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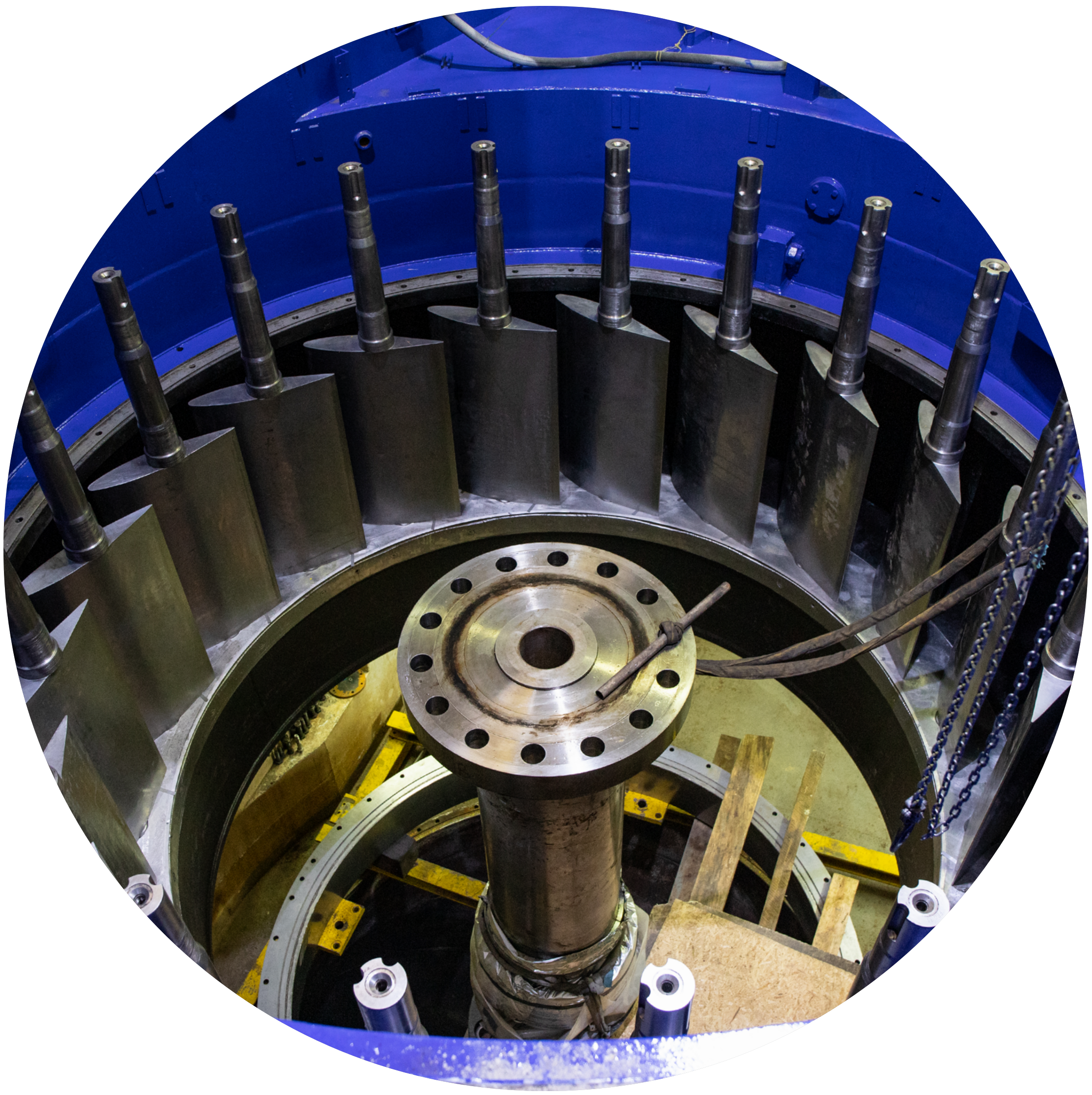
Scaling blended finance to realize Africa's energy future



Accelerating Africa's low-carbon future

September 2022

For Africa to meet Sustainable Development Goal (SDG) #7 and "Ensure access to affordable, reliable, sustainable and modern energy for all,"[1] Deloitte estimates, using a decentralized solar-based approach, that about $248 billion of capital investment is needed. The investment amounts required are far beyond the capacity of many African government budgets. We estimate that private sector financing, at purely commercial terms, can only mobilize $27 billion of this needed capital investment. Therefore, grants or concessional loans are needed to cover the gap of $221 billion. Blended finance may be a solution to draw additional private sector capital in the near term, particularly if development partners provide targeted technical assistance to catalyze blended finance investments.

Assessing grid extension to unelectrified communities

Extending the electrical grid to provide modern energy service to every African citizen is ideal but economically impractical. Most African utilities are not currently bankable as measured by their credit rating or stand-alone creditworthiness even though they are often state-owned enterprises (SOEs) receiving government budgetary support. The causes include a combination of technical, economic, social, and regulatory challenges: technical inefficiencies lead to energy losses, impairing revenue; inadequate revenue shortchanges maintenance, reducing reliability; and regulators lack the political capital to approve tariffs to cover the full cost of service. Utilities seeking to electrify the nation face diminishing returns – the cost of extending the grid to unserved communities, typically some of the poorest and most vulnerable, becomes more expensive than the revenue expected. Productive use of energy (PUE), that is, using electricity for income-generating activities as compared with household consumption, sometimes can be used to justify grid extension through the additional revenue of commercial and industrial customers. Often, though, PUE is not considered until years after grid extension, when utility finances are stretched by revenue shortfalls.

Setting the vision for household energy consumption

Deloitte's experience in Africa and elsewhere has shown that customers are not generally satisfied with bare-bones systems, e.g., a 50 watt household electricity panel and five LED lamps, though this level of electricity is consistent as a starting point for SDG #7. With this in mind, Deloitte analyzed economic and energy conditions in 51 countries in Africa, accounting for family sizes and degree-days in each country to calculate basic human comfort, as a matter of environmental justice, on non-economic factors. We conclude that 1,079 kWh/person/year counts as modern energy, that is, an acceptable level of household energy. This is consistent with International Energy Agency (IEA) findings that: "Electricity access entails … at a minimum, several lightbulbs, phone charging, a radio and potentially a fan or television … growing over time [to] … four lightbulbs operating at five hours per day, one refrigerator, a fan operating 6 hours per day, a mobile phone charger and a television operating 4 hours per day, which equates to an annual electricity consumption of 1,250 kWh per household with standard appliances, and 420 kWh with efficient appliances."[2] Deloitte considers that off-grid home solar systems (commensurate with 1,079 kWh/person/year), will be generally more cost-effective than building out the grid, which may cost thousands of dollars per household when accounting for generation, transmission, and distribution.

Grappling with finance for the home solar approach

Building out a massive home solar program in Africa will need a robust program of financing that, frankly speaking, cannot continue to be assisted by development partners at great expense on a transaction-by-transaction basis. Deloitte has facilitated non-bank or otherwise non-traditional forms of finance. Those tools are unlikely to mobilize the quantum required for the power sector and are unlikely to be major building blocks towards meeting SDG #7. Green bonds and other green investment funds[3] are financing tools that, even more so than blended finance, require issuers to develop sophisticated governance

Deloitte leverages technical assistance to attract financing for Africa's power sector

In Ghana, Nigeria, South Africa, and more than two dozen other Power Africa countries, Deloitte has been working to implement United States Agency for Development (USAID) programs under the Power Africa Initiative. We have facilitated formulation of energy policy, energy investment, and transaction execution. We have provided training to policymakers, regulators, project developers, and private sector investors. Our work from 2017 to 2022 has resulted in more than $8 billion of private sector financing leveraged off of $253 million of USAID financing, including multiple blended financing examples.

1. "Sustainable Development Goal 7: Ensure access to affordable, reliable, sustainable and modern energy," United Nations, https://unric.org/en/sdg-7/, accessed August 31, 2022
2. "Defining energy access: 2020 methodology," International Energy Agency, https://www.iea.org/articles/defining-energy-access-2020-methodology, accessed August 31, 2022
3. This basket is sometimes referred to as green, social, and sustainable (GSS) bonds.

and regulatory structures and reliable information bases on which to create a bankable offering. Project financing requires contracts that meet strict international conventions.[4] Bonds issued by corporate or sovereign issuers require investment-grade credit ratings with transparent financial statements. In any case, "bankable" means that a commercial debt or equity investor can find transactions with a rate of return that justifies taking on the risks involved. The suggestions we present here regarding blended finance are equally applicable to green bonds.

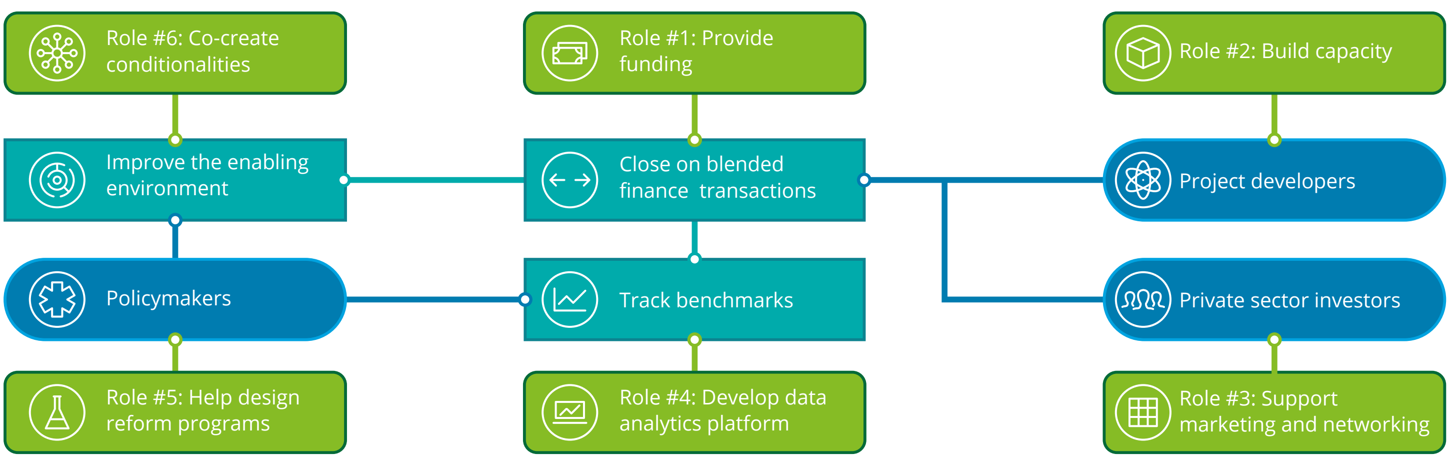
A role for blended finance

The Organisation for Economic Co-operation and Development (OECD) defines blended finance as: "... strategic use of development finance for the mobilisation of additional finance towards sustainable development in developing countries."[5] Deloitte has a broad definition of blended finance, where development partner funding is leveraged to unlock private sector capital by altering the risk allocation issues that hinder financing. To address the fundamental risk allocation issues in the power sector in Africa, blended finance pairs up market-based, commercial, private finance with a concessional strip of financing. Blended finance solutions encompass grants, debt, equity, insurance, performance-based incentives, and many other structures, but all have the common function to de-risk transactions so that private sector investment is justified on a risk / return basis. Some observers are very enthusiastic about blended finance,[6] while others are more measured.[7]

Some researchers recommend blended finance as a useful tool in a sweet spot where modest assistance avoids both low risk / low returns and high risk / high returns scenarios.[8] Deloitte's experience in Africa would indicate that the key factor in power sector financing is actually the creditworthiness of the off-taker, regardless of the country. The key objective for any financing transaction is to reduce the net cost of money of the private sector to a point where the project is bankable, so creditworthiness is essential.

The most authoritative tracker of blended finance is Convergence, which counts $160 billion in total blended finance availability since 2015, globally, for all SDG goals.[9] The grant or concessional component needed for Africa is almost 90 percent of the total, a point raised by many researchers.[10] Development partners do not always follow through on blended finance commitments – less than 20 percent of pledged funds have been dispersed.[11]

Figure 1: Catalytic roles supporting blended finance



4. "Important Features of Bankable Power Purchase Agreements For Renewable Energy Power Projects," Overseas Private Investment Corporation, et. al., https://www.homeenergyafrica.com/sg_userfiles/10_Elements_of_a_Bankable_PPA.pdf, accessed August 31, 2022
5. "Blended Finance," Organisation for Economic Co-operation and Development. https://www.oecd.org/dac/financing-sustainable-development/blended-finance-principles/#:~:text=Blended%20finance%20is%20the%20strategic,providing%20financial%20returns%20to%20investors, accessed August 31, 2022
6. "4 reasons why blended finance is our best bet in adapting to climate change," World Economic Forum, https://www.weforum.org/agenda/2021/09/why-blended-finance-is-our-best-bet-in-successfully-adapting-to-climate-change/, accessed August 31, 2022
7. Samantha Attridge, "Blended finance in the poorest countries: The need for a better approach" Overseas Development Institute, accessed August 31, 2022
8. Owen Barder and Theodore Talbot, "Guarantees, Subsidies, or Paying for Success Choosing the Right Instrument to Catalyze Private Investment in Developing Countries. Center for Global Development Working Paper No. 402, June 2015, accessed August 31, 2022
9. "The State of Blended Finance 2021," Convergence , October 2021, https://www.convergence.finance/resource/0bbf487e-d76d-4e84-ba9e-bd6d8cf75ea0/view, accessed August 31, 2022
10. Charles Kenny, "Billions to Trillions is (Still) Dead. What Next?" Center for Global Development, April 2022 https://www.cgdev.org/blog/billions-trillions-still-dead-what-next, accessed August 31, 2022
11. Kathy Julik-Heine, Sri Sekar, and Abbey Pizel, "Climate finance commitments aren't enough. We need new tools to unlock investment." December 2021, https://www2.deloitte.com/uk/en/insights/topics/strategy/international-climate-finance.html, , accessed August 31, 2022

While individual examples of blended financing abound, we respectfully submit that scaling up blended financing requires better enabling environments.[12] This means inter alia, improving creditworthiness of counterparts, upgrading the planning and financing skills of energy project developers, and helping governments better understand requirements of private sector lenders when structuring a transaction. According to researchers Dana Vorisek and Shu Yu, "SDG costing exercises largely ignore the critical role of policy and institutions and may put excessive emphasis on financing needs… In the absence of improving absorptive capacity, raising more funds will not necessarily help countries achieve the SDGs… it would be more effective to focus primarily on the policy and institutional environment in forming strategies to achieve the goals." With this in mind, blended finance should be a reward for progress in reforms and should be checked as a diagnostic to see if concessional support diminishes over time.[13]

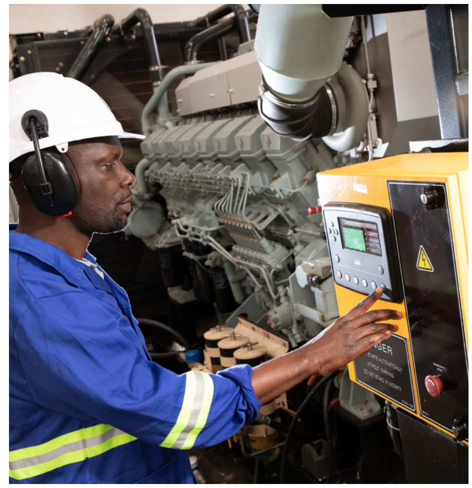
Suggestions to improve effectiveness of blended finance

To scale up and make blended finance more effective, Deloitte suggests a strong program of capacity-building activities that motivate such finance. Our suggestions are based on our historical experience that, for a variety of reasons, investors from the private sector struggle to find bankable power sector transactions in Africa. We suggest development partners adopt a holistic view of blended finance, so that grant or concessional funding is expanded to capacity-building to help governments improve the enabling environment for investment. Figure 1 depicts six catalytic roles for development partners to adopt to scale up blended finance.

For example, development partners can assist policymakers to improve the enabling environment in their countries and thereby better attract developers and investors. Development partners assist project developers to strengthen project plans and business cases to attract finance. Development partners can assist private sector investors to better understand and to close on investment opportunities. While development partners providing funding in a blended finance transaction (Role #1) remains central, the other roles spelled out in the following suggestions would increase the volume of blended financing and increase private sector participation.

Upgrade the enabling environment

According to the World Bank, "As of 2020, more than 40 percent of countries in Sub-Saharan Africa had not set electricity access targets or developed solid national plans and policies."[14] Governments need to create a path for the reforms indicated by market signals. One important market signal is the amount of private sector capital available versus the amount of concessional finance



needed. We suggest business training for local entrepreneurs and for customers to transition them from grant-writing to market-facing in the private sector (Role #2). On a parallel track, development partners can support marketing and networking to private sector investors (Role #3), adding a comfort factor and helping them link with a quality project pipeline. Governments, regulators, and SOEs often also need support in creating data and analytics platforms to compare transactions across countries and across time (Role #4).

Governments should engage directly with blended finance providers to convey that their reform programs in the power sector are significant, realistic, and time-bound, preferably incorporated into roadmaps

Effecting blended finance for off-grid development in Nigeria

In Nigeria, Deloitte helped structure a $350 million financing facility for a home solar system installation program, blending grant, commercial debt, and private sector equity. In coordination with the financing facility, Deloitte provided technical assistance, capacity-building on project finance, and strategy support to the Rural Electrification Agency.

12. The term "enabling environment" means the overall environment in which transactions take place – or are prevented, with respect to rule of law, enforcement of contracts, strength of the regulator, good governance at the utility, and any other aspects that bear on investor risk.

13. Vorisek, Dana and Shu Yu. "Understanding the Cost of Achieving the Sustainable Development Goals." World Bank Group, February 2020, https://documents1.worldbank.org/curated/en/744701582827333101/pdf/Understanding-the-Cost-of-Achieving-the-Sustainable-Development-Goals.pdf, accessed August 31, 2022

14. IEA, IRENA, UNSD, World Bank, WHO. 2022. Tracking SDG 7: The Energy Progress Report. World Bank, Washington DC. © World Bank. https://trackingsdg7.esmap.org/data/files/download-documents/sdg7-report2022-full_report.pdf, accessed August 31, 2022

consistent with goals and constraints. Governments should adopt an attitude consistent with results-based financing, which "can help enable countries to establish and strengthen institutions and to improve infrastructure and services."[15] Deloitte considers that achieving reforms can lead to market-based conditions in the power sector. To operationalize reforms, a dedicated unit in each country should be empowered to work across ministerial boundaries. Blended finance could be used programmatically, so that some financing could be made available when electricity access targets and solid plans are made. Reform programs can leverage lessons learned and check if concessional financing amounts needed are declining (Role #5).

Aggregate projects to replicate blended finance at scale

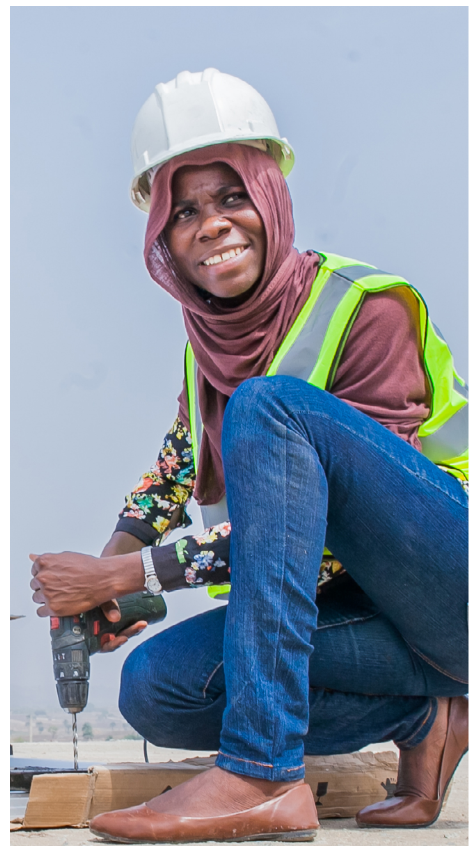
A common misconception about financing – one we see held by energy entrepreneurs, governments, and development partners – is that financing conditions that apply to large projects can also work for small projects or even at the household level. For example, a 70/30 debt-to-equity ratio is a standard capitalization structure, but it only applies to large, single-purpose projects without technology or market risk and without all risks that potentially impair revenue streams. Scaling blended finance requires large deals, enterprises, and/or programs. To finance cost-efficient solutions like off-grid home solar systems, we suggest aggregating projects with stable institutions. This means instead of pursuing numerous individual deals, partners should build up local organizations with good governance and sustainable cash flow, such as utilities or municipal corporations, with which to aggregate blended finance deals.

Upgrade the skills of market players and government officials

The modern power sector requires management be attuned to cost effectiveness, bidding into competitive power markets, staff efficiencies, inventory optimizations – a host of new skills in addition to traditional utility skills related to reliability and technology risk reduction. Entrepreneurs in wind and solar development should focus their business plans on efficiency factors, costs of energy, anticipated collection rates, and customer creditworthiness, in addition to the climate-related benefits derived from renewable energy generation. Customers may have benefitted from subsidies and regulatory policies or tariffs that disfavor energy efficiency. We suggest business training for local entrepreneurs, government officials, and customers to transition them from grant-writing to market-facing in the private sector.

Deepen links between concessional lenders and technical assistance

Concessional lenders and development partners providing technical assistance have collaborated well in many countries through regular coordination groups. This collaboration can be expanded, and governments should increasingly lead coordination amongst development partners around both SDGs and sector development. To lead reform, cash-strapped governments may avail financing under a multi-donor trust fund arrangement.[16] Concessional lenders can cite reform achievements as milestones in their loan conditions. Parties can also co-create conditionalities, on which blended finance transactions can serve as a reward (Role #6).



Building due diligence capacity in South Africa

Deloitte built the capacity of South Africa Independent Power Project (IPP) Office personnel to conduct due diligence on renewable energy project proposals, resulting in 27 projects reaching financial close and mobilizing $4 billion of investment in South Africa's energy economy.

15. 15. "Banking on Impact: What You Need to Know about Results-Based Financing," World Bank, June 2019, https://www.worldbank.org/en/news/feature/2019/06/28/banking-on-impact-what-you-need-to-know-about-results-based-financing, accessed August 31, 2022

16. "Multi Donor Trust Funds Generic Terms of Reference," United Nations Sustainable Development Group, September 2016, https://unsdg.un.org/resources/multi-donor-trust-funds-generic-terms-reference, accessed August 31, 2022

Implementing blended finance at scale

Blended finance, at scale, requires ease and speed of investor due diligence. For large projects, countries should adopt a familiar and accepted enabling environment, including respect for expected energy regulation, sanctity of contracts, and legal frameworks for collateral, debt covenants, and a host of other risk issues with which investors can become comfortable quickly. The Equator Principles, "A financial industry benchmark for determining, assessing and managing environmental and social risk in projects,"[17] provide a good example of a shorthand for community engagement that international infrastructure investors understand and like.

Blended finance – *if it is going to be deployed at scale* – also needs to have large transaction sizes. For small projects and small customers, aggregation is needed to match ticket sizes (i.e., the amount of a transaction, also called gross proceeds). Aggregation can be done by a traditional utility distribution model, whether state-owned or private, but that may be not efficient to address off-grid and disadvantaged communities. Aggregation for off-grid solar home systems needs to be first incubated, then grown to large enough scale to justify professional management teams, service centers, etc. Creative business models and decentralized solutions can address the off-grid market, with the right package of subsidies, tariff structures to incentivize investment in underserved communities and women-owned and -led businesses, workforce development, productive uses of electricity programs, stakeholder engagement, upgraded supply chains, and governance. Blended finance can apply to either centralized grid-based solutions, or to off-grid operations, but, in either case, a growth path should be clear toward realization of SDG #7.

With countries improving their enabling environment, blended finance also offers a diagnostic function by quantifying the necessary proportion of grant financing, concessional loans, or payment guarantees in the blend. Once a consistent track record of successful projects is established using blended finance and private sectors increase their familiarity and actual risk profile of projects, private sector lenders may subsequently increase funding and reduce risk premiums based on greater volumes of performing loans and projects.

Building Malawi's capacity for sustainable development
In Malawi, Deloitte guided the government to structure the commercial financing documents needed to close on a 350 MW hydropower project, including setting up a Project Implementation Unit capable of managing future power sector acquisitions.

17. "About the Equator Principles," The Equator Principles - Equator Principles Association (equator-principles.com), The Equator Principles Association 2022, accessed August 31, 2022

Let's talk

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