

World Bank's public assistance for gas expands fossil fuels not energy access



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Highlights

Since the Paris Climate Agreement (December 12, 2015):

- 75% of World Bank Group gas project finance has no linkage to expanding energy access
 - 33% of gas assistance went to G20 countries
 - 42% of gas assistance went to countries without energy access deficits or projects with no linkage to expanding energy access
- The remaining 25% of WBG gas assistance has highly questionable energy access linkages and is not climate-safe or cost-effective for expanding energy access.
- All the countries where the WBG prioritized gas assistance have vast undeveloped renewable energy resources, thus WBG public assistance to gas risks displacing renewable investments.
- The World Bank Group provides no evidence that gas development is necessary for expanding energy access and that it is not displacing renewable energy investments.

Access to energy is essential to reducing poverty. In 2013, the World Bank Group (WBG)ⁱ pledged that its energy practice would be centered on the achievement of the United Nations Sustainable Development Goal 7 (SDG 7), which aims for universal access to affordable, reliable and sustainable energy by 2030.¹

For the SDG 7 goal, universal energy access is measured as 100% household electrification. Thus, WBG projects that are contributing to expanding energy access should have a direct linkage to new electricity connections for households in countries with energy access deficits.

The WBG makes the argument that it needs to continue providing its public assistance to gas development in order to expand energy access. However, since the Paris Climate Agreement (December 2015), the vast majority, 75%, of WBG assistance to gas projects have no linkage to expanding energy access (see Table 1 below). A review of the WBG's energy sector project finance from December 13, 2015 to August 12, 2020 found 27 projects totaling \$6.4 billion that focused on gas-based energy development.² \$2.1 billion or 33 percent of gas assistance went to four G20 countries (Brazil, Mexico, Turkey and Indonesia³), which represent the 20 largest economies in the world. In addition, \$2.7 billion or 43 percent of WBG gas assistance went to countries that are already 100 percent electrified, or projects that had no linkages to expanding energy access (e.g., projects aimed at exports).

¹ World Bank Group, 2013. Toward a Sustainable Energy Future for All: Directions for the World Bank Group's Energy Sector. July 2013. <http://documents.worldbank.org/curated/en/745601468160524040/Toward-a-sustainable-energy-future-for-all-directions-for-the-World-Bank-Group-8217-s-energy-sector>

² For a summary of WBG fossil fuel finance, see: <https://urgewald.org/en/medien/world-bank-annual-meeting-bank-invested-over-105-billion-fossil-fuels-paris-agreement>

³ Indonesia does have an energy access deficit. According to the World Bank: In 2018, Indonesia's rate of electrification was 98.51% with the lack of access almost exclusively in rural areas. Thus, the WBG's public assistance in this G20 country should only be spent on distributed renewable energy options that are the most cost-effective and climate-safe option for rural energy access.

The remaining 25 percent of WBG gas projects have questionable linkages to energy access expansion. To begin, none of the projects provide new household electricity connections. Thus, there is no evidence that any of these projects led to expanding energy access in these countries. A new gas power plant or new supply of gas does not translate into new energy connections unless new connections have actually been created.

For example, of the remaining 25 percent (or \$1.58 billion) of WBG gas assistance, 31 percent or \$500 million went to the Azura open-cycle gas power plant in Nigeria (Prior to 2015, this same gas plant received additional WBG finance totaling: \$400 million). Nigeria has the largest energy access deficit in the world with over 85 million people living without access.

At the time (2014 and 2015) the WBG decided to invest in the 460 MW Azura gas power plant, Nigeria was already experiencing significant challenges in supplying gas to already existing gas power plants, including a lack of funds to obtain gas and gas pipeline sabotage. In 2017, Nigeria's installed power generation capacity stood at 12,500 MW with 74 percent of this capacity gas power.⁴ However, only about a third of power could be dispatched due to gas supply shortages (linked to lack of funds to pay for gas) and lacking transmission and distribution capacities.

The WBG's Energy Business Plan (EBP, 2013) for Nigeria focused on the development of the gas sector, from upstream gas production through downstream power generation. Correspondingly, from 2014-19, the WBG funded over \$1.1 billion for gas processing, transport and power generation, including for the inefficient open-cycle Azura gas plant.⁵ Meanwhile, Nigeria's vast potential for renewable energy is mostly untapped. The assumed solar power generation potential is around 427 GW and studies of wind data indicate immense cost-effective wind opportunities.⁶ In 2018, the WBG did fund new energy connections mainly through solar hybrid mini-grids and stand-alone-home systems, but this only represented 13% of the WBG's overall energy sector lending to Nigeria from 2014-2019.⁷

There is no evidence that the WBG's \$1.1 billion in gas assistance to Nigeria is associated with any new household energy connections. According to the World Bank, from 2016 to 2018, Nigeria's overall electrification rate dropped from 61 percent to 56 percent (partly due to population growth).

Gas Power Plants are not a Climate-safe or Cost-effective Power Source for Energy Access

In Mozambique with only a 31 percent electrification rate, the WBG provided \$500 million in public assistance to two gas power plants. The largest amount, \$420 million went for new high power transmission lines to evacuate the power from the new Temane gas power plant (see Table 1). This transmission is largely aimed at exporting the electricity and provided no distribution lines to households in Mozambique.

Energy consulting firm Frost and Sullivan point out that residential consumption in Mozambique, and southern Africa as a whole, constitutes a very small percentage of the total natural gas demand, and as such industrial entities have to be developed in order to create enough stable demand for gas. Frost and Sullivan state that this is the only way that natural gas could be adopted as an energy source across residential consumers in southern Africa.⁸ In other words, **natural gas power plants are not a cost-effective power source to supply Mozambique's population with access to energy.**

⁴ See <https://infoguidenigeria.com/current-power-generation-nigeria/> and The Guardian, 2018. Opinion: What happened to "Power Sector Recovery Programme?" September 9, 2018. <https://guardian.ng/opinion/what-happened-to-power-sector-recovery-programme/>

⁵ Mainhardt, Heike, 2020. The World Bank Failing Nigeria on Climate Goals and Energy Access. Re-course and Swedish Society for Nature Conservation, June 2020. <https://www.re-course.org/news/the-world-bank-failing-nigeria-on-climate-goals-and-energy-access/>

⁶ <https://www.get-invest.eu/market-information/nigeria/renewable-energy-potential>

⁷ Mainhardt, Heike, 2020. The World Bank Failing Nigeria on Climate Goals and Energy Access. Re-course and Swedish Society for Nature Conservation, June 2020. <https://www.re-course.org/news/the-world-bank-failing-nigeria-on-climate-goals-and-energy-access/>

⁸ ESI-Africa, 2019. Watch list: Natural hub to produce and export gas. ESI-Africa, May 9, 2019. <https://www.esi-africa.com/industry-sectors/generation/watch-list-natural-hub-to-produce-and-export-gas/>

Meanwhile, Mozambique has vast undeveloped renewable energy resources with 7.5 GW identified as priority projects and renewable technologies are already available and cost competitive with fossil fuels. However, instead of prioritizing finance for renewable energy, the WBG's finance from 2014-2019 was 16 times greater for fossil fuels than for renewable energy.⁹ The WBG is not supporting any wind and only a small amount of solar – \$23 million for a 40 MW grid-connected solar plant and only \$13 million for off-grid solar. Furthermore, World Bank policy-based lending supported tax breaks for coal and gas to increase investments into these fossil fuel sectors.

The production and burning of more gas and the associated increase in GHG emissions is a significant threat to the climate. The global gas sector is one of the largest industrial sources of methane emissions, a potent greenhouse gas that in the first two decades has an atmospheric warming effect approximately 80 times greater than carbon dioxide. Methane leakage is a problem across the entire value chain of gas production and distribution.¹⁰ Global methane emissions have substantially spiked in recent years posing catastrophic climate impacts. Gas is not a climate-safe or cost-effective power source for energy access.

In November 2020, the UN Sustainable Energy for All initiative recommended terminating the “financing of fossil fuel projects as a means of closing the energy access gap.”ⁱⁱ The World Bank Group should follow this critical recommendation.

Table 1. World Bank Group Gas Project Finance December 2015 to August 2020

Country	WBG Gas Projects	Amount (million US\$)	Main Activities	Date Approved
Afghanistan [2018: 98.7% electrification]	Mazar-e-Sharif Gas to Power Project	12	IDA - Gas Power: design, construction and operation of a 58.6MW green-field Mazar-e-Sharif Gas-to-Power Project (an IPP). <u>Simple cycle plant (Wartsila)</u> ; ADB financing (\$20 mill) and Germany's DEG (\$21.2 mill) – no new household connections	10-Oct-19
Afghanistan	Afghanistan Gas Project (AGASP)	52.5	IDA - Upstream & Midstream Gas: construct Sheberghan-Mazar Gas Pipeline; construct two amine plants; tender contract for Totimaidan gas block; new Hydrocarbons Law; contract model; TA for gas exploration plan focusing on Yatimtaq gas field	26-Nov-19
Afghanistan	Mazar IPP Afghan (equity & loan)	29.25	IFC - Gas Power: design, construction and operation of a 58.6MW green-field Mazar-e-Sharif Gas-to-Power Project (an IPP). <u>Simple cycle plant (Wärtsilä)</u>	10-Oct-19
Afghanistan	Sheberghan Gas to Power Project	12.8	IDA - Gas Power: design, construction and operation of 40MW gas power plant as an IPP	10-Oct-19
Armenia [2018: 100% electrification]	Yerevan Combined Cycle Gas Power Plant	39.2	MIGA - Gas Power: greenfield 250MW gas-fired combined-cycle power plant; Siemens equipment	27-Feb-19
Armenia	Yerevan CCGT [ARMPower CSJC]	65	IFC - Gas Power: greenfield 250MW gas-fired combined-cycle power plant; Siemens equipment	6-Apr-18

⁹ Mainhardt, Heike, 2020. World Bank Prioritizes Fossil Fuels and Exports instead of Renewables and Energy Access in Mozambique. Re-course and Swedish Society for Nature Conservation, September 2020. <https://www.re-course.org/wp-content/uploads/2020/09/World-Bank-prioritizes-Fossil-Fuels-and-Energy-Exports-instead-of-Renewables-and-Energy-Access-in-Mozambique-3.pdf>

¹⁰ See <http://www.yaleclimateconnections.org/2016/08/is-natural-gas-a-bridge-fuel/>.

Azerbaijan [2018: 100% electrification]	Trans-Anatolian Natural Gas Pipeline (TANAP)	1,110	MIGA - natural gas pipeline from Shah Deniz Gas Field to Turkey and Europe	27-Jun-18
Bangladesh [2018: 85.2% electrification]	United Ashuganj Energy Ltd. (equity & loan)	44	IFC - Gas Power: 195MW combined cycle gas power plant; A modular system employing 20 <u>Wärtsilä</u> 20V34SG gas engines	19-Jan-16
Bangladesh	Ghorasal 3rd Unit Repowering	97	MIGA - Gas Power: turning 210 MW into 400 MW combined cycle gas power plant; <u>GE</u> engineering and technology	29-Sep-16
Bangladesh	Ghorashal Unit Four Repowering Project	217	IDA - Gas power plant; refurbish units and expand from current 170 MW to 409MW; <u>GE</u> equipment and servicing	21-Dec-15
Bangladesh	Bangla LNG (EXCELERATE ENERGY BANGLADESH LIMITED)(equity, loan, guarantee)	55	IFC - LNG transport, regasification: offshore marine terminal to support the transfer, storage and regasification of liquefied natural gas (“LNG”); a subsea pipeline to shore	13-Jun-17
Brazil [100% electrification]	CELSE	200	IFC - LNG to power: 1,516 MW gas-fired combined cycle power plant & transmission lines; <u>GE</u> construction and equipment	14-Dec-17
Brazil	Gas Natural Acu	288	IFC - Gas LNG-to-power: 1,298 MW gas-fired combined cycle power plant; <u>Siemens</u> equipment/long-term service and part owner; BP part owner	18-Dec-18
Cote d'Ivoire [2018: 67% electrification]	FCS RE CIPREL V	134.62	IFC - Gas power: Atinkou power plant; 390 MW gas plant; PPP project	10-Jan-20
El Salvador [2018: 100% electrification]	Acajutla LNG	88	IFC - LNG to power: 378 MW gas-fired power plant and offshore liquified natural gas (“LNG”) import terminal, floating storage regasification unit (“FSRU”); gas pipelines	6-Jun-19
Indonesia [2018: 98.5% electrification]	Riau IPP [PT MEDCO RATCH POWER RIAU]	51.5	IFC - Gas power: 275 megawatt (MW) combined cycle gas turbine power plant and about 40-kilometer gas pipeline; subsidiary of Medco Power Indonesia - 11.37% is owned by IFC	15-Feb-19
Iraq [2018: 99.9% electrification]	Basrah Gas Co	158	IFC - Midstream gas (gas capture from oil fields): Expansion of gas processing capacity [Note: Shell 44% owner; project was economic before IFC involvement]	7-Nov-19
Mexico [100% electrification]	Ciclo Combinado Tierra Mojada S.A. de R.L. de CV.	962.9	MIGA - Gas Power: Construction of 874 MW gas-fired combined cycle gas turbine power plant; <u>utilizing two GE</u> 7HA.02 Guarantee is good for 15 years and could cover further expansion.	20-Jun-17
Mozambique [2018: 31.1% electrification]	Central Termica de Ressano Garcia	60	IFC - Gas power generation plant (175 MW) - does not say if it's a combined cycle	7-Jul-17

Mozambique	Temane Regional Electricity Project (loan & guarantee)	420	IDA - high power transmission lines for new Temane gas power plant , transmission largely aimed at trade (export) and main grid (no new household connections)	20-Jun-19
Myanmar [2018: 66.3% electrification]	Myingyan	75	IFC - Gas power generation 225 MW Combined Cycle Gas Turbine – plant connected to the Myingyan Steel Mill sub-station (no new household connections)	8-Oct-16
Myanmar	Power System Efficiency and Resilience Project	350	IDA - gas power: Ywama power plant; 300 MW Gas combined power plant to replace old gas plant. Not expanding energy access	29-May-20
Nigeria [2018: 56.5% electrification]	Azura Power West Africa Ltd.	492	MIGA - Gas power: 460 MW natural gas open cycle power plant ; Siemens' equipment (no new household connections – lack of gas supply to existing gas plants)	22-Dec-15
Panama [100% electrification]	AES Panama LNG	150	IFC - LNG to power: 380MW net combined cycle gas-fired power plant and an onshore liquefied natural gas (“LNG”) import terminal	20-Jul-16
Turkey [100% electrification]	Gas Storage Expansion Project	600	IBRD - Gas storage and distribution: Tuz Golu gas storage expansion plant; including transmission to grid and Brine discharge into Lake Tuz Golu.	22-May-18
Ukraine [100% electrification]	Gas Supply Security Facility	500	IBRD - Gas supply: Guarantee for Naftogaz gas purchases	18-Oct-16
Uzbekistan [2018:100% electrification]	District Heating Energy Efficiency Project	140	IDA - New gas-fired boilers to replace old boilers for heating	25-Jan-18
Total	27 projects	\$6,404		

Table color code: **Yellow** = G20 countries; **Orange** = not associated with energy access deficit

Further Resources

Falling Short: World Bank needs to focus on new connections for energy poor countries - <https://www.re-course.org/wp-content/uploads/2020/10/Assessing-the-World-Bank%E2%80%99s-contributions-to-Climate-Goals-and-Energy-Access-Nigeria-Mozambique-and-Myanmar-web.pdf>

Assessing the World Bank's contributions to climate goals and energy access: Nigeria, Mozambique, and Myanmar - <https://www.re-course.org/wp-content/uploads/2020/10/Assessing-the-World-Bank%E2%80%99s-contributions-to-Climate-Goals-and-Energy-Access-Nigeria-Mozambique-and-Myanmar-web.pdf>

ⁱ The World Bank Group (WBG) includes: International Development Association (IDA), International Bank for Reconstruction and Development (IBRD), International Finance Corporation (IFC), and Multilateral Investment Guarantee Agency (MIGA).

ⁱⁱ [Energizing Finance: Understanding the Landscape 2020 | Sustainable Energy for All \(seforall.org\)](https://www.seforall.org/)