

DATA BRIEF

ENERGY INFRASTRUCTURE

JANUARY 2020



HIGHLIGHTS

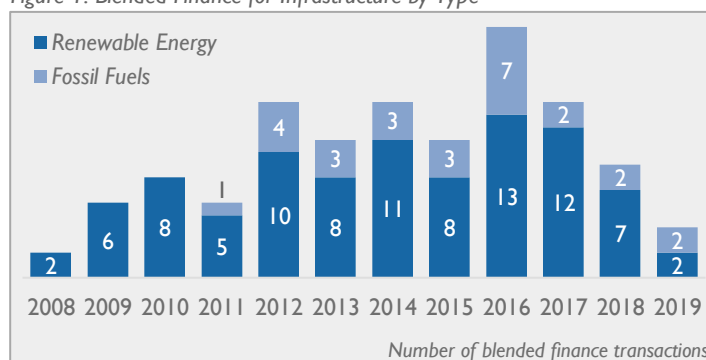
- Universal access to energy is crucial to achieving the Sustainable Development Goals (SDGs). Yet, more than one billion people – mostly concentrated in Sub-Saharan Africa – still live without electricity. The persistent challenge is to promote universal access, while reducing the environmental footprint of the global energy sector.
- Convergence's database captures 128 blended finance transactions focused on the energy sector, which represent an aggregate \$67.7 million in total financing. This includes transactions that mobilize financing for renewable energy as well as fossil fuels, although blended finance has been primarily deployed for renewable energy.
- Blended finance transactions in the energy sector have been large: the median transaction is nearly twice the median of all blended finance transactions. Within the energy sector, transactions that finance fossil fuels have generally been the largest, with a median size of \$325 million compared to \$103 million for renewable energy.
- Guarantees / risk insurance have been more commonly used in transactions focused on fossil fuels, while concessional debt or equity in the capital structure has been more common in transactions focused on renewable and off-grid energy. Design-stage grants have also supported the sector.
- Leverage ratios have been higher in the energy sector than in blended finance as a whole. The average leverage ratio for blended finance transactions in the energy sector has been 6.5x, compared to 4.05x across all blended finance transactions. Leverage ratios varied significantly, from a minimum of 0.2x to a maximum of 44.2x.

It's time to scale-up blended finance for energy access

Universal access to energy is crucial to achieving many of the Sustainable Development Goals (SDGs) and embodied in Goal 7 (*Affordable & Clean Energy*). Yet, more than one billion people still live without electricity, including 65% of the population in Sub-Saharan Africa. The persistent challenge is to promote universal access while reducing the environmental footprint of the energy sector. Additional public and private investment are needed in the energy sector, with a focus on regulatory frameworks as well as innovative business models to transform the global energy system.

This Data Brief outlines key trends in the use of blended finance approaches for the energy sector in developing countries. Energy has been one of the most common focus sectors for blended finance transactions, second only to financial services. According to the Convergence database, there have been 128 blended finance transactions focused on the energy sector, representing an aggregate \$67.7 billion in total financing. Most transactions have focused exclusively on the energy sector, but a few have broader mandates (e.g., green growth, clean technology). Three-quarters of these transactions have launched since 2012.

Figure 1: Blended Finance for Infrastructure by Type



Energy infrastructure accounts for 72% of blended finance transactions focused on infrastructure, which is why Convergence captures energy as a separate sector. Nearly 80% of these transactions in the energy sector have focused on renewable energy, such as biogas, biomass, geothermal, hydropower, solar, and wind projects. About one-fifth of transactions have focused on fossil fuels, including projects to increase energy efficiency as well as to develop, store, and transmit fossil fuel resources that support broader energy access and affordability.

ANALYSIS

Solar power has received the most attention from blended finance

The majority of blended finance transactions have focused on power generation, including the financing of greenfield and brownfield energy infrastructure projects. These energy projects have most commonly leveraged solar technology, with about one-third of solar projects being off-grid solutions. Beyond solar, blended finance has focused on hydro and wind technologies, and then traditional oil and gas. Of the transactions focused on oil and gas, approximately 60% have focused on developing new production capacity, with the remaining 40% focused on transportation, storage, and other logistical infrastructure to increase access and affordability.

Blended finance has unlocked additional capital for energy projects

Energy is one of the few sectors where blended finance solutions have been most commonly structured at the project level. Nearly half of blended finance transactions targeting the energy sector have been individual projects, which is double the proportion of projects seen across all blended finance transactions. Companies that have benefitted from blended capital are also common in the energy sector, such as off-grid solutions like BBOX, d.light, Kingo, and M-KOPA. In contrast, pooled vehicles, like funds and facilities, have been relatively less common in this sector, with those funds often taking broader green growth or clean technology approaches.

Transactions in the energy sector are big compared to other sectors

The median blended finance transaction in the energy sector has been \$123 million in total size, which is approximately double the median transaction size across all sectors. The majority (55%) of blended finance transactions in the energy sector have been larger than \$50 million, with 23% of transactions between \$100-250 million in total size and another 15% of transactions between \$500-1,000 million. Transactions that have financed fossil fuels have generally been largest, with a median transaction size of \$325 million compared to \$105 million for transactions focused on renewable energy.

There's been significant focus on energy across Sub-Saharan Africa

Sub-Saharan Africa has been the region most frequently targeted by blended finance transactions in the energy sector, followed by East Asia and Pacific and South Asia. This finding closely mirrors analysis done by the [Climate Policy Initiative](#) in 2018, which noted that countries in these regions showed higher potential in terms of energy access improvements. Transactions in the energy sector have been less likely to focus on Latin America and the Caribbean and the Middle East and North Africa. There have also been fewer transactions at the global level, which in good part reflects the preponderance of direct project-level transactions.

Figure 2: Transactions by type of energy and project

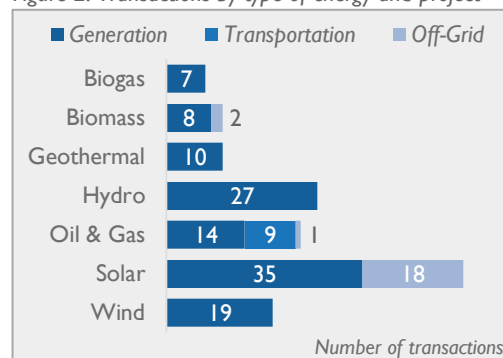


Figure 3: Transactions by blended vehicle type

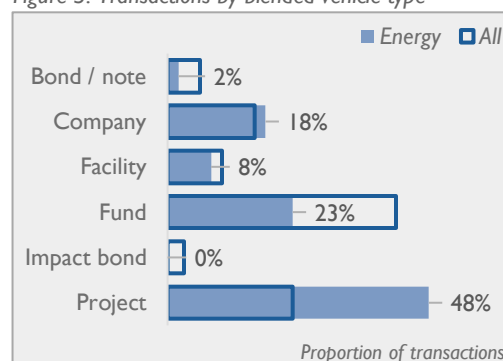


Figure 4: Transactions by total transaction size

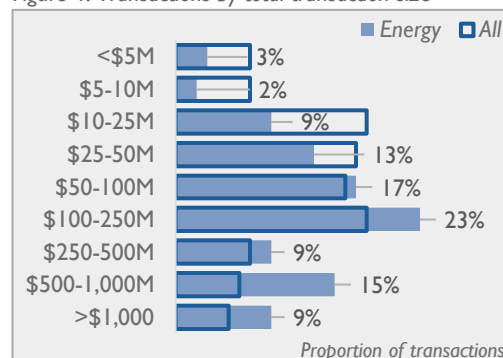
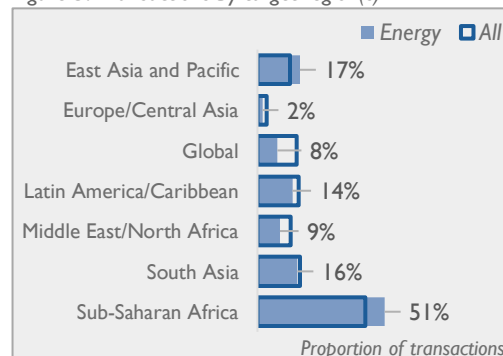


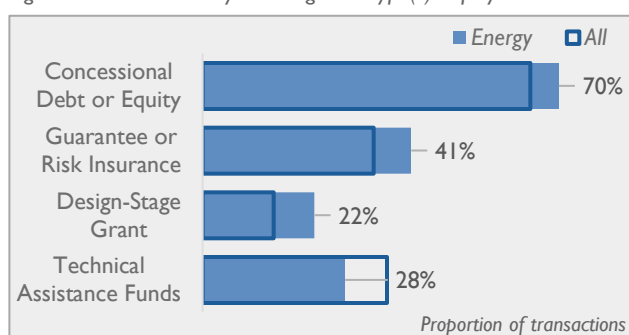
Figure 5: Transactions by target region(s)



Blending varies across fossil fuels and renewable energy

The most common blending approaches used in the energy sector have been concessional debt or equity in the capital structure and concessional guarantees or risk insurance. Guarantees or risk insurance have been particularly common in transactions focused on fossil fuel infrastructure (i.e., larger and/or more commercial projects). Meanwhile, concessional debt or equity have been more commonly deployed to transactions focused on renewable energy and off-grid solutions. Design-stage grants have also been more common in transactions in the energy sector, compared to across all blended finance.

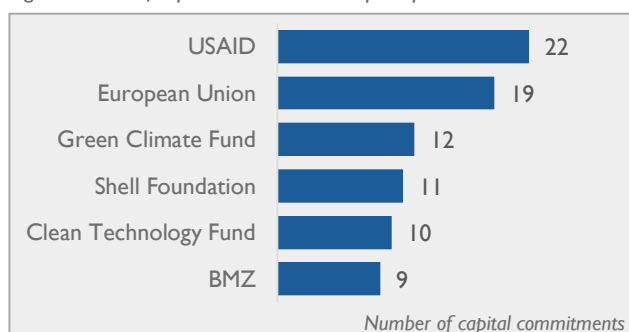
Figure 6: Transactions by blending archetype(s) deployed



Public funds play a key role in unlocking private finance

Public concessional funds – both bilateral and multilateral – have played an important role in blended finance transactions in the energy sector. The public sector accounts for the vast majority (~70%) of concessional commitments to blended finance transactions in the sector. The most frequent concessional capital providers have been donors, like USAID, the European Union, and BMZ, and specialized multilateral instruments, like the Green Climate Fund (GCF) and Clean Technology Fund (CTF). The Shell Foundation has also been a key development funder, reflecting its focus on energy access.

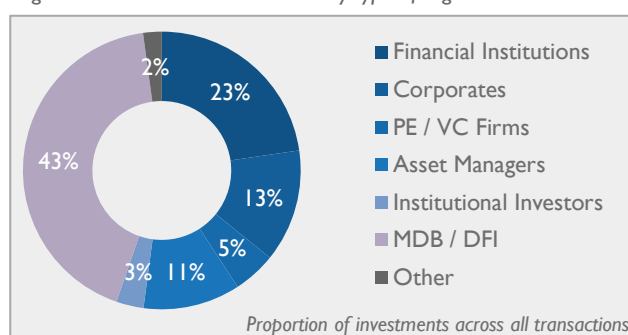
Figure 7: Most frequent concessional capital providers



Banks and corporates have invested most private dollars

Each blended finance transaction in the energy sector has mobilized capital from one or more private sector investors. Just over half of commercial investments (by count) have been provided by private sector investors, with the remaining 43% of commercial commitments provided by commercially oriented public institutions (i.e., development finance institutions). Financial institutions and corporates have been the most likely private sector investors to invest in blended finance transactions in the energy sector. Institutional investors have only accounted for 3% of commercial investments in these transactions.

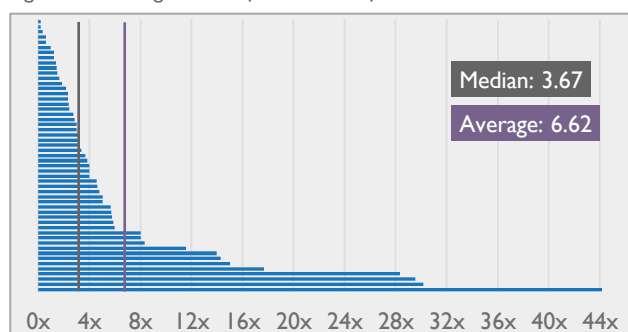
Figure 8: Commercial investments by type of organization



Leverage ratios have been higher in the energy sector

Based on our 2018 analysis, the average leverage ratio for blended finance transactions in the energy sector has been 6.5x, or \$6.50 of commercial capital has been mobilized by each dollar of concessional capital. Leverage has ranged from a minimum of 0.2x to a maximum of 44.2x, with a median of 3.67x. This is the same median as seen across all blended finance transactions; however, the average leverage ratio has been higher for the energy sector. Across all blended finance transactions, the average leverage ratio has been 4.05x. This likely reflects a small number of large, regional fossil fuel projects.

Figure 9: Leverage ratios of 55 blended finance transactions



REFLECTIONS

Within the energy sector, there is a critical need to achieve universal energy access while promoting the transition towards a low- or zero-carbon global economy. A broad range of energy technologies are needed, including new sources of energy (e.g., solar, hydropower) and improved carbon capture and energy efficiency. While the need to reduce greenhouse gas (GHG) emissions does not preclude the use of fossil fuels, it does demand a significant change to “business as usual” across the sector. Blended finance, as a tool for partnership creation, may be one approach for navigating this balance between universal access and climate action.

Regardless of the technology, achieving universal energy access will require significant capital investment in power generation, transportation, storage, transmission, and other logistical infrastructure, as well as operations and maintenance. Blended finance is well established in the energy sector – and now it is time to scale proven solutions that achieve development impact (i.e., greater energy access and affordability) and mobilize additional private sector investment. [CPI identifies](#) Sub-Saharan Africa, Southeast Asia, and South Asia as key markets for blended finance in the energy sector, with high relevance for climate change mitigation and energy access as well as broadly conducive environments for private sector investment.

METHODOLOGY AND NOTES

1. **Convergence's database:** Convergence maintains the largest and most detailed database of blended finance transactions in developing countries that have reached financial close. Given the current state of information sharing, it is not possible for this database to be fully comprehensive. Efforts have been made to capture all relevant blended finance transactions; however, there are likely more transactions that have not been captured.
2. **Scope of available data:** This Brief analyzes 128 blended finance transactions that target the energy sector, in full or part, in developing countries. This includes blended finance transactions that focus on renewable energy as well as fossil fuels. This Brief does not include transactions that focus on energy efficiency in other sectors.
3. **Leverage:** 55 out of the 128 blended finance transactions in the energy sector are included in this analysis, based on availability of information. The data and methodology for Convergence's leverage calculations and analysis is outlined in our first data brief [here](#). These calculations are based on multiple estimates and should be taken as indicative trends only. Commercial investment includes both private investment and commercial DFI investment; private and commercial DFI investment is not disaggregated because of a lack of data.
4. **Additional reading:** Additional research on blended finance for the energy sector can be found in two recent reports: Climate Policy Initiative's *Blended Finance in Clean Energy: Experiences and Opportunities* and the Blended Finance Taskforce's *Better Finance, Better Infrastructure*.

ABOUT CONVERGENCE

CONVERGENCE is the global network for blended finance. We generate blended finance data, intelligence, and deal flow to increase private sector investment in developing countries.

BLENDED FINANCE uses catalytic capital from public or philanthropic sources to scale up private sector investment in emerging markets to realize the SDGs.

Our GLOBAL MEMBERSHIP includes public, private, and philanthropic investors as well as sponsors of transactions and funds. We offer this community a curated, online platform to connect with each other on blended finance transactions in progress, as well as exclusive access to original market intelligence and knowledge products such as case studies, reports, trainings, and webinars. To accelerate advances in the field, Convergence also provides grants for the design of vehicles that could attract private capital to global development at scale.

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