



Infrastructure  
transforming economies  
changing lives

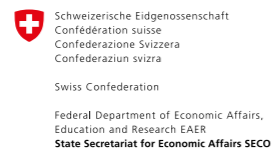
FRONT COVER: Zambia's increasing demand for electricity and the impact of droughts on hydropower production led to a 560MW supply deficit, resulting in frequent power outages and reduced supply to the mining industry. PIDG has supported projects in Zambia focused on improving energy access, diversifying energy mix and delivering reliable, affordable and clean energy.



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## PIDG Annual Review 2017

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





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

\$ are US dollars throughout and all figures are as at 31 December 2017

OPPOSITE: InfraCo Africa's support for Redavia's innovative solar minigrids installed in shipping containers means Shitunguru village in western Tanzania has access to clean, reliable power for the first time

Our mission is to mobilise private investment with public funds to help developing countries provide infrastructure vital to boosting their economic growth and combating poverty.



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PIDG **overview**

## About PIDG

Since 2002, PIDG has committed \$3.2bn to infrastructure projects, alongside which the private sector has invested \$22.9bn

The Private Infrastructure Development Group's mission is to mobilise private investment with public funds to help developing countries provide infrastructure vital to boosting their economic growth and combating poverty.

For every \$1 of PIDG member funding, projects we have supported have mobilised \$23, of which \$17 comes from private sector financing.






We use that money to fill market gaps in sub-Saharan Africa and south and south-east Asia, offering financial solutions to infrastructure development in the most challenging environments.

We were 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.

Our specialist companies work along the infrastructure development cycle and across the capital structure.

Through them we bring financial, practical and strategic leadership and invest where others cannot or will not.

## PIDG in numbers

2017		2002 – 2017
<p><b>20</b> projects reached financial close  <b>7</b> of these were in Fragile and Conflict-Affected States*</p>		<p><b>170</b> projects reached financial close  <b>82</b> of these were in Fragile and Conflict-Affected States*</p>
<p><b>\$2.5bn</b> mobilised from Private Sector Investors and Development Finance Institutions</p>		<p><b>\$33.7bn</b> mobilised from Private Sector Investors and Development Finance Institutions**</p>
<p><b>9.2 million</b> people with access to new or improved infrastructure</p>		<p><b>230.9 million</b> people with access to new or improved infrastructure</p>
<p><b>10,335</b> long-term jobs created  <b>6,235</b> short-term jobs created</p>		<p><b>240,373</b> long-term jobs created  <b>49,194</b> short-term jobs created</p>
<p><b>10</b> projects became commercially operational</p>		<p><b>95</b> projects became commercially operational*</p>

\* Where multiple PIDG companies are involved in the same projects, PIDG nets these off to avoid double-counting

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

## PIDG in action

### Delivering clean power to remote communities

Energy made up 52% of PIDG company investments in 2017, reflecting the impact that access to reliable power has on home life and business opportunities.

While investment in large-scale energy supply is vital, providing power essential for national grid stability, many remote communities need a more immediate and localised solution.

PIDG company InfraCo Africa, is working at the leading edge of off-grid power, committing \$5m to support private sector partner Redavia, to scale up its solar business in rural Tanzania.

The company can now deploy sustainable solar power in the remote communities of Shitunguru and Isenzanya and to major industries in the country.

Teacher **Pilly Mwashiyombo** said: "Power helps when I need light for preparing study materials for my next lessons. The availability of light has also improved the kids' performance."

And it is not just the school which has been helped. Access to reliable off-grid power has had a positive impact on employment, health and security.

Redavia addresses this need by deploying containerised solar PV panels, which have an installed capacity of 89KW and can be connected to a mini-grid in just six days. Customers pay for what they use via mobile banking and battery storage enables them to access clean power 24/7.

**Elly Mwasenga**, a former farmer who had the opportunity to become a welder once the solar panels were installed in his home village, Isenzanya, said: "Truly this electricity is changing lives."



**Christopher Mwamlima** (21) is an entrepreneur in Shitunguru, who runs a small cinema where he shows African, Indian, Chinese and Korean films. Reliable electricity inspired Christopher to return to the village from Tanzania's capital Dar es Salaam to develop his business ideas.



**Pilly Mwashiyombo** (37) teaches English in Nambinzo Secondary School, Shitunguru, where she has seen her pupils top the regional attainment league since reliable power was introduced. Before, it was dark at 6pm and Pilly had to use unreliable, expensive diesel generators for light to prepare lessons. She now teaches night classes too.



**Roida Kajiba** (52) is a public health worker and nurse in Shitunguru. With power available, women are increasingly going to the dispensary to give birth to their children. They no longer worry about a lack of reliable lighting for night-time deliveries and are more relaxed.



**Musa Haonga** (27) began work as a security guard for Redavia, patrolling the solar farm to prevent thefts. He was fascinated by the off-grid solar power system and grew his skills as an electrician, before becoming assistant technician. Musa now works with the head technician to connect new customers and maintain the solar farm in Shitunguru.

## A message from PIDG's Chair

### Scaling up our unique approach to deliver greater impact



**Andrew Bainbridge**

I am honoured and delighted to be appointed Chair of PIDG, an organisation that has been fundamental to changing people's lives. We are a catalyst for changing how frontier markets evolve. Last year we created more than 10,000 permanent jobs and improved access to infrastructure for more than 9 million people.

PIDG is unique. We identify and address market failures and accelerate development impact in the world's lowest-income and most fragile countries. We mobilise private sector infrastructure investment in frontier and emerging markets across Africa and Asia in a way that no-one else does.

Over the last year we have made significant strides towards delivering a new governance structure. One which embeds collaborative working across our organisation, creating a single board and committee structure which unifies our organisation and oversees development and investment decisions across the Group. With a unified Executive Committee, this new structure creates better alignment, greater impact and cost efficiencies to improve value for money for our owners.

Our pioneering approach is outstanding. We change lives.

In 2017, we committed \$487m to projects, facilitating \$2.5bn of incremental investment, benefiting more than 9 million people in some of the world's lowest-income countries. For every \$1 of public funding invested since 2002, \$17 of private sector funding has been mobilised by projects we have supported. This is something we are hugely proud of. We have forged innovative partnerships with private sector investors, including a \$110m commitment from Allianz, a leading European insurer, to PIDG company, EAIF. This first-of-a-kind long-term commitment reflects another milestone in our work to mobilise new sources of private sector investment into infrastructure projects.

PIDG will advance gender equality and women's empowerment. We will do this through our work in low-income countries and at a corporate level, recognising that change must happen at every level of our organisation. World Economic Forum research says that it will take until

**Our pioneering approach is outstanding. We change lives**

2133 to achieve gender parity. We believe that this is unacceptable. We will set targets for gender equality at a corporate and project level over the coming year. We will measure ourselves on this and we expect to be held to account.

We have now begun the next stage of PIDG's evolution. All of these changes are additive to building a sustainable business over time. Working with our owners and private sector partners, we will continue to innovate. That is our mandate. As a consequence of the commitment of our owners, our people and our other stakeholders, all of whom I am very grateful to, we are now better organised to deliver against our mandate than we have ever been.



**Andrew Bainbridge**

Chair

Private Infrastructure Development Group

## A message from PIDG's CEO

### PIDG plays a unique role in delivering innovative infrastructure solutions



Philippe Valahu

Our strength relies on our ability to adapt and continue to fill market gaps as they evolve, and to create development impact. We operate at the frontier, where others cannot or will not.

Our projects are transformative, they drive change and improve people's daily lives. However, this alone is not enough, they must also achieve scale and replicability to deliver a demonstration effect not just in-country but across other countries as well. They must also be delivered cost effectively while achieving a high developmental impact, thereby demonstrating to our owners and private sector partners the good business sense it makes to invest in the regions in which we operate.

While our structure may be changing, our ground-breaking approach continues. What sets us apart is our ability to move swiftly to take advantage of new technologies and develop new products that are suited to the local conditions.

In 2017, we achieved many firsts. In response to Mali's power deficit, PIDG companies provided innovative finance to support the first private sector solar power project. The 50MW Akuo Kita solar farm will be the largest of its kind in West Africa. Power generated at the site will be fed into the national grid and will serve up to 730,000 people. This will help to reduce reliance on the environmentally damaging burning of wood and charcoal for power, which currently provides nearly 80% of energy supplies.

In Rwanda, PIDG companies helped finance the Kigali bulk water treatment plant which will provide a reliable supply of clean water for up to 500,000 people. Based at Kanzenze, it will produce 40,000m<sup>3</sup> of water per day, the equivalent to one third of Kigali's total supply. As such, it is one of the first projects of its kind to be developed using a public-private partnership model in sub-Saharan Africa.

PIDG helped establish InfraCredit in Nigeria with the Nigerian Sovereign Investment Authority to overcome some of the challenges facing infrastructure finance. InfraCredit now provides local currency guarantees to enhance the credit quality of infrastructure bonds, with the aim of attracting pension and insurance fund investors in Nigeria. This will

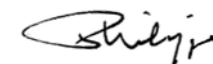
Our projects are transformative, they drive change and improve people's daily lives

also allow InfraCredit to open up infrastructure bonds as an asset class to pension funds, insurance companies and other investors. Plans are already underway to replicate the model in other countries, including Pakistan.

Our PIDG companies operate collaboratively across the capital structure and along all stages of the project cycle, from upstream project preparation to the provision of equity and debt instruments. Together, we provide holistic and innovative infrastructure finance solutions. We are building on strong foundations to drive the next stage of PIDG's evolution, allowing us to do more, better.

Looking to 2018 and beyond, we will continue to lead the way in opening domestic capital markets to mobilise local pension funds, insurance companies and other investors. We will drive innovative investments, pushing the boundaries of what is possible for infrastructure finance in emerging and frontier markets. We have the funding and capability to catalyse greater private sector participation and deliver investor-ready, life changing infrastructure in the parts of the world that need it the most.

I look forward to 2018 and beyond with confidence and a sense of excitement of what we can achieve.



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



In 2017, PIDG committed \$487m to projects, facilitating \$2.5bn of additional investment, benefiting more than 9 million people in some of the world's lowest-income countries.

It achieved many firsts and has made significant strides towards delivering a new governance structure, while continuing to deliver new infrastructure that supports economic development and poverty reduction where it is most needed.

While its structure may be changing, its ground breaking approach continues. Building on strong foundations to drive the next stage of its evolution, PIDG will do more, better.













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PIDG **2017**

## PIDG member and other donor funding

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

	 UK aid	 DGIS	 FMO	 Sida	 WB-IFC	 SECO	 DFAT	 KfW	 MFA	 ADA-BMF	Other*	Total
<b>2017</b>												
<b>PIDG</b>	70.2	0.5	-	0.4	0.4	15.4	7.9	-	-	-	-	94.8
<b>Cumulative (2002-2017)</b>												
<b>TAF</b>	51.7	3.5	-	0.2	7.9	13.0	-	-	-	0.3	3.2	79.8
<b>DevCo</b>	63.5	5.5	-	3.3	11.7	-	-	-	-	7.0	-	91.0
<b>InfraCo Africa Development</b>	119.5	35.5	-	-	-	27.5	-	-	-	6.4	-	188.9
<b>InfraCo Africa Investment</b>	0.1	-	-	-	-	-	-	-	-	-	-	0.1
<b>InfraCo Asia Development</b>	91.0	-	-	-	-	14.0	23.0	-	-	-	-	128.0
<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	-	39.8	5.9	-	-	-	-	309.6
<b>ICF Debt Pool</b>	-	-	-	-	-	-	-	7.8	-	-	-	7.8
<b>GAP**</b>	28.0	-	-	-	-	-	-	-	16.7	-	-	44.7
<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	988.5	71.6	34.0	38.6	19.9	116.6	28.9	7.8	17.2	13.7	3.2	1,340.0
General admin	11.6	4.5	-	4.0	4.0	4.7	2.4	2.2	0.8	1.4	1.9	37.5
<b>Totals</b>	<b>1,000.1</b>	<b>76.1</b>	<b>34.0</b>	<b>42.6</b>	<b>23.9</b>	<b>121.3</b>	<b>31.3</b>	<b>10.0</b>	<b>18.0</b>	<b>15.1</b>	<b>5.1</b>	<b>1,377.5</b>

\* Includes Irish Aid, ADB and AECID

\*\* UK aid includes disbursements from BEIS

## Other sources of funding







In addition to the \$1,377.5m of cumulative donor disbursements made to date, our companies draw on a range of other sources of capital to deliver our strategy and targets. Our companies also have access to other funding sources, such as debt financing, contingent capital and UK Government-backed promissory notes. The total of all funding disbursed or available to us is now cumulatively in excess of \$2.4bn.

During our 15 years of operations, our owners have benefited from the flexibility to allocate funding

across all our activities, or to particular PIDG companies or geographies enabling them to fund their priority areas. Our agile structure also enables PIDG companies to access other sources of capital, including private sector funds, supporting our drive to mobilise greater amounts of funding.

As we deliver the next stage of PIDG's development, we are focused on broadening and deepening our funding. We look forward to working with new public and private sector partners, across the capital structure.

### Other sources of funding (\$m) as at 31 December 2017

	 UK aid	 FMO	 DFAT	 KfW	 Standard Bank	 Standard Chartered	Total
<b>InfraCo Africa Development</b>	37.4	-	-	-	-	-	37.4
<b>InfraCo Asia Development</b>	-	-	2.5	-	-	-	2.5
<b>InfraCo Asia Investment</b>	15.9	-	-	-	-	-	15.9
<b>EAIF</b>	-	55.0	-	205.1	25.0	25.0	310.1
<b>GuarantCo</b>	54.1	30.0	-	-	-	-	84.1
<b>ICF Debt Pool</b>	-	-	-	516.3	-	-	516.3
<b>GAP</b>	17.5	-	-	-	-	-	17.5
<b>Totals</b>	<b>124.9</b>	<b>85.0</b>	<b>2.5</b>	<b>721.4</b>	<b>25.0</b>	<b>25.0</b>	<b>983.8</b>

#### EAIF

Access to committed loans as at 31 December 2017 of:

- \$25m and €25m (revolving facilities maturing in 2021) from FMO
- \$85m (maturing 2028), and €100m (maturing 2024-28) from KfW
- \$25m (revolving facility maturing in 2018) from Standard Bank South Africa
- \$25m (revolving facility maturing in 2019) from Standard Chartered

#### GuarantCo

- Access to £40m callable capital arrangement with UK aid allowing GuarantCo under certain circumstances, to draw further capital
- Access to \$30m stand-by facility with FMO which can be triggered as debt instrument after the callable capital with UK aid is fully drawn

#### ICF Debt Pool

As at 31 December 2017 €431m was disbursed (net of repayments) from an original commitment of €500m

In addition to the funding disbursed by UK aid, UK Government promissory notes lodged with the Bank of England were issued to the PIDG Trust for the PIDG companies (Green Africa Power, InfraCo Africa Development and InfraCo Asia Investment) during the year. These instruments allow companies to draw down cash disbursements on demand and as at 31 December 2017 the amount of undisbursed cash under issued promissory notes stood at \$70.8m (£52.4m)

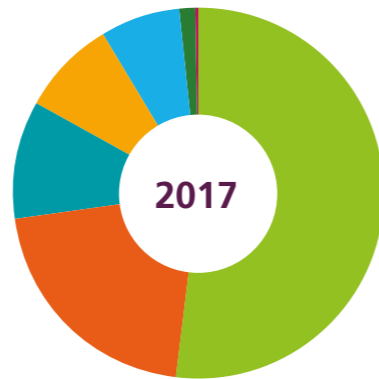
Of \$983.8m of other sources of funding, \$375.8m is outstanding and available for use

## PIDG commitments by sector

### PIDG commitments by sector: 2017 (\$m)

Energy	52.0%	253.2
Transport	21.0%	102.4
Multisector	10.3%	50.0
Telecoms	8.2%	40.1
Water, Sewerage and Sanitation	7.1%	34.4
Agri-infrastructure	1.3%	6.2
Capital market development	0.1%	0.3
Urban development / infrastructure	0.0%	0.2
Housing	0.0%	0.1
<b>62 projects</b>		<b>486.9</b>

(including 22 TAF grants totalling \$4.7m)



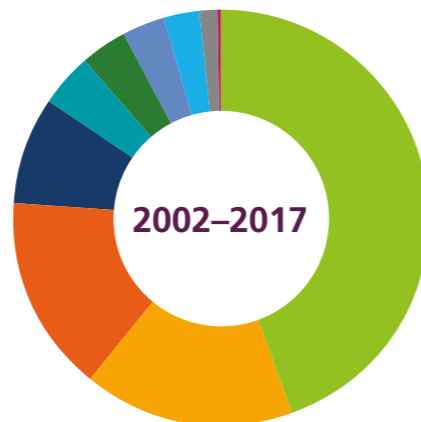
### Of the commitments made by PIDG to new projects in 2017:

<b>36%</b>	<b>45%</b>
were to projects in Fragile and Conflict-Affected States	were to projects in Least Developed or Other Low Income Countries (OLIC) (DAC I/II)

### PIDG commitments by sector: cumulative (\$m)

Energy	44.5%	1,412.6
Telecoms	16.4%	520.4
Transport	15.3%	486.9
Industrial infrastructure	8.3%	263.9
Multisector	4.2%	133.0
Agri-infrastructure	3.7%	117.6
Housing	3.1%	98.6
Water, Sewerage and Sanitation	2.8%	89.4
Mining	1.5%	46.1
Capital market development	0.1%	2.6
Urban development / infrastructure	0.0%	1.3
<b>403 projects</b>		<b>3,172.4</b>

(including 144 TAF grants, totalling \$57.5m)

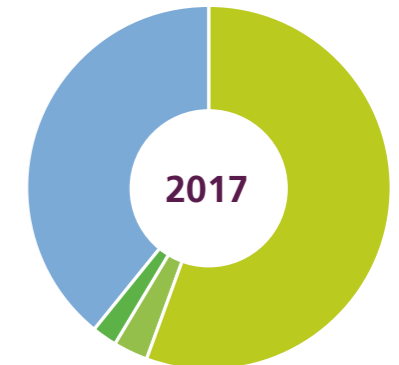


### Of the cumulative commitments made by PIDG to projects since 2002:

<b>50%</b>	<b>48%</b>
were to projects in Fragile and Conflict-Affected States	were to projects in Least Developed or Other Low Income Countries (OLIC) (DAC I/II)

### PIDG commitments by sector: 2017 (\$m) – Energy

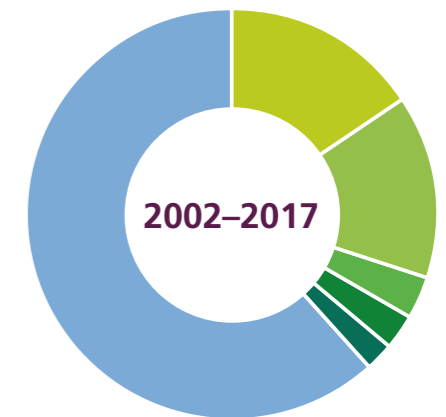
<b>Energy</b>		<b>253.2</b>
Of which:		
<b>Renewable energy:</b>	<b>61.1%</b>	<b>154.8</b>
Solar	55.7%	141.0
Hydropower	3.0%	7.6
Wind	2.4%	6.1
Geothermal	0.0%	0.1
Biomass	-	-
<b>Non-renewable energy</b>	<b>38.9%</b>	<b>98.4</b>



Energy represents the largest proportion of PIDG's commitments by sector. With an increasing focus on renewable energy, PIDG is delivering a positive impact on people's lives.

### PIDG commitments by sector: cumulative (\$m) – Energy

<b>Energy</b>		<b>1,412.6</b>
Of which:		
<b>Renewable energy:</b>	<b>38.4%</b>	<b>542.0</b>
Solar	15.6%	220.0
Hydropower	14.4%	202.8
Wind	3.5%	49.8
Biomass	2.8%	39.3
Geothermal	2.1%	30.1
<b>Non-renewable energy</b>	<b>61.6%</b>	<b>870.6</b>



Last year, PIDG's commitments supported multiple solar projects focused on delivering mini grid and off-grid electricity to villages and people who might otherwise have limited or no access to energy.

Infrastructure is fundamental to progress. PIDG works across the spectrum of the infrastructure development process based on local market needs, catalysing private sector participation and creating development impact.

Whether it's the power that provides the ability to use an electric stove that stops people from using charcoal, or reduces the problems of people dying from carbon monoxide poisoning, whether it's the power that gives light that enables people to read and educate themselves, or the power that gives access to the internet and allows communities to school their children.

What PIDG does matters – PIDG changes lives.



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## PIDG **development impact**










## Measuring PIDG's development impact

PIDG monitors a range of indicators to understand how its investments are improving people's lives. Its 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 about what works and monitor its achievements.

During 2017, PIDG undertook a range of studies and evaluations to provide insight to the impacts

of its investments. These included a study on the affordability of infrastructure to identify how PIDG can deliver infrastructure services that reach the poor and underserved, and how PIDG can best measure and monitor this. A study was commissioned to explore the effects which PIDG's investments have had on the wider capital markets and a study to model and estimate the effects of energy infrastructure on employment. In addition, baseline studies were undertaken for several individual projects; capturing the situation before PIDG's investment and monitoring changes over time to enable PIDG to understand the ways in which its projects affect people's lives.

## Key development result indicators

	Indicators	How do we measure this?
What do we do	 <b>Finance</b>	<ul style="list-style-type: none"> <li>• PIDG company investments</li> <li>• Technical assistance funding</li> </ul>
	 <b>Additional support</b>	<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 or where it is the catalyst</li> <li>• Better design and efficiency</li> <li>• Improved regulatory and policy environment</li> </ul>
What then happens?	 <b>Investment mobilised</b>	<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>
	 <b>Viable infrastructure</b>	<ul style="list-style-type: none"> <li>• Projects reaching financial close</li> <li>• Operational projects</li> </ul>
	 <b>Access to infrastructure</b>	<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>
What are the outcomes?	 <b>Jobs</b>	<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>
	 <b>Supply chain</b>	<ul style="list-style-type: none"> <li>• Description of value and opportunities generated for local businesses</li> </ul>
	 <b>Wider economic impact</b>	<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>
	 <b>Demonstration effect</b>	<ul style="list-style-type: none"> <li>• Capital mobilisation through greater private participation in infrastructure</li> </ul>



## PIDG companies played a highly additional role in the financing of Mali's first solar power plant



## Additional support

**PIDG companies are additional: participating where private investors would otherwise not have engaged, or where participation increases the development impact and sustainability of infrastructure**

PIDG uses public funds to mobilise private capital for infrastructure development. To prevent 'crowding out' the private sector in doing so, it is critical that the specific inputs and services provided by PIDG complement rather than substitute those already in the market.

There are financial and non-financial ways in which the participation of PIDG is additional to the private sector and PIDG and its companies articulate and report on them.

Often PIDG's additionality is demonstrated through innovative financing structures and an appetite for risk and long-term commitment that is above the market. PIDG's intervention must be in response to specific market failures and lead to a more correct pricing of risk over time, rather than undercutting a functioning market.

### Leading on innovative projects at the frontier

PIDG companies played a highly additional role in the financing of the Akuo Kita solar power plant in Mali – a least developed and conflict-affected country with no existing precedent for a utility-scale solar PV initiative. **EAIF** acted as the mandated lead arranger of a debt package that no commercial banks were willing to provide due to country risk and was the sole provider of a long-tenor mezzanine loan, which is essential to ensuring that electricity tariffs for the people of Mali remain low. Through the provision of a debt service reserve account guarantee, **GuarantCo** introduced an innovative instrument to ease the developer's debt service obligations, which would also allow local banks and private sector equity investors to participate in the transaction without having to provide cash collateral as would otherwise be the case in Mali.

As mandated lead arranger for the debt to the Kigali Bulk Water project in Rwanda, **EAIF** managed to ensure its financial viability and accommodate tight project economics by structuring the debt repayment over 18 years and securing \$6.3m in viability gap funding from **TAF**.

OPPOSITE: A digital representation of the Akuo Kita solar power plant, currently under construction in Mali



## Investment mobilised

### For every \$1 of PIDG member funding, projects PIDG has supported have mobilised \$23, of which \$17 comes from private sector financing

A key part of PIDG's mission is to mobilise private sector funding; PIDG companies leverage donor funding, blending it with private sector investment (PSI) from local, regional and international sources, and debt or equity from Development Finance Institutions (DFIs).

Since 2002, for every dollar of PIDG member funding, projects PIDG has supported have mobilised \$23, of which \$17 comes from the private sector. This method also accounts for funds reinvested and raised by PIDG companies, and is compared to the 2017 mobilisation per dollar of PIDG commitments. PIDG's focus on frontier countries is evident from the fact that 53% of total funding mobilised was in DAC I and II countries and 52% in Fragile and Conflict-Affected States.

There is a need to mobilise trillions of dollars of private sector money alongside the billions invested by public sector institutions. Donors and other stakeholders need a clear picture of how Private Sector Investment (PSI) is mobilised.

To avoid double-counting, the amounts raised on each transaction need to be attributed to the DFIs involved. The OECD has been developing a methodology for this and PIDG provides the relevant numbers to them. When the methodology

has been extended to all funding instruments, and agreed with other public sector funders, PIDG will report in line with it.

During 2017, PIDG-supported projects mobilised private sector funding in various ways, including:

- EAIF participated in a B loan on Central Termica de Ressano Garcia (CTRG) which raised PSI of \$79m in equity and debt, while its participation in a bond issue for Helios Towers Africa led to \$540m of investment from the private sector.
- GuarantCo provided guarantees to projects which will raise \$641m of PSI, including \$301m from domestic sources.
- DevCo's work to enable Myanmar's first internationally competitively-tendered IPP for a combined-cycle power plant in Myingyan led to a project raising \$325m in private sector debt and equity.
- InfraCo Asia sold its interests in the Gul Ahmed and Metro Wind Power projects in Pakistan to Daelim Energy, a Korean-based private sector company.



### Cumulative commitments mobilised by PIDG activities, by sector (\$m)

	Total Investment Commitments	Private Sector Investment	DFI Investment	Grant**
Agri-infrastructure	552.6	291.0	249.9	11.7
Energy*	13,458.1	8,325.1	5,074.9	58.1
Housing	367.2	277.2	90.0	-
Industrial infrastructure	2,522.9	1,504.7	1,018.2	-
Mining	655.0	346.7	308.3	-
Multisector	509.2	263.0	241.2	5.0
Telecoms	9,929.1	8,000.0	1,929.1	-
Transport	5,134.7	3,493.6	1,641.1	-
Urban development / infrastructure	4.8	4.8	-	-
Water, Sewerage and Sanitation	545.3	378.0	160.8	6.5
<b>Total</b>	<b>33,678.9</b>	<b>22,884.1</b>	<b>10,713.5</b>	<b>81.3</b>

Notes

\* 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

\*\* Grants are included in TICs for projects funded by DevCo, InfraCo Africa and InfraCo Asia, as these are a key part of PIDG's efforts to make the projects viable

### Mobilisation of funding by PIDG-supported projects reaching financial close in 2017 (\$m)

PIDG commitments to projects reaching financial close in 2017* **	451.7
DFI commitments made alongside PIDG to projects reaching financial close	684.4
PSI commitments to all projects reaching financial close	1,605.4
<i>Total Investment Commitments recognised in PIDG results</i>	<i>2,496.5</i>
Of which: Total PSI commitments recognised in PIDG results	1,605.4

#### Comparison:

Amount of PSI mobilised in 2017 for every \$1 of member funding (Total PSI / Total Member Disbursements in 2017)	<b>16.9</b>
Amount of PSI mobilised in 2017 for every \$1 of PIDG commitments (Total PSI / Total PIDG commitments)	<b>3.6</b>

Notes

\* This includes \$242m of guarantees from GuarantCo: \$13.8m of which was a guarantee to a DFI and \$228.5m was in guarantees to PSI

\*\* This figure excludes \$16.8m of grants from DevCo and TAF that are not included in the mobilisation figures

### Percentage of Total Investment Commitments in Fragile and Conflict-Affected States by sector (cumulative)

Agri-infrastructure	87%
Energy	41%
Housing	7%
Industrial infrastructure	85%
Mining	0%
Multisector	41%
Telecoms	70%
Transport	41%
Urban development / infrastructure	0%
Water, Sewerage and Sanitation	10%

### Percentage of Total Investment Commitments in Least Developed and Other Low Income Countries (LDC & OLIC) (DAC I/II) by sector (cumulative)

Agri-infrastructure	88%
Energy	39%
Housing	0%
Industrial infrastructure	43%
Mining	100%
Multisector	54%
Telecoms	68%
Transport	63%
Urban development / infrastructure	100%
Water, Sewerage and Sanitation	13%





## Access to infrastructure and affordability

### 10 projects become operational in 2017, improving access to infrastructure for an estimated 9.2 million people

PIDG companies collect data on expected numbers of people gaining access before a deal is closed, after a deal is closed, and once a project becomes operational. As more infrastructure becomes operational, so the number of people benefiting increases. These figures often rely on estimates based on conversion methodologies, for example calculating the number of people accessing improved energy services as a result of a grid-tied power plant.

#### Delivering affordable infrastructure

This year PIDG commissioned a review of the affordability of infrastructure for poor and low-income people. The review found that PIDG is capable of structuring projects that serve the poor as end users, and in many cases, may be underestimating the effects on access for poor people. In the coming year PIDG will build up data on infrastructure access rates and constraints for lower income populations. Ensuring least cost solutions and broadening project origination to find more opportunities to serve those most in need will also be priorities for PIDG in the coming year.

#### Off-grid energy: Standard Microgrid

Beyond the grid infrastructure is a small but rapidly growing part of the PIDG portfolio. In 2017 **InfraCo Africa** partnered with Standard Microgrid (SMG), to help expand its distributed energy businesses focused on rural electrification. SMG provides low cost off-grid electricity subscriptions ranging between \$5 and \$30 per month through solar microgrids. With InfraCo Africa support, SMG aims to put in place up to 150 microgrids in Zambia, connecting more than 110,000 people and contributing to the country's plans to raise rural electrification from 4% in 2014 to 51% by 2030.

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

	Predicted access (cumulative)
Agri-infrastructure	235,724
Energy	126,684,053
Housing	46,731
Industrial infrastructure	16,790,423
Mining	27,500
Multisector	1,311,889
Telecoms	68,166,971
Transport	15,022,517
Urban development / infrastructure	167,547
Water, Sewerage and Sanitation	2,440,364
<b>Total</b>	<b>230,893,719</b>

OPPOSITE: A primary school in Mugurameno, Zambia, powered by the InfraCo Africa-supported Standard MicroGrid



## Helping raise rural electrification in Zambia from 4% in 2014 to 51% by 2030





## Jobs

### PIDG projects reaching financial close in 2017 will employ 16,570 people directly and provide infrastructure essential for wider job creation

Economic growth and job creation are essential to alleviating poverty and improving lives. More reliable, accessible and affordable infrastructure can provide a major boost to businesses, allowing them to grow and create more and better jobs.

PIDG measures impact on employment by recording the direct jobs created in the construction and operation of infrastructure. The 20 PIDG-supported projects which reached financial close in 2017 expect to create 6,235 direct short-term construction jobs and 10,335 long-term jobs in the operation of the infrastructure.

PIDG supported projects also create jobs indirectly through supply chains, and many facilitate job creation in local economies by providing essential inputs for business.

#### Projected cumulative employment directly generated by PIDG-supported projects

	Short-term employment	Long-term employment
Agri-Infrastructure	4,352	8,077
Energy	25,818	5,500
Housing	1,630	70
Industrial Infrastructure	7,570	3,658
Mining	1,000	1,425
Multisector	175	1,160
Telecoms	2,665	- 2,253
Transport	5,211	221,372
Urban Development / Infrastructure	20	20
Water, Sewerage and Sanitation	753	1,344
<b>Total</b>	<b>49,194</b>	<b>240,373</b>

OPPOSITE: Senergy 2, Senegal

#### Measuring the job creation effect of investment in power

PIDG assessed the economic and job creation value of two energy generation projects in Senegal. Senergy 2, a 20MW solar plant, and Tobene, a 96MW thermal power plant, are a crucial part of PIDG's work to expand access to infrastructure and support economic development in Africa and Asia. Combined, the two projects will lower the cost of electricity for consumers by an estimated 6%. Lower costs allow firms to use more electricity and increase production. It is estimated this will foster economic growth worth more than \$400m, creating over 68,000 jobs nationally.

Gathering reliable data in nascent markets is challenging, and so PIDG has to rely on careful assumptions and opts for conservative figures. Nonetheless, the findings give an important indication of the scale of impact that power infrastructure has.



PIDG investments have expanded the effective capacity of Senegal's national grid by 15%



Lowering electricity costs in Senegal by an estimated 6% will help foster economic growth – creating over 68,000 jobs nationally





## Supply chain

### **PIDG companies can build local businesses and supplier networks into the construction and maintenance of infrastructure through locally sourced labour, goods and services**

In addition to the benefits of the resulting infrastructure itself, PIDG-supported projects can generate significant development impact in host communities and countries by creating local employment opportunities, promoting local enterprises, and developing capacity and resilience in local supply chains.

PIDG companies report on the providers, nature and value of their main supplies of goods and services. 'Local content', including the supply of core inputs such as fuel and labour as well as more specialised technical, operations and maintenance services, can have significant economic impact. International suppliers might bring with them advanced equipment, technical expertise, competence and quality standards. This can contribute to local enterprise and workforce development through capacity building and technology and skills transfer.

#### **Sustainable supply chains: Gabon railways**

PIDG-supported projects may also contribute to the development of supply chains more directly. Through its guarantee of the construction and upgrading of railway infrastructure servicing Gabon Special Economic Zone (GSEZ), **GuarantCo** is significantly improving transport logistics in the supply chain for timber. This will help to convert the local supply of timber into more processed, higher value products, encouraging value addition in the nascent local and regional wood industry.

GSEZ has been able to leverage its position along the supply chain to promote sustainable forest management and combat deforestation. It is committed to procuring timber on a sustainable basis across the entire supply chain process that meets the strict standards of the international certification companies, including the Forest Stewardship Council (FSC) and Bureau Veritas.



## Wider economic impact

### **Reliable and accessible infrastructure underpins a well-functioning society – PIDG infrastructure can boost fiscal revenues, enable business growth and improve investment flows in frontier markets**

In addition to the specific impacts identified in this review, PIDG projects may have significant effects on the wider economy. These might be by enhancing local capacity among developers and suppliers, through the contributions made to local and national governments in the form of taxes and royalties, or by creating fundamental changes in capital markets. PIDG companies enhance local capacity in a range of ways. DevCo has a direct impact on the ability of governments to negotiate and implement public-private partnerships (PPPs). That in turn has an impact on projects in the immediacy, but also gives governments the expertise and confidence to enter into appropriate agreements in the future. The InfraCos have a close relationship with developers and work with them to implement high standards in environmental, social and governance issues. This can have an important wider economic impact as it can lead to an expectation of higher standards by all.

PIDG companies report on their expected and actual fiscal impact where possible. The fiscal impact for 2017 was \$238m and for the period 2002-2017 it was \$7.3bn.

#### **Unlocking local funding: InfraCredit**

For some projects these wider economic impacts, which can be difficult to quantify and are reported in narrative form, are the most significant. **GuarantCo** demonstrated the potential for such meaningful impact on capital markets and the growth of local businesses through its structuring of InfraCredit, an innovative credit enhancement vehicle enabling Nigerian pension funds to mobilise local currency savings into the financing of domestic infrastructure. By introducing infrastructure as a new class of high quality long-term assets to institutional investors such as pension and insurance funds, InfraCredit will free up banks to lend to new greenfield projects while encouraging the diversification of pension fund portfolios away from government securities. Subsequent to year-end, InfraCredit supported an investment bond issued by power developer Viathan which raised \$22m from pension funds.

**TAF** will build on its partnership with **GuarantCo** and the success of InfraCredit to support credit enhancement facilities in selected countries, including Pakistan.

PIDG is undertaking an evaluation to explore how InfraCredit is changing the perceptions of Nigerian pension funds and other investors towards investment into private infrastructure and this will provide insight to support replication elsewhere.



## Demonstration effect

### PIDG works at the frontier to demonstrate the viability of investing in infrastructure in the places that need it most

PIDG helps to overcome financial, technical or environmental challenges, creating blueprints which can be replicated by the private sector, including:

- introducing new technologies, processes, or financial instruments in nascent markets
- providing capacity building for local partners to improve regulatory environments
- financing projects during the riskier early stages of construction and operation
- sharing risk with private sector investors while they gain knowledge of a market, enabling them to invest in future deals without PIDG support.

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 focus on new challenges at the frontier.

#### Demonstration effects in a growing hydropower market

Lower Solu is an 82MW run-of-river hydropower plant in north-eastern Nepal. The project reached financial close in December 2014, making it the first internationally funded hydropower plant to reach financial close in the country in nearly two decades. An in-depth case study of the project found that local and international banks had become more comfortable with large scale hydropower projects in Nepal as a result of Lower Solu. The study also identified growth in the pipeline of infrastructure projects that can be guaranteed and, crucially, an increase in the availability of local currency funding for infrastructure projects.

Knowledge of ESG standards and good procurement policy also improved, although more work is needed to translate this into lasting improvements in practice.



Lower Solu, Solukhumbu District, Nepal



## PIDG and the Global Goals for Sustainable Development

### Sustainable, resilient and accessible infrastructure is a prerequisite for achieving the Sustainable Development Goals (SDGs)

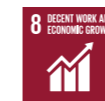
PIDG projects that reached financial close in 2017 will:



Produce 40m litres of water per day once operational



Improve access to energy for 6.0 million people



Create jobs for 16,570 people



Open up access to infrastructure for 9.2 million people



Mobilise more than \$1.6bn of private sector capital



All projects are also expected to address:



No poverty is PIDG's goal. PIDG contributes to this directly through service provision and employment, and indirectly by providing the infrastructure needed for inclusive economic development



4.1 million women and girls are expected to have access to new and improved infrastructure.



45% of PIDG's projects reaching financial close contributed to climate change mitigation or adaptation

The SDGs will also be central to PIDG's renewed strategy, to be launched in 2018

#### Mapping PIDG company portfolios on the SDGs

##### The Emerging Africa Infrastructure Fund

mapped its entire portfolio against the SDGs for the first time in 2017. It expects to extend and regularly update portfolio mapping as SDG data improves and country investment plans are developed by local governments.

Sustainable Development Goal	Percentage of the EAIF portfolio to which the SDG applies
	6%
	3%
	59%
	100%
	100%
	3%
	25%



## Climate change

**In 2017, 45% of PIDG's projects reaching financial close contributed to climate change mitigation or adaptation**

The changing climate is a significant risk for vulnerable communities in the countries in which we work. PIDG must assess how its activities can help to mitigate climate change as well as identifying how those activities are helping communities to adapt. In addition, the infrastructure must itself be resilient to climate change.

Where PIDG is developing renewable power plants as part of a country's energy system, these projects have a direct impact on the mitigation of climate change. The Akuo Kita solar plant in Mali reached financial close with EAF support in 2017 and is expected to reduce CO<sub>2</sub> emissions by 51,744 tonnes per year.

InfraCo Asia's support for a biomass project in Sri Lanka will also have a positive impact on climate change through the substitution of fossil fuel sources with renewable sources.

Some projects are more focused on adaptation to climate change. The irrigated land at Chanyanya and Chiansi in Zambia, which InfraCo Africa brought to financial close in 2017, will help farmers to be more resilient in the face of changes in rainfall, enabling them to grow crops for more of the year.

PIDG's clear preference is to support alternatives to fossil fuels for energy generation. However, PIDG can consider thermal power in circumstances where the project is in a poor country or in a Fragile or Conflict-Affected State and there are no cleaner power generation base load technologies that are technically or economically viable to provide grid stability.

### Reducing emissions, increasing farmer incomes

**InfraCo Asia** is supporting Biomass Ventures, which creates biomass chips and pellets for markets in Asia through an outgrower model. Farmers are given training to grow Gliricidia trees in their plots and enter long-term agreements to supply the woodcuttings for biomass. Once this reaches scale, the proposal is to build a pellet production plant. The farmers can grow the biomass alongside their normal crops, increasing their usual incomes. Tree branches are harvested instead of the entire tree, creating a carbon sink and therefore mitigating climate change. PIDG's **Technical Assistance Facility (TAF)** has provided financial support to enable the company to register as a seller of the carbon credits created through this system.



Farmers can grow the Gliricidia alongside their normal crop, creating biomass for fuel and increasing their incomes



## Gender equality

**4.1 million women and girls are expected to have access to new or improved infrastructure as a result of projects that reached financial close in 2017**



Improving outcomes for women and girls is fundamental to PIDG's mission to improve infrastructure for economic development and poverty reduction. Poverty and marginalisation are disproportionately experienced by women and girls. Improving women's participation in the workforce leads to major gains in economic growth and infrastructure projects that do not address the needs and concerns of women are at greater risk of failure.

In 2017, PIDG sought to map out more clearly the risks and opportunities for gender impacts associated with infrastructure finance. In partnership with the Netherlands Royal Tropical Institute, it published a report on International Women's Day setting out examples of how telecommunications, energy and transport infrastructure can deliver positive outcomes for women as workers, users of infrastructure and stakeholders in decision making processes.

This also highlighted some of the potential elements of project design that can lead to infrastructure failing women and providing services that are not fit for purpose.

In 2018, PIDG will use the knowledge from this review to pilot a new framework for improving project outcomes for women and girls. This will assess whether projects do the 'minimum', are 'empowering' or, at the highest level, 'transformative', and find practical steps to improve project contributions to gender equality and inclusion. This could mean smarter and more inclusive community consultation, better training and recruitment practices, or redesigned services to better meet the needs of women as consumers, to name just a few examples.

Visit **PIDG's website** to read a full copy the report.

ABOVE: Dao Thi Thuan, Engineer, and Nhu Quynh Ta, General Director, Lao Cai Renewable Energy at the Coc San hydropower project in Vietnam

PIDG is fundamentally innovative. It operates at the frontier where others cannot or will not operate.

Operating collaboratively across the capital structure and along all stages of the project life cycle. Addressing a series of market failures, PIDG as a whole, harnesses its companies, to seek further donor and private sector funding and achieve scale.

Together, PIDG makes the seemingly impossible, possible.



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PIDG **companies**

## How PIDG companies support the infrastructure development cycle

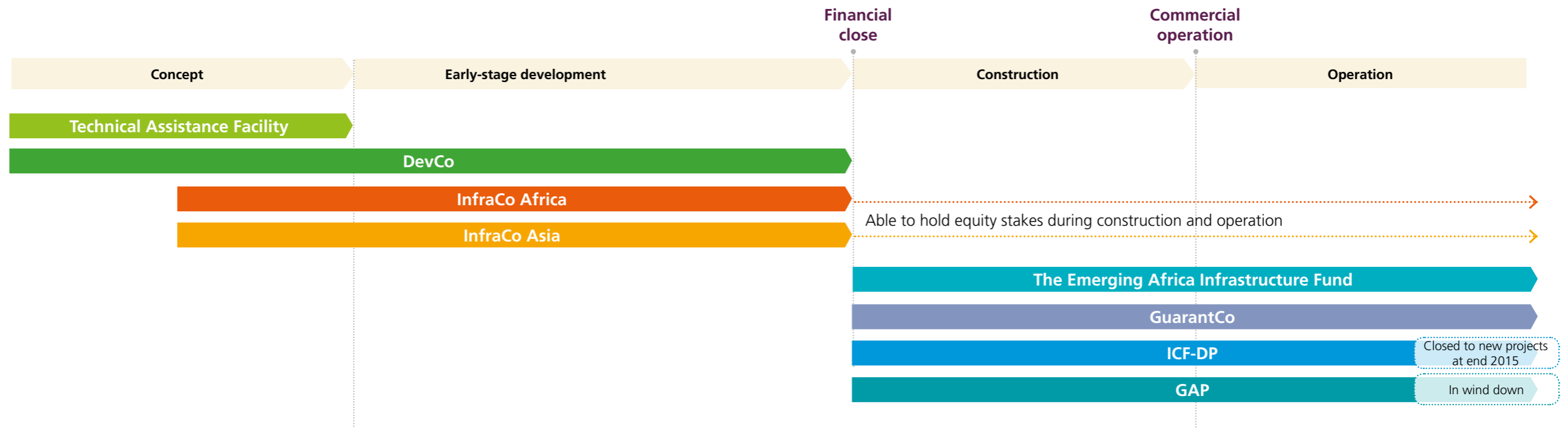
PIDG's specialist companies work at every stage of the infrastructure project development cycle and across the capital structure, as the graphic below shows.

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

PIDG's 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)** and **GuarantCo** work further downstream, providing funds and guarantees at financial close through the construction phase to commercial operation.

### How PIDG companies support the infrastructure development cycle



## A financial toolkit for infrastructure development and growth

**PIDG companies work along the project life cycle and across the capital structure to provide a holistic infrastructure finance solution in the lowest income countries. Here we explain PIDG's investment approach and impact**

### Early-stage development

A lack of investor-ready projects is a major bottleneck to unlocking infrastructure finance in the countries where we work. To counter this, PIDG companies TAF, DevCo, InfraCo Africa and InfraCo Asia provide technical assistance and early-stage development expertise and funding to de-risk and structure projects properly to attract private sector investment. This can involve working with host governments, consulting with communities, undertaking detailed environmental and social assessments, piloting technology, identifying the market or negotiating an offtake agreement. This process can take time, but the provision of development expertise and capital at this early stage can create projects which, once scaled, help deliver the Global Goals for Sustainable Development.

PIDG's work through the InfraCos is therefore considered a form of impact investing. They invest in infrastructure to address the world's most pressing challenges alongside a modest financial return in sectors including sustainable agriculture, renewable energy and affordable and accessible basic services such as water supply and transport.

Part of what differentiates PIDG from others operating in the market is the concentration of its activities at the frontier of infrastructure investment. In 2017, both InfraCo Asia and InfraCo Africa made a high proportion of their investment commitments (21% and 83% respectively) in the poorest countries where per capita gross national income is less than \$1,045

per year, and 43% and 48% respectively in Fragile and Conflict-Affected States.

### Credit for infrastructure development

PIDG's long-term debt provider, the Emerging Africa Infrastructure Fund (EAIF), and its guarantee arm, GuarantCo, offer hard and local currency financing respectively. These companies also seek social and environmental change alongside financial return and, like the InfraCos, are impact investors. Their role is to achieve the highest possible impact on economic growth and poverty reduction.

Importantly, they do that not only through their impact on jobs, access to infrastructure and mobilisation of private sector finance, but also through changing longer-term perceptions of risk in a country or sector. Through this demonstration effect (described in more detail on page 38), PIDG creates an environment where the private sector is willing and able to take an increasingly greater share of the cost of infrastructure provision.

By blending funding from grants, concessionary finance and commercial investment, EAIF and GuarantCo establish deal structures which deliver the most effective combination of financial return, scale, risk and impact on each transaction. This means that donors' funding is used more effectively.

A vital part of GuarantCo's role is to enable local currency lenders to participate in a transaction. This reduces the exchange rate risk for the project and therefore should help to make the cost of



Bugoye hydropower, Uganda

the infrastructure service more predictable and affordable. InfraCredit, established by GuarantCo in 2016, was designed to bring local pension and insurance funds in Nigeria into infrastructure finance. InfraCredit's first deal, an innovative investment bond with power developer Viathan, was closed this year (see page 71).

EAIF's role as a lender is based on a model widely used by Development Finance Institutions. However, compared to its peers, EAIF has a substantially greater proportion of its loans in the poorest countries (91% of its 2017 investment commitments) and in Fragile and Conflict-Affected States (77% of its 2017 investment commitments). It also has its share of pioneering investments; the Kigali Water transaction (see page 67) was one of the first public-private partnerships (PPPs) in the water sector in sub-Saharan Africa.

EAIF's added value is particularly clear when it leads the arrangement of financing on a transaction. In 2017, EAIF was lead arranger on three deals; Akuo Kita Solar, Kigali Water and Bugoye Hydropower.

During 2017, EAIF raised new debt capital to lend to projects. European insurer Allianz became EAIF's first private sector institutional investor, committing \$110m to the \$385m total funding raised. Investors have been persuaded to commit by the combination of financial performance and impact.

Working closely at every stage of infrastructure development, PIDG companies play an important role in creating change in the lives of the people benefiting from infrastructure finance and facilitating an environment for sustainable economic growth.



## Technical Assistance Facility (TAF)

Providing grants to help PIDG companies overcome specific development obstacles

### At a glance

Established	2004
PIDG members currently funding	UK aid, DFAT, DGIS, SECO, Sida, World Bank-IFC
Cumulative PIDG member funding disbursed to the PIDG Trust	\$79.8m
Total commitments at 31 December 2017	\$19.5m to 67 completed grants
	\$36.3m to 58 live grants
	\$1.6m to 19 completed grants where the PIDG parent projects were cancelled or permanently stalled
2017 commitments	\$4.7m to 22 grants

### Technical Assistance Facility approved 22 grants in 2017, including:

- Bangladesh** Solar IPP, **GuarantCo**
- Burkina Faso** Windiga Solar IPP, **EAIF**
- Ethiopia** Corbetti Brine Option Study, **InfraCo Africa**
- Ethiopia** Corbetti Water Add-on, **InfraCo Africa**
- Malawi** Salima Solar - ESIA Advisory, **InfraCo Africa**
- Myanmar** Mon Streetlights, **InfraCo Asia**
- Nigeria** InfraCredit Workshops, **GuarantCo**
- Nigeria** Mixta Housing ESMS, **GuarantCo**
- Pakistan** Credit Enhancement Facility, **GuarantCo**
- Sri Lanka** Biomass Add-on, **InfraCo Asia**

### Achievements in 2017

TAF approved 22 grants totaling \$4.7m, making 2017 the second most active year in its history. TAF continues to be a crucial partner to the PIDG companies with nearly two-thirds of completed grants providing essential support to financially closed projects, including almost all of those taken to closure by the two InfraCos.

TAF supported four projects in Myanmar, a country where levels of access to basic infrastructure remain low. It funded the designs of bankable models for rural solar power generation, private urban water supply and commercially financed urban street lighting.

### Other notable highlights

TAF continued to work with DevCo during the year on its joint development plans for selected pilot countries. TAF provided additional support to an embedded transaction adviser in Zambia, managed by TAF and DevCo.

Funding limitations in 2017 meant that no viability gap funding (VGF) grants were approved, however TAF worked with InfraCo Africa on the design of a grant to support the ground-breaking Corbetti Geothermal scheme in Ethiopia, expected to reach closure in 2018.

### 2018 and beyond

TAF plans to take a more programmatic approach to its work in 2018. The groundwork for this was established in 2017 with a special DFAT-funded project scoping study in the Pacific Island countries, managed directly by TAF, and expected to lead to a series of on-going activities.

TAF will build on its partnership with GuarantCo and the success of InfraCredit to support credit enhancement facilities in selected countries, including Pakistan. TAF will also support a programme to assist PIDG companies with the implementation of improved health and safety standards developed during 2018.

## Mozambique Mocuba viability gap funding

### Delivering affordable power



Technology

Solar



TAF commitment

\$7m

#### Challenge

At just 24%, Mozambique has one of the lowest electrification rates in southern Africa. Despite strong economic growth in the past decade, high levels of poverty persist. The Government of Mozambique is committed to increasing access to power and has invested in improving energy services. However, power cuts are frequent and rural customers rely on expensive and polluting diesel generators. The key to securing reliable access to power lies in developing additional generation capacity and affordable tariffs.

#### Solution

Seeking to address Mozambique's energy shortfall, Scatec Solar, government utility Electricidade de Moçambique (EDM) and Norfund established Central Solar de Mocuba (CESCOM SA) to develop a 40MW on-grid solar power plant in the country's Zambézia region. Mocuba will be the first utility scale solar IPP in Mozambique and one of the largest of its kind in sub-Saharan Africa outside South Africa. Connecting to existing infrastructure, the new facility will distribute power to Mocuba, Pelane, Lugela and Maganja de Costa. Working with the IFC, EAIF provided \$16.9m of long-term debt. Despite this support, a gap remained between costs and anticipated revenues which TAF was able to bridge by providing viability gap funding. TAF's involvement was crucial to the financial viability of the project as it enabled CESCOM SA to negotiate affordable tariffs for EDM, which will keep prices down for customers.

#### Impact

**"Viability gap funding from PIDG's Technical Assistance Facility... directly reduced the tariff to be paid by EDM as off-taker, and thus the end user."** Mikkel Tørud, Scatec Solar CFO

The Mocuba plant will increase the power generation capacity of northern Mozambique by up to 40%. The initiative is expected to demonstrate the potential of solar power as part of Mozambique's future renewable energy mix, stabilising the national grid and reducing the country's dependence on hydropower. The price of electricity from the Mocuba plant is forecast to be at reasonable levels for the Mozambique market, helping to support the government's strategy to incentivise the development of small and medium-sized businesses in the Mocuba area.

#### Malawi Grid and new entrant studies

##### Research to maximise the impact of energy

Demand for power in Malawi outstrips current supply, a shortfall which is expected to worsen as the country's mining and manufacturing industries expand. InfraCo Africa is exploring opportunities to become involved in the early-stage development of power plants in Malawi. However, in order to understand the best way to develop the country's power sector and the relative costs and advantages of different generation technologies, the Electricity Supply Commission of Malawi (ESCOM) requires focused information to plan and diversify its installed power generation capacity. \$124,000 of TAF grants will fund two studies, exploring Malawi's national grid capacity and the potential for new technologies and power plants to connect to the grid. TAF's research will build ESCOM's internal capacity and drive private sector investment into Malawi's energy sector in the future.

## DevCo

### Providing transaction advisory services to governments on Public-Private Partnerships (PPPs)

#### At a glance

Established	2003
PIDG members currently funding	UK aid, DGIS, Sida, World Bank-IFC; DevCo is funded directly, not through the PIDG Trust
Cumulative PIDG member funding	\$91.0m
Managed by	IFC
Total commitments as at 31 Dec 2017	\$41.0m to 64 projects/mandates, including 30 that have reached financial close, 13 that have reached commercial close, 16 under active development, and 5 closed after completing Phase I or Post-Transaction work
2017 commitments	\$4.0m to 5 projects

#### Projects that reached financial close in 2017

- India** Clean Ganga Varanasi
- Myanmar** Myingyan IPP
- Rwanda** Kigali Bulk Water
- Zambia** Zambia Scaling Solar, NeoEn

#### Expected development impact

	2017	Cumulative
Financially-closed and/or fully exited projects	4	30
Total Investment Commitments (TICs) (\$m) *	455.5	2,749.1
% of TICs in DAC I/II and 8 poor states of India		55.1%
% of TICs in FCAS		49.5%
Access (in millions) *	1.7	27.5
Job creation: short-term	185	1,095
Job creation: long-term	67	(8,682)
Fiscal benefits (\$m)	145.5	2,758.1

\* The cumulative figures exclude the results from the Central Java IPP project (TICs of \$4.3bn, Access of 7.5m), as the size would skew DevCo's results

#### Projects that reached commercial close in 2017

- India** Clean Ganga Haridwar
- India** Odisha Affordable Housing
- India** Odisha Rice Storage
- India** Clean Ganga Varanasi
- Zambia** Zambia Scaling Solar, Enel
- Zambia** Zambia Scaling Solar, NeoEn

#### Achievements in 2017

DevCo helped 1.7 million people gain access to improved infrastructure and services. Six projects reached commercial close and four reached financial close; the latter is expected to deliver nearly \$264m in private sector investment – all in DAC I and II countries.

Zambia Scaling Solar set a record for solar tariffs with the lowest non-indexed tariffs in sub-Saharan Africa outside South Africa of US\$6.015/kWh and US\$7.84/kWh for two schemes that will deliver much needed, cheap, green power to the country. This is expected to deliver further scale and replicability across sub-Saharan Africa. In addition, Zambia Scaling Solar was awarded Best Utilities Project at the 2017 Partnership Awards.

Myanmar structured and tendered a PPP to construct and operate a 225MW combined cycle power plant, with DevCo's help. This project will provide nearly five million people with improved electricity and generate \$325m in investment.

India's Ganges river is a water source for 400 million people, yet untreated sewage from the towns along its banks flows directly into the river. DevCo helped design an innovative PPP for modern sewage treatment plants for three cities – Haridwar, Varanasi and Mathura – that will help reduce pollution and improve drinking water. Based on this success further replicability is expected. Sewage programmes using a similar model have already been approved for 15 more cities resulting in transformational change.

#### Other notable highlights

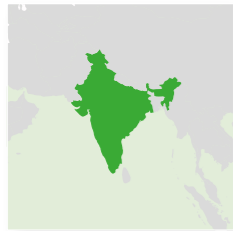
DevCo signed three mandates, with 62% of the new commitments in DAC I and II countries and 38% in fragile states. These include a new Scaling Solar mandate in Zambia that will begin with an initial tender for up to 200MW, with subsequent rounds to follow, with a goal of developing 500MW of renewable power. Another key project is in the West Bank. The Palestinian territories are almost entirely dependent on expensive energy imports from neighbouring countries. With electricity demand growing, securing new sources of affordable energy is a priority. DevCo will help design and tender PPPs to construct, operate, and maintain three to four solar plants totaling about 15MW of renewable energy.


#### 2018 and beyond

DevCo will continue to bring innovation to its transactions, pursuing pioneering deals that can pave the way for future private investment in infrastructure. In India, DevCo will support low income states to implement large scale solar generation projects and scale up innovation in the storage of renewable energy. These initiatives aim to support the country's ambitions for 175GW of renewable energy by 2022.

## India Bhubaneswar Affordable Housing

Supporting the development of Odisha's first affordable public-private housing development



	
Technology	PIDG commitment
Housing	\$478,000

### Challenge

Home to 42 million people, the state of Odisha in eastern India is one of its poorest and most populous. Odisha has seen rapid urban growth, but a shortage of affordable homes, particularly in the state capital Bhubaneswar, has led to 23% of the population living in slums, including 10% to 15% of children. The Government of Odisha's Policy for Housing for All in Urban Areas 2015 supports development of affordable homes, and the Bhubaneswar Development Authority (BDA) has a target to deliver 10,000 affordable homes for low income families in Bhubaneswar by 2020.

### Solution

To address Bhubaneswar's housing shortage, the International Finance Corporation (IFC) was appointed to develop Odisha's first affordable housing PPP. Funded by DevCo, the IFC worked with the BDA to develop a unique transaction and competitive tendering process to deliver



Affordable homes will reduce the number of people living in the capital's slums

the project, which aligned with changes to national real estate legislation. It was awarded to a consortium comprised of Shyam Indus Power Solutions and GSBA Builders, which signed an eight year development agreement to design, finance, construct and hand back 2,600 affordable homes for the BDA to sell to lower income families. The developers will be given 13.5 acres

of land for the affordable housing, free of charge, plus freehold on an additional 6.5 acres which can be developed for higher income residential homes.

### Impact

The new houses are estimated to provide affordable homes for up to 15,000 people in poor areas of Bhubaneswar, providing families with shelter, security and modern sanitation. The developers are required, under the terms of the agreement, to support lower income groups to access appropriate mortgages. To ensure build quality, the developers retain responsibility for correction of any structural defects for five years after the houses are handed back to the BDA and commit to creating a maintenance account to finance future upkeep and repairs.

By funding the development of standardised documentation, DevCo's support for the scheme will enable the Government of Odisha to implement similar affordable housing initiatives in the future. The Bhubaneswar transaction has a potential demonstration effect for other cities in south and east Asia struggling to accommodate growing urban populations.



DevCo has supported India's first PPP in affordable housing

## Zambia Scaling Solar

Funding advisory support to scale up solar access



Scaling Solar programme will bring affordable, clean energy to countries across Africa

Zambia's increasing demand for electricity and the impact of droughts on hydropower production led to a 560MW supply deficit, resulting in frequent power outages and reduced supply to the mining industry. To diversify Zambia's energy mix, the Government of Zambia joined the DevCo-supported World Bank Group Scaling Solar programme in 2015. Scaling Solar provides a standardised independent power producer procurement process, supporting governments of low-income countries to develop bankable solar projects using PPPs. With funding from DevCo and international donors, the International Finance Corporation provided advisory support for two Zambian solar PPPs. DevCo's support enabled the IFC to conduct site selection, due diligence and oversight of a competitive tendering process which attracted private developers, Enel Green Power and a consortium of Neoen and First Solar, to deliver two new solar plants, totalling 75.7MWp, with Neoen / First Solar offering the lowest tariffs in sub-Saharan Africa at the time.

## InfraCo Africa

### Providing risk capital and expertise to develop early-stage infrastructure projects in sub-Saharan Africa

#### At a glance

Established	2004
PIDG members currently funding	UK aid, DGIS, SECO
Cumulative PIDG member funding	\$189m
Chair	Brian Count
Managed by	InfraCo Africa
Total commitments as at 31 Dec 2017	\$95.9m to develop 23 projects, 12 of which have reached financial close and/or have been sold
2017 commitments	\$9.9m across 4 projects, 3 which reached JDA, and 1 which reached financial close

#### Projects that signed a Joint Development Agreement or equivalent in 2017

- Guinea** Khoumaguéli Solar
- Nigeria** Abiba Solar
- Zambia** Standard Microgrid

#### Expected development impact

	2017	Cumulative
Financially closed and/or fully exited projects	2	12
Total Investment Commitments (TICs) (\$m)	28.0	2,116.6
% of TICs in DAC I/II		96.3%
% of TICs in FCAS		22.2%
Access (in millions)	0.01	13.0
Job creation: short-term	177	7,188
Job creation: long-term	247	1,292
Fiscal benefits (\$m)	0.5	604.8

#### Projects that reached financial close in 2017

- Zambia** Chanyanya II and Chiansi

#### Achievements in 2017

Chiansi irrigation in Zambia reached financial close, over 10 years after it was first set in motion by the Chanyanya pilot. As well as developing a commercial farm, irrigated market garden plots will give more than 6,000 people access to cash crops, fresh fruit and vegetables all year round, for the first time.

#### Other notable highlights

InfraCo Africa committed \$30m of equity investment to the ground-breaking Corbetti Geothermal power plant. It is a landmark deal, being the first private geothermal project in Ethiopia and the largest single commitment InfraCo Africa has made to date.

In October, InfraCo Africa and GuarantCo marked the opening of PIDG's east and southern Africa office in Nairobi, establishing InfraCo Africa's first team on the ground in Africa. Following quickly thereafter with the employment of resource in west Africa which has led to mobilisation of two projects; Khoumaguéli Solar in Guinea and Abiba Solar in Nigeria.

Two new developers, Access Power and CPCS, were brought on board to join InfraCo Africa's existing developers, eleQtra and Aldwych Africa Developments. The companies will develop

pre-financial close infrastructure projects in sub-Saharan Africa's poorer countries in partnership with or on behalf of InfraCo Africa. The two new contracts commit an additional \$30m of funding to sub-Saharan infrastructure development.

#### 2018 and beyond

Off-grid energy solutions for rural areas grew this year, with InfraCo Africa's portfolio now at four, encompassing innovative off-grid solar and hydropower solutions in Zambia, Uganda and Tanzania. These projects bring much-needed power to communities which are isolated from the national grid and would otherwise have limited access to modern public services and economic opportunities. InfraCo Africa will continue to prioritise the development of pioneering off-grid solutions in 2018.

During the past three years, InfraCo Africa has committed over \$70m to developing 11 new projects. Through the focused commitment of InfraCo Africa's team and its partners, these projects are reaching fruition, with five of them planned to commence construction in 2018.

InfraCo Africa will foster greater co-operation with other PIDG companies, including GuarantCo with whom it is now co-located in Nairobi. It has the ambition and the funding to accelerate the further expansion of its pipeline and development impact.

## Zambia Chanyanya and Chiansi Irrigation

Boosting agriculture by growing an innovative model

				
<b>Technology</b>	<b>PIDG commitment</b>	<b>Total Investment Commitments</b>	<b>Number of people benefiting</b>	
<b>Agri-infrastructure</b>	<b>\$14m</b>	<b>\$28m</b>	<b>7,273</b>	

### Challenge

Zambia has a plentiful rainy season, however farmers struggle to grow crops all year round. The Government of Zambia is committed to pro-poor agricultural development, and has identified irrigation as the key to increasing yields and enhancing food security. To date, irrigation has been largely restricted to commercial-scale agriculture. A lack of capital and scale prevented Zambia's majority smallholder farmers from implementing irrigation schemes which could significantly increase the country's agricultural productivity.

### Solution

InfraCo Africa, through its principal developer eleQtra, was approached by a group of smallholder and commercial farmers in Zambia's Kafue District, in 2006. The group needed support to create a viable irrigation scheme. The development of the

Chanyanya pilot which resulted in a co-operative, pooling smallholder land to achieve the scale required to irrigate a 148 hectare commercial farm and eight hectares of market gardens to grow food and cash crops year-round.

Having provided proof of concept, grant funding was secured from the Dutch ORIO Infrastructure Fund to expand the original bulk water infrastructure to increase Chanyanya's irrigated land area, and to support development of the nearby Chiansi project. Chiansi will replicate and scale up the pilot, establishing a 1,336 hectare commercial farm and market garden plots for up to 960 smallholders in three neighbouring communities: Chikupi, Demu North and Demu South. Regional private investor SUDECO will build, own and operate Chiansi's commercial farm. InfraCo Africa is providing \$12.5m of senior debt, alongside \$5m in TAF viability gap funding, to fund construction.



Innovative market garden farming will improve land productivity and household incomes

### Impact

**"Gardening is all I want, as long as I am able to buy a car, pay for my children to go to school and provide for my family, that's all I want."**  
Maurine Nyamusunga, smallholder farmer

Working with farmers in the Kafue District, a replicable model has been developed which has informed the Chiansi scheme and World Bank irrigation initiatives in Zambia and Ghana. The expansion of Chanyanya and new Chiansi project will irrigate more than 1,600 hectares of additional land.

With a year-round supply of water, Chanyanya's smallholder farmers have diversified their crops, reporting increased incomes and food security. Chiansi will facilitate the establishment of market garden committees to enable agricultural knowledge and technical knowhow to be shared, improving land productivity and so household incomes.

Leveraging grant funding has enabled the government to acquire ownership of bulk water assets with sufficient capacity to irrigate up to 3,800 hectares of land, enabling more farmers in the area to access irrigation in the future.

## Ethiopia Corbetti Geothermal

### Harnessing global expertise and finance to develop geothermal energy

Just 27% of Ethiopia's population has access to on-grid electricity. To meet growing demand, the government is exploring the potential of Ethiopia's geothermal resource. In 2015, InfraCo Africa partnered with Berkeley Energy to become the majority shareholder in Corbetti Geothermal, working with stakeholders from Ethiopia, Iceland, the United Kingdom and the United States of America. In 2017, the Government of Ethiopia signed an updated power purchase agreement and an implementation agreement with Ethiopia Electric Power and Corbetti Geothermal, marking a key project milestone and the culmination of extensive work by all parties. In December, InfraCo Africa doubled its original commitment to Corbetti to \$30m, making it InfraCo Africa's largest single project investment. Set to commence first phase drilling in 2018, Corbetti is expected to lead the way for future private geothermal projects, attracting the investment needed to transform Ethiopia's energy sector.



Local households will be consulted on the works and actively involved in designing community initiatives

## InfraCo Asia

### Providing risk capital and expertise to develop early-stage infrastructure projects in south and south-east Asia

InfraCo Asia comprises two companies; InfraCo Asia Development (IAD), investing early-stage development capital, and InfraCo Asia Investments (IAI), offering debt and equity

#### At a glance

<b>Established</b>	IAD: 2010 IAI: 2014
<b>PIDG members currently funding</b>	IAD: UK aid, SECO, DFAT IAI: UK aid
<b>Cumulative PIDG member funding</b>	IAD: \$128.0m IAI: \$27.3m
<b>Chair</b>	IAD: John Walker IAI: Keith Palmer
<b>Managed by</b>	InfraCo Asia
<b>Total commitments as at 31 Dec 2017</b>	IAD: \$103.4m to develop 32 projects, 6 having reached financial close and 26 having signed a JDA IAI: \$28.2m on 3 projects that have reached financial close
<b>2017 commitments</b>	IAD: \$45.3m across 16 projects which reached JDA, one of which also reached financial close

#### Expected development impact

	2017	Cumulative
<b>Financially-closed projects</b>	<b>2</b>	6
<b>Total Investment Commitments (TICs) (\$m)</b>	<b>97.4</b>	413.7
<b>% of TICs in priority countries*</b>		87.9%
<b>% of TICs in FCAS**</b>		86.9%
<b>Access (in millions)</b>	<b>1.5</b>	2.3
<b>Job creation: short-term</b>	<b>310</b>	2,010
<b>Job creation: long-term</b>	<b>95</b>	541
<b>Fiscal benefits (\$m)</b>	<b>0.3</b>	0.8

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

\*\* Fragile and Conflict-Affected States: Bangladesh, Myanmar, Nepal, and Pakistan; Sri Lanka was FCAS until end 2016

#### Projects that signed a Joint Development Agreement or equivalent in 2017

- Bangladesh** Bangladesh Solar JV
- India** Hydroponic Farming, Himachal Pradesh
- Indonesia** Archipelago Hybrid Solutions
- Myanmar** Myanmar Wind Power
- Pakistan** Swat KPK Small Hydropower Projects - Ban Khwar, Gabral, Rathi Gali, Sakhara I & II
- Philippines** Metro Manila Waste-to-Energy
- Sri Lanka** Trincomalee Biomass to Pellets
- Vietnam** Ninh Tay Power Projects - solar, wind
- Vietnam** Water Supply Projects - Bai Lai, Kim Lien, La Giang, Thuy Nguyen

#### Projects that reached financial close in 2017

- India** Hydroponic Farming Project, Himachal Pradesh
- Nepal** Kabeli A hydropower

#### Achievements in 2017

InfraCo Asia sold its shares in Pakistan's two 50MW Metro and Gul Ahmed wind power projects to the private sector, allowing the public funds it invested during development to be redeployed. The sale marked InfraCo Asia's first complete exit from a utility-scale renewable energy project and demonstrated its ability to catalyse private sector infrastructure investment in its target countries.

InfraCo Asia Development saw two financial closes: the 36.7MW Kabeli A hydropower in Nepal; and a 1.2 hectare greenhouse hydroponics facility in Junga, north India, which will improve the yield and quality of vegetables for sale and export.

#### Other notable highlights

InfraCo Asia Development signed joint investment and development agreements (JIDAs) for a total of 16 projects in 2017, including a series of firsts. Its first commitments to water treatment and solar projects in Vietnam, are expected to reach financial close in 2018. In addition, a first JIDA to provide power to remote islands in Indonesia was signed.

Recognising its important role in de-risking project development in low-income areas of Asia, the company was awarded Smart Seed Investor status by industry publication Thomson Reuters Project Finance International.

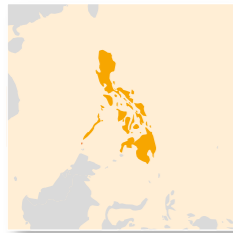
#### 2018 and beyond

In the coming years InfraCo Asia will seek to play a greater supporting role in the renewable, water and waste management sectors across the south and south-east Asia regions. With 16 new projects with Joint Development Agreements signed in 2017, InfraCo Asia will focus its efforts on bringing these projects into commercial operation, thereby scaling the impact of PIDG's unique model of early-stage infrastructure development.

In these efforts InfraCo Asia will foster greater cooperation with other PIDG companies, including InfraCo Africa and GuarantCo, with whom it is now co-located in Singapore.

# Philippines North Luzon Mini Hydro Portfolio

Delivering up to 35MW of investor-ready hydropower



Technology	PIDG commitment
Hydropower	\$2.2m

### Challenge

Electrification rates in the Philippines have increased as the country has experienced a period of rapid economic growth. However, rural and remote areas continue to face frequent power cuts, impacting businesses, schools, homes and healthcare centres. Rising demand for energy is expected to exacerbate such issues in the future. As part of its Philippines Energy Plan (2013-2030), the Government of the Philippines is committed to incentivising the development of renewable energy. Despite this supportive environment, the Philippines Department of Energy estimates that the country currently has untapped hydro resource potential of up to 13,000MW. Around 2,000MW lies in mini hydro (defined as up to 10MW), however challenges persist for smaller developers in making these projects bankable.

### Solution

InfraCo Asia has partnered with Alternergy Hydro Partners, a Philippines-based renewable energy developer, to co-develop a portfolio of six mini run-of-river hydropower plants in northern Luzon. Alternergy had been seeking development capital for this portfolio which, given the perception of high early-stage risk in this sector among private investors, was proving difficult to find. The North Luzon Mini Hydro Portfolio will have an aggregate capacity of around 35MW, maximising economies of scale and enabling them to be competitive against the country's Feed-In-Tariff or bilateral tariffs agreed with provincial distribution utilities.



Identifying and surveying sites for the six hydropower plants in the Philippines

### Impact

**“InfraCo Asia will enable us to realise the development of our mini hydro projects and this will be an integral first step in mobilising private investment.”** Eduardo Martinez Miranda, President, Alternergy Hydro Partners Corporation

InfraCo Asia's involvement has brought early-stage capital and expertise to this project, which will have a demonstration effect for the country's mini-hydro sector. Delivering additional clean power to the country's national grid will improve access to power for homes and businesses and it is anticipated that the portfolio will generate up to 1,500 construction jobs and 30 long-term posts. The Philippines' regulation stipulates that part of the income generated by the hydro plants be reinvested into the local population. Alternergy Hydro Partners will complement this with its own corporate social responsibility initiatives to improve livelihoods, public health, education and the environment.

## Pakistan Gul Ahmed and Metro Wind

### InfraCo Asia sells Gul Ahmed and Metro Wind projects to Daelim Energy

InfraCo Asia achieved its first exit from a utility-scale renewable energy project in 2017, selling its stakes in the Gul Ahmed and Metro Wind Power projects to private sector company Daelim Energy. Collectively, the two 50MW plants deliver improved access to power for 700,000 people and have demonstrated the efficacy of utility-scale renewables in Pakistan's energy mix since they became operational in 2016. This sale demonstrates the effectiveness of InfraCo Asia's mandate; having worked to support the development of the two ground-breaking projects through to operation, InfraCo Asia exited in favour of the private sector, recycling public funds into the early-stage development of new infrastructure. Gul Ahmed and Metro Wind is Daelim Energy's first projects in Pakistan, bringing key energy and infrastructure expertise to the country.



Gul Ahmed Wind, Pakistan



## The Emerging Africa Infrastructure Fund (EAIF)

### Providing long-term foreign currency loans across Africa

#### At a glance

<b>Established</b>	2001
<b>PIDG members currently funding</b>	UK aid, DGIS, Sida, SECO
<b>Cumulative PIDG member funding</b>	\$391.9m
<b>Fund capacity</b>	As of 31 December 2017, \$310m (equivalent) of debt has been raised, denominated in \$ and €
<b>Chair</b>	David White
<b>Managed by</b>	Investec Asset Management Ltd
<b>Total commitments as at 31 Dec 2017</b>	\$1,344.2m to 71 projects that have reached financial close or been repaid
<b>2017 commitments</b>	\$178.1m to 8 projects that reached financial close, and \$21m in additional refinancing to existing projects

#### Projects that reached financial close in 2017

- Africa** Helios Towers
- Madagascar** Ravinala Airports
- Mali** Akuo Kita Solar
- Mali** Albatros Energie
- Mozambique** Central Termica de Ressano Garcia Energy
- Mozambique** Mocuba Solar
- Rwanda** Kigali Bulk Water
- Senegal** Tobene II

#### Expected development impact

	2017	Cumulative
<b>Financially-closed projects*</b>	<b>8</b>	71
<b>Total Investment Commitments (TICs) (\$m)</b>	<b>1,507.1</b>	17,187.3
<b>Private Sector Investment commitments (\$m)</b>	<b>791.4</b>	10,827.8
<b>% of TICs in DAC I/II</b>		72.5%
<b>% of TICs in FCAS</b>		69.4%
<b>Access (in millions)</b>	<b>10.8</b>	128.6
<b>Job creation: short-term</b>	<b>2,602</b>	18,391
<b>Job creation: long-term</b>	<b>787</b>	21,078
<b>Fiscal benefits (\$m)</b>	<b>77.0</b>	1,609.7

\* There were two refinancings of already-existing projects that occurred during 2017 - for Bugoye and Indorama Eleme Fertiliser - the increases to the TICs and PSI resulting from these have been included in the cumulative figures

#### Projects that became operational in 2017

- Cote D'Ivoire** Ciprel Expansion
- Ghana** TICO Takoradi Expansion Project
- Multiple countries** Smart Energy Solutions
- Senegal** Tobene II
- Uganda** Soroti Solar PV
- Uganda** Tororo Solar PV

#### Achievements in 2017

2017 marked EAIF's 15th full year of operation. During 2017 it brought eight projects to financial close, investing a total of \$178m and leveraging \$791m private sector capital.

In Rwanda, EAIF led the arrangement of financing for the landmark Kigali water treatment plant which will provide a clean water supply for 500,000 people. It is one of the first water schemes of its kind to be developed using a PPP model in sub-Saharan Africa.

In Mali, a new market for EAIF, two innovative power projects were brought to fruition in partnership with other PIDG companies. The 90MW Albatros power plant, also supported by GuarantCo and TAF, will add 30% to base load as the country's first IPP. In southern Mali, the 50MW Akuo Kita solar plant will provide renewable power for up to 712,000 people. Also supported by GuarantCo, Akuo Kita is the country's first private sector solar farm.

#### Other notable highlights

The Tororo solar farm is now generating renewable power for an estimated 67,000 people through Uganda's national grid. The 10MW plant will reduce CO<sub>2</sub> emissions by 7,200 tonnes per year, equivalent to that of 2,800 petrol powered cars.

Upgrades to runways and passenger terminals at Madagascar's Antananarivo and Nosy Be airports are now underway. EAIF's €25m long-term loan, its first in the country, will help boost trade and tourism on the island.

#### 2018 and beyond

In order to secure financial resources to meet its ambitious investment plan for the next five years, EAIF has finalised \$385m of new investment from public and private sector institutions, including a \$110m commitment from European insurer Allianz.

In addition, the African Development Bank (AfDB) is providing a total of \$75m over ten years as a returning lender to EAIF. Standard Chartered Bank is increasing and extending its existing lending to \$50m. Underlining its continuing support, KfW is contributing \$50m and €75m, both over 12 years, and FMO is lending \$50m over 10 years.

EAIF has an established role as an experienced and innovative lead arranger of project finance which it will continue to cultivate, adding a higher level of additionality to its investments.

EAIF will encourage new sources of infrastructure investment from both the public and private sectors. This includes mobilising additional sharia-compliant finance specialist lenders such as the Islamic Development Bank.

## Rwanda Kigali Bulk Water

Securing complex financing to deliver a ground-breaking water supply plant

				
Technology	PIDG commitment	Total Investment Commitments	Number of people benefiting	
Water	\$28.9m	\$51.5m	500,000	

### Challenge

Rwanda's capital Kigali is growing rapidly, placing strain on the city's water infrastructure. Water rationing is common due to limited production capacity. The Government of Rwanda's Economic Development and Poverty Reduction Strategy II highlights the need to improve public health and economic productivity. As part of this strategy, the government is committed to providing safe, clean water for its population and has worked to create a regulatory environment conducive to private investment in the sector.

### Solution

To attract a private sector partner to address Kigali's water shortage, the government engaged IFC PPP Advisory Services, with funding support from DevCo, to develop a PPP transaction. Following a competitive tendering process, Metito won a 27 year license to build, operate and transfer the 40,000m<sup>3</sup> per day Kigali Bulk Water

scheme in the city's Kanzenze district. EAIF acted as the mandated lead arranger, coordinating the complex financing to make the scheme bankable. EAIF provided long-term debt alongside the African Development Bank, with Metito providing the balance as equity finance. TAF viability gap funding covered upfront capital costs, allowing the government to expand the number of people connected to a reliable water supply without raising tariffs.

### Impact

**"Kigali Bulk Water puts Rwanda on the map for the international investor community and marks an historic moment for the country. Together... we are setting a precedent not only for Rwanda, but for the whole of sub-Saharan Africa, and surely for Metito. This is an exemplar project for public-private partnerships in the region."** Mutaz Ghandour, Chair and CEO of Metito



A digital representation of the Kigali Bulk Water plant in Rwanda

PIDG companies made a significant contribution to the finance and structuring of Kigali bulk water as one of sub-Saharan Africa's first water PPPs. DevCo's involvement helped the IFC to structure the project, creating a benchmark for future transactions. EAIF led the arrangement of financing, providing a \$40m, 18 year long-term loan jointly with the African Development Bank. It also coordinated \$6.5m viability gap funding from TAF to reduce up-front costs and expand the number of people connected to a reliable water supply without raising tariffs. 150,000 customers are expected to benefit in the first phase.

Extracting and treating water from the Nyabarongo River, the scheme will provide around one third of Kigali's water, delivering health benefits and meeting growing demand from households and water-dependent businesses. It is anticipated that reduced spending on public health and related productivity losses will enable the government to redeploy funds to support its wider economic development and poverty reduction agenda.

## Madagascar Ravinala Airports

Boosting trade and tourism by investing in airports

Connectivity by air is crucial for the movement of people and goods into and around Madagascar, and for accessing global markets. The Antananarivo and Nosy Be airports handle around 84% of the island's passenger transport but require modernisation. The Government of Madagascar established the country's first airport PPP to attract a private sector partner to carry out the works. However, securing long-term finance was challenging as commercial lenders appeared reluctant to invest in Madagascar. Alongside other DFI investors, EAIF provided a 16 year, €25m loan which financed a consortium of major private sector interests, Ravinala SA, to rehabilitate terminal and runway infrastructure to international standards and to manage the airports through a 28 year concession. The project is expected to increase passenger handling capacity by up to 1.3 million and runway improvements will enable large carriers to fly to Antananarivo for the first time. EAIF's support has demonstrated Madagascar's potential for future investment, tourism and trade.



Ravinala Airport, Madagascar

## GuarantCo

### Providing local currency guarantees for infrastructure financing in Africa and south and south-east Asia and dollar-denominated guarantees in Fragile and Conflict-Affected States

#### At a glance

<b>Established</b>	2006
<b>PIDG members currently funding</b>	UK aid, Sida, SECO through the PIDG Trust, DGIS through FMO, and DFAT
<b>Cumulative PIDG member funding</b>	\$309.6m
<b>Fund capacity</b>	Capacity of over \$1bn
<b>Chair:</b>	Andrew Bainbridge
<b>Managed by:</b>	GuarantCo Management Company Ltd
<b>Total commitments as at 31 Dec 2017</b>	\$886.1m to 45 projects for which GuarantCo has signed a Recourse Agreement and/or have reached financial close
<b>2017 commitments</b>	\$245.1m to 7 projects for which GuarantCo has signed a Recourse Agreement and/or reached financial close

#### Projects that reached financial close in 2017

- Bangladesh** Technaf Solar Energy
- Gabon** Gabon Special Economic Zone
- Ghana** Early Power 2
- India** Au Financiers 2
- Mali** Akuo Kita Solar
- Multiple countries** African Guarantee Fund
- India and Philippines** Sindicatum Renewable Energy

#### Expected development impact

	2017	Cumulative
<b>Financially-closed projects</b>	<b>7</b>	45
<b>Total Investment Commitments (TICs) (\$m)</b>	<b>760.0</b>	5,225.3
<b>Private Sector Investment commitments (\$m)</b>	<b>640.6</b>	4,375.0
<b>% of TICs in DAC I/II/III *</b>		93.9%
<b>% of TICs in FCAS</b>		40.3%
<b>Access (in millions)</b>	<b>2.3</b>	39.5
<b>Job creation: short-term</b>	<b>3,584</b>	10,449
<b>Job creation: long-term</b>	<b>9,366</b>	221,421
<b>Fiscal benefits (\$m)</b>	<b>15.6</b>	1,690.1

\* All GuarantCo projects have been made in DAC I/II/III except for 3 projects in South Africa and 1 project in Gabon, where the donors gave specific permission

#### Projects that became operational in 2017

- India** AU Financiers
- Pakistan** ByCo Oil

#### Achievements in 2017

GuarantCo committed to seven guarantees, with a total exposure of \$245m.

GuarantCo backed a \$40m local currency green corporate bond, helping Sindicatum to secure financing for renewable infrastructure in India. Its support helped extend the tenor of the bond to seven years, moving the market beyond its previous benchmark of five years for the first time.

In Bangladesh, GuarantCo has supported a 25MW solar farm, the country's first utility-scale solar project.

In Gabon, GuarantCo guaranteed the country's first local currency infrastructure bond – its 10 year tenor has set a new benchmark for the market. The issuer is overseeing the development of one of the country's special economic zones. The proceeds of the bond will help fund open rail infrastructure to support the movement of goods from nearby landlocked countries.

#### Other notable highlights

The GuarantCo-backed InfraCredit became operational and issued its first guarantee supporting a corporate bond which will finance new power infrastructure in Nigeria. The 10 year tenor was another new benchmark for the local market and the bond attracted investment from

local pension and insurance funds for the first time.

GuarantCo was pleased to receive additional funding from the governments of Switzerland and Australia, which will further underpin its work across Africa and Asia.

In October, GuarantCo and InfraCo Africa marked the opening of PIDG's east and southern Africa office in Nairobi, providing an important regional presence to better support local clients and achieve greater development impact.

#### 2018 and beyond

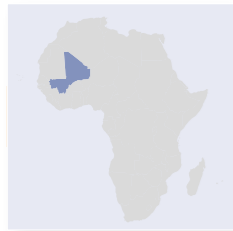
In the coming year, GuarantCo aims to crowd in the commercial insurance market, increasing its guarantee capacity.

Following InfraCredit's early success in Nigeria, similar initiatives are being considered in other countries. In Pakistan, GuarantCo and TAF, with support from UK aid, will support the establishment of a similar facility following a positive feasibility study. The Swedish government is supporting a similar study for Kenya.

GuarantCo will also build on its partnership with the London Stock Exchange which aims to support the listing of local currency infrastructure bonds on the London market to encourage global investment.

# Mali Akuo Kita Solar

## Delivering Mali's first large-scale solar farm



Technology	PIDG commitment	Total Investment Commitments	Number of people benefiting
Solar	\$34.3m	\$98.4m	711,665

### Challenge

Only 27% of Mali's population has access to electricity. Mali has limited installed power generation capacity which is largely derived from hydro and thermal power plants and supplemented by energy imports from neighbouring countries. Demand for energy in Mali has risen by 10% per annum in the past five years, outstripping supply, and the country's population is projected to double by 2035. The Government of Mali's Politique Énergétique Nationale highlights the need for investment in renewable energy infrastructure, identifying the development of Mali's solar power potential as part of its efforts to close the country's energy access gap.

### Solution

The Government of Mali signed a concession agreement with international renewables developer Akuo Energy, giving the company rights to build, own, operate and transfer a 50.2MW solar plant in Kita, 150km west of the capital, Bamako. Power will be sold to the government utility, Electricité du Mali SA, under a 28 year power purchase agreement. This will be Mali's first utility-scale solar initiative and the local banks in Mali did not have the risk appetite to provide payment guarantees on behalf of the scheme to improve its financial viability. GuarantCo provided an innovative guarantee facility totalling \$2.8m to help mobilise debt financing and to support Akuo Energy in achieving financial close. GuarantCo worked with its fellow PIDG companies on this; EAIF was the project's mandated lead arranger, providing \$21m of senior debt, and GAP supplied a \$10m mezzanine facility. EAIF has subsequently taken on GAP's commitment to the scheme and will fund the mezzanine component.



A digital representation of the Akuo Kita solar power plant, currently under construction in Mali

### Impact

**"We are eager for this project to be delivered. I am here because my country, Mali, despite the difficulties it is currently experiencing, is seeking to accelerate the development of renewable energy. The reason I am visiting Akuo Energy, a private group, is that I firmly believe we share the same values."** Abdoulaye Idrissa Maïga, former Prime Minister of Mali

Akuo Kita Solar will deliver much-needed energy to Mali's national grid, increasing the country's installed generation capacity by up to 12%. The plant will create 400 construction jobs, with 30 long-term positions available for local people. By providing access to clean power, it is anticipated that the scheme will stimulate Mali's economic growth.

The Akuo Kita Solar Project demonstrates the importance of credit enhancement in improving the viability of infrastructure programmes, setting a precedent for similar renewable energy schemes in Mali. The ability of PIDG companies to creatively combine a range of financial instruments to provide an overall solution was a key factor in the development of the venture.

Akuo Kita Solar will be one of the largest solar plants in west Africa and marks Akuo Energy's first African project to reach construction, bringing vital expertise and finance to the region and demonstrating the value of solar power in Mali's energy mix.

# Nigeria InfraCredit Viathan

## InfraCredit issues first guarantee

With Nigeria's population expected to exceed 400 million by 2050, the country needs to invest billions in power, transport and housing infrastructure. However, access to finance has been constrained by the limited capacity of local banks to provide long-term capital, and by the perception among Nigeria's substantial pension and insurance funds that infrastructure bonds are high risk. To address this, TAF, GuarantCo and the Nigerian Sovereign Investment Authority established InfraCredit, which guarantees to de-risk infrastructure bonds. InfraCredit issued its first guarantee in 2017, supporting an investment bond issued by power developer Viathan to expand its natural gas generation portfolio. As the first issue of its kind by the private sector to attract investment from domestic pension and insurance funds, the bond sets an important precedent in Nigeria's capital markets. Attracting new sources of local currency finance enables Viathan to reduce its exposure to currency risk, while delivering vital power infrastructure.



Proceeds from the bond will help Viathan to expand its natural gas generation portfolio

## Infrastructure Crisis Facility – Debt Pool

A time-limited company, set up in 2009 and closed to new business in 2015, ICF-DP provided 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 is no longer making further investments
<b>PIDG members currently funding</b>	KfW
<b>Cumulative PIDG member funding</b>	\$7.8m
<b>Chair:</b>	Andrew Bainbridge
<b>Managed by:</b>	Cordiant Capital Inc.
<b>Total commitments as at 31 Dec 2017</b>	\$595.1m to 20 projects that have reached financial close and/or have been repaid

### Expected development impact

	Cumulative
<b>Financially-closed projects</b>	20
<b>Total Investment Commitments (TICs) (\$m)</b>	5,956.6
<b>% of TICs in DAC I/II</b>	12.9%
<b>% of TICs in FCAS</b>	23.3%
<b>Access (in millions)</b>	12.3
<b>Job creation: short-term</b>	9,981
<b>Job creation: long-term</b>	4,699
<b>Fiscal benefits (\$m)</b>	633.7

### Projects that became operational in 2017

- Multiple countries** Karadeniz
- Senegal** Aeroport International Blaise Diagne

The Infrastructure Crisis Facility – Debt Pool (ICF-DP)'s investment period ended in December 2015.

The ICF-DP was the mechanism for delivering Chancellor Merkel's pledge of €500m to fund stranded infrastructure projects in the emerging world during the financial crisis of 2008-9.

Designed to help bridge the transition from pre-crisis to post-crisis, ICF-DP has led to 20 projects completing, enabling access to infrastructure to an incremental 12 million people and creating nearly 5,000 long-term jobs directly.

## Green Africa Power

Providing financing and support for renewable projects in Africa

### At a glance

<b>Established</b>	2013. During 2017, the decision was made to wind down GAP, and it ceased taking on new projects
<b>PIDG members who have provided funding</b>	UK aid and Norway MFA
<b>Cumulative PIDG member funding</b>	\$44.7m
<b>Chair:</b>	Jim Cohen
<b>Total commitments as at 31 Dec 2017</b>	\$21.1m to 1 project that has reached financial close
<b>2017 commitments</b>	No commitments were made during the year

### Expected development impact

	Cumulative
<b>Financially-closed projects</b>	1
<b>Total Investment Commitments (TICs) (\$m)</b>	30.5
<b>% of TICs in DAC I/II</b>	100%
<b>Access (in millions)</b>	0.2
<b>Job creation: short-term</b>	80
<b>Job creation: long-term</b>	24
<b>Fiscal benefits (\$m)</b>	1.1

### Achievements in 2017

This year, the solar plant Senergy 2, funded by Green Africa Power (GAP), delivered full production output. This meant that Senergy 2, the SPV which developed and operates the plant, was able to attract long-term senior debt refinancing and short-term construction debt from FMO, the Dutch development finance institution, for an extension to the 20MW plant. Repayment of the short-term construction bridging loan made to Senergy 2 is expected in 2018.

GAP, alongside InfraCo Africa, also assisted in the closure of a deal to finance a 70MW geothermal plant in Ethiopia. GAP's proposed funding has been taken on by InfraCo Africa, allowing the deal – the first geothermal IPP in Ethiopia – to be signed.

### 2018 and beyond


PIDG strives to meet the demands of the market in which it operates. Following a strategic review of its activities and priorities, it became clear that there were not enough projects in the renewable power sector that were sufficiently developed to justify continuing with a specialised facility which trades only in intermediate capital products, such as GAP.

While PIDG's commitment to renewable energy in Africa continues, it has been decided that GAP will not take on new mandates and will wind down its operations.

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## Keep up to date with PIDG

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