrastructure in frontier markets is making the seemingly impossible, possible. Natural gas power plant KivuWatt, in Rwanda, demonstrates PIDG's success in targeting investment where it is most needed, despite the challenges.

At the plant's official opening this year, President Paul Kagame said: "Many people thought it was impossible to be successful with this project, but we are happy today that things have proved to be different."

KivuWatt uses cutting-edge technology to extract naturally occurring methane from Lake Kivu, transforming it into sustainable, affordable electricity for up to 2.5 million people.

Rwanda has a growing population with rising demand for electricity. Reliance on firewood, charcoal and expensive imported diesel has led to deforestation, soil erosion and air pollution.

PIDG's Emerging Africa Infrastructure Fund (EAIF) supported private sector partner ContourGlobal in extracting potentially explosive lake-bed methane safely, whilst ensuring that Lake Kivu's ecosystem – vital to livelihoods and wildlife – maintains its integrity.






PIDG financing was instrumental to the project's success. EAIF provided \$25m in financing to the project and crucial leadership which leveraged an additional \$105m in private investment, making this high-risk project a reality. PIDG's Technical Assistance Facility (TAF) also gave \$500,000 to help monitor the lake's stability.

KivuWatt is already surpassing expectations, supplying more than 25MW of clean power to the country's national grid, whilst the potential to replicate the technology could see output increase to 100MW in the future.

Access to much-needed power is unlocking Rwanda's potential for economic growth. With clean, reliable and affordable power businesses can flourish and Rwanda's health services and schools can operate more effectively.



## PIDG in numbers

2016		2002 – 2016
<b>18 projects</b> reached financial close 13 in fragile and conflict-affected countries		<b>154 projects</b> reached financial close* 78 in fragile and conflict-affected countries
<b>\$2.6bn</b> mobilised from private sector investors and development finance institutions**		<b>\$31.4bn</b> mobilised from private sector investors and development finance institutions**
<b>30,657,895</b> people with access to new or improved infrastructure		<b>221,793,351</b> people with access to new or improved infrastructure
<b>7,404</b> long-term jobs created <b>4,349</b> short-term jobs created		<b>230,153</b> long-term jobs created <b>43,662</b> short-term jobs created
<b>21</b> projects became commercially operational		<b>84</b> projects became commercially operational

\* 169 transactions reached financial close, of which 15 were on projects where there was already another PIDG company involved – these have been netted off

\*\* Excludes one outlier project which, at \$4.3bn, has been omitted to avoid skewing the results (see page 31)

See pages 22, 23 and 28 for an explanation of the point at which PIDG recognises its own commitments, and its predicted and actual development impact results.

## PIDG in pictures

**These photographs of site team members at Tororo solar, in Uganda, show how PIDG-funded infrastructure helps promote economic development and combat poverty**

Carpenter Francis, 38, who was born with polio, has a roadside workshop. He now makes furniture for the solar project and his business is thriving.



Single mum Jessica, 28, is a store keeper and site cleaner. Her income means she can now pay her seven-year-old son Ian's school fees, she has bought a goat and built a new home.



Father-of-two Kenneth, 24, is a labourer who now has a stable income which proved crucial during the famine that hit Tororo – his job meant he could feed his nuclear and extended family.



“PIDG works well at the frontier because it is adaptable – it innovates and remains flexible to alleviate poverty in the poorest countries.”

**Philippe Valahu**  
PIDG's CEO



---

**PIDG** introduction

**2016**

## A message from PIDG's chair

### Building on the strength of a unique development finance institution



**Shannon White**

**Australia is pleased to have chaired the PIDG Governing Council and Supervisory Board in 2016, and to be continuing in this role in 2017.**

Strong economic infrastructure underpins human development, enables movement of people and goods, provides access to and expands markets and services, facilitates innovation and enhances competitiveness.

However, the perceived risks of investing in emerging markets and developing economies make it difficult to attract the private capital necessary to meet the infrastructure gap in these countries.

For example, Australia's Asia Pacific neighbours require some \$26 trillion to meet their infrastructure needs by 2030. Our support for the PIDG helps address this gap.

Australian funding to InfraCo Asia Development and GuarantCo helps attract private capital and enhances PIDG's capacity to provide local currency guarantees to infrastructure projects in our region.

Our engagement with PIDG also contributes to global efforts to advance the 2030 Agenda for Sustainable Development, especially SDG 9 on sustainable infrastructure.

We will continue to support the diversification of PIDG funding streams in order to enhance its impact, including by seeking a broader donor base and connecting with new commercial partners.

Australia is pleased to be a part of important progress towards a new PIDG governance structure. These changes will see the creation of a single consolidated board responsible for implementing development and investment priorities.

### "Strong economic infrastructure underpins human development"

We welcome Andrew Bainbridge to the role of chair of the PIDG board and look forward to a smooth transition to the new structure in 2017.

Australia strongly supported the decision by the Governing Council in 2016 to make the PIDG board chair the organisation's senior gender champion. We will work closely with Mr Bainbridge to ensure an ongoing commitment to gender equality outcomes in the PIDG and throughout its investments.

We will also continue to work with the PIDG to ensure that safeguards remain a key focus as the group seeks to set an example of leading practice in this area.

Australia looks forward to our ongoing partnership with the PIDG. We will work together to help it realise its goals as a best-practice development finance institution, and to deliver further tangible social and economic returns on infrastructure investments in frontier markets around the world.

**Shannon White**

Director

Infrastructure Policy Section

Multilateral Development and Finance Division

Department of Foreign Affairs and Trade



## A message from PIDG's CEO

### Life-changing infrastructure at the forefront of foreign aid thinking



**Philippe Valahu**

#### **PIDG works in the riskiest countries, building life-changing infrastructure.**

In doing so, we catalyse private sector investment in development with public money by blending the two, allowing us to deliver the greatest possible impact in our drive to help transform economies and end poverty.

In 2016, we committed \$420m to 35 new projects, of which 50% was in the power sector. Energy is key to unlocking barriers to improving people's lives. By providing reliable, affordable power in remote places, hospitals, schools and small businesses, PIDG is having a strong transformative effect.

The steep drop in the cost of solar photovoltaic technology also means projects that were unthinkable a few years ago are now a reality – an area in which PIDG is doing pioneering work.

Off-grid technology can provide much-needed power to rural areas more quickly. We are looking to expand on these innovative solutions, while continuing to back larger, on-grid projects.

The telecoms sector remains an important part of our portfolio. PIDG was among the first to invest in expanding telecoms networks in Nigeria and Uganda. As these markets have developed, we have shifted our focus to projects in more challenging markets such as the Democratic Republic of the Congo and Congo-Brazzaville which still require our help to attract private sector investment. We continue to adapt and deploy our funding where others cannot or will not.

A lack of investor-ready projects is arguably the greatest challenge facing infrastructure development in the countries where we work. PIDG is helping to address this issue by focusing more resources on early-stage development through the InfraCos, TAF and DevCo. We will be supported in this work by our new strategic partnerships with the World Bank Group's Global Infrastructure Facility, the Sustainable Development Investment Partnership and the

“Energy is the key to unlocking barriers to improving people's lives”

Sustainable Infrastructure Foundation. By pooling our resources and knowledge, we will galvanise a greater number of private sector led infrastructure projects.

In order to keep transforming economies and improving lives where people need it most, we must have the backing to do it. In 2017 we will work to diversify our funding from new and existing donors, and continue the dialogue with alternative sources of finance that have expressed an interest in working with us.

In the coming year we will introduce changes to PIDG's governance structure which will enable future growth. The transition to a single board will strengthen our operations and enhance our ability to make an impact.

These changes reflect PIDG's shift to a sizeable development finance institution, with a 15-year track record of delivering accessible, reliable and sustainable infrastructure benefiting more than 222m people across sub-Saharan Africa and south and south-east Asia.

Working with donor partners current and new, we will build on PIDG's important achievements to date, while maintaining its ability to be an agile enabler of infrastructure development and sustainable economic growth.

**Philippe Valahu**

Chief Executive Officer

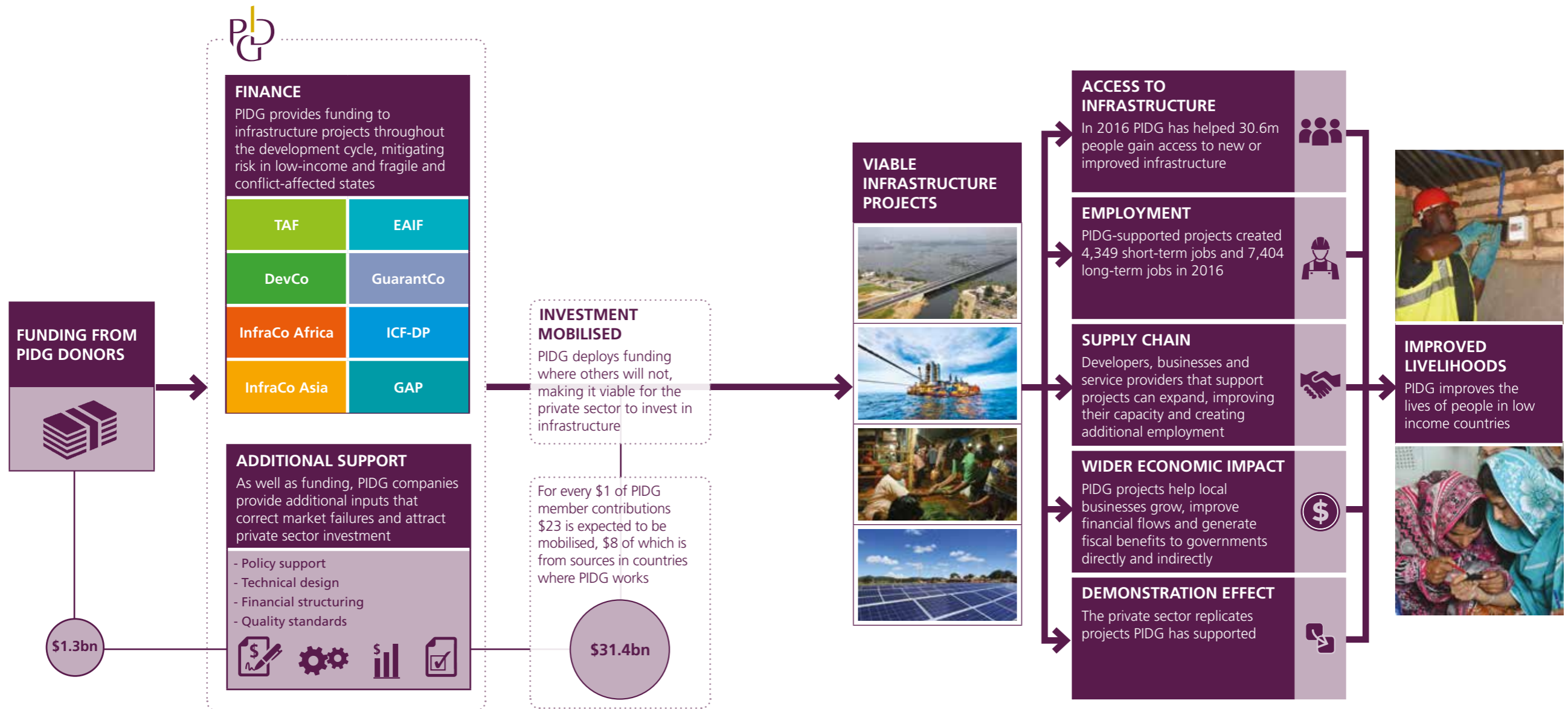
Private Infrastructure Development Group


















# How PIDG transforms economies and improves livelihoods

## PIDG infrastructure creates development impact in the lowest income countries



## PIDG member and other donor funding

### Member and other donor funding disbursed to PIDG by company (\$m)

	 UK aid	 DGIS	 FMO	 Sida	 WB-IFC	 SECO	 DFAT	 KFW	 MFA	 ADA-BMF	 Irish Aid	 Norrad	 Other*	Total
<b>2016**</b> Disbursed (\$m)														
<b>PIDG</b>	98.2	0.6	-	0.5	0.5	4.7	3.4	-	0.3	-0.1	-1.2	-	-	106.9

### Cumulative Disbursed (\$m)

<b>TAF</b>	35.1	3.5	-	0.2	7.9	11.0	-	-	-	0.3	2.9	-	0.3	61.2
<b>DevCo</b>	57.0	5.5	-	3.3	11.7	-	-	-	-	7.0	-	-	-	84.5
<b>InfraCo Africa Development</b>	105.3	35.5	-	-	-	23.5	-	-	-	6.4	-	-	-	170.7
<b>InfraCo Asia Development</b>	69.9	-	-	-	-	10.0	19.1	-	-	-	-	-	-	99.0
<b>InfraCo Asia Investment</b>	27.3	-	-	-	-	-	-	-	-	-	-	-	-	27.3
<b>EAIF</b>	322.9	27.0	-	20.0	-	22.0	-	-	-	-	-	-	-	391.9
<b>GuarantCo</b>	214.9	-	34.0	15.0	-	35.0	2.9	-	-	-	-	-	-	301.8
<b>ICF Debt Pool</b>	-	-	-	-	-	-	-	7.8	-	-	-	-	-	7.8
<b>GAP</b>	20.5	-	-	-	-	-	-	-	16.7	-	-	-	-	37.2
<b>AgDevCo</b>	67.0	-	-	-	-	-	-	-	-	-	-	-	-	67.0
Project development	2.6	0.1	-	0.1	0.3	0.3	-	-	-	-	-	0.5	-	3.9
Total less admin	922.5	71.6	34.0	38.6	19.9	101.8	22.0	7.8	16.7	13.7	2.9	0.5	0.3	1252.3
General admin	7.6	4.0	-	3.6	3.5	4.0	1.3	2.2	0.8	1.4	1.6	-	0.3	30.3
<b>Totals</b>	<b>930.1</b>	<b>75.6</b>	<b>34.0</b>	<b>42.2</b>	<b>23.4</b>	<b>105.8</b>	<b>23.3</b>	<b>10.0</b>	<b>17.5</b>	<b>15.1</b>	<b>4.5</b>	<b>0.5</b>	<b>0.6</b>	<b>1282.6</b>

\* Includes ADB and AECID

\*\* As of 31 December 2016, transfer of DFAT funds for IAsD (USD\$3.9m) from the PIDG trust were pending advice on IAsD operations and budget requirements

In addition to the funding disbursed by UK aid (DFID and BEIS) promissory notes (lodged with the Bank of England) were issued to the PIDG trust for certain PIDG companies during the course of the year. These instruments allow companies to draw down cash disbursements on demand and as at 31 December 2016 the amount of undisbursed cash under issued promissory notes stood at \$59.6m (£47.7m)

## Other sources of capital

In addition to the \$1,282.6m of cumulative donor disbursements made to date, our companies draw on a range of other sources of capital to manage their project pipeline, as well as managing liquidity and credit risk.

PIDG takes public funds and catalyses private sector investment in infrastructure development in the world's low-income countries. By 'blending' public and private sector investment, PIDG ensures that the public money it invests can go much further and deliver the greatest possible impact in its drive to help transform economies and end poverty. This blending can happen at PIDG **company level** and **project level**.

The company level blending is reflected in the table below.

### Other sources of capital in place by company

Company	Arrangements	PIDG member, other donor or lender	
<b>EAIF</b>	EAIF has access to committed loans from a range of public and private financing institutions	Loan commitment of \$85m (maturing 2028) and €100m (maturing 2024–28)	KFW
		Loan commitment of \$25m (revolving facility maturing in 2018)	Standard Bank South Africa
		Loan commitment of \$25m and €25m (revolving facilities maturing in 2021)	FMO
		Loan commitment of €25m (revolving facility maturing in 2019)	Standard Chartered
<b>GuarantCo</b>	GuarantCo has entered into a callable capital arrangement with DFID meaning it can, under certain circumstances, draw further capital into the company to increase GuarantCo's paid-in equity base	£40m	UK aid
		GuarantCo has entered into a contingent debt facility with FMO to manage liquidity risk	\$30m
<b>ICF Debt Pool</b>	From 2009-16 ICF Debt Pool had access to loan facilities of up to €500m to support the company's market activities	KFW	

At project level the appetite of the private sector for risk has to be carefully analysed – PIDG will only focus on those projects which will not get investment otherwise. The financial structure can then be designed with that project in mind to encourage appropriate private sector participation on the best terms, with PIDG companies playing a lead role.

In the Lower Solu hydropower project in Nepal, for example, GuarantCo provided a partial guarantee which enabled local banks to provide the capital for almost a quarter of the project cost. PIDG’s ambition is to play a role in proving that the financial risk is manageable for the private sector, reducing the need for public finance in subsequent projects in the same country or with the same technology. There is some evidence to suggest that this is indeed the case.



Lower Solu, Solukhumbu district, Nepal

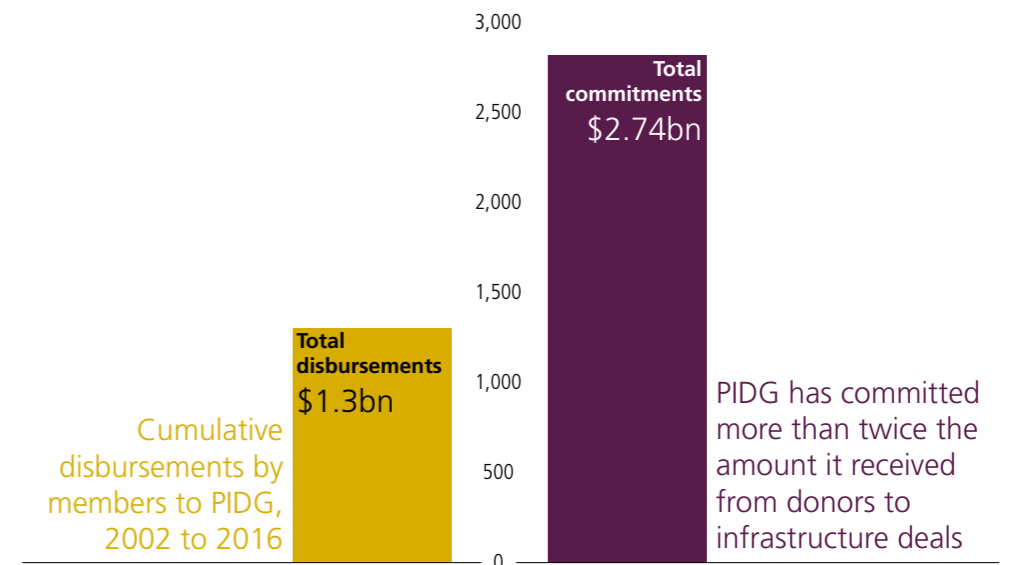
## PIDG commitments by infrastructure sector

PIDG commitments are the amounts which PIDG – through its companies – has committed to the projects in which it is, or has been, involved. These amounts are recognised at the point of commitment which, for TAF, DevCo, InfraCo Africa and InfraCo Asia Development, is considerably earlier than financial close.

The PIDG model means that revenues from loan interest, guarantee fees, investment income and sales proceeds are recycled into new projects. For this reason PIDG has been able to make cumulative commitments of \$2.74bn to projects since its inception, on the basis of \$1.3bn of PIDG member disbursements.

A key requirement for all PIDG investments is that they are financially additional – it does not get involved in a project unless it is fulfilling a purpose which would not be provided otherwise. In this way, PIDG ensures that it is bringing in private sector investment, rather than crowding it out.

PIDG operates across a range of infrastructure sectors, although energy generation, telecoms and transport account for more than 80% of overall commitments. Of the 35 new projects (excluding TAF grants) committed to in 2016, 21 are in the energy sector – spread evenly between early-stage project development, debt finance and capacity-building and advisory services.



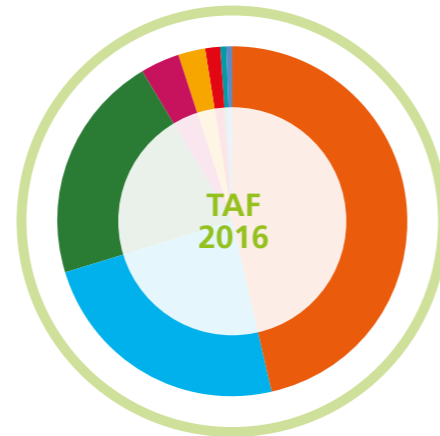
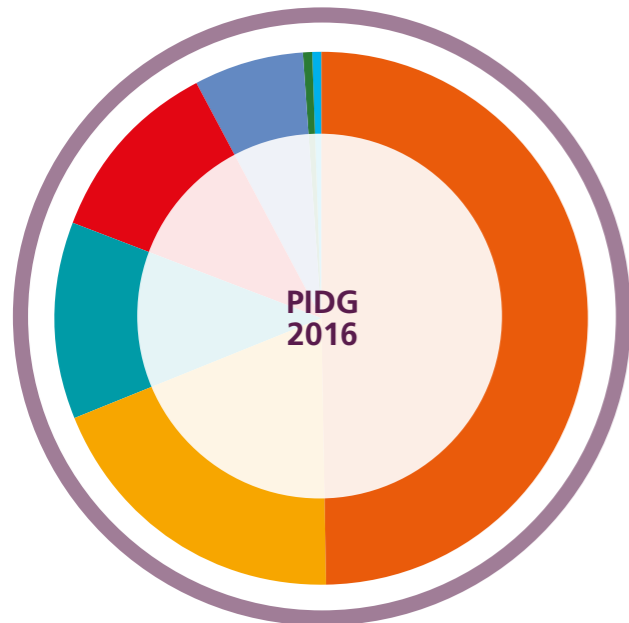


PIDG commitments (excluding TAF) by sector 2016 (\$m)

	PIDG commitments	
Energy	50.0%	210.30
Telecoms	19.1%	80.50
Multisector	11.9%	50.00
Transport	11.5%	48.35
Housing	6.5%	27.30
Agri-infrastructure	0.7%	2.83
Water, sewerage and sanitation	0.4%	1.72
<b>35 projects</b>		<b>421.00</b>

TAF commitments by sector 2016 (\$m)

	TAF commitments	
Energy	46.5%	12.60
Water, sewerage and sanitation	24.0%	6.50
Agri-infrastructure	21.1%	5.71
Capital market development	3.6%	0.97
Telecoms	2.5%	0.67
Transport	1.3%	0.36
Multisector	0.7%	0.20
Housing	0.4%	0.10
<b>30 projects</b>		<b>27.11</b>



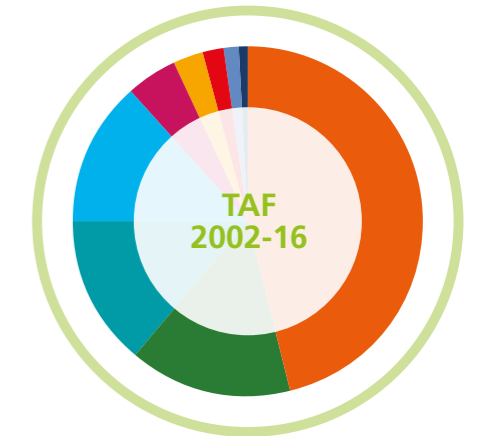
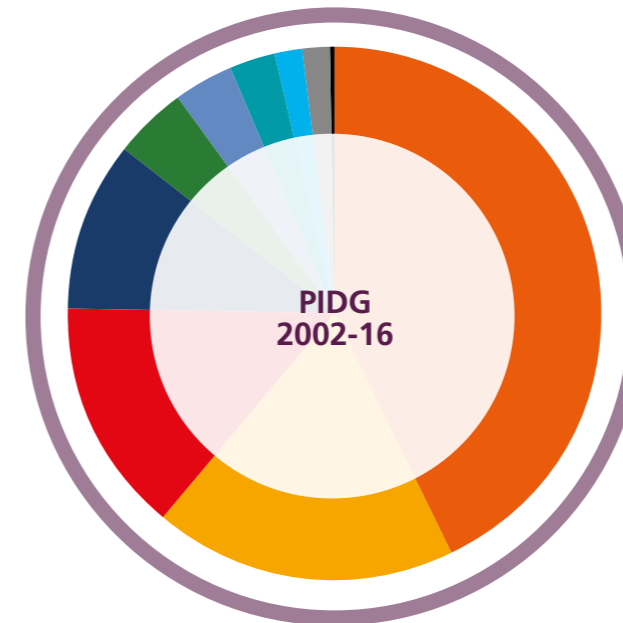
PIDG companies committed \$421m to 35 new projects

PIDG commitments (excluding TAF) by sector cumulative (\$m)

	PIDG commitments	
Energy	43.0%	1,155.86
Telecoms	18.2%	489.30
Transport	14.3%	385.36
Industrial infrastructure	10.3%	277.20
Agri-infrastructure	4.2%	113.05
Housing	3.6%	97.78
Multisector	2.8%	75.69
Water, sewerage and sanitation	1.8%	49.13
Mining	1.7%	46.20
Urban development/infrastructure	0.0%	1.08
<b>226 projects</b>		<b>2,690.65</b>

TAF commitments by sector cumulative (\$m)

	TAF commitments	
Energy	46.3%	24.22
Agri-infrastructure	15.1%	7.88
Multisector	13.9%	7.29
Water, sewerage and sanitation	13.3%	6.96
Capital market development	4.7%	2.44
Telecoms	2.8%	1.48
Transport	1.9%	1.02
Housing	1.4%	0.74
Industrial infrastructure	0.6%	0.32
<b>124 projects</b>		<b>52.35</b>



“PIDG delivers essential infrastructure to people in the poorest countries, with far-reaching economic impact. Monitoring and evaluation of that impact allows PIDG to build on its success.”

**Diane Harris**

PIDG’s Head of Operations, Central Management Office



---

**PIDG** development impact  
**2016**

## Measuring PIDG’s development impact

### PIDG’s purpose is to improve the livelihoods of people in low-income countries through infrastructure

To measure PIDG’s success, it is important to get a picture of the development impact its projects are creating in the countries where it operates.

PIDG’s investments aim to increase access to infrastructure and its benefits, boost employment and opportunities for domestic businesses, expand economies and create examples which can be replicated.

The Key Development Result Indicators table, opposite, sets out how PIDG companies measure their impact.

PIDG seeks practical and resource-efficient ways to collect and verify data in all these areas to learn lessons on what works and monitor its achievements.






During 2016 PIDG took steps to enhance understanding of its development impact.

Members agreed a programme of evaluation to gain greater insight to the actual results of its activities, and PIDG began a process of strengthening its impact measurement – particularly for access to infrastructure and job creation – so as to develop more robust figures.

PIDG continues to question and test the assumptions behind its route to impact to help refine its strategy. In 2017 PIDG will commission studies into the affordability of infrastructure and the effects of infrastructure investment on the development of financial markets.

In the following sections the different outputs and outcomes of PIDG’s activities which are expected to lead to the desired overall impact of improved livelihoods are explained.

## Key Development Result Indicators

Result level	Development result indicator	Components
Input	Finance	<ul style="list-style-type: none"> <li>• PIDG company investments</li> <li>• Technical assistance funding</li> </ul>
	Additional support	<ul style="list-style-type: none"> <li>• Strategic role of the company in securing a deal – this includes financial additionality, i.e. PIDG only funds when others would not</li> <li>• Better design and efficiency</li> <li>• Improved regulatory and policy environment</li> </ul>
Outputs	Investment mobilised	<p><b>Investments from commercial entities:</b></p> <ul style="list-style-type: none"> <li>• Domestic commercial finance (equity and/or debt)</li> <li>• Foreign commercial finance (equity and/or debt)</li> </ul> <p><b>Investment from DFIs:</b></p> <ul style="list-style-type: none"> <li>• DFI finance (equity and/or debt)</li> </ul>
	Viable infrastructure	<ul style="list-style-type: none"> <li>• Projects reaching financial close</li> <li>• Operational projects</li> </ul>
Outcomes	Access to infrastructure	<ul style="list-style-type: none"> <li>• Number of people expected to have access to new infrastructure</li> <li>• Number of people expected to have access to improved infrastructure</li> </ul> 
	Employment	<ul style="list-style-type: none"> <li>• Direct short-term jobs created during construction</li> <li>• Direct long-term jobs created during operations</li> </ul> 
	Supply chain	<ul style="list-style-type: none"> <li>• Description of value and opportunities generated for local businesses</li> </ul> 
	Wider economic impact	<ul style="list-style-type: none"> <li>• Fees and taxes paid to the government and government subsidies avoided</li> <li>• Description of other economic impacts resulting from PIDG infrastructure</li> </ul> 
	Demonstration effect	<ul style="list-style-type: none"> <li>• Capital mobilisation through greater private participation in infrastructure</li> </ul> 



## Reviewing and comparing PIDG’s predicted results and providing actual figures

PIDG reports predicted figures which are produced when a project reaches financial close, which is normally when construction commences. These figures are reviewed for any changes annually and revised accordingly. Once a project has become fully operational, a post-completion monitoring process takes place, which produces the actual figures.

Post-completion monitoring enables PIDG to review the practicality of the assumptions for its access calculations, and provides the actual figures for funding mobilised and job creation. As can be seen from the table below, the predicted figures are generally in line with what is reported after the projects become operational, and the actual figures often end up considerably higher.

### Development impact indicators for PIDG's 84 operational projects

	Predicted cumulative	Actual cumulative	Difference
Total investment commitments (\$m)	17,772	18,779	1,007
Private sector investment (\$m)	12,599	13,510	911
Total number of people with access (millions)	111.32	163.84	52.52
People with access to new infrastructure (millions)	64.73	84.88	20.15
People with access to improved infrastructure (millions)	46.59	78.96	32.37
Short-term jobs created	16,339	16,551	212
Long-term jobs created	185,837	202,698	16,861

“KIS has brought safe, piped water to Kalangala for the first time.”

Mary Nakiwala Senkungo, Deputy Resident Commissioner  
Kalangala District, Kalangala Infrastructure Services, Uganda

**InfraCo Africa**

Read more about KIS on page 61



## Additional support

### PIDG provides financial additionality by investing where others will not, as well as support that can increase the development impact and sustainability of an infrastructure project

Because PIDG uses public funds to mobilise private capital, it is important to ensure that its inputs and services complement, rather than substitute, that which others are willing or able to provide. This means that PIDG companies must clearly identify the market failures which they aim to address as well as the unique inputs and services which they can provide in addition to those already existing in the market.

This principle is critical to the rationale behind PIDG, and its companies are required to disclose their expected role and additionality for each project. There are different types of financial, as well as non-financial, additionality. PIDG activities can be additional in terms of their scope, scale, quality or timing, among other aspects. As such, additionality is recognised as being both difficult

to conceptualise and to assess. In 2016 PIDG companies scored projects on a forecast basis for their additionality using specific definitions and grading systems relevant to their business and stage of the project development cycle at which they operate.

PIDG companies demonstrated significant additionality in their financial structuring, mobilisation of finance, improved project design, raising standards, improvement of regulatory environments and efficient allocation of risk. In 2017 PIDG companies will increase their focus on monitoring and reporting in more detail on these elements of additionality. The evaluations programme is also commissioning studies to investigate PIDG’s additionality in more depth.

“My role is to provide advice to the government of Sierra Leone as it develops the country’s first public-private energy project for its people.”

Cyril Grant, Embedded Adviser, Bumbuna hydropower, Sierra Leone

**TAF**

Read more about Cyril's work on page 51



## Investment mobilised

**For every \$1 of PIDG member contributions \$23 is expected to be mobilised, \$17 of which is from private sector financing**

The more private sector funding PIDG can mobilise, the further its own funding will go and the greater the impact it will have. PIDG companies leverage funding from its members at the project level, blending it with private sector investment from local, regional and international sources, and debt or equity from development finance institutions (DFIs).

The figures in the table below are a key indicator of the extent to which PIDG has succeeded in catalysing private sector and development finance investment in infrastructure. PIDG’s focus on challenging markets is indicated by the percentage of total investment mobilised in lower and middle income countries and fragile and conflict-affected states (FCAS). At the end of 2016, for every \$1 of PIDG member contributions, \$17 of private local and foreign commercial financing (excluding DFI investments) is expected to be mobilised.

At the PIDG company level equity injected by PIDG members enables EAIF and GuarantCo to raise additional financing from the private sector and DFIs. The increased funding means PIDG companies can support both a higher number of projects and those that are larger in scale.

At the project level PIDG encourages co-financing or follow-on financing from external sources. By taking on the up-front risk, its companies reduce risk to a sufficient level for the private sector to invest, typically at financial close or shortly afterwards.

Due to the limited availability of private sector financing to close infrastructure deals in developing countries, PIDG projects are often co-financed by other DFIs. PIDG is working with them to refine the methodology for allocation of investment mobilised.

“London Stock Exchange’s partnership with GuarantCo will build on our existing emerging markets expertise and will help companies in those markets access new sources of private sector finance for much-needed infrastructure projects.”

Nikhil Rathi, CEO, London Stock Exchange plc

In partnership with [GuarantCo](#)

[Read more about the partnership on page 73](#)



## Total investment commitments mobilised by PIDG activities by sector (\$m)

	Total investment commitments	Private sector investment	DFI investment
Agri-infrastructure	548.90	312.44	236.46
Energy* **	12,297.78	7,636.90	4,602.83
Housing	367.30	277.30	90.00
Industrial infrastructure	2,594.10	1,581.10	1,013.00
Mining	655.00	346.68	308.32
Multisector***	373.73	127.51	241.22
Telecoms	9,350.10	7,481.00	1,869.10
Transport	4,690.46	3,225.21	1,465.15
Urban development/infrastructure	4.80	4.80	-
Water, sewerage and sanitation	474.80	354.40	120.40
<b>Total</b>	<b>31,356.97</b>	<b>21,347.34</b>	<b>9,946.48</b>

\* The TIC and PSI figures exclude DevCo’s Central Java IPP project which, at \$4.3bn mobilised PSI funding, would have a misleading impact on the percentages for DAC I/II and FCAS

\*\* The TIC figure includes total grants of \$58m for DevCo, InfraCo Africa and InfraCo Asia projects, which are therefore not included in the PSI and DFI subtotals

\*\*\* The TIC figure includes a \$5m grant for an InfraCo Africa project, which is not included in the PSI and DFI subtotals

## Percentage of total investment commitments in fragile and conflict-affected states (FCAS) by sector

Agri-infrastructure	93%
Energy	42%
Housing	7%
Industrial infrastructure	83%
Multisector	40%
Telecoms	69%
Transport	40%
Water, sewerage and sanitation	0.1%

## Percentage of total investment commitments in least developed and lower-income countries (DAC I/II) by sector

Agri-infrastructure	82%
Energy	36%
Industrial infrastructure	45%
Mining	100%
Multisector	73%
Telecoms	66%
Transport	64%
Urban development / infrastructure	100%
Water, sewerage and sanitation	0.1%

## Access to infrastructure

### 21 projects which will benefit an estimated 24 million people became operational in 2016

Ultimately, the principal objective of PIDG's funding support is to increase people's access to effective infrastructure, be it energy, water or opportunities for mobility and trade. Therefore, it is crucial for PIDG to understand, as far as possible, how many people gain access to new or improved infrastructure as a result of its activities.

PIDG collects data on expected access before a deal is closed, after a deal is closed, and once a project becomes operational. As more projects become operational, so the number of people benefiting from new or improved infrastructure increases.

There is a challenge in that reliable access estimates are not always available, in particular for energy generation projects. Where this is the case, PIDG – like other development finance institutions – uses 'conversion methodologies' as agreed by the International Financial Institution Harmonisation Group. These estimates provide an indication of the numbers of people who have gained new or improved access to infrastructure.

We recognise that, even with the conversion methodology, it is particularly difficult to estimate beneficiary numbers for grid-tied energy generation projects. There are also some types of projects for

which determining beneficiary estimates is not practical either at project level or through the use of conversion methodologies; these include ports, roads and manufacturing projects.

In 2016, as part of PIDG's desire to tackle these problems, it carried out a review of historic access numbers to ensure that claimed development impact figures are as robust as possible given the parameters of the conversion methodology.

This was the first step in a wider process that will also involve identifying and testing new ways of estimating beneficiaries – both for those sectors where PIDG currently has methodologies, and for those where the beneficiaries are difficult to determine – and, in the longer term, feeding in the findings from its evaluation work to ensure that PIDG is capturing real impact.

This more cautious approach to the estimation of predicted beneficiaries has resulted in a substantial reduction in the cumulative predicted figures on two outlier projects. These projects have the potential to reach considerably more beneficiaries than the revised predictions, but PIDG will only include these people in the numbers when the projects are more mature and more detailed information becomes available.

"With electricity, there has been enough light inside the house and the children, who were using a kerosene lamp to study, were able to study until late in the night. In the days to come we will also be able to own a radio and TV in order to be in touch with various news, and a fridge to keep milk and butter cold and fresh."

Paul Mwamlima, resident of Shitunguru, Redavia solar pilot, Tanzania

**InfraCo Africa**

**Read more about Redavia on page 61**



### Predicted access, by sector, for all PIDG companies

	Predicted access (cumulative)
Agri-infrastructure	262,258
Energy* **	121,990,554
Housing	46,731
Industrial infrastructure	16,790,423
Mining	27,500
Multisector	35,000
Telecoms **	65,519,493
Transport	15,013,481
Urban development/infrastructure	167,547
Water, sewerage and sanitation	1,940,364
<b>Total</b>	<b>221,793,351</b>

\* The access figure includes DevCo's Java IPP project since it does not have an impact on other targets. The figures have been separated out from DevCo's individual results, where it has a greater effect on the overall figures

\*\* Changes due to PIDG's drive towards more robust and prudent numbers and revised access calculation methodologies

### Operational projects: actual access calculated by post-completion monitoring

	Predicted access (cumulative)	Actual access (cumulative)
Agri-infrastructure	127,451	127,350
Energy	31,532,610	32,271,095
Industrial infrastructure	15,057,500	15,258,000
Mining	27,500	27,500
Multisector	35,000	35,000
Telecoms	58,471,173	109,885,372
Transport	6,072,081	6,235,921
<b>Total</b>	<b>111,323,315</b>	<b>163,840,238</b>

Predicted access figures used here are included within the totals in the main 'predicted' table



## Employment

### 4,349 short-term jobs and 7,404 long-term jobs will be created by projects which reached financial close

Employment is key to alleviating poverty in the developing world. As well as creating short and long term jobs, infrastructure boosts the wider job market. PIDG measures its impact on employment by recording the direct jobs created in the construction and operation of infrastructure. For example, the 154 PIDG-supported projects that reached financial close are expected to create 230,153 direct long-term jobs.

PIDG's activities have wider impact on employment too. There are indirect jobs, which are those created within the supply and distribution chain, as well as induced jobs, resulting from direct

and indirect employees having a higher level of disposable income. Most significantly for PIDG, there are the jobs which result from the removal of an obstacle to growth, such as power provision, often referred to as secondary effects. The section on wider economic impact on page 36 has more information.

This year PIDG adjusted assumptions for predicting the number of short-term construction jobs it creates in the housing and telecoms sectors, reflecting its commitment to being robust and prudent in the measurement of development impact.

#### Projected cumulative employment directly generated by PIDG

	Short-term employment	Long-term employment
Agri-infrastructure	4,345	7,888
Energy	20,791	5,127
Housing *	1,630	70
Industrial infrastructure	7,570	3,658
Mining	1,000	1,425
Multisector	175	1,060
Telecoms **	3,315	- 2,621
Transport	4,248	212,249
Urban development/infrastructure	20	20
Water, sewerage and sanitation	568	1,277
<b>Total</b>	<b>43,662</b>	<b>230,153</b>

\* The cumulative number of short-term jobs for housing projects includes a reduction of 60,000, following the cancellation of the Housing Finance Guarantee Africa project in 2016

\*\* The cumulative number of short-term jobs in telecoms includes a reduction of over 11,000, due to a more robust set of assumptions in the calculation of jobs created in the construction and refurbishment of telecoms towers

“My job at the Tororo site is my first since 1973. Now my earnings help me to feed my family.”

Geoffrey Othieno, traffic controller, Tororo solar, Uganda

EAIF

Read more about Tororo on page 71



## Developing local supply chains

### PIDG uses locally sourced labour, goods and services – collectively referred to as ‘local content’ – helping to build business capacity and supplier networks in the countries where it operates

PIDG can generate significant development impact for communities in the countries where it works beyond the direct and indirect benefits of the resulting infrastructure service itself by creating employment opportunities, promoting local enterprises and developing capacity and resilience in supply chains.

Local procurement can contribute to enterprise and workforce development through capacity building and the transfer of technology and skills. Such capacity development might enhance technical and financial expertise, operational strength or organisational stability. This is done through

substantive technical assistance or as a result of increased expectations which lead to improvements in quality standards, labour conditions or occupational health and safety practices.

As part of their regular reporting PIDG companies provide detailed information on the nature, value and providers of their main supplies of goods and services. Domestic suppliers typically provide core inputs such as building materials, electrical services or civic works to the construction of infrastructure. Specialised consulting, technical and operations and maintenance services may also be sourced locally.

Local electricians and labourers are trained and employed to set up Redavia’s innovative solar farm and mini-grid which provide renewable power to rural areas. The company is also training Tanzanians to manage similar solar installations across the country.

Redavia, Shitunguru, Tanzania

InfraCo Africa

You can read more about Redavia on page 61



## Wider economic impact

### Mobilising private investment in infrastructure can have wide reaching and transformative effects on economies

#### Enabling business growth and job creation

Improved energy supply, transport networks and telecommunications are essential for businesses to grow, create more and better jobs and raise tax receipts for governments. Reliable measurement and attribution of local business growth is outside the scope of project reporting, but has been identified as a priority for further PIDG research and evaluation. PIDG will take this forward in 2017 with an initial focus on the economic effects of improved energy generation capacity, building on a growing body of research conducted by PIDG partners and co-investors in 2016. This will improve how it understands the impact of improved energy generation, in terms of enhanced domestic access to energy, better essential services and economic growth and job creation.

#### Boosting fiscal revenues

PIDG projects provide direct contributions to local and national governments through upfront fees to governments, corporate taxes and consumption and sales taxes. In cumulative terms, they are expected to generate \$7.1bn

in fiscal benefit of which \$3.4bn comes from upfront fees paid to governments.

#### Improving investment flows in frontier markets

PIDG companies seek to close financing gaps for infrastructure, both through direct projects in partnership with government and private sector investors and through knock-on effects on local markets. PIDG adds value in a number of ways; in addition to providing finance and taking on financial risk directly, it works intensively to build the capacity of actors in local capital markets including government and project developers, and pioneers new investment models in frontier markets. The combination of enhanced local capacity, new mechanisms for investment, and the demonstration effect of PIDG projects provides a foundation for greater levels of investment in local markets as well as follow-on finance for PIDG projects and wider infrastructure that may subsequently be supported without PIDG involvement.

The development of a scheduled cross-border freight ferry service will allow businesses to transport goods across Lake Victoria reliably.

Lake Victoria Marine Transport

Route between Mwanza and Kampala

JDA signed with Grindrod Limited

**InfraCo Africa**

Read more about LVMT on page 59



## Demonstration effect

### PIDG's aim is to develop proof of concept projects that demonstrate the viability of investing in pioneering initiatives and higher risk environments

PIDG's development impact can extend well beyond the direct effects of new or improved infrastructure. PIDG helps overcome financial, technical or environmental challenges, creating blueprints which can be replicated by the private sector. Examples of this include the introduction of effective new technologies or processes, the employment of new financing mechanisms, improvement of the regulatory environment, or proving the credit-worthiness of borrowers. Lessons learned in one project make it easier for others to achieve successful close, and PIDG can demonstrate to governments the potential value of private sector participation in infrastructure

development or encourage a 'critical mass' of private capital mobilisation within a given sector.

By contributing to increased private sector participation and greater willingness to invest and take on risk, these effects can transform a sector. One critical element of PIDG's intervention logic is that once the market becomes self-sustaining following this crowd-in effect, its companies will stop working in that particular sector or geography and seek new challenges at the frontier.

"Encouraged by the successful outcome of the Odisha rooftop solar project we have begun to replicate this across 10 more cities. We will also put in place a system that will allow individual building owners to generate power by installing solar panels on their rooftops. This will help create jobs and business opportunities for several vendors."

Hemant Sharma, Secretary Energy, Government of Odisha, Odisha rooftop solar, India

**DevCo**

Read more about Odisha rooftop solar on page 53



### PIDG and the Global Goals for Sustainable Development

2015 saw the adoption of the Global Goals for Sustainable Development (SDGs). The 17 goals provide a shared plan of action for governments, the private sector and civil society intended to protect the planet and deliver prosperity for all by 2030. Better infrastructure is critical to this plan and PIDG companies contribute to the SDGs directly and indirectly.

All PIDG projects are expected to comply with IFC’s Environmental and Social Performance Standards. By ensuring projects have robust environmental and social plans, PIDG helps reduce the potential for negative impacts on the SDGs. These include improved energy and water efficiency in construction and operation, and transparent and inclusive engagement with communities.

PIDG-supported projects make distinct contributions to eight core SDGs, as shown below.

In the coming year PIDG’s strategy review will assess how best to integrate aligned SDGs into its approach to creating and measuring development impact.



### Climate change mitigation and adaptation

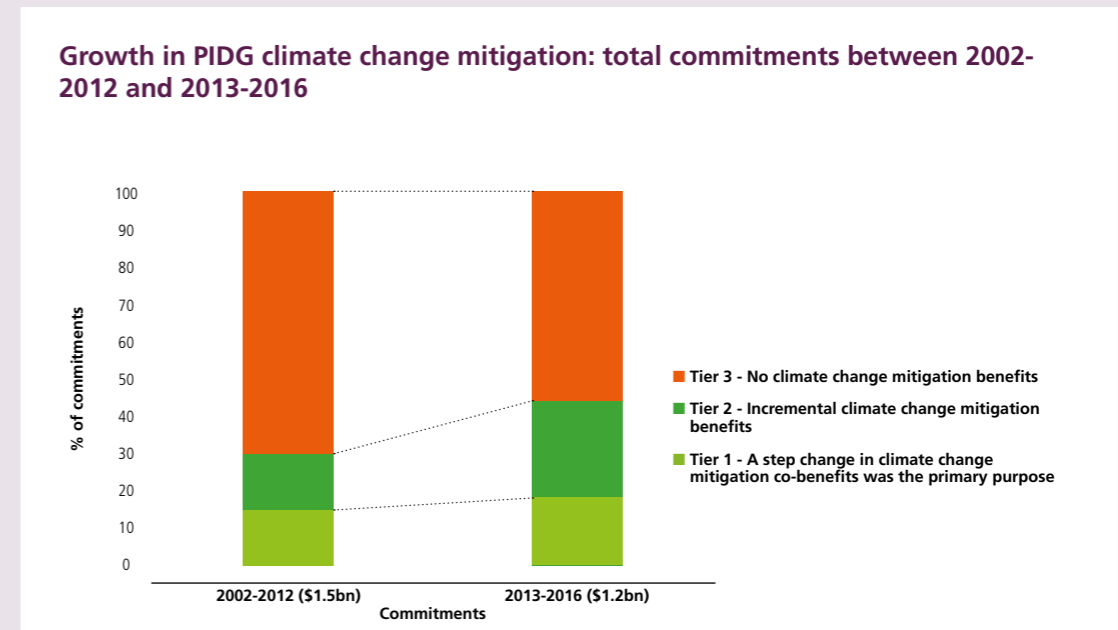
Climate change is an increasingly important agenda for PIDG. While it is not the principal objective of its work, all projects are classified based on their potential contribution to climate change mitigation and adaptation.

In 2016 PIDG commissioned a review of this tier system, which was last assessed in 2012, to help improve the way it evaluates projects. The review showed significant growth in activities to support climate change mitigation. 44% of PIDG commitments since the 2012 review are classified as having some mitigation benefit. By comparison, a total of 30% of commitments between 2002 and 2012 were classified as having mitigation benefits.

The trend towards greater mitigation benefits across the PIDG portfolio is expected to continue in the coming year, as it places greater emphasis on low carbon, sustainable performance of infrastructure and further prioritises renewable energy projects.

Few projects have been developed to assist with adaptation to this point, but PIDG will actively review the extent to which projects are themselves resilient to climate change.

PIDG is now taking steps to improve its classification methodology in line with industry practice, including systematic tracking of greenhouse gas emissions' reductions for Tier 1 projects. Given the longevity of the projects PIDG supports, it will continue to factor in 'climate smart' and 'climate resilient' considerations into its evaluation methodology.



**Gender**

11.6m women and girls will have access to new or improved infrastructure as a result of projects that reached financial close in 2016.

The livelihoods of women and girls in developing countries are particularly affected by inadequate or unsafe energy sources, remote water supplies and poor transport links. The task of accessing energy or water often falls to female members of a household, limiting their economic and social opportunities. Infrastructure can make a large difference to this. Historically, PIDG has sought to estimate how many women benefit from its infrastructure projects, applying a tool to take into account local circumstances and the specific design of the project, but there is scope to take a more proactive stance and PIDG has been exploring ways to do this.

A review undertaken in 2016 for InfraCo Asia highlighted some specific actions that PIDG can take across its portfolio to encourage a more deliberate focus on positive outcomes for women. In early stage investments by the InfraCos, developers are expected to consult with women in the communities where they work to understand how to design projects with their needs in mind. In each project these factors are taken into account by the InfraCos to assess the additionality of developers. For later stage investments, the PIDG companies are expected to design the terms of reference for an environmental and social impact assessment so that it explicitly explores how a project may affect women in different ways to men. At the time of each investment decision, PIDG companies are expected to make a comment on the expected impact of that investment on women.

These steps will sharpen PIDG’s focus on gender and enable it to see more clearly where positive outcomes for women are being achieved and can be improved.



“I hope other women will see that they could do this job. Working in the power sector is not easy, but I do believe that women can do anything.”

Nhu Quynh Ta, General Director, Lao Cai Renewable Energy, Coc San hydropower, Vietnam

**InfraCo Asia**

**Read more about Coc San on page 65**

**PIDG spotlight**

One of PIDG's earliest projects is a development built to support a titanium mine in Mozambique – one of the world’s least-developed countries.

The Emerging Africa Infrastructure Fund backed Kenmare Moma Mining in 2004, which developed a titanium minerals mine in northern Mozambique and has been running since 2007.

Floating mining platforms link directly to a processing facility and a jetty which transports the refined product to market at the self-contained site. The mine serves 8% of the global demand for titanium.

The project provides around 1,200 jobs, stimulating the local economy in a poor region.



Fresco Ussene and Selemene Momade help run a textiles business in the nearby village of Mititicoma.

They provide the mine with 3,000 handmade bags a month, which the geological team fill with excavation samples.

This microenterprise has grown since the mine opened and now provides a stable income for 18 families, allowing them to make home improvements and send their children to school.

**EAIF**

**Read more about EAIF on pages 68-71**



“Collectively, PIDG’s companies bring unparalleled experience in the infrastructure sector to developing countries.”

**Amy Lee**

Non-Executive Director, InfraCo Asia



---

**PIDG** companies  
**2016**

Technical assistance  
Early stage development  
Debt and guarantees  
Equity and mezzanine

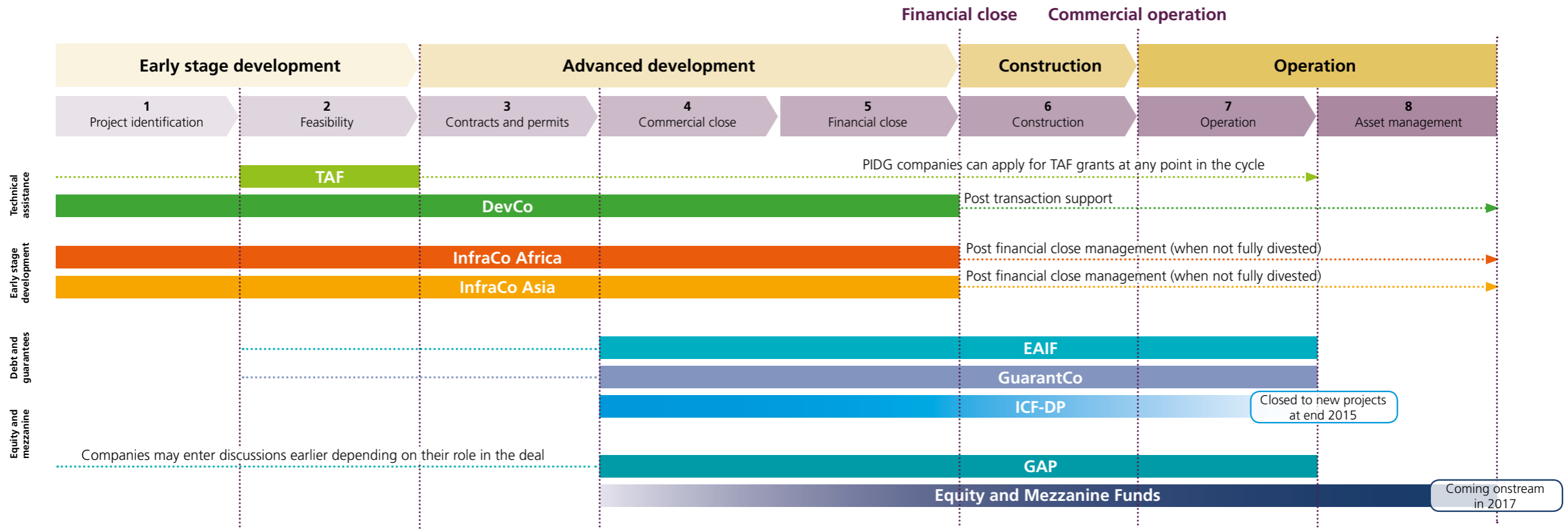
## How PIDG companies support the infrastructure development cycle

PIDG's specialist companies work with private investors at every stage of the infrastructure project development cycle and across the capital structure, as the graphic below shows.

Our companies' infrastructure finance products are designed to fill market gaps, where commercial financing is not available.

Our technical assistance funds **TAF** and **DevCo** and early-stage development companies **InfraCo Africa** and **InfraCo Asia** offer support upstream, helping bring bankable projects to market.

**The Emerging Africa Infrastructure Fund (EAIF)**, **GuarantCo**, **Green Africa Power (GAP)** and the **Equity and Mezzanine Funds** work further downstream, providing funds and guarantees at financial close through the construction phase to commercial operation.



## PIDG companies and technical assistance funds

**Technical Assistance Facility (TAF)** provides grants to support other PIDG companies, e.g. feasibility studies, project set-up costs

**DevCo** helps fund advisory services to governments on PPPs, delivered through the World Bank Group's IFC

**InfraCo Africa** originates, develops, structures, invests and manages infrastructure projects in sub-Saharan Africa

**InfraCo Asia** originates, develops, structures, invests and manages infrastructure projects in south and south-east Asia

**The Emerging Africa Infrastructure Fund (EAIF)** provides long term foreign currency loans in Africa

**GuarantCo** provides local currency guarantees in Africa, south and south-east Asia and other emerging economies

**ICF-DP** provided long-term loans to address financing gaps as a consequence of the financial crisis

**Green Africa Power (GAP)** provides financing and support for renewable projects in Africa

**Equity and Mezzanine Funds** provides equity and mezzanine finance

## Adapting the model of PIDG's technical assistance work

### PIDG's **Technical Assistance Facility** and **transaction advisory service, DevCo**, work ahead of and alongside other PIDG companies to finance critical project preparation

PIDG's technical assistance work is becoming increasingly important as its model continues to adapt to meet the infrastructure gap faced by the world's poorest countries.

The Technical Assistance Facility (TAF) works to support infrastructure development 'upstream' at the very beginning of the project life cycle, by providing grant funding for feasibility work, baseline studies, capacity building, regulatory support for governments and local investors as well as Viability Gap Funding at financial close. DevCo provides transaction advice to governments to structure and tender public-private partnerships (PPPs), which can include upstream capacity building, as well as support for policy and regulatory reforms.

Working more closely together and with other PIDG companies, TAF and DevCo are responding to public sector requests for advisers to be embedded alongside host country government staff to help increase their capacity to put together a pipeline of bankable infrastructure projects that will attract private sector participation.

TAF and DevCo are also helping to drive a PIDG initiative pioneering Joint Development Plans to encourage PIDG companies to work together to rapidly scale up infrastructure in a chosen country or sector. TAF is due to provide grants to support the development of several new projects in Myanmar as a result of one of these schemes.

PIDG is committing more technical assistance funding to projects than ever before as it continues to work towards closing the infrastructure gap faced by low-income countries.



RIGHT: Energy efficient LED street lighting enables residents of Bhubaneswar in India's Odisha State to trade into the evening.

## Technical Assistance Facility

**Providing grants for various forms of technical assistance within PIDG, to help companies overcome specific obstacles in the development of their projects**

### At a glance

<b>Established</b>	2004
<b>Funding members</b>	DFID, DGIS, SECO, Sida, World Bank-IFC
<b>Cumulative member funding disbursed to the PIDG trust</b>	\$61.2m
<b>Managed by</b>	TAF is a fund within the PIDG trust that is managed by PIDG CMO, TAF's technical adviser and trustees
<b>Total commitments at 31 December 2016</b>	\$12.8m to 62 completed or expired grants
	\$38.4m to 48 live grants
	\$1.2m to 14 completed grants for projects which did not generate private sector investment
<b>2016 commitments</b>	\$27.1m to 30 grants

### TAF approved 30 new grants in 2016, including:

- Burkina Faso** Windiga Zina Solar IPP Part 2 **EAIF**
- Chad** Solar IPP Advisory **InfraCo Africa**
- Chad** Compliance Training **InfraCo Africa**
- Kenya** Local currency PPA Finance **GuarantCo**
- India** Kumar Slum Rehabilitation **GuarantCo**
- Malawi** New Entrant Study **InfraCo Africa**
- Mali** Koutiala Solar IPP **EAIF**
- Mozambique** Hydro Capacity Building **InfraCo Africa**
- Mozambique** Mocuba Solar VGF **EAIF**
- Myanmar** TELCO ESCO **InfraCo Asia**
- Rwanda** Rwanda Rental Housing BM Study **GuarantCo**
- Sierra Leone** Small Hydro Returnable Grant **EAIF**
- Sierra Leone** Bumbuna II E&S **EAIF**
- Zambia** Chiansi VGF Preparation **InfraCo Africa**

### Achievements in 2016

TAF approved 30 grants totalling \$27.1m. Its work supported projects undertaken by **EAIF**, **InfraCo Africa**, **InfraCo Asia** and **GuarantCo**. TAF continues to be a crucial partner to the PIDG companies with 66% of completed grants providing essential support to financially closed projects.

TAF made Viability Gap Funding grants to EAIF and InfraCo Africa. The first provided \$7m to a solar project in Mozambique, demonstrating the country's solar potential to private investors. The second \$5m grant was for an agribusiness project in Zambia designed to harness the country's untapped agricultural potential.

TAF financing supported much-needed compliance training for the Government of Chad in response to issues on regulatory observance. This will help to facilitate greater future private sector involvement in Chad.

InfraCo Asia received a grant to support technical assistance and capacity building activities to help develop a solar micro-grid project in Myanmar.

### Other notable highlights

An independent performance evaluation of TAF was completed by Cambridge Economic Policy Associates which highlighted that it is well-aligned with PIDG's mission and that its unique products are vital in ensuring project development impact.

As part of the TAF/DevCo scale-up approved in 2015, the facility has increased its use of returnable grants this year. By adding this component to projects that are likely to generate a return, TAF is ensuring a more sustainable future funding structure.

TAF is financing embedded transaction advisers in Sierra Leone, Nigeria and Zambia, working alongside local governments to build capacity and unblock the project pipeline for further private sector investment in these countries.

### 2017 and beyond

TAF's pivotal role within PIDG will continue into 2017 as a result of the increasing challenges of working in low-income countries. TAF fills an important market gap, enabling projects to reach financial close.

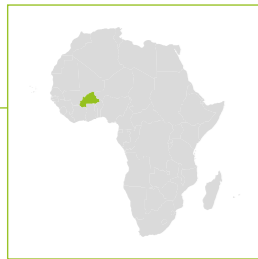
TAF will also play a lead role in developing Joint Development Plans in Zambia and Myanmar, seeking to optimise PIDG's impact by co-ordinating a joined-up approach.

Throughout 2017 TAF will seek to capitalise on the success of GuarantCo's InfraCredit project in Nigeria by helping to finance the roll-out of similar locally-owned and operated credit enhancement facilities in high priority PIDG countries.



## Burkina Faso Windiga Zina Solar IPP

### Supporting advisory work to progress a pioneering solar power project



Technology

Solar



TAF commitment

\$275,000

#### Context

Burkina Faso's economic growth has slowed following socio-political instability and the impact of fluctuating rainfall and falling global commodity prices on its main exports, cotton and gold. Following democratic elections in 2015, the new administration is committed to addressing the country's high levels of poverty. However, Burkina Faso has an electrification rate of just 17%, restricting the growth of businesses and impacting upon domestic living standards. Recognising the country's energy shortfall and unsustainable dependence upon fossil fuel imports, the Government of Burkina Faso is exploring options for the development of the country's significant solar power potential.

#### Project

EAIF approached TAF for additional funding to progress the Windiga Zina Solar IPP project, a 26.6MWp solar plant in western Burkina Faso. Sponsored by Windiga Energy, a Canadian private-sector renewable energy developer, the project will be developed as a public-private partnership and is expected to attract significant regional private sector investment. Earlier support from TAF enabled the project to finance key advisory work to establish the bankability of Burkina Faso's first private sector infrastructure operation and one of the first solar IPP's to be developed in West Africa. A further TAF grant of \$275,000 was required to finance critical legal and advisory services necessary for the project

to achieve financial close. TAF funding will be used to develop and translate key documentation and carry out vital auditing of the project's financial model and developers' costs. Technical assistance grant funding for the final stage of due diligence work will keep electricity tariffs down for the government-owned utility, SONABEL. Financial close is expected in 2017.

#### Impact

Windiga's solar power will be significantly cheaper than electricity from existing heavy fuel oil fired plants it is anticipated that this will stabilise the Burkinabe power sector. Delivering additional, affordable power to Burkina Faso's national grid will improve access to electricity for homes and businesses whilst reducing dependence on thermal plants and fossil fuel imports. Crucially, TAF's funding will enable the project to progress to financial close and construction whilst keeping tariffs affordable for Burkina Faso's electricity consumers.

By pioneering the development of the region's abundant solar potential, it is anticipated that Windiga Zina IPP will have a demonstration effect, incentivising domestic and international investors to support future solar power initiatives in West Africa.

## Sierra Leone Embedded adviser

### Providing embedded advisory support to progress a key power project

TAF has provided a returnable grant and technical assistance grants to support an embedded adviser, Cyril Grant, within the Government of Sierra Leone's Ministry of Energy since 2012. Cyril is the Project Manager for the extension to Bumbuna hydro, a major initiative which will increase the country's power generation capacity by 140MW, raising sustainable access to energy for the people of Sierra Leone.

With full oversight of the Bumbuna extension, Cyril is a single point of contact for the government and for the project's private developers. He assists in the management of technical advisers to the government and oversees the budget.

Due to the successful positioning of this role and the benefits it has generated for the Bumbuna project, TAF will look to support embedded advisers in Myanmar, Zambia and Nigeria in 2017, offering a unique mechanism to help projects reach financial close.



The Bumbuna hydro project will be extended, with a new dam being built on the Yiben river.

## DevCo The Infrastructure Development Collaboration Partnership Fund

### DevCo supports transaction advisory services to governments to structure and procure Public-Private Partnerships (PPPs)

#### At a glance

<b>Established</b>	2003
<b>Funding members</b>	DFID, DGIS, Sida, World Bank-IFC; DevCo is funded directly, not through the PIDG trust
<b>Cumulative member funding</b>	\$84.5m
<b>Managed by</b>	International Finance Corporation
<b>Total commitments at 31 Dec 2016</b>	\$40.6m to 61 projects/mandates, including 26 that reached financial close, 12 that reached commercial close, 18 under active development, and 5 closed after completing phase I or post-transaction work
<b>2016 commitments</b>	\$5.17m to 7 projects

#### Expected development impact

	2016	Cumulative
<b>Financially closed and/or fully exited projects</b>	1	26
<b>Total investment commitments (TICs) (\$m) *</b>	4,300	2,345.1
<b>% of TICs in DAC I/II and 8 poor states of India</b>		47.4%
<b>% of TICs in FCAS</b>		44.1%
<b>Access (in millions) *</b>	7.5	26.3
<b>Job creation: short-term</b>	-	1,005
<b>Job creation: long-term</b>	-	-8,702
<b>Fiscal benefits (\$m)</b>	-	2,613.1

\* The cumulative figures exclude the results from the Central Java IPP project, as the size of the transaction would skew the results. However, the amounts are included in the 2016 achievements project which resulted in a workforce reduction of 12,000.

#### Projects that reached financial close in 2016

**Indonesia** Central Java IPP

#### Projects that reached commercial close in 2016

**East Timor** Tibar Bay Port

**India** Odisha rooftop solar

**India** Odisha street lighting

**Uganda** Nyagak III hydropower

#### Achievements in 2016

The Central Java IPP includes a 2,000MW power plant and transmission facilities that will benefit 7.5m people and contribute to improved power supply for families, businesses, and industry. The project reached financial close in 2016, making it the largest of its kind in Asia.

#### Other notable highlights

Four projects supported by DevCo reached commercial close in 2016.

Once built, the state-of-the-art Tibar Bay Port in East Timor will mobilise private investment and connect the small island with the rest of the world.

The Nyagak III hydropower plant in Uganda will help to address the country's acute shortage of power.

Two renewable energy projects in Odisha, a low-income state in India, will mobilise private investment and deliver improved energy services, CO<sub>2</sub> reductions and cleaner, more effective street lighting.

DevCo's new originations demonstrate its commitment to working across sectors and in difficult frontier markets. DevCo has expanded its support of the Scaling Solar programme to deliver clean, affordable power in Africa.

In Bangladesh DevCo will support transaction advisory services for the development of utilities infrastructure in the Purbachal area of Dhaka, which comprises water and sewerage services, a drainage network and solid waste management system. Once implemented, this project will provide access to safe urban water, sewerage and sanitation services. It will also develop a bankable business model for this capital-intensive greenfield type of infrastructure.

#### 2017 and beyond

DevCo is a unique multi-donor partnership bringing bankable, transparent and competitively-tendered PPP projects to the market.

From 2017 to 2021 DevCo will expand its provision of critical financial and advisory support in frontier markets, specifically increasing its work in fragile and conflict-affected states. DevCo will continue to bring innovation to its transactions, pursuing pioneering projects with the potential to transform an entire sector of a country's economy as well as projects that can pave the way for future private investments in infrastructure.

## East Timor Tibar Bay Port

### Attracting foreign direct investment to develop essential port infrastructure



Technology  
Transport



PIDG commitment  
\$1.5m

#### Context

East Timor became independent from Indonesia in 2002. Following the referendum in favour of independence, civil unrest ensued and the majority of the country's infrastructure was destroyed. Now politically stable, East Timor continues to be regarded as a fragile state. The country is rich in offshore oil and gas and the government is keen to explore opportunities to diversify the economy. However, port facilities in the capital Dili are congested, accruing high costs as a result of cargo handling delays. East Timor's Strategic Development Plan (2011 to 2030) identifies construction of alternative port infrastructure at Tibar Bay and Suai as a national priority. The government views private sector investment as key to addressing the infrastructure deficit, and achieving rapid and sustainable growth.

#### Project

The Government of East Timor approached the IFC to develop a PPP structure to address the port infrastructure crisis. DevCo provided \$1.5m to support the vital work of establishing the country's first infrastructure PPP. Balancing the needs of the government and the market, the PPP will enable development of a port at Tibar Bay, 10km west of Dili. Replacing the Dili facility, Tibar Bay Port is designed to be a state-of-the-art terminal handling up to 750,000 containers annually, with construction of a two-berth 630 metre pier and associated cargo, customs and administrative buildings.

Bolloré Group won a competitive international tender for a 30-year concession to design, build, own and operate Tibar Bay Port in line with the government's strategy. The government will secure ownership of the port when the concession ends.

#### Impact

**"The port will contribute to the economic growth of Timor-Leste, playing an important role in external trade."**

Gastão de Sousa, Minister of Public Works, Transport and Communications

Tibar Bay Port will provide access for more and larger vessels, reducing the costs of imports and exports. The new port will overcome congestion and safety concerns and will cut the cost of doing business in East Timor.

The Government of East Timor had no experience of attracting large-scale foreign investment to the country or of managing an infrastructure PPP process. The project built government capacity and developed a PPP transaction capable of attracting a world class investor, something which had previously proved challenging. The demonstration effect of the Tibar Bay Port transaction places the government in a stronger position to attract future private sector infrastructure investment to the country.



Technical drawing of the proposed Tibar Bay Port, East Timor

## Zambia Scaling Solar

### Supporting ambitions for a rapid scale up of affordable solar power

DevCo provides government advisory services support to the Scaling Solar initiative, a World Bank Group programme designed to help low-income countries procure low-cost, privately-financed solar power.

The initiative provides a 'one-stop-shop' package of advisory services, financing and guarantees, enabling governments to close their energy gaps and overcome development challenges.

In Zambia, where about a fifth of the population has access to electricity and 10 hour blackouts are common, Scaling Solar supported the procurement of developers for two solar plants totaling over 75MW. The inaugural Scaling Solar auction yielded winning prices of 6 and 8 cents per kilowatt hour – with 6c/kWh the lowest solar tariff seen to date in sub-Saharan Africa.

Through this project, Zambia is expected to reduce green house gas emissions by 1.868 metric tons per year and facilitate financing of \$82 million.

The Government has now signed up to develop up to 500MW more renewable power through a second Scaling Solar mandate, and DevCo will help speed up procurement and development, giving people access to much-needed power more quickly.

The two rounds in Zambia, along with projects in progress in Senegal, Madagascar and Ethiopia will combine to develop more than 1.2 gigawatts of solar power, bringing improved generation capacity to countries struggling to meet their power needs.



## Building a pipeline of bankable projects

**PIDG's early-stage development companies *InfraCo Africa* and *InfraCo Asia* provide the funding and expertise needed to develop infrastructure projects from concept to viable investment opportunities**

The shortage of well-structured, bankable projects continues to hinder urgently-needed infrastructure development in the world's poorest countries.

Many project opportunities suffer delay and even abandonment due to a shortage of both early-stage risk capital and private sector project development expertise. Inadequate preparation of projects in PIDG countries is slowing the flow of private capital required to close the huge infrastructure gap.

InfraCo Africa and InfraCo Asia both focus on the initial stages of infrastructure project development, providing the funding and private sector expertise to transform high-risk, early-stage projects into commercially viable investment opportunities with the highest environmental, social and good governance standards.

In 2016, InfraCo Africa and InfraCo Asia took significant steps to scale up operations through diversified delivery channels, engaging new developer teams and building their internal co-development capability. InfraCo Africa has also seen success with its pilot projects, demonstrating that pilots can reach financial close and become operational relatively quickly, have significant demonstration effects and potential for replicability. InfraCo Asia has also seen a rapid expansion of its early project pipeline in mandated countries.

InfraCo Africa and InfraCo Asia continue to work closely with TAF and DevCo, which play a key part in addressing the challenges that hold back project pipelines, increasing development impact by supporting government capacity building and regulatory reform to develop and prioritise projects that the InfraCos and the private sector can take forward.





## InfraCo Africa

### Providing the risk capital and expertise needed to develop early-stage infrastructure projects into viable investment opportunities in sub-Saharan Africa

#### At a glance

Established	2004
Funding members	DFID, DGIS, SECO
Cumulative member funding	\$170.7m
Chair	Brian Count
Managed by	InfraCo Africa
Total commitments at 31 Dec 2016	\$83.1m to develop 19 projects, 10 of which have reached financial close and/or been sold
2016 commitments	\$15.0m across 4 projects, 3 reached JDA, and 1 reached financial close

#### Expected development impact

	2016	Cumulative
Financially closed and/or fully exited projects	1	10
Total investment commitments (TICs) (\$m)	5.2	2,088.6
% of TICs in DAC I/II		96.3%
% of TICs in FCAS		22.4%
Access (in millions)	-	13.0
Job creation: short-term	8	7,011
Job creation: long-term	8	1,045
Fiscal benefits (\$m)	-	604.4

#### Projects that signed a Joint Development Agreement or equivalent in 2016

**Malawi** Salima Solar

**Tanzania** Virunga mini hydropower

**Uganda** Lake Victoria Marine Transport

#### Projects that reached financial close in 2016

**Tanzania** Redavia Solar phase II

#### Projects that became operational in 2016

**Uganda** Kalangala Infrastructure Services

**Uganda** Kalangala renewables

#### Achievements in 2016

InfraCo Africa reached financial close on Redavia, a mini-grid containerised solar rental business in Tanzania, following the successful deployment of two pilot containers. InfraCo Africa will now fund up to \$5m to help this innovative business to achieve sufficient scale to attract private sector investment.

#### Other notable highlights

InfraCo Africa committed funding to new projects in three sub-Saharan countries; Malawi, Tanzania and Uganda. The projects include a mini-hydro scheme, a solar power plant and a marine transport project which will allow freight to cross Lake Victoria reliably. These projects demonstrate the continued success of InfraCo Africa's model of balancing project origination and development between private sector developers working on its behalf, and using its in-house co-development team to source projects on a standalone basis.

InfraCo Africa continued to progress development of the five projects it committed to fund in 2015. The company also completed the sale and exit of its stake in Cabeólica, a 25MW wind IPP in Cape Verde, providing further funds to recycle into its development activities.

#### 2017 and beyond

InfraCo Africa will continue to scale up its business model by procuring up to two new developer teams, whilst continuing to expand its internal co-development team.

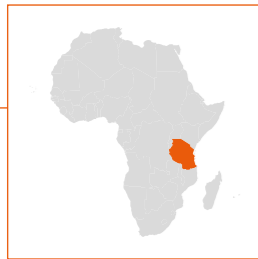
2017 will see the opening of new offices in Nairobi and west Africa to increase project origination and enable InfraCo Africa to deploy resource rapidly to its projects. New offices will allow closer working with host governments, African-based developers and investors.

Following the success of Redavia, InfraCo Africa will continue to develop smaller, innovative pilot projects. By providing the capital and expertise needed to demonstrate a project's commercial viability, InfraCo Africa's support can enable projects to attract private investment to scale up solutions. This approach accelerates communities' access to the benefits of transformative infrastructure services.

In 2017 InfraCo Africa will lead an exciting new initiative with the Africa Infrastructure Development Association, which aims to support the growth of private sector project developers in Africa whilst working with governments to build local capacity and establish industry standards.

## Tanzania Redavia

### Rolling out containerised off-grid solar power across Tanzania



**Technology**  
Off-grid solar



**PIDG commitment**  
\$4.7m



**Total investment commitments**  
\$5.2m

#### Context

Tanzania has a rural electrification rate of just 3.6%. The majority of Tanzanians rely on kerosene, charcoal and diesel for domestic lighting and cooking, fuels which have been linked to respiratory illnesses and pollution. The Government of Tanzania has committed to exploring off-grid solutions to address the country's rural power deficit. Solar power has been identified as offering a viable technology given Tanzania's high levels of sunshine and the falling cost of solar photovoltaic panels.

#### Project

Redavia rents containerised, fully assembled 87kWp solar farms to remote communities, utilities and businesses. Farms mostly hybridise with existing diesel generators, significantly saving on diesel consumption and cost. In 2015

InfraCo Africa funded a pilot project to deploy two solar farms in the villages of Shitunguru and Isenzanya. Both were commissioned during 2016, delivering reliable, safe, clean electricity to rural homes and businesses for the first time. A third container has since been commissioned in Zombo village. Taking account of stringent health and safety considerations, a preliminary batch of 65 households have so far been connected to electricity and demand is growing.

Following the initial pilot project's success, InfraCo Africa committed to the additional phased dispersement of up to \$4.7m to enable deployment of a further 28 containers, delivering up to 3MWp of clean power in total. The roll-out will support Redavia's growth, establishing a varied portfolio of up to 30 new customers, including small and medium-sized enterprises and local utilities.



Delivering clean, first-time power to homes and businesses in Shitunguru

#### Impact

**"Our expectation is that electricity will provide us with light and help us in operating small industries such as sunflower oil making machines, maize milling machines, hairdressing salons, cold drinks, enjoying news and sports, better dispensary and laboratory services, students being able to study during the night, it will definitely bring a big change to our lives."**

Tamson David Mwasenga, Chairman of Shitunguru Village

Redavia's solar-hybrid technology reduces costs by 20% to 30% and cuts emissions associated with diesel back-up generation. By supplying and maintaining the containerised solar farms, Redavia offers an affordable long-term solution for small businesses and rural communities. Reliable power will transform living standards and enable businesses operating in isolated communities to increase productivity and profitability.

By demonstrating the commercial viability of Redavia's innovative model, it is anticipated that the company will attract private sector investment to scale up the deployment of solar farms across sub-Saharan Africa. Once sufficient private finance and scale is secured, InfraCo Africa will exit the project, recycling its funds into the early stage development of other infrastructure projects that are vital for the region.

## Uganda Kalangala Infrastructure Services

### KIS reaches completion

The final stage of the \$49m Kalangala Infrastructure Services (KIS) project on Bugala Island was completed when the management and maintenance of the newly constructed 66km Luuku to Mulabana road was transferred to the Government of Uganda. Delivered in partnership with the government, the development of KIS was led by InfraCo Africa with support from TAF, EAI, GuarantCo and domestic and international DFIs. Completion of the island's main road has increased domestic access, trade opportunities and improved year-round links to the ferry terminal and the mainland.

KIS also supplies reliable power to 2,504 homes, operates two ferries linking Bugala Island with mainland Uganda and has delivered key health gains through its provision of clean potable water for 19 villages. The pioneering mixed utility company continues to expand access to its infrastructure services, promoting the ongoing economic development of Bugala Island.



Bugala Island's newly-constructed Luuku to Mulabana main road.

## InfraCo Asia

### Providing early-stage risk capital and equity and mezzanine financing for infrastructure in south and south-east Asia

InfraCo Asia comprises two companies; InfraCo Asia Development – investing early-stage development capital – and InfraCo Asia Investments – offering debt and equity close to financial close

#### At a glance

<b>Established</b>	InfraCo Asia Development: 2010 InfraCo Asia Investments: 2014
<b>Funding members</b>	InfraCo Asia Development: DFID, SECO, DFAT InfraCo Asia Investments: DFID
<b>Cumulative member funding</b>	InfraCo Asia Development: \$99m InfraCo Asia Investments: \$27.3m
<b>Chair</b>	InfraCo Asia Development: John Walker InfraCo Asia Investments: Keith Palmer
<b>Managed by</b>	InfraCo Asia
<b>Total commitments at 31 Dec 2016</b>	InfraCo Asia Development: \$55.8m to develop 17 projects, 4 having reached financial close and 13 having signed a JDA InfraCo Asia Investments: \$28.2m on 3 projects that have reached financial close
<b>2016 commitments</b>	InfraCo Asia Development: \$12.7m across 8 projects which reached JDA

#### Expected development impact

	2016	Cumulative
<b>Financially closed projects</b>	-	4
<b>Total investment commitments (TICs) (\$m)</b>	-	316.3
<b>% of TICs in priority countries*</b>	-	84.2%
<b>% of TICs in FCAS**</b>	-	83.3%
<b>Access (in millions)</b>	-	0.8
<b>Job creation: short-term</b>	-	1,700
<b>Job creation: long-term</b>	-	446
<b>Fiscal benefits (\$m)</b>	-	0.5

\* Priority countries: Bangladesh, Bhutan, Cambodia, Laos, Myanmar, Nepal, Pakistan and DFID focus states in India

\*\* Fragile and conflict-affected states: Bangladesh, Myanmar, Nepal, Pakistan, Sri Lanka

#### Projects that signed a Joint Development Agreement or equivalent in 2016

- India** Keyi run of river hydropower
- India** Pareng run of river hydropower
- Myanmar** gas power
- Myanmar** rice processing
- Myanmar** hybrid rice seed centre
- Myanmar** rural electrification services

- Myanmar** waste-to-fish-feed
- Philippines** mini hydropower

#### Projects that became operational in 2016

- Pakistan** Metro Wind and Gul Ahmed Wind
- Vietnam** Coc San hydropower

#### Achievements in 2016

InfraCo Asia Development (IAD) achieved commercial operation for its 29.7MW Coc San hydropower project in northern Vietnam's Lao Cai Province. Its two 50MW wind power projects in Pakistan's Sindh Province - Metro Wind and Gul Ahmed Wind - also reached commercial operation.

#### Other notable highlights

IAD signed a Joint Investment and Development Agreement (JIDA) and a Convertible Loan Agreement with Alternergy Hydro Partners Corporation to develop six mini, run-of-river hydropower projects in the Philippines. It also signed JIDAs with Virtual InfraPower to support the development of two run-of-river hydro projects in north-east India. Through its Myanmar Developer Programme, InfraCo Asia signed five Joint Development Agreements, encompassing rural electrification services, a gas power plant, a rice processing facility, a waste-to-fish-feed facility and a hybrid seed project.

2016 saw all three InfraCo Asia Investments (IAI) projects begin commercial operations, namely Coc San Hydro and Metro Wind and Gul Ahmed Wind. Coc San attracted new private sector capital, enabling IAI to recover a portion of its investment. IAI made a conditional commitment to support the Kabeli A hydro project in Nepal with the required equity capital needed at financial close.

InfraCo Asia provided the case study for a 'Gender Equality in Infrastructure Programmes - Gender Review' undertaken by PIDG member, the Australian Department of Foreign Affairs and Trade. The review studied the intersection of gender equality and the infrastructure development process.

PIDG central management held a Theory of Change workshop with the InfraCo Asia team, further aligning the company's vision and impact. InfraCo Asia also hosted a collaborative workshop with its south Asia, south east Asia and Myanmar developer teams, covering compliance, risk management, anti-money laundering and anti-corruption.

#### 2017 and beyond

InfraCo Asia provides 'leadership capital' to manage and fund high-risk infrastructure development activities by taking an equity stake in socially responsible and commercially viable infrastructure. InfraCo Asia's activities catalyse greater private sector investment in infrastructure and contribute to economic growth, social development and poverty reduction.

In 2017 InfraCo Asia will deploy capital for some of its first projects in the agricultural infrastructure sector, a challenging area known for its scarcity of well-structured opportunities.

With an active pipeline in nine countries in the region, InfraCo Asia will continue to discuss shared challenges and opportunities with its fellow PIDG companies and draw on their support.



## Pakistan Metro Wind and Gul Ahmed Wind

Supplying 100MW of renewable energy to Pakistan's national grid



**Technology**  
Wind power



**PIDG commitment**  
\$33.8m



**Total investment commitments**  
\$263.5m



**Number of people benefiting**  
700,890

### Context

Demand for power in Pakistan outstrips supply and frequent power cuts can last up to 18 hours per day. Asian Development Bank research suggests that the impact of inadequate electricity supply on business and industry in Pakistan is equivalent to a loss of around 2% to 3% of annual GDP. The Government of Pakistan is keen to harness the potential of the country's largely untapped renewable energy resource, improving fuel security and power supply for customers. Expanding Pakistan's renewable energy sector will also cut carbon emissions and reduce government spending on expensive fossil fuel imports.

### Project

InfraCo Asia was approached for support by local sponsors of the Metro Wind and Gul Ahmed Wind projects in Pakistan's Sindh Province, both of which had faltered as a result of unfavourable macro-economic conditions.

InfraCo Asia Development provided funding of \$15.6m in early stage capital, prepared the required documentation and worked with commercial lenders and international DFIs to secure the required project finance, whilst InfraCo Asia Investments invested \$18.2m at, and post, financial close. Metro Wind and Gul Ahmed Wind became operational in late 2016. Clean energy generated by the projects costs \$0.14/kWh to \$0.16/kWh which is lower than the cost of conventional oil and diesel power generation (\$0.20 to \$0.25/kWh).

### Impact

**"Our management team, together with InfraCo Asia, has played an instrumental and a very positive role in developing both wind projects...I congratulate InfraCo Asia for their relentless support."**

Chairman Iqbal Alimohamed, Metro Power Company Ltd and Gul Ahmed Wind Power Ltd



Construction of the now operational Metro Wind power plant, Sindh Province, Pakistan

By developing an abundant source of renewable energy, the projects will reduce Pakistan's exposure to the high cost and insecurity of fuel imports. Access to clean, reliable power promotes business growth, creating employment and boosting household incomes. Metro Wind has invested directly in initiatives to improve quality of life for residents of a small community on the project site, building water wells and a unique co-educational school, and offering construction training opportunities for adults. Both projects demonstrate the viability of harnessing Pakistan's substantial wind resource to provide a sustainable source of affordable energy. It is anticipated that the demonstration effect of the projects will attract new private investors to the country's emerging renewables sector.

## Vietnam Coc San

### Switch on for Coc San hydropower plant

Following early-stage support and investment from InfraCo Asia Development, InfraCo Asia Investments and TAF, the Coc San run-of-river hydro plant began delivering power to Vietnam's national grid in April 2016. The 29.7MW plant has improved access to clean and renewable electricity and it is anticipated that reliable power will increase the profitability of mining and mineral processing, as well as enabling the expansion of other key industries in the region. Coc San will cut carbon emissions by up to 76,000 tonnes per annum whilst reducing Vietnam's dependence on fossil fuel imports. The project has created local jobs and its development programme continues to benefit nearby communities; roads and schools have been upgraded, and farmers anticipate increased yields following crop education. Coc San attracted foreign direct investment to Lao Cai Province for the first time and provides a model for future projects.



Coc San hydropower plant is now operational



## Using innovative financial instruments to leverage private sector investment ahead of financial close

The **Emerging Africa Infrastructure Fund (EAIF)** and **GuarantCo** provide elements of the financing needed to secure private sector participation in commercially viable infrastructure projects in higher-risk emerging markets

**Infrastructure Crisis Facility – Debt Pool (ICF-DP)**, a time-limited company has successfully completed its lifecycle and begun repaying funds

Banks have withdrawn funding due to concerns regarding the African and global growth outlook, including Basel III requirements which have made infrastructure financing less attractive. EAIF is able to offer loans to private-sector sponsored projects in sub-Saharan Africa with tenors of up to 20 years, unlike commercial lenders which lend for shorter terms. EAIF's involvement gives private sector investors greater confidence to bring projects to fruition in low-income and fragile states.

GuarantCo provides local currency guarantees to banks and bond investors which are mostly local or regional. Local currency depreciation is a key risk where projects are funded by foreign currency but generate revenue in local currency, compromising the ability to service foreign debt. This risk is often pushed onto the project or, worse still, the end consumer. GuarantCo helps infrastructure projects mitigate this risk and protects their commercial viability.

GuarantCo is also supporting the development of local capital markets that will, in the future, finance a greater proportion of infrastructure and other financing needs themselves.

A time-limited lending facility, ICF-DP, was set up in 2009 in the wake of the global financial crisis to bridge financing gaps in infrastructure projects in emerging markets. Having successfully fulfilled its mandate, ICF-DP has now closed to new applications, reflecting PIDG's ability to fill market gaps as they appear and close down once the job is done.



Right: KivuWatt biogas plant, Rwanda (top) and Lower Solu run-of-river hydro, Nepal (below)



# The Emerging Africa Infrastructure Fund

## Providing very long-term foreign currency loans to private sector investors

### At a glance

Established	2001
Funding members	DFID, DGIS, Sida, SECO
Cumulative member funding	\$391.9m
Fund capacity	As of 31 December 2016, \$291.8m (equivalent) of debt has been raised, denominated in \$ and €
Chair	David White
Managed by	Investec Asset Management Ltd
Total commitments at 31 Dec 2016	\$1,170m to 64 projects that have reached financial close or been repaid
2016 Commitments	\$134.3m to 7 projects that reached financial close

### Expected development impact

	2016	Cumulative
Financially closed projects	7	64
Total investment commitments (TICs) (\$m)	1,408.6	15,954.3
Private sector investment commitments (\$m)	975.8	10,124.6
% of TICs in DAC I/II/III		70.4%
% of TICs in FCAS		69.3%
Access (in millions) *	5.7	123.7
Job creation: short-term	1,683	16,152
Job creation: long-term	6,524	20,378
Fiscal benefits (\$m)	28.0	1,532.6

\* PIDG's 2016 review of the assumptions for calculating access resulted in a revised cumulative figure - notably, a decrease of 50m people across O3B and Seven Energy. However, these projects could ultimately provide access to considerably more beneficiaries, but the data is not yet robust enough to support the larger estimates

### Projects that reached financial close in 2016

**DR Congo** Helios Towers  
**Nigeria** IHS Nigeria Group  
**Sierra Leone** CECA IPP  
**Uganda** Lubelia Hydro DI Frontier  
**Uganda** Siti II Hydro, DI Frontier  
**Uganda** Tororo Solar PV Building Energy  
**Uganda** Achwa Hydro Plant 2

### Projects that became operational in 2016

**Congo (Republic)** Helios Towers  
**DR Congo** Nyumba Ya Akiba Cement  
**Nigeria** African Foundries Limited Expansion  
**Nigeria** Tower Power Abeokuta Limited  
**Rwanda** KivuWatt, Lake Kivu  
**Senegal** Tobene Power  
**Tanzania** Helios Towers (Vodacom Tower)  
**Tanzania** Helios Towers  
**Uganda** Kalangala Infrastructure Services  
**Uganda** Kalangala renewables

### Achievements in 2016

EAIF met all its targets, finishing the year in a healthy financial position with a strong and diversified portfolio. During the year, EAIF closed seven transactions for a total value of \$134m, leveraging \$976m in private sector capital investment.

In Uganda EAIF has now supported eight small-scale renewable energy projects, mostly in rural locations. This year EAIF helped fund Tororo solar farm and Siti II and Achwa, two run-of-river hydro plants.

### Other notable highlights

In Sierra Leone the company's investment in the country's first IPP, a new 57MW power station in Freetown, will help to vastly increase the power available, supporting the economy's recovery from the impact of Ebola and a decade of lost growth.

Two projects financed in earlier years celebrated milestones. Soroti solar farm – Uganda's largest – reached full production. In Rwanda, KivuWatt's unique Lake Kivu methane-fuelled power station was formally opened. It produces 26.2MW of power, with future potential for up to 100MW.

Accelerating the development of Africa's digital economy is central to EAIF's strategy. In 2016 EAIF was involved in telecommunications tower projects in the Democratic Republic of Congo, Congo Republic and Nigeria.

In May Investec Asset Management (IAM) became EAIF's fund manager following a competitive tender process designed to achieve best value for PIDG members. IAM has strengthened EAIF's market access, new-business prospecting, risk management, and portfolio monitoring and administration, thus improving EAIF's ability to deploy funds where they are most needed, so increasing its economic development impact and its attractiveness to private investors.

### 2017 and beyond

EAIF will focus on projects in post-conflict and fragile states. Energy, transport, and telecommunications, including mobile payment services, are likely to be prominent.

EAIF will seek an expanded role as a lead arranger of finance for projects, thus bringing a higher level of additionally to its activities.

# Uganda Siti II

## Delivering 16.5MW of hydropower to stimulate economic development



**Technology**  
Run-of-river hydro



**PIDG commitment**  
\$11.7m



**Total investment commitments**  
\$33.9m



**Number of people benefiting**  
283,720

### Context

Uganda has an electrification rate of 18%. In recent years population growth and accelerating industrialisation have seen demand for power grow by 7% to 9% annually. The Government of Uganda is committed to developing the country's renewable energy sector, highlighting hydropower as a major pillar of its Second National Development Plan. Uganda's rivers and topography offer potential for small hydro plants to deliver baseload power as part of a wider renewable energy mix.

### Project

Siti Elgon Hydro (Siti II) will develop a 16.5MW run-of-river hydropower plant on the slopes of Mount Elgon. The plant will be built downstream of Siti I, a small hydro plant also supported by EAIF, with the two coming together to form a cascade hydro scheme. The plant's design and location were subject to independent technical

due diligence to mitigate any potential impact on the neighbouring Mount Elgon National Park.

Siti II will be built, owned and operated by Elgon Hydro Siti and is the largest of four plants being developed in Uganda by lead sponsor, DI Frontier Market Energy and Carbon Fund. Siti II will attract \$8.8m in subsidies from the Global Energy Transfer Feed-In Tariffs (GETFiT) Premium Payment Mechanism, a government initiative developed, with international support, to enhance the viability of small-scale renewables.

Despite subsidies, Siti II required long-term finance to be bankable. EAIF and the lead arranger, FMO, provided senior debt to the project with a loan tenor of 15 years, longer than loans available from domestic commercial banks. Long-term finance will enable the Uganda Electricity Transmission Company (UETCL) to invest in its network whilst keeping costs affordable for its customers. EAIF's experience of providing debt finance to Ugandan renewable energy projects enabled it to share specialist



Work begins on road access to Siti II's power house

technical and financial knowledge with DI Frontier, a company with limited assets in Uganda.

### Impact

Affordable, reliable power will transform living standards and underpin the growth of small businesses. Costing \$0.09/kWh, Siti II's hydropower is cheaper than diesel generation and the plant will enable UETCL to replace some of its diesel-fired plants. Siti II will create 192 construction jobs and 23 local people will gain long-term employment in maintenance, security and administration roles. It is anticipated that businesses in the area will undertake some legal and accountancy functions.

EAIF and FMO are working with DI Frontier to deliver Siti II as part of a four-plant portfolio which will collectively deliver approximately 33MW of power to Uganda's national grid. The approach enables swift replication of projects which benefit from the economies of scale offered by the wider portfolio. Coupled with forward-thinking initiatives such as GETFiT, adopting a portfolio approach could enhance the bankability of small-scale renewables across sub-Saharan Africa.

## Uganda Tororo Solar

### Harnessing Uganda's solar potential to deliver much-needed electricity

Hydropower dominates Uganda's renewable energy sector. However, the sun is increasingly being harnessed to make solar power a key part of the country's energy mix. Delivered by lead sponsor, Building Energy, the Tororo Solar project will develop, construct and operate a 10MWp solar plant in rural eastern Uganda. Unemployment is high in the Tororo district and many families depend on subsistence agriculture. Together, EAIF and the lead arranger FMO, provided \$14.7m in long-term senior debt to the project. Long-term loans help make borrowing more efficient, particularly in countries traditional lenders are not attracted to. It is projected that Tororo's contribution to Uganda's national grid will be sufficient to improve access to electricity for approximately 67,000 people, with the plant reducing CO<sub>2</sub> emissions by an estimated 218,000 tonnes. The project will create local jobs and it is anticipated that access to clean, affordable power will act as a stimulus to economic development across eastern Uganda.



## GuarantCo

### Providing local currency guarantees for infrastructure financing and providing dollar-denominated guarantees in fragile and conflict-affected countries

#### At a glance

<b>Established</b>	2006
<b>Funding members</b>	DFID, DFAT, Sida, SECO through the PIDG trust, DGIS through FMO
<b>Cumulative member funding</b>	\$301.8m
<b>Fund capacity</b>	Capacity of over \$950m
<b>Chair</b>	Andrew Bainbridge
<b>Managed by</b>	GuarantCo Management Company Ltd
<b>Total commitments at 31 Dec 2016</b>	\$696.5m to 41 projects that have reached financial close and/or been redeemed
<b>2016 commitments</b>	\$191.9m to 6 projects that have reached financial close

#### Expected development impact

	2016	Cumulative
<b>Financially closed projects</b>	<b>6</b>	41
<b>Total investment commitments (TICs) (\$m)</b>	<b>788.9</b>	4,665.5
<b>Private sector investment commitments (\$m)</b>	<b>540.8</b>	3,816.5
<b>% of TICs in DAC I/II/III *</b>		96.3%
<b>% of TICs in FCAS</b>		44.1%
<b>Access (in millions)</b>	<b>15.0</b>	38.0
<b>Job creation: short-term **</b>	<b>1780</b>	7,733
<b>Job creation: long-term</b>	<b>160</b>	212,263
<b>Fiscal benefits (\$m)</b>	<b>425.8</b>	1,691.5

\* All GuarantCo projects have been made in DAC I/II/III except for 3 projects in South Africa, where the donors gave specific permission

\*\* The cumulative figure has decreased following the cancellation of a house-building project which was predicted to create 60,000 construction jobs

#### Projects that reached financial close in 2016

- Ghana** Early Power
- Kenya** KOOBA Datacentre
- Nigeria** Accugas Limited
- Nigeria** Mixta Real Estate Plc ("Mixta Nigeria")
- Nigeria** Infrastructure Credit Guarantee Company Limited (InfraCredit)
- Mali** Albatros Energie Mali SA

#### Projects that became operational in 2016

- Cameroon** Cameroon Telecommunication Limited
- Cameroon** Cameroon Telecommunication Limited II
- Nigeria** Rack Centre
- Pakistan** Fatima Fertilizer Company Limited
- Pakistan** Pakistan Mobile Telecommunications Limited (Mobilink)
- Sri Lanka** Softlogic Finance
- South Africa** South Africa Development Finance Company III
- Uganda** Kalangala Infrastructure Services
- Uganda** Kalangala renewables

#### Achievements in 2016

GuarantCo closed six guarantees, with a total exposure of \$191.9m.

In Mali GuarantCo provided a local currency guarantee to support the development of a 90MW oil-fired power station, which will add around 10% to the country's total generation capacity. The project is the first IPP to be developed in the post-conflict country for a decade.

In Nigeria GuarantCo's guarantee for a local currency bond will support the development of some 5,000 affordable homes during the next six years. The bond was the first of its kind in Nigeria.

#### Other notable highlights

GuarantCo progressed its strategy to build a \$1bn portfolio by 2020, boosting the development impact it generates.

A new office and associated hires were agreed for Singapore and new appointments were made at the Nairobi office, supplementing GuarantCo's capacity to work on the ground in its target countries. These offices will co-locate with InfraCo Asia and InfraCo Africa respectively in 2017.

GuarantCo was delighted to receive new funding support from the Government of Australia, which will underpin the expansion of its work to the poorest regions of south and south-east Asia. GuarantCo's capital was further enhanced by the approval of a £40m callable capital facility from UK aid.

GuarantCo's growth was also underpinned by the appointment of GuarantCo Management Company Ltd – a subsidiary of Cardano Development – as its new fund manager

following a competitive retender process.

Cardano Development's specialism in currency risk will support GuarantCo's unique work to mobilise local currency finance for infrastructure in challenging frontier markets.

During 2016 GuarantCo was able – thanks to its strong credit ratings – to dispense with its previous counter-guarantee facility and replace it with a more appropriate stand-by facility from FMO. This reduced costs, enabled greater flexibility in its operations and was a crucial step in accessing commercial insurance.

#### 2017 and beyond

Currency volatility, transfer and conversion concerns, coupled with falling commodity prices, are driving governments and businesses to look to domestic financing options, particularly for infrastructure.

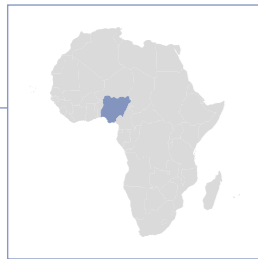
GuarantCo expects to build on this momentum, collaborating with other entities to mobilise more local currency financing for infrastructure. This work has already begun in Nigeria, where GuarantCo helped launch InfraCredit, the country's first local currency-focussed guarantor. In 2017 it will explore options for replication of the scheme in south Asia.

By supporting local developers and entrepreneurs to access sources of domestic capital, GuarantCo's work will help build capacity and capability within local markets.

GuarantCo will also undertake an innovative new partnership with the London Stock Exchange to progress efforts to encourage global investment in local currency bonds for infrastructure.

## Nigeria InfraCredit

### Unlocking capital from domestic pension funds to finance infrastructure



#### Technology

Local currency financial guarantor



#### PIDG commitment

NGN 15bn (\$50m)

#### Context

The Government of Nigeria recognises infrastructure investment as a key driver of economic growth. In spite of increased government funding, infrastructure investment remains insufficient, whilst falling global oil prices and heightened security concerns have negatively impacted the country's economy. Nigeria's commercial banks are constrained in providing long-term infrastructure finance, and dollar-denominated loans from international banks carry the uncertainty of exchange rate fluctuations. With assets of NGN5.8tn (approximately \$20bn), Nigeria's pensions sector has been identified as a potential source of long-term domestic capital required to meet the country's infrastructure needs.

#### Project

Investment by Nigeria's pension funds in infrastructure-linked bonds has been constrained by a lack of precedent and insufficient credit quality to satisfy investors. In 2011 GuarantCo provided credit enhancement for a corporate bond issued by Tower Aluminium. In what proved to be a ground-breaking transaction for Nigeria's debt capital markets, GuarantCo drew on its AAA credit rating to credit enhance Tower's bond issue, making it eligible for pension fund investment.

Following the Tower transaction, GuarantCo and TAF provided technical assistance for the Nigerian Securities & Exchange Commission (NSEC) and National Pension Commission (NPC), bringing both funds to the attention of the Nigerian Sovereign Investment Authority (NSIA). GuarantCo and TAF worked with NSIA to establish the Nigerian Infrastructure Credit Enhancement Facility, InfraCredit. InfraCredit is designed to provide local currency guarantees

for corporate and project bonds issued by entities across a range of sectors. GuarantCo committed NGN15bn (\$50m) to InfraCredit through a Callable Capital Funding Facility Agreement, with NSIA providing NGN7.5bn (\$25m) of paid-in equity. An expression of interest has been received from the Africa Finance Corporation to invest a further NGN7.5bn (\$25m) of paid-in equity alongside NSIA.

#### Impact



**"InfraCredit will play a pioneering role in connecting Nigeria's debt capital markets to infrastructure financing. This unique initiative will act as a catalyst to accelerate access to power, telecoms and other vital infrastructure for Nigeria's growing population."**

Chinua Azubike, CEO of InfraCredit

It is anticipated that InfraCredit's guarantees will derisk bonds issued by eligible companies, increasing the confidence of Nigeria's pension funds to invest in long-tenor, Naira-denominated bonds thereby offering an alternative source of finance for vital infrastructure projects. InfraCredit's preliminary domestic rating of AA+, issued by Global Credit Ratings, will enable it to crowd in domestic private sector investment.

GuarantCo's expertise and strong working partnership with NSIA made development of InfraCredit possible. A returnable grant from TAF to support feasibility studies and a capital markets training programme with NSEC and NPC was fundamental to establishing InfraCredit and wider efforts to institutionalise bond market reforms. The model has scope for replication in east Africa and south Asia.

## Nepal Lower Solu

### Construction begins on an 82MW run-of-river hydro plant

Developer Essel Clean Solu Hydropower (ECS) commenced construction of Lower Solu, a run-of-river hydro power plant in the Solukhumbu District of Nepal. The plant is expected to begin delivering much-needed power in 2019, improving access to electricity for up to 4m people and increasing Nepal's power generation capacity by 11%. GuarantCo's local currency guarantee of NPR2.785bn (\$28.2m) enabled the project to mobilise long-term finance from DFIs and regional private sector investors. Lower Solu is the first project in Nepal to reach financial close using both international and domestic financing. The project also demonstrates how mixing hard and local currency can create long-term hedging solutions which improve the viability of renewable energy projects in developing countries. These innovations made an important contribution to the development of local financial markets in Nepal, a unique additional element of GuarantCo's work.



Construction workers begin work on the Lower Solu hydro plant

## Infrastructure Crisis Facility – Debt Pool

**ICF-DP was a time-limited company, set up in 2009 and closed to new business in 2015, providing long-tenor loans to support infrastructure projects which had become stranded by the global financial crisis**

### At a glance

<b>Established</b>	2009 ICF-DP is a closed-end fund and no longer making further investments
<b>Funding members</b>	KfW
<b>Cumulative member funding</b>	\$7.8m
<b>Chair</b>	Andrew Bainbridge
<b>Managed by</b>	Cordiant Capital Inc.
<b>Total commitments at 31 Dec 2016</b>	\$595.1m to 20 projects that have reached financial close and/or have been repaid
<b>2016 commitments</b>	\$40.8m to 2 projects that reached financial close

### Expected development impact

	2016	Cumulative
<b>Financially closed projects</b>	<b>2</b>	20
<b>Total investment commitments (TICs) (\$m)</b>	<b>403</b>	5,956.6
<b>% of TICs in DAC I/II/III</b>		12.9%
<b>% of TICs in FCAS</b>		23.3%
<b>Access (in millions)</b>	<b>2.2</b>	12.33
<b>Job creation: short-term</b>	<b>798</b>	9,981
<b>Job creation: long-term</b>	<b>688</b>	4,699
<b>Fiscal benefits (\$m)</b>	<b>1.56</b>	633.7

### Projects that reached financial close in 2016

**Colombia** Transambiental  
**Côte d'Ivoire** HKB Bridge

### Achievements in 2016

In 2016, ICF-DP achieved financial close on two projects that had been committed, but not closed, before the end of its investment period.

The HKB Bridge in Ivory Coast connects two highly populated districts in Abidjan, providing a shorter, more direct route, reducing greenhouse gas emissions and journey times. It also alleviates traffic congestion on two existing bridges and allows for better infrastructure planning.

The Transambiental project in Colombia involves financing to build an integrated bus transport system that will allow a large number of old, inefficient buses to be decommissioned. It will reorganise the system so that travel routes are professionally managed and co-ordinated, improving service levels and journey times in the city of Cartagena.

### Other notable highlights

In Senegal construction of the much-needed Blaise Diagne International Airport continued, with the final phase of construction expected in 2017.

In Nigeria good progress was made on the construction of the 459MW Azura Power Plant which is now more than 60% complete. The project will provide essential power to the country. By using gas as an input, the plant will reduce carbon emissions and improve the country's energy security.

### 2017 and beyond

ICF-DP's investment period ended in December 2015. During the next 12 to 15 months the company will continue to disburse loans it has committed.

Having successfully fulfilled its mandate to help stranded infrastructure projects during the financial crisis, ICF-DP has now closed to new loan applications. This reflects PIDG's agility, filling market gaps as they appear and closing down once the job is done.

ICF-DP will wind down over an extended period, taking repayments on its existing long-tenor loans and returning these funds to KfW. ICF-DP anticipates, based on current forecasts, that KfW's original pledge of €500m will be returned to the German taxpayer by 2027.



## Colombia Transambiental S.A.S

### Transforming bus transportation to promote urban development



**Technology**  
Transport



**PIDG commitment**  
\$18.5m



**Total investment commitments**  
\$82.3m



**Number of people benefiting**  
422,000

#### Context

A peace accord was signed in late 2016 bringing to an end more than half a century of internal conflict in Colombia. As part of its National Development Plan, the Government of Colombia has identified strengthening urban transportation as key to unlocking the economic potential of its expanding cities. Growth in private vehicle ownership in Colombia's cities has led to congestion and public transport is inefficient and, at times, unsafe. Without intervention to regulate urban transportation, it is projected that economic growth will suffer and that CO<sub>2</sub> emissions will rise sharply.

#### Project

Transambiental S.A.S. will deliver one of three concessions of the state-initiated Transcribe Mass Transport Integrated Bus System.

Collectively, the concessions will transform bus transportation in Cartagena, on Colombia's northern coast. Approximately 50% of the city's population use buses daily; however, the system is uncoordinated, comprising of old vehicles operated by small private operators. The dysfunctional system has resulted in a surplus of buses, contributing to congestion and air pollution. Transambiental will formalise routes, finance, implement, operate and maintain 212 new buses and operate a scrappage programme for old vehicles. The project will employ existing drivers, offering access to Transcribe's training programme to improve the safety, professionalism and management of the system. Local and regional banks were reluctant to invest in public transport and so finance for the 19.5 year concession was secured from DFIs, domestic and international private investors and an \$18.5m loan from ICF-Debt Pool (ICF-DP).



Transambiental's fleet of modern buses, Cartagena

#### Impact

The wider Transcribe programme will cut the number of buses on Cartagena's roads from 1,585 to 658, reducing congestion and CO<sub>2</sub> emissions. A reliable, efficient bus service will enable people to travel around the city to work and school, boosting economic activity and productivity in Cartagena. Knowledge transfer around safety procedures, new technology and management methods will formalise the industry and professionals within it, ensuring the sector's long-term profitability.

With a lack of available commercial finance, ICF-DP's support for Transambiental enabled the company to play a key role in transforming Cartagena's bus system. When the concession ends, ownership of its assets will revert to the government, ensuring that Cartagena's people will continue to have access to high-quality public transport in the future.

## Côte d'Ivoire HKB Bridge

### A new toll bridge to enhance connectivity in Abidjan

Côte d'Ivoire's economic capital, Abidjan, is home to 4.7m people. The city is bisected by the Ébrié Lagoon and existing bridges cannot support increasing traffic volumes. The 1.5km HKB Bridge was built to link two major neighbourhoods, Cocody and Marcory, enhancing economic opportunities and improving access to the city's air and sea ports. Access to commercial bank finance in Ivory Coast is limited and so the project was funded by DFIs and private investors. However, in 2016 the African Development Bank sought to reduce its stake and ICF-DP stepped in to provide a secondary loan of €20m over 15 years. ICF-DP's involvement enabled AfDB to reinvest its funds elsewhere. Around 100,000 vehicles now use the bridge daily, reducing pressure on existing infrastructure and cutting journey times by up to 30%.



The HKB Bridge provides a vital new transport link for Abidjan

## Closing the gap with equity and mezzanine financing at financial close to boost development impact

**Green Africa Power (GAP) provides intermediate capital and mezzanine financing for renewable energy projects**

**InfraCo Asia Investments provides equity and mezzanine financing for infrastructure**

There is little appetite for equity and debt investment in greenfield projects in PIDG countries at financial close – before projects have completed construction and become operational – due to the real or perceived risks involved. DFIs are increasingly willing to lend to infrastructure projects in low-income countries, but have limited appetite and agility.

Unable to secure all the equity needed at financial close, many greenfield infrastructure projects go unbuilt or face delays. GAP is able to step in and provide investment to projects which have sufficient potential to create high development impact and be commercially sustainable.

GAP invests intermediate capital and mezzanine finance in renewable energy projects in sub-Saharan Africa. In 2016 the company ensured a 20MWp solar power plant in Senegal was built by providing a €20m construction finance loan. GAP is exploring opportunities to provide further construction finance solutions to prove the concept of greenfield projects and allow long-term debt finance to be secured following commercial operation. The company's flexible approach also enables it to take a position which is subordinated to senior debt but senior to equity, enabling projects to complete.

InfraCo Asia Investments provides equity and mezzanine financing for infrastructure projects in south and south-east Asia at financial close. Investments are made which expect commercial returns and where private sector investors are willing to invest a significant share, but there remains a gap in equity capital needed to reach financial close and commence construction.

RIGHT: Workers on site at the Senergy 2 solar park, Senegal



## Green Africa Power

### Intermediate capital and mezzanine financing for renewable energy power generation

#### At a glance

Established	2013
Funding members	DFID, BEIS, Norway MFA
Cumulative member funding	\$37.2m
Chair	Jim Cohen
Managed by	EISER Infrastructure Partners LLP
Total commitments at 31 Dec 2016	\$21.1m to 1 project that reached financial close
2016 commitments	\$21.1m to 1 project that reached financial close

#### Expected development impact

	2016	Cumulative
Financially closed projects	1	1
Total investment commitments (TICs) (\$m)	30.5	30.5
% of TICs in DAC I/II/III		100%
Access (in millions)	0.2	0.2
Job creation: short term	80	80
Job creation: long term	24	24
Fiscal benefits (\$m)	1.1	1.1

#### Projects that reached financial close in 2016

Senegal Senergy 2

#### Projects that became operational in 2016

Senegal Senergy 2

#### Achievements in 2016

GAP achieved financial close on Senergy 2, a first-of-its-kind solar power plant in Senegal. GAP provided a short-term bridging finance loan to enable construction to be completed and the plant is now operating at full capacity. Following Senergy 2's success, GAP will consider similar construction finance for other small renewable energy projects which are vital to diversifying the energy mix in sub-Saharan Africa.

#### Other notable highlights

GAP is able to offer innovative, intermediate capital solutions to renewable energy projects that would otherwise fail to reach financial close. This means that GAP must remain flexible in its approach to its project pipeline in order to respond promptly to any financing needs that arise in the market.

GAP is exploring solar projects and development programmes with a focus that recognises the region's high levels of sunshine and the speed at which solar plants can be installed, enabling communities to access power more quickly. GAP recognises, however, that solar alone cannot meet the huge power needs that exist and is therefore looking at other renewable energy sources. Such sources include hydro, wind and geothermal power, all of which take longer to construct than solar but can form part of a country's balanced renewable energy portfolio. Some projects can only proceed with an initial phase financed by equity and a GAP intermediate capital solution until the project is de-risked for senior debt to come on board.

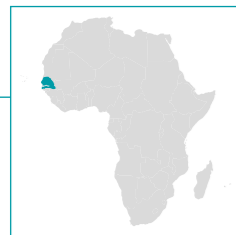
#### 2017 and beyond

GAP's innovative and flexible nature will continue to be important in meeting the varying needs of individual projects and making sure they get 'over the line.' In the year ahead, GAP will maintain close relations with TAF and DevCo whose work supports the flow of viable projects and addresses blockages. GAP is also considering co-funding opportunities with InfraCo Africa, EAIF and GuarantCo from the PIDG family.



## Senegal Senergy 2

### Delivering 20MWp of solar power to drive economic growth



Technology  
On-grid solar



PIDG commitment  
€20m  
(\$21.1m)



Total investment  
commitments  
\$82.3m



Total investment  
commitments  
160,000

#### Context

44% of Senegal's population has no access to electricity. Senegal relies on fossil fuel imports which are subject to fluctuating supply and leave the country vulnerable to changing oil prices. Senegal is one of the world's poorest countries and a lack of affordable, reliable power acts as a significant constraint to the country's economic potential. The Government of Senegal is committed to developing renewable energy and to working with the private sector to increase overall power generation capacity. High levels of sunshine and the falling cost of solar photovoltaic panels make solar power an attractive option.

#### Project

Senergy 2, in Bokhol, northern Senegal, is west Africa's first operational IPP solar PV plant. The plant delivers 20MWp of affordable solar power to the national grid. When a financing

gap threatened to derail the project, GAP was approached for support by the project's lead developer and sponsor, GreenWish Partners. By funding €20m of the construction costs through a short-term loan, GAP ensured that Senergy 2 would become operational: supplying new, clean energy to the people of Senegal at 50% below the cost per kilowatt-hour of the existing energy mix. Having derisked the construction phase, Senergy 2 is now well positioned to attract long-term debt finance.

#### Impact

**"Without energy there can be neither growth nor development...with the Bokhol facility we take a new step and Senegal enters wholeheartedly into a new, clean-energy era."**

Republic of Senegal President Macky Sal



Senergy 2 solar park, Senegal

GAP's involvement reduced financial risk by providing time for long-term debt to be put in place. When Senergy 2 is refinanced, GAP will re-invest its funds in other vital renewable energy initiatives.

Access to reliable power enables people to study, operate businesses and maintain their health. The majority of the plant's 24 long-term jobs were filled locally. Senergy 2 will reduce Senegal's CO<sub>2</sub> emissions by up to 24,000 tonnes per annum.

Senergy 2 is dedicated to maintaining its positive relationship with local communities, committing funds for locally-defined projects during the lifetime of the plant. So far, funding has been used to train 15 young people in solar panel assembly, maintenance and installation, and to establish local power supply and street lighting for nearby communities. It is anticipated that Senergy 2 will act as a benchmark for future solar projects, stimulating private sector interest in Senegal's wider renewable energy sector.

## Contact us

### PIDG

**Philippe Valahu**, PIDG CEO: philippe.valahu@pidg.org

Central Management Office (MDY Legal and Ernst & Young): info@pidg.org

[www.pidg.org](http://www.pidg.org) [in](#) Private Infrastructure Development Group [tw](#) @pidgorg

---

### Technical Assistance Facility (TAF)

Provides grants to support other PIDG companies, e.g. feasibility studies, project set-up costs

**James Leigland**, Technical Adviser: info@pidg.org

[www.pidg.org/what-we-do/companies/taf](http://www.pidg.org/what-we-do/companies/taf)

---

### DevCo

Helps fund advisory services to governments on PPPs, delivered through the World Bank Group's IFC

**Emmanuel Nyirinkindi**, IFC Manager for DevCo: enyirinkindi@ifc.org

[www.ifc.org/ppp](http://www.ifc.org/ppp)

---

### InfraCo Africa

Originates, develops, structures, invests and manages infrastructure projects in sub-Saharan Africa

**Alex Katon**, InfraCo Africa Executive Director: AKaton@infracoafrica.com

[www.infracoafrica.com](http://www.infracoafrica.com) [in](#) InfraCo Africa

---

### InfraCo Asia

Originates, develops, structures, invests and manages infrastructure projects in south and south-east Asia

**Allard Nooy**, InfraCo Asia CEO: Allard.Nooy@infracoasia.com

[www.infracoasia.com](http://www.infracoasia.com) [in](#) InfraCo Asia [tw](#) @InfraCoAsia [tw](#) @AllardMNooy

---

### The Emerging Africa Infrastructure Fund (EAIF)

Provides long-term foreign currency loans in Africa

**Emilio Cattaneo**, EAIF Executive Director: emilio.cattaneo@eaif.com

[www.eaif.com](http://www.eaif.com)

---

### GuarantCo

Provides local currency guarantees in Africa, south and south-east Asia and other emerging economies

**Lasitha Perera**, GuarantCo CEO: Lasitha.Perera@guarantco.com

[www.guarantco.com](http://www.guarantco.com)

---

### Green Africa Power (GAP)

Provides financing and support for renewable projects in Africa

**Peter Hutchinson**, GAP Executive Director: peter.hutchinson@greenafricapower.com

[www.greenafricapower.com](http://www.greenafricapower.com)

---

## Keep up to date with PIDG

Sign up for the **newsletter** at [www.pidg.org](http://www.pidg.org) or email [communications@pidg.org](mailto:communications@pidg.org)

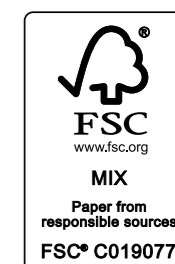
All pictures © PIDG and companies except where otherwise indicated.

Every attempt has been made to clear copyright. Please contact PIDG should there be any inadvertent omissions.

The PIDG Annual Report 2016 was produced by the central management office MDY Legal and EY.

Many thanks to all who contributed.

Print by PWPFS, design and illustration by D.R. ink, [www.d-r-ink.com](http://www.d-r-ink.com).






Private  
Infrastructure  
Development  
Group



[www.pidg.org](http://www.pidg.org)

 Private Infrastructure Development Group

 @pidgorg