

Sida's Power Africa Initiative

Results 2019

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Summary

This fifth annual report marks the midpoint of the ten-year Power Africa Initiative (PA) launched by Sida in 2015. The report therefore not only takes stock of results achieved within contributions of the Africa Department but also incorporates all of Sida's contributions generating results towards the Swedish pledge of mobilising 1 billion USD over the period 2015-2024. The report also reflects an ongoing discussion of the outcomes and impacts of Sida energy-contributions in addition to the standard output indicators. The report is released with significant delay as its data collection and preparation proved challenging in the COVID-context.

2019 Results and outlook for the Power Africa Project (PAP) are generated under 14 strategies that include Burkina Faso, Ethiopia, Kenya, Liberia, Mali, Mozambique, Rwanda, Somalia, Sudan, Tanzania, Uganda, Zambia, Zimbabwe, as well as the regional strategy. From 2020 onwards, the Democratic Republic of the Congo (DRC) will also be included as the new DRC-strategy was adopted in late 2020. In addition to the results generated under strategies within sub-Saharan Africa, Global Sida-contributions also generate important results in terms of energy access, generation, policy and capacity building.

Between 2015 and 2019, a total of 3,031 MSEK has been mobilised towards energy sector development in sub-Saharan Africa. Of this, 2,381 MSEK has been Sida grants (ODA) deployed under Power Africa country- and regional strategies and 808 MSEK in mobilised capital. It is a stated goal of PA to deploy development funds in ways that catalyse and mobilise private capital and also increase the long-term financial sustainability of energy access investment. The trend is generally an increasing proportion private investment mobilised by development aid, and, through the use of guarantees and blended finance initiatives, this is expected to further increase. In addition, taking into account two large Global energy contributions, ESMAP (Energy Sector Management Assistance Program) and GET. invest which have significant Sub-Saharan Africa components, we estimate that some 1.7 billion SEK of additional ODA and investment mobilised has been generated.

With the current agreed contributions in the Swedish energy contribution portfolio related to Sub-Saharan Africa, progress towards the Swedish pledge of mobilising \$1bn (approximately 9.3 billion SEK at year-end 2019 exchange rate) as shown in **Table 1** below reaches approximately

- 75% (4.1+3 bnSEK) if only Sida grants and mobilised private capital are included.
- 90% based on the pipeline forecast on the same basis but including indicative contributions (4.7 +3.7 bn SEK).
- 100% + including also associated DFI funding (9.3 bn SEK)

It should be noted that at the time of the original pledge, the \$1bn was equivalent to only 7bn SEK, so at constant exchange rates, progress is significantly ahead of the aforementioned. In addition, including the impacts of the Global energy contributions, the pledge would clearly appear to be exceeded.

Table 1 shows 2015-2019 and forecasts for the periods 2020-2024. It is worth noting that the amount of mobilised capital is rising both as an absolute number, but also as a share of the total projects' financing. Compared with the 2018 report, two very large planned projects, Akiira geothermal and the Universal Green Energy Access Program fund have had to be removed from the Power Africa Forecast due to the private sector promoters being unable to reach financial close.

Therefore, the forecasts are reduced compared with the 2018 report.

Table 1: ODA, and mobilised private capital (MOB) and DFI funding for Power Africa projects during the first five years of activity as well as forecast for the entire project timeline (2015-2024). Conservative forecast only includes agreed contributions while Pipeline forecast also includes indicative and planned contributions.

MSEK	2015-2019 Achieved	2015 - 2024 Agreed FC	2015-2024 Pipeline FC
<i>Bilateral and Regional Power Africa Project</i>			
ODA	2 381	4 098	4 697
MOB	802	3 019	3 712
DFI	1 712	2 214	2 214
Total	4 895	9 332	10 623

The share of mobilised capital as a proportion of ODA+MOB was roughly 25% for the period 2015-2019, and is expected to rise to 44% for the whole 10-year period. Year-on-year 2019 over 2018 (not shown) the proportion rose from 20% to 29%.

In addition, Sida supports two large Global energy contributions, ESMAP (Energy Sector Management Assistance Program) and GET.invest which have significant Sub-Saharan Africa components. While reporting for these is not of the same nature and format as that for the Bilateral and Regional Power Africa Project, we estimate that that a Sida pro-rata share of volumes could be on the order of some 1.7 billion SEK of additional ODA and investment mobilised.

Note: Approximated results from multilaterals

Table 2: Approximation of the results from Get.Invest and ESMAP that could be attributed to Sida's contributions. Values are approximate and shown to give the reader orders of magnitude.

MSEK	2015-2019 Achieved	2015-2024
<i>Support to Multilateral organisations (ESMAP and Get.Invest)</i>		
ODA	203	1 507
MOB+DFI	467	4 538

Table 3 shows the types of financing instruments employed by the Power Africa projects. The shares of respective instruments has evolved over the years - Initially utility investments (UI) represented the overwhelming majority of financing. Since then, results-based financing (RBF) has moved up substantially to 30% in 2019 resulting in RBF and UI constituting 50% of all disbursements in 2019. The lion's share of the remaining 50% are distributed relatively equally between challenge funds (CF), guarantees (G), and enabling environment (ENENV). For the period 2015-2019, a closer look at instrument use for the largest receivers is shown in **Figure 4**.

New for 2019 is the instrument category “Multi-instrument” which is used for projects such as SEFA or multi-instrument funds which deploy a wide range of instruments including equity, debt, grants and in the future possibly guarantees.

Table 3: Distributed ODA and mobilised capital in 2019, the period 2015-2019, and the entire period 2015-2024 (where future years correspond to the pipeline forecast), for the Power Africa projects, divided by type of financial instrument used. The last row shows the share of the total financing that in time-period came from mobilised private capital.

(in tSEK)	2019		2015-2019		2015-2024	
	ODA	MOB	ODA	MOB	ODA & FC	MOB & FC
Challenge funds	111 507	2 456	246 673	28 956	592 756	157 476
Results based fin.	122 975	300 812	482 897	520 812	1 170 579	1 250 637
Guarantees	0	100 514	10 716	164 052	161 975	1 257 185
Transaction adv.	10 907	4 350	189 721	13 782	317 442	502 332
Utility investment	179 038	0	990 779	73 400	1 565 926	73 400
Enabling envirom.	106 127	0	225 871	0	475 915	19 941
Regional integrat.	47 800	0	175 993	0	175 993	0
PPDP	7 500	6 134	7 500	6 134	35 500	6 134
Multi-instrument	50 095	0	50 095	0	200 395	450 000
Total	635 949	414 265	2 380 245	807 135	4 696 480	3 717 104
% of funding from mobilised capital	39,4%		25,3%		44,2%	

With regards to result indicators, a summary of the period 2015-2019 is shown in **Table 4**. Positive trends are shown for ODA, MOB, and number of installed connections. Other indicators show less growth which is normal in a context with increasing proportion off-grid activity. Some discussions on the limited progress on installed power generation is given under the heading “Renewable electricity generation capacity”.

Table 4: Yearly values for the key indicators in the Power Africa project, 2015-2019. Capacity refers to installed electrical production capacity.

	MSEK	ODA	MOB	DFI	Connections	CAP (MW)	EE (MW)	GHG tCO2e/yr
2019	636	259	159	189 065	6	0	235 827	
2018	653	157,5	993	159 573	14	1	395 000	
2017	421	208	222	19 375	49	0	169 157	
2016	183	25	106	9 136	33	0	115 400	
2015	488	2,4	232	33 665	0	3	0	

Introduction and background

Power Africa is a partnership between the public and private sector that started in 2013 on initiative from the US Obama administration. It aims to increase electricity access and solve Africa's energy crisis. Sweden supports PA to bridge the financing gap and double electricity access for millions of people in SSA.

In August 2014, Sweden made a commitment to mobilise one billion US-dollars over the ten-year period 2015-2024. With the exchange rate at the time, this represented a pledge of approximately 7 bn SEK. The mobilised financing would be in support of energy sector development in Sub-Saharan Africa (SSA), with exclusive focus on renewable energy and energy efficiency.

More than two-thirds of the population of SSA lack access to electricity. Universal energy access is key to achieving the Sustainable Development Goals (SDG) according to many international aid organisations such as the UN, World Bank, and others. However, a huge financial gap is a crucial obstacle that is hindering the achievement of universal energy access.

Universal access to affordable, reliable, sustainable, and modern energy (SDG7) is one of the 17 SDG's and 169 targets. About 65% of all the SDG targets require actions to be taken concerning energy systems¹. Therefore SDG7 is closely interlinked with all other SDGs such as "Good health and well-being" (SDG3), "Sustainable cities and communities" (SDG11), and "Climate action" (SDG13).

Roughly one billion people across the world live without access to modern energy. Solving this will require a sharp increase in energy access investments. In sub-Saharan Africa alone, 575 million people, or 52% of the population, lack access to electricity and 940 million people, or 85% of the population lack access to clean cooking².

From the outset of PA, it was understood that public funding alone couldn't (and can't) bridge the financial gap to secure universal energy access. It must be complemented with private financing. Therefore, mobilising capital is one of the fundamental goals of the Swedish PA.

PA works with a number of financial blending instruments when creating incentives for private investment. These are challenge funds, results-based financing, guarantees, Public Private Development Partnerships (PPDP), transaction advice and other instruments via partners.

¹ Mapping synergies and trade-offs between energy and the Sustainable Development Goals, Nature Energy, Vol 3, January 2018, Nerini et al.

² [Access to clean fuels and technologies for cooking \(% of population\) - Sub-Saharan Africa | Data \(worldbank.org\)](#)
[Access to electricity \(% of population\) - Sub-Saharan Africa | Data \(worldbank.org\)](#)

Results in 2019

ODA and mobilised capital

2019 ODA for the energy contributions was 636 mSEK, slightly down from 2018 but a significant amount in the context of the last 9 years and on an increasing trend from the start of the Power Africa Project. Most importantly, the amount of mobilised capital showed a significant increase in 2019 and more than off-set the slight reduction in ODA. As an illustration, the mobilised capital 2019 is on the order of magnitude of 2017 ODA, so clearly an important lever to complement ODA.

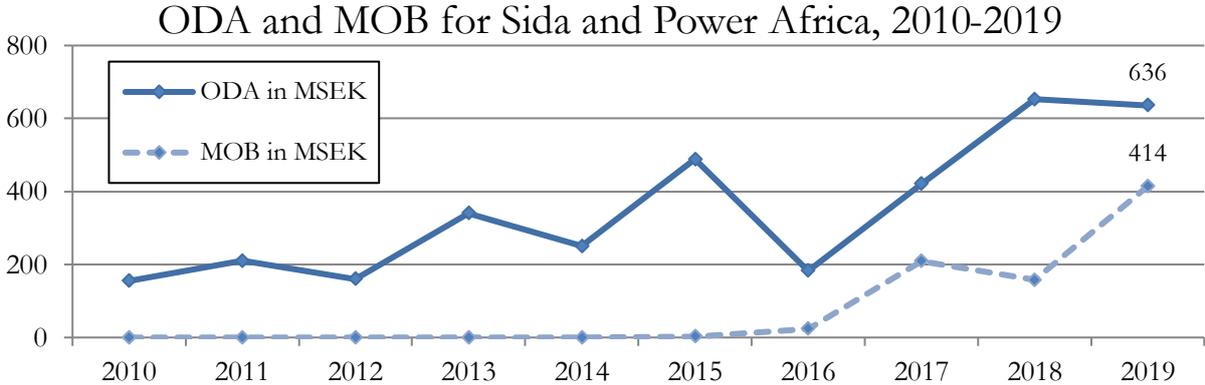


Figure 1: Graph showing disbursed ODA (MSEK) and mobilised capital for the Power Africa project over time. Note that the Power Africa project started in 2015, the earlier numbers (2010-2014) show ODA disbursements from Sida in general for each corresponding year, there was no mobilisation of private capital during those years.

When looking at the numbers in a time series including forecasted amounts as shown in **Figure 2**, the share of mobilised capital in the sum of ODA and mobilised capital has risen yearly. The forecast indicates this share will grow, amounting to more than half of the total capital in 2024.

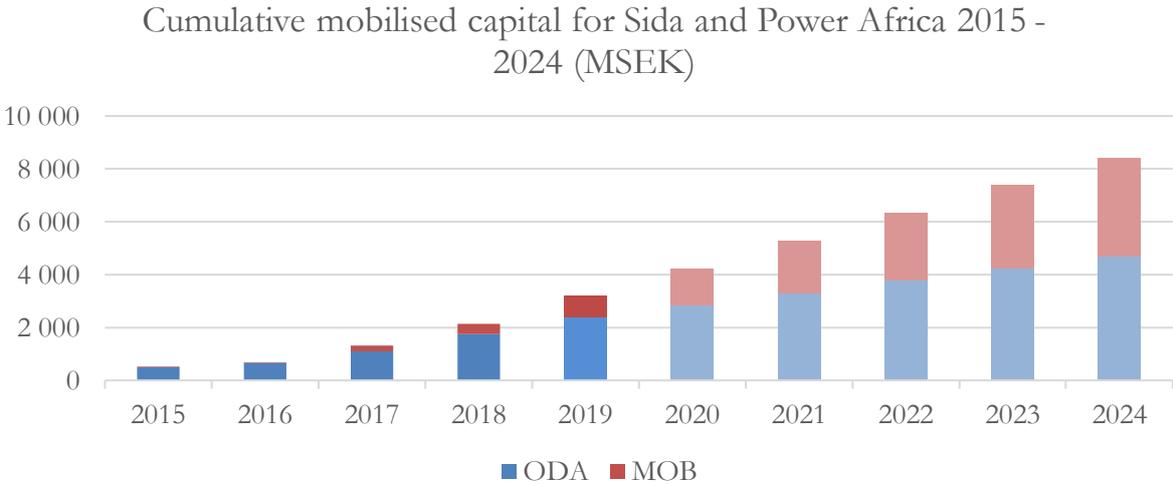


Figure 2: Bar graph over ODA and mobilised capital in projects financed by Power Africa. The bars are cumulative year-on-year, and the period 2020-2024 is prognosed from the pipeline forecast from the summary.

This forecast illustrates the objective of catalytic deployment of ODA, where more and more capital will be mobilised per ODA resource deployed.

A summary of countries and regions reached by the disbursements for the period 2015-2019 is shown in **Figure 3**. The majority (88%) of the ODA disbursements reached three countries; Mozambique, Tanzania, and Zambia. In addition, regional contributions which reach multiple countries in SSA increased significantly.

Yearly ODA disbursements to PA-funded projects, per country, 2015-2019, MSEK

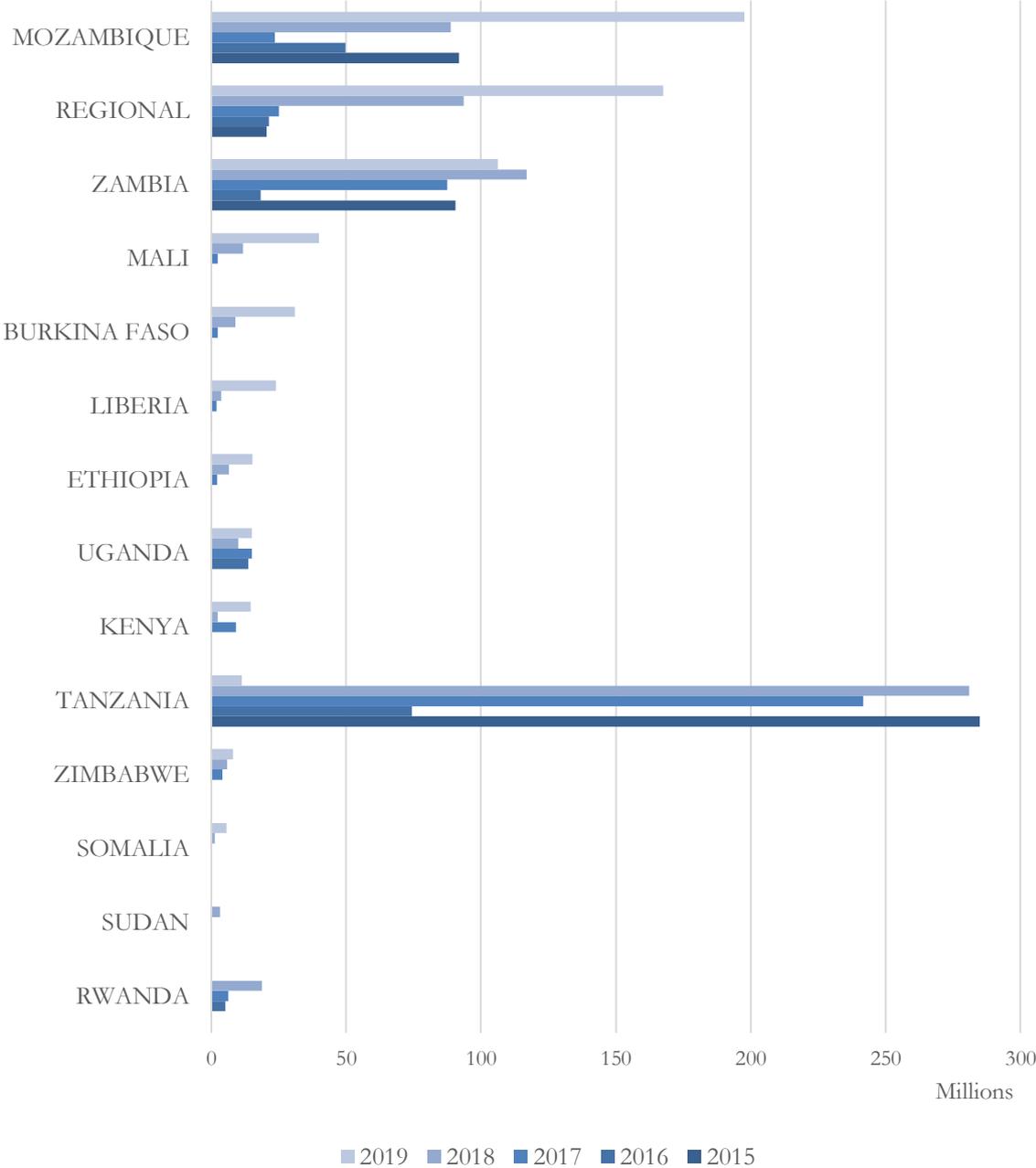


Figure 3: ODA (MSEK) disbursements from Sida and the Power Africa project during the period 2015-2019, as categorized by receiver country and ordered by ODA amount 2019. Regional refers to the SSA region.

Analysing these four countries, as done in **Figure 4**, shows that Utility investment and RBF make up significant portions of the bilateral ODA.

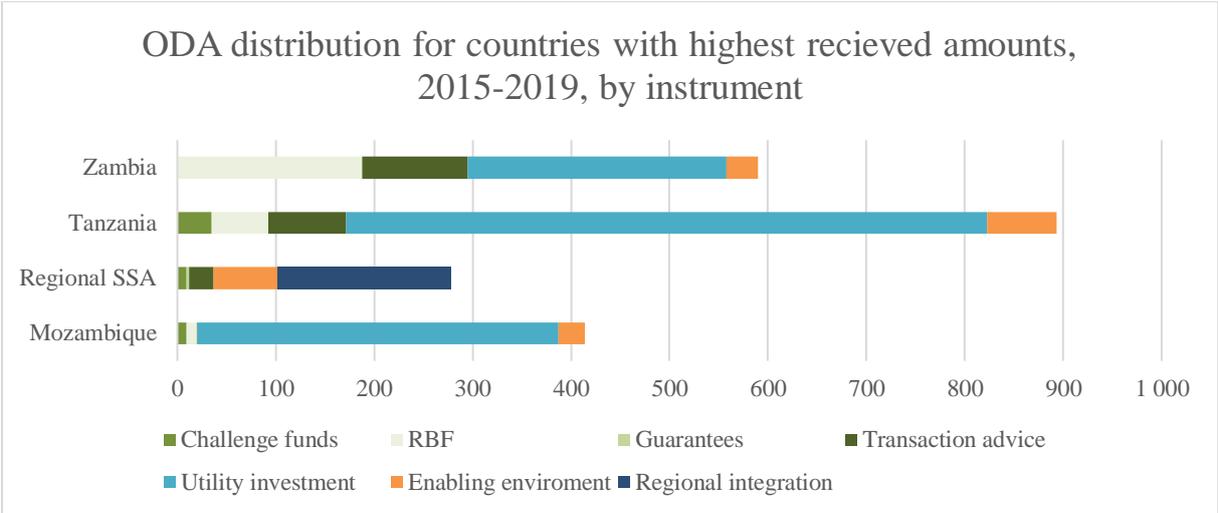


Figure 4: Power Africa’s ODA distributions to the top four highest receiving strategies in the period 2015-2019, as divided by instrument. These four strategies receive 88% of the total ODA disbursement from P.A.

Connections

During 2019, a total of 189,065 new connections were made. A large part of these, 149,156, came from two crowdfunding projects for which Sida provided guarantees so as to allow mobilization of additional capital for energy access financing and the Beyond the Grid Fund for Zambia. A crowdfunding platform ran interesting experiments which showed that Sida-guaranteed campaigns could raise additional funds more quickly and in larger increments, demonstrating the power of risk-sharing to mobilize additional and new capital for energy access in SSA.

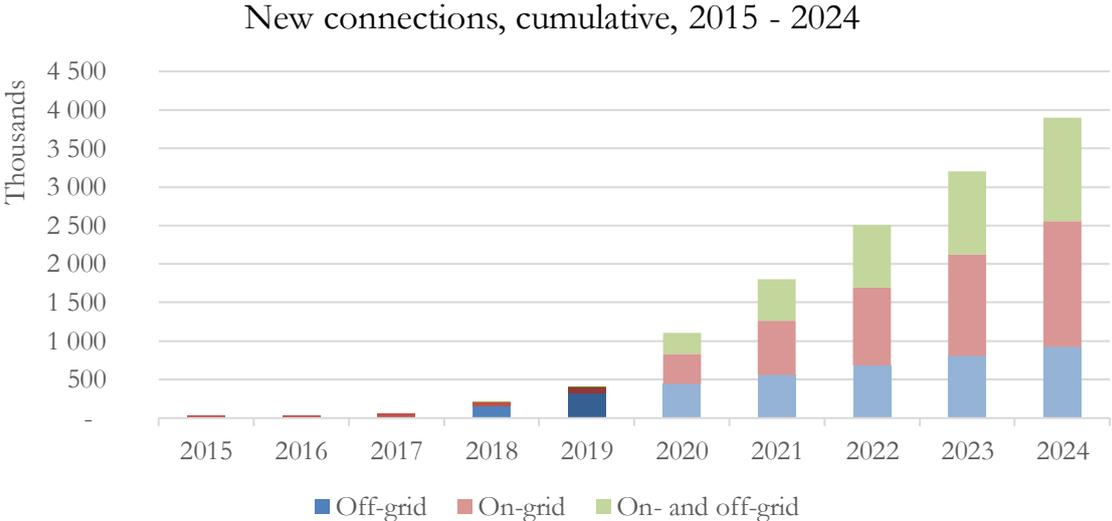


Figure 5: Amount of new connections installed between 2015 and 2024 through projects financed by the Power Africa project, the amount as cumulative year-on-year, and the categorisation refers to type of installed connections within a project. Period 2020-2024 is a linearization of the pipeline forecast described in the executive summary.

The Beyond the Grid Fund for Zambia has since inception in 2016 and contract signing with energy service providers mid 2017, provided more than 170 000 connections (reaching roughly 900 000 people). This success has led to an expansion of the project called BGFA, Beyond the Grid Fund for Africa.

While the quality and capacity of each connection is generally higher with on-grid extensions, most research show that the most dramatic increase in quality of life from access to electricity often occurs at the point of the first kWh or tens of watts of access³. Getting over the threshold, accessing light, mobile phone charging, and perhaps even a radio or tv, vastly improves people’s lives. This is important to keep in mind when looking at connections or capacity numbers.

Renewable electricity generation capacity

The addition of new electric generation capacity amounted to a total of 6 MW. This is lower than earlier years, especially lower than 2016 and 2017. However, this is explained through the type of installations. As an illustration, a typical solar home system has a capacity of roughly 20 W or on the order of 100 times less than an on-grid connection.

2016 and 2017 saw large rehabilitation of hydropower plants, resulting in large increases in generating capacity. 2018 and 2019 instead focused largely on Solar Home Systems (SHS) and mini-grids, resulting in many more connections – though less total generating capacity.

Both grid extensions and off-grid solutions such as mini-grids or SHS have their rationales. Which one to work with is a function of many things, such as geography, economic fabric, laws and regulations, positions of promoters and utilities and current and planned electrical access. Because of this, and because of which projects are feasible and suitable, the type of connections installed can and will vary from year to year.

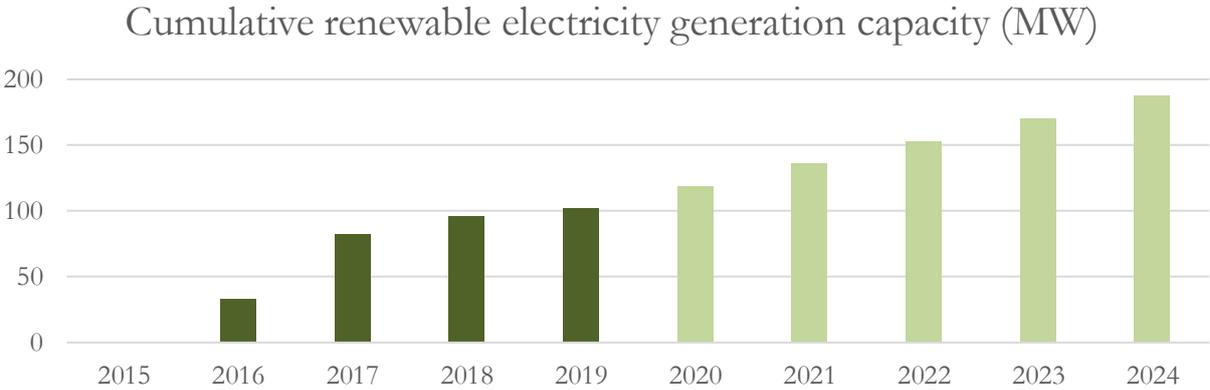


Figure 6: Amount of newly installed electricity generation capacity in projects financed by Power Africa contributions in the period, 2015-2024. Amount is calculated cumulatively year-on-year. Period 2020-2024 is a linearization of the pipeline forecast described in the executive summary.

³ [60 Decibels - Why Off-Grid Energy Matters.pdf](#)

Avoided greenhouse gas emissions

SDG7 is defined as “Ensure access to affordable, reliable, sustainable and modern energy for all”. Electric energy is only one component of the “modern energy”-part of the quote. Clean cooking is as important, and when it comes to the reduction of greenhouse gas emissions, each end-user that switches to a clean cooking alternative has a substantial impact on GHG emissions compared to e.g. access to a distributed electricity supply system.

Currently, traditional biomass stands for a significant share of Africa’s total primary energy demand (45%)⁴ and is contributing more than its primary energy demand share to climate forcing than fossil fuels because traditional biomass is produced (charcoal) and used in inefficient ways resulting in incomplete combustion with unburned hydrocarbons, including methane and particulate matter causing emissions of black carbon contributing to global warming. With 85% of the population dependent on traditional biomass to meet energy cooking needs, and a growing population, this is an important area to address to mitigate greenhouse gas emissions. These emissions also represent a significant health issue with significant amounts of years of healthy life lost.

The cumulative reduction of greenhouse gases attributable to projects financed by Power Africa, 2015-2024 are shown in **Figure 7**. Values from 2020 to 2024 are based on forecasts.

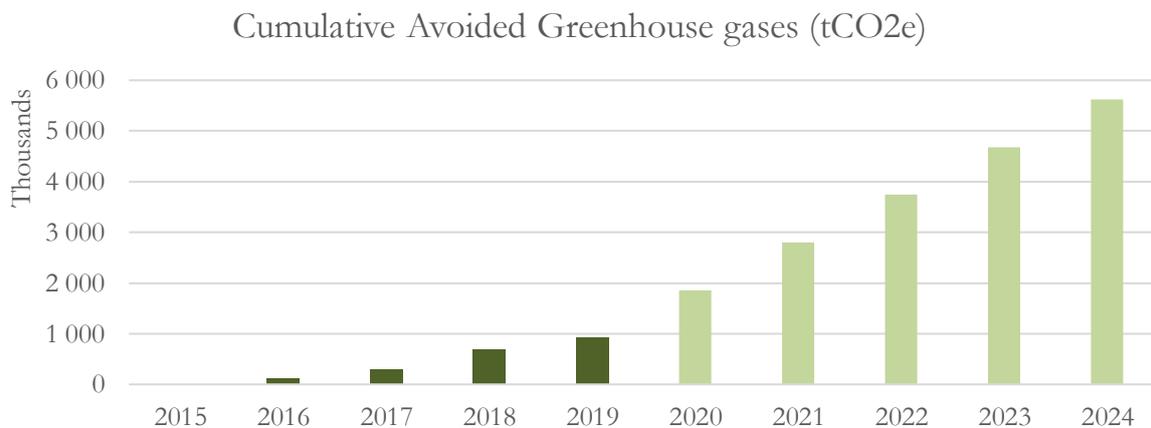


Figure 7: Total amount of tonnes mitigated CO₂ equivalents from Power Africa- financed projects for the period 2015-2024. The amounts are calculated cumulatively and the prognosis for the period 2020-2024 is based on the pipeline forecast as shown in the executive summary. Avoided CO₂e is not only from removing other electric production methods, but also through the introduction of clean cooking stoves.

The avoided emissions for 2019 amounted to 235,827 tCO₂e (only 2019, not cumulative), of which roughly 72% were attributable to clean cooking projects. For the same year, those clean cooking projects only amounted to 2.5% of the ODA.

Interventions to introduce clean cooking alternatives have huge benefits for health, climate mitigation and avoided loss of biodiversity. Globally, the failure to ensure universal access to clean cooking alternatives is estimated to cost 2,400 billion dollars per year. These are costs arising from health, climate change, insecurity, particularly amongst women and loss of

⁴ [Africa Energy Outlook 2019 – Analysis - IEA](#)

biodiversity. In Rwanda, total welfare losses attributable to household air pollution is estimated at 3.2% of GDP.^{5 6}

This implies the importance of having a balanced portfolio to have a wide effect on a number of result indicators. Access to clean energy has a catalytic effect on the achievement of many other goals, such as a health, education, and sustainable economic development.

⁵ Source: World Bank; Institute for Health Metrics and Evaluation. 2016. The Cost of Air Pollution: Strengthening the Economic Case for Action. World Bank, Washington, DC.

⁶ <https://www.cleancookingalliance.org/country-profiles/32-rwanda.html>

Impact measurement

Power Africa has set itself the objective of further increasing focus on, and measurement of impact from electricity access. Impacts in this context differs from the traditional results reporting in that results are direct outputs of projects (installed MW, mitigation of CO₂, etc.) while outcomes and impact are about long-term development effects of changes that have occurred. This section is only intended to give a first overview of a complex but important area which PA expects to develop further in the second period of the project.

Impacts can be measured at the source over time, such as a company working with solar home systems (SHS) asking their clients how many kerosene lanterns that have been removed, or how the grades of their children are changing. However, this type of method is complex and expensive, as it requires companies and projects to do work that is not directly related to the project implementation itself.

Impact can also be measured through proxy variables and statistical models based on studies complement in some cases by almost real-time measurement of actual usage of appliances. The GOGLA Impact Calculator⁷ is one example of such a statistical model. Based upon a rigorous study using surveys and interviews it allows the user to input data and receive an estimation of the impacts that stem for those numbers.

The GOGLA Impact Calculator only claims to estimate impacts from installations of SHS's, while Power Africa also finances projects using mini-grids (MG) or grid extensions (GE). We discussed internally on how to approach this issue. Initially the idea was to build separate models for MG or GE allowing the user to approximate those impacts separately. After some initial research it became obvious that the amount of studies on the questions of MG or GE are small.

Power Africa came to the conclusion that connections through MG and GE would be approximated as SHS connections, in turn allowing the connections to be used in the GOGLA Impact Calculator. A MG or GE connection is approximated to be a 25W SHS with a 500 lumen lamp. This is of course a very conservative estimate and a MG or GE connection would in reality be much more powerful than a SHS connection, making it a conservative estimate.

Below are presented the estimated outcomes of Sweden's Power Africa contributions 2019 based on GOGLA's Impact Calculator.

Light availability

Almost a total of one million people have improved access to electricity through the projects that Sida finances. This could be through a range of things from access to electric lights to grid access. Of that million, roughly 850,000 are through SHS, 25,000 through mini-grids, and 100,000 through grid extensions.

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1 million people have gotten access to electric lights at home

Economic activity

Around 80,000 people have increased their economic activity as an effect of access to electricity. Of these, roughly 73,000 are through SHS, 2,000 through mini-grids, and 5,000 through grid extensions. An increase in economic activity is fundamental in driving growth, in turn raising the general wealth levels for everyone.



80,000 people have increased their economic activity

Income generation

Micro, Small and Medium Sized Enterprises (MSME's) are the backbone of economies of which almost 50,000 are using electricity to support their enterprises. This could be through lights that allow shops to open longer, TV's in hospitality venues to attract customers, or introduction of electrical tools for increased productivity. Of those 50,000 SME's, roughly 44,000 are using electricity through SHS, 1,000 through mini-grids, and 5,000 through grid extension.



50,000 SME's are using electricity to support their enterprises

Other

Other examples of impact include:

- Additional disability-adjusted life years from
 - reduction of respiratory and cardiovascular diseases as an effect of clean cooking or kerosene reduction from replacement of kerosene lanterns with LED light

- improved access to healthcare through electrification of rural clinics
- increased agricultural yields and food security improvements from solar irrigation, cooling or milling.
- increased productivity of MSMEs and artisans such as a carpenter when he or she gets access to power tools.

While impact analysis has always been included in the appraisal of contributions, Power Africa is working with partners to further develop impact measurement and understand where social impacts and value chains can be unlocked by energy access. This goes hand-in-hand with increased focus on productive use of electricity which can have significant impact on economic activity, food security, health, and more.

Multilaterals – Global contributions

ESMAP

The Energy Sector Management Assistance Program (ESMAP) is a multi-donor trust fund supported by Sida as a Global contribution, separate from Sida's Power Africa Project. ESMAP is closely aligned with SDG 7, World Bank Group (WBG) Climate Action Plan and the Paris Agreement and the Nationally Determined Contributions (NDCs). Implementation is done by ESMAP, WBG practice units, Governments, NGOs and partners. ESMAP has a significant Sub-Saharan Africa component, both in terms of resources deployed and in terms of projects informed.

ESMAP programming has covered four main areas:

- Cross-cutting solutions such as annual block grants for governance, markets & planning and energy subsidy reform and technical assistance
- Energy access
- Clean energy
- Energy efficiency

Priority areas for Africa include:

- Strengthening utilities, regulation and power system planning and regional integration of electricity infrastructure and trade.
- Renewable energy scale up, particularly hydropower and solar, with associated transmission requirements and all aspects of increasing access to electricity (off-grid and grid-connected).
- Facilitating private sector investment.
- Clean cooking
- Other initiatives such as Gender and Energy, Lighting Africa, Africa Electrification Initiative and Geospatial planning

Going forward, ESMAP continues its strong focus on SDG7 and decarbonization in support of international commitments on climate change also integrating new approaches such as storage, hydrogen an additional innovation in finance and foundational initiatives on, for example, regulatory benchmarking and gender.

GET.pro/GET.invest

GET.invest, linked to the GET.pro programme is a European programme to support investment in decentralised RE in partner countries, building on the predecessor Africa-EU Renewable Energy Cooperation Programme (RECP). It is hosted on the European multi-donor platform GET.pro and implemented by GIZ. GET.invest is a so-called project preparation facility and has two components:

- Private sector mobilisation - stimulate partnerships and new project / business development.
- Pipeline development - get existing projects (and businesses) ready for financing.

The facility provides Development support, Structuring- and financial modelling support, Finance Access support and transaction support.

GET.invest is funded by the European Commission, Germany, Sweden, the Netherlands, and Austria.

It should be noted that Power Africa regional strategy supports another, separate, project preparation facility, Private Finance Advisory Network (PFAN) which has some similarities, but which has a network of presences in some additional countries.

Orders of magnitude, Sida share of Global contributions

Source reporting of Sweden’s global development cooperation strategies does not provide the requisite full detail and breakdown fully comparable to the contributions under Sweden’s development cooperation strategies, but an attempt to estimate an order of magnitude gives by hand the below. It should be noted, that as for standard PA reporting, the results are weighted by Sida’s share of the budget. In addition, the results have been further weighted to reflect the share which is SSA and, subjectively, the fact that the ESMAPs objective is to a large extent to inform investment rather than directly seek to mobilise investment and GET.pro/invest operates as a facilitator of investment, not directly mobilising capital. The below should only be taken as very rough orders of magnitudes given the limitations of source reporting and the different natures of the contributions. PAP is working with Global and partners to access and evolve further detail on reporting.

PARTNER AND PHASE	Estimated order of magnitude					
	ODA mSEK	Africa % ODA, mSEK	MOB+DFI, mSEK	MW	CNX '1000	CO2 '1000 t/year
ESMAP 2015-2019	200	148	1 357	64	295	105
ESMAP 2020-2024	250	185	2 660	253	633	240
Get.pro/invest 2015-2019	55	55	150	10	40	13
Get.pro/invest 2020-2024	79	79	371	24	92	28
Subtotal 2015-2019	255	203	1 507	73	335	117
Subtotal 2020-2024	329	264	3 031	327	968	358
Grand total 2015-2024	584	467	4 538	336	1 008	370

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⁸ Weighted with Sida% of budget * % SSA * subjective influence factor : Sida % of budget ESMAP 11%, Get.pro/invest 6%; SSA ESMAP 74% (based on projects financed, not ESMAP budget which is approx.. 32% SSA), get. Invest/pro 100% SSA: Influence factor: ESMAP 5% (due to relatively more enabling environment), Get Invest & Endev 50%. Assumptions have been made regarding lifecycle CO2-emissions and connections to make comparable to standard PA contributions.

2019 Highlights – new contributions

Phasing Out Fossil Fuels

Humanitarian aid has traditionally not focused on renewable energy access, rather putting its resources into water, food, and health. This has unfortunately led to a large use of diesel generators in refugee camps all over the world.

Apart from the question of where focus lies, there is also the issue of regulation. Most countries are unwilling to accept long-term discussions around refugee camps due to the political sensitivity on the question. In the question of clean generation of electrical energy this issue manifests itself in two ways; the reluctance (or refusal) to accept long-term installations in the camps, and the difficulty of setting up power purchasing agreements with clean energy investors when UNHCR is only allowed to make agreements of one year's length.

In reality, the vast majority of camps stay for many years. This means that the diesel generators stay around for most of those years, emitting greenhouse gases as time goes by.

In an effort to increase the generation of renewable energy, Sida Power Africa, has initiated and implemented a project resulting in UNHCR setting up "The Green Fund". The fund will issue internal guarantees to country operations that will minimise the risk for clean energy providers being contracted to replace the diesel generators that powers UNHCR facilities in their refugee camps.

As earlier stated, one large issue that has hindered investors from replacing the generators is the theoretical risk of camps being disbanded before the pay-back period of the investment has passed. Since UNHCR operate their camps with short budget cycles, there has previously been no possibility of setting up power purchasing agreements for the entire pay-back period.

The guarantee then allows the risk to be reduced for the investor, guaranteeing return on investment should the camp be disbanded. As this rarely happens – the guarantee is not expected to be called for very often – allowing it to reduce risk for many investments.

The experience gained from phasing out fossil fuels has engendered the Power Africa initiative to work with clean energy for refugee camps with an ambition to address both clean cooking as well as electricity for the refugees themselves.

Sunfunder Guarantee

As noted throughout, closing the energy access gap clearly requires significant private investment. There are opportunities for residential and commercial solar enterprises to provide clean energy access, resulting in more reliable power for social services, businesses and new jobs by deploying distributed solar systems. However, a bottleneck for many companies in the off-grid solar sector is the limited availability of scalable and appropriate debt financing.

To alleviate this bottleneck and build a track record of credit history in the sector a partial loan portfolio guarantee was provided on concessional terms to SunFunder a private finance intermediary. Through its debt funds, SunFunder., will offer loans to renewable energy sector

companies in Sub-Saharan African LDC and LMIC countries, thereby enabling them to expand and offer renewable energy services to more underserved populations.

SunFunder is a specialized solar lender in sub-Saharan Africa. They support companies working with i) Solar Home Systems ii) Commercial and Industrial iii) mini-grids for productive uses. The total guarantee facility is 15 million USD and will enable a total of 30 million USD in loans over an eight-year period.

The purpose of this guarantee is to spur development and investments in this sector, a better environment, reduced climate impact and increased production of and access to renewable energy. Approximately 30 companies are expected to get a loan with support from the Sida guarantee providing at least 600 000 new connections with 3 million people gaining access to electricity.

SEFA 2.0

Achieving universal access to electricity and clean cooking alternatives as well as increasing energy efficiency in sub-Saharan Africa requires that current investment levels be increased five times. This is where the Sustainable Energy Fund for Africa plays an important role by catalysing the investments needed to achieve SDG7. SEFA is a multi-donor Special Fund hosted and managed by the African Development Bank (AfDB). Its overarching objective is to contribute to universal access to affordable, reliable, sustainable, and modern energy services for all in Africa. SEFA achieves this by offering a range of concessional and catalytic financing instruments to de-risk investments in renewable energy and energy efficiency solutions.

SEFA addresses barriers and risks and provides support from the development stages to the commissioning of projects within three key areas:

- green mini-grids
- green baseload and
- energy efficiency.

Its resources serve to remove market barriers, demonstrate the viability of pioneering approaches, enhance the bankability of investments, and crowd-in commercial finance. SEFA has the capacity to deploy debt, equity and grants and is exploring the use of guarantees.

The SEFA Special Fund is a 10-year undertaking from 2020 to 2030 with an ambition of mobilising 500 MUSD in grant funding from donors. A few of the expected results of SEFA include contributing to 7.5 million people being connected to electricity, new generation capacity from renewable energy of 3 000 MW and mobilising 3,1 billion USD in private investments.

In 2019 Sida made its first contribution of 50 MSEK to SEFA.

Annex 1: Summary of Swedish development cooperation Strategies in SSA

Strategy	Period and total budget	Energy in strategy
Burkina Faso	2018 – 2022 1 500 million SEK	Increased production of and access to renewable energy.
DR Congo	2015 – 2019 1 225 million SEK	Not directly mentioned. May be part of the Area “Improved opportunities and tools for poor people to improve their living conditions”. A mapping study of opportunities in energy related to the cooperation strategy has been carried out.
Ethiopia	2016 – 2020 1 000 million SEK	Increased production and improved access to renewable energy.
Kenya	2016 – 2020 1 750 million SEK	Increased production and improved access to renewable energy.
Liberia	2016 – 2020 1 320 million SEK	Increased production and improved access to renewable energy.
Mali	2016 – 2020 1 200 million SEK	Increased production and improved access to renewable energy.
Mozambique	2015 – 2020 4 100 million SEK	Increased access to renewable energy and reliable and sustainable produced electricity for households, companies and the public sector.
Rwanda	2015 – 2019 900 million SEK	Swedish development cooperation is to contribute to strengthening the capacity and skills of national actors to help improve the environment and tackle climate change and negative environmental impacts, including continuing reforms in the areas of climate/ energy, environment and natural resources. Activities may involve both the public administration and other actors. The business sector’s work on green economic development and green innovations, including <u>sustainable energy solutions</u> and trade in green products and services, can help to limit negative environmental and climate impacts. The Embassy has allocated MSEK 30 for energy projects.

Somalia	2018 – 2022 3 000 million SEK	“Swedish activities will contribute to increasing access to affordable and renewable energy for households and production. Measures to improve energy efficiency are important to ensure this is achieved. “ “Opportunities to work with the private sector will be examined, particularly regarding renewable energy” ”
South Sudan	2018 – 2022 1500 million SEK	Energy not included in the present strategy. The strategy includes environment and climate change measures to improve the conditions for sustainable livelihoods.
Sudan	2018 – 2022 1 200 million SEK	Increased production of and access to renewable energy.
Tanzania	2013 – 2019 5 500 million SEK	Explicit result: “Increased access to safe and sustainable energy, with the aim of providing access to electricity for at least 300 000 people.”
Uganda	2018 – 2023 2 400 million SEK	“Increased use of renewable energy and greater energy efficiency are essential for creating economically sustainable growth, driven by increased entrepreneurship and increased productivity”
Zimbabwe	2017 – 2021 1 500 million SEK	Improved access to renewable energy that is socially and environmentally sustainable is part of Sustainable livelihood, environment, climate and energy.
Zambia	2018 – 2022 2 250 million SEK	“Development cooperation will help people living in poverty gain increased access to renewable and sustainable energy, including in off-grid areas. Support to sustainable energy systems is also important for strengthening the business sector and economic development in Zambia, as well as for reduced deforestation.” “Development cooperation will contribute to environmentally sustainable increased productivity and production in agriculture” “Sida will also work for a reduction of greenhouse gas emissions.”

Regional SRHR	2015 – 2019 1 750 million SEK	Not included. Cooperation related to off grid systems to supply health posts with electricity may be of interest where the regional team in Lusaka has the knowledge of health system and financing etc. while a component of AECF and its window REACT for renewable energy will be supported through the Regional pan-Africa strategy.
Regional sub-Saharan Africa	2016 – 2021 2 670 million SEK	Increased production and improved access to renewable energy.