pioneering infrastructure changing lives

PIDG Development Impact 2018

Series note: Climate change

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"Take urgent action to combat climate change and its impacts"

Low-income countries in Africa and Asia are amongst the most susceptible to climate change shocks. PIDG seeks infrastructure projects which contribute to the mitigation of – and adaptation to - climate change, and which are themselves resilient in the face of climate change.

Rating infrastructure projects on climate change impacts

PIDG categorises new infrastructure projects by their contribution to climate change adaptation and mitigation in the following ways:

Tier	Mitigation		Adaptation	
	Description	Projects reaching financial close in 2017	Description	Projects reaching financial close in 2017
Tier 1	The principal objective of the projects is to mitigate climate change and/or the project delivers a step change in terms of reducing GHG emissions	6 (35%)	The principal objective is to facilitate adaptation to climate change	0
Tier 2	Mitigation forms an important part of the project scope and/or GHG emissions reductions are incremental	1 (6%)	Climate change adaptation is a secondary objective and/or the project will deliver significant adaptation co-benefits	2 (12%)
Tier 3	The project is not expected to have significant co-benefits for mitigation	10 (59%)	The project is not designed to facilitate adaptation to climate change and impacts are not likely to be significant	17 (88%)

Climate change and energy infrastructure

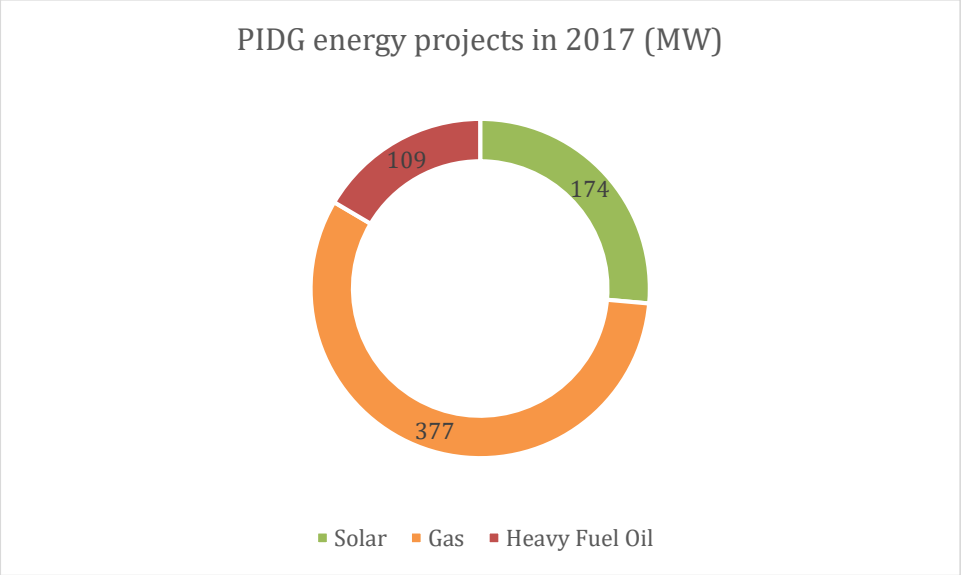
PIDG prioritises renewable energy generation. There are, however, occasions where urgent needs for dispatchable energy in PIDG's target countries cannot currently be met by renewable energy. Drought and extreme weather systems have placed increasing pressure on hydropower in eastern and southern Africa[1]. While solar PV use has accelerated across Africa and Asia, the battery technology to offer dispatchable power at scale from solar plants is currently some way from being commercially viable. Where grid capacity is severely limited, local households and businesses are

[1] Conway D, Dalin C, Landman WA, Osborn TJ (2017) 'Hydropower plans in eastern and southern Africa increase risk of concurrent climate-related electricity supply disruption.' *Nature Energy* 2: 946– 953.

more likely to use high emissions alternatives, such as diesel generators, traditional biomass or kerosene.

PIDG provides support for fossil-fuel based energy generation where there is an urgent need for electricity, and no viable lower carbon alternative. Emissions from these projects are a negative contribution to climate change, however they can also represent an improvement on the existing or alternative emissions profile, for example by replacing emergency diesel generators.

In 2017, PIDG Companies helped bring large solar power projects to financial close in four countries. These will add a total of 174.4MW once operational. PIDG Company, EAIF also supported CTRG, a natural gas plant that will provide electricity at a much lower emissions factor than the current grid in Mozambique. The emissions avoided from these projects are estimated to be 5.5m tonnes of $C0_2$ annually.



PIDG energy project emissions and emissions avoided, 2017

Project	PIDG Company	Energy type	Country	Installed capacity (MW)	Annual emissions* (tCO_2)	CO_2 emissions avoided per year** (tCO_2)
Mocuba	EAIF	Solar	Mozambique	41		14,800
Akuo Kita	EAIF, GuarantCo	Solar	Mali	50		51,744
Technaf Solar	GuarantCo	Solar	Bangladesh	20		TBC
SREC	GuarantCo	Solar	Philippines	64		TBC
CTRG	EAIF	Natural gas	Mozambique	175	506,350	5,416,100
Early Power	GuarantCo	LPG	Ghana	202	821,705	
Tobene Power	EAIF	HFO	Senegal	19	95,349	
Albatros Energy	EAIF, GuarantCo	HFO	Mali	90	365,975	

**Emissions calculations drawn from project documentation on the emissions factors of fuel combustion for electricity generation. This does not take account of construction or other upstream emissions associated with power plant operation.*
***Figures taken from Clean Development Mechanism monitoring reports and certifications.*

Fossil-fuel based energy generation projects must meet the following criteria for PIDG support:

a) the project which is being funded is in a DAC 1 Country or in a DAC 2 Country or in a Fragile or Conflict Affected State;
b) there is a clear and urgent need for additional on-grid power generation capacity;
c) no "cleaner/less polluting" thermal or renewable power generation base load technologies are feasible, or likely to become feasible in the foreseeable future, in such country from a technical, cost and economic perspective;
d) the project is the only viable / cost-efficient option to provide grid stability (either base load or peaking capacity); and
e) all reasonable steps are being taken to enable the plant to be modifiable at a future date to use fuels with a lower carbon footprint.

PIDG will conduct a carbon accounting exercise in 2019 and identify priority types of project for greater scrutiny on GHG emissions. PIDG will also implement a climate change standard to set expectations for PIDG projects on climate change adaptation, mitigation and resilience.