

DISCUSSION PAPER No. 218

EU's Financial Instruments for Access to Energy

SUPPORT IN REMOTE AND POOR AREAS IN AFRICA

By Sebastian Grosse-Puppendahl, San Bilal and Karim Karaki

November 2017

SUMMARY

The European Union (EU) has committed to ambitious energy-related objectives that shall contribute to inclusive, sustainable development. It therefore has put a number of financial instruments in place that support energy access in sub-Saharan Africa. Beyond traditional grants (still the bulk of EU funding), the EU increasingly uses its Official Development Assistance (ODA) to leverage loans and private investments from Development Finance institutions (DFIs) and the private sector, as also envisioned in the recently agreed European External Investment Plan (EIP).

Through blended finance and smart technical assistance, there is a huge potential to develop and finance more energy projects that are currently (perceived) too risky and do not attract purely private investment. The EIP, through its 3-pillar approach and the setting of a dedicated 'sustainable energy' investment window, offers the opportunity to boost public and private investments in a more coherent, coordinated, and differentiated manner, and to foster impact investments, including towards the poor and enhancing their access to energy.

Blending is however not a silver bullet, as it only works in certain areas and conditions, and cannot compensate for a lack of bankable and economically viable projects, particularly in less developed areas, where access rates are usually the lowest and the private sector is least interested and attracted. There will therefore be a continued need for i) grant funding for not fully economically viable projects, including when reaching some of the remote and poorest areas, ii) the right mix of public and private support instruments depending on context and need, and iii) more patience to see results.

Besides, while many of the policy documents and instruments, most notably the EC's Africa Investment Facility and ElectrIFI, make specific reference to enhancing access to energy, there is little information on results and impact, in particular for remote areas and poor segments of the population. The lack of transparency and data makes it often difficult to identify best practice and lessons learnt. The EIP also offers an opportunity for the EC to reconsider its monitoring and reporting results framework, and adapting expectations on impact, over a longer time horizon.

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¹ Hivos is an international organisation that seeks new solutions to persistent global issues. Hivos works towards a green society that has no expiry date and is powered by renewable energy. This is important for the climate, the global economy and our health. We make new forms of energy like biogas available for poor people in remote areas and stimulate governments and businesses to invest in the energy of the future.

Acronyms

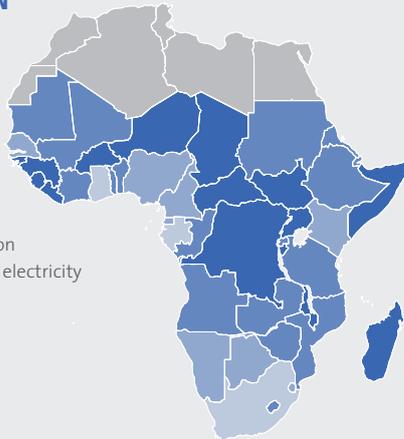
ACP	African, Caribbean and Pacific
AEEP	Africa-EU Energy Partnership
AiF	Africa Investment Facility
AIP	Africa Investment Platform
AREI	Africa Renewable Energy Initiative
ASEF	Africa Sustainable Energy Facility
DFI	Development Finance Institution
EAVF	Energy Access Ventures Fund
EBRD	European Bank for Reconstruction and Development
EC	European Commission
ECDPM	European Centre for Development Policy Management
EDFI	European Development Finance Institution
EFP	European Financing Partners
EFSD	European Fund for Sustainable Development
EIB	European Investment Bank
EIP	European External Investment Plan
ElectriFI	Electrification Financing Initiative
ERI	Economic Resilience Initiative
EU	European Union
EU-AITF	EU-Africa Infrastructure Trust Fund
EUD	EU Delegation
EUEI	EU Energy Initiative
FI	Financial Instruments
GCF	Green Climate Fund
GEEREF	Global Energy Efficiency and Renewable Energy Fund
GW	Gigawatt
HIC	High Impact Countries
ICCF	Interact Climate Change Facility
IEA	International Energy Agency
IF	Investment Facility
IFE	Impact Financing Envelope
M&E	Monitoring and evaluation
MS	Member States
ODA	Official Development Assistance
PDF	Partnership Dialogue Facility
RE	Renewable energy
RECP	Renewable Energy Cooperation Programme
ReM	Results measurement
SDG	Sustainable Development Goals
SE4ALL	Sustainable Energy for All
SSA	Sub-Saharan Africa
TAF	Technical Assistance Facility
UNDP	United Nations Development Programme

PEOPLE WITHOUT ACCESS TO MODERN ENERGY

SUB-SAHARAN AFRICA (SSA)

Share of population **without access** to electricity

- >75%
- 50% to 75%
- 25% to 50%
- <25%



	electricity	clean cooking
worldwide	1.1 BILLION people without access to electricity	2.8 BILLION people lack access to clean cooking facilities
SSA	588 MILLION people without access to electricity, roughly 57% of the population of which 80% lives in rural areas	780 MILLION people, roughly 80% of the population, still cooks on solid biomass in SSA
by 2030	600 OUT OF 674 MILLION people still without access to electricity live in SSA (89%)	2.3 BILLION people without access to clean cooking, with yearly 2.5 million premature deaths due to household air pollution

Source for map and data: IEA, 2017

KEY FINDINGS

ecdpm.org/dp218

AMBITIOUS EU ENERGY-RELATED OBJECTIVES & FINANCIAL INSTRUMENTS

for energy access in sub-Saharan Africa

- Beyond traditional grants, increasing use of blending

BLENDED FINANCE & SMART TECHNICAL ASSISTANCE

to develop/finance more energy projects currently (perceived) too risky → as envisioned in **European External Investment Plan (EIP)**

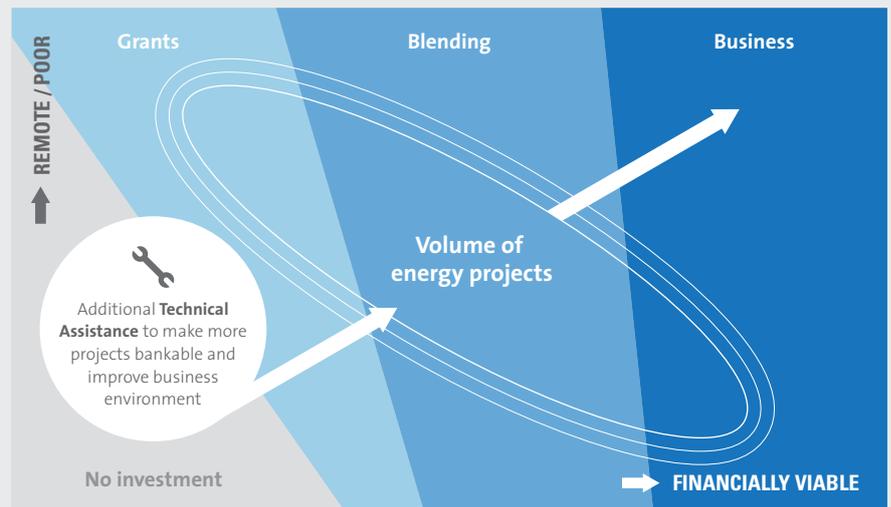
- EIP three-pillar approach, incl. the 'sustainable energy' investment window, to boost public/private investments for:
 - more coherence, coordination and differentiation
 - higher pro-poor impact and enhanced energy access

BLENDED IS NOT A SILVER BULLET

- it only works in certain areas/conditions + cannot compensate for a lack of bankable projects. Hence, need for:
 - grant funding (i.e. to reach remote and poor)
 - right mix of public/private support instruments (context/need-specific)
 - more patience to see results

LITTLE TRANSPARENCY ON RESULTS AND IMPACT

- in particular for poor and remote areas
- difficult to identify best practice and lessons learnt
 - EIP is an opportunity for the EC to
 - reconsider monitoring/reporting
 - reconcile ambition, risk and reality



Technical challenges

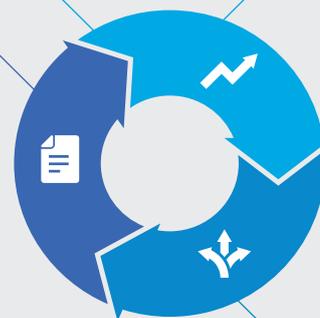
- Blending fit for context and needs?
- Reporting incentives and constraints
- Learning opportunities?

Political challenges

- Context-specific aspects
- Stakeholders' vested interests
- Public and internal pressure to demonstrate results and impact

Policy implications

- Ensure complementarity and coordination between and within instruments!
- Use blending in a strategic way, not a systematic manner!
- Make reporting on results and impact aligned with objectives!
- Make the business environment a key priority area!
- Make better use of EUDs and actors on the ground!
- Make the instruments choice context-specific towards needs and conditions in place!
- Ensure domestic ownership and build on local initiatives!



Opportunities

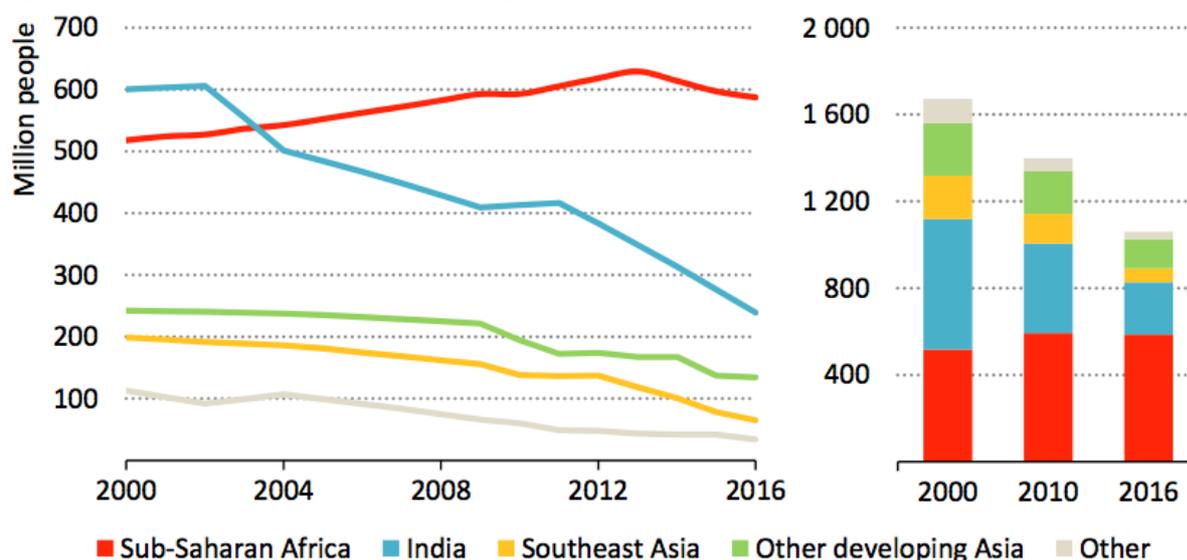
- African agenda
- Instruments alignment and complementarity
- Monitoring and evaluation

Graphic design by Robin van Honterm

1. Introduction

Access to energy² is crucial for sustainable and inclusive development, being “the ‘golden thread’ that weaves together economic growth, human development and environmental sustainability” (IEA, 2017).³ Energy shortage represents a major obstacle in the way of economic transformation (Africa Progress Panel, 2017; Tagliapietra, 2017). Lack of access to energy is one of the root causes of poverty, as “1.2 billion people live without access to electricity and the opportunities it provides for working, learning or running a business” (Acumen, 2017).⁴ In sub-Saharan Africa alone, about 600 million people (57% of the overall population) are currently without electricity access, with access rates average of 43%⁵ and an average per capita consumption of 180 kWh⁶ (DfID, 2015; IEA, 2016 and 2017). Although in sub-Saharan Africa the number of people without access to electricity has finally declined since 2014 (as “electrification efforts have been outpacing population growth since 2014”), contrary to other regions “there are still more people without electricity today than there were in 2000”, as illustrated in Figure 1 (IEA, 2017).

Figure 1: Population without access to energy



Source: IEA, 2017.

Additionally, there are further nearly 780 million people that still rely on dangerous and inefficient forms of cooking using solid biomass (IEA, 2017). This is particularly relevant and dangerous for high impact countries (HICs)⁷ in sub-Saharan Africa, whose access rates are often well below the SDG7 and Sustainable Energy for All (SE4ALL) target of access to affordable, reliable, sustainable and modern energy for all (Figure 2).

² By access to energy we refer to on-grid, as well as off-grid solutions of renewable and conventional energy sources.

³ The New European Consensus on Development ‘*Our World, Our Dignity, Our Future*’, 19 May 2017.

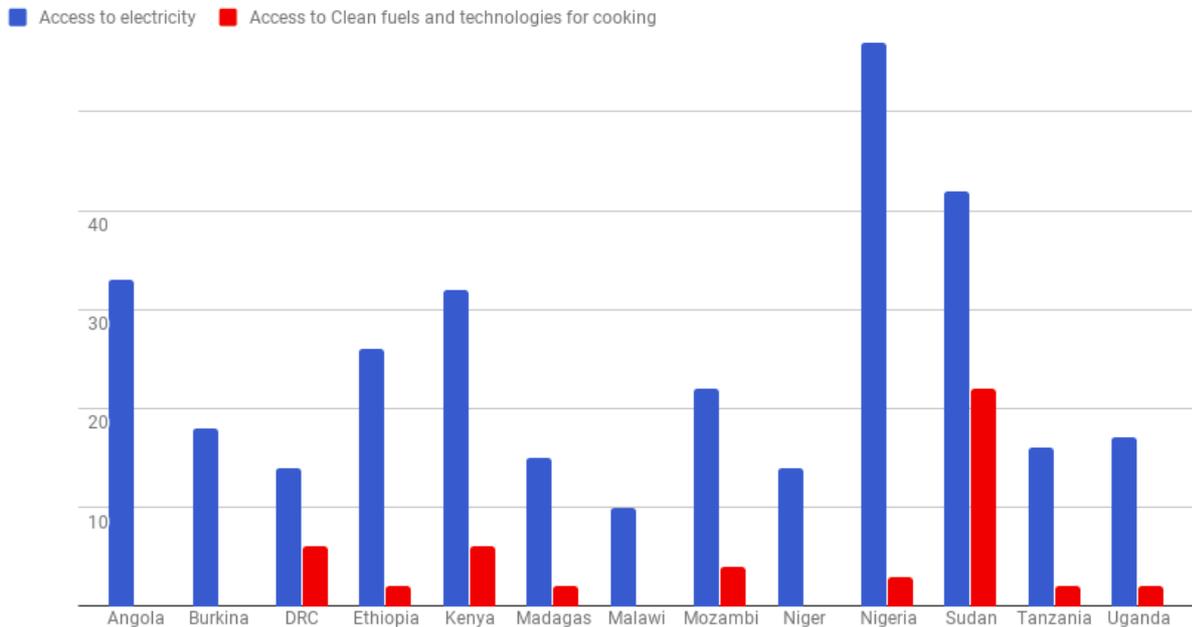
⁴ https://ec.europa.eu/europeaid/sectors/energy/energy_en

⁵ In 2015 only seven countries - Cameroon, Côte d’Ivoire, Gabon, Ghana, Namibia, Senegal and South Africa - have electricity access rates exceeding 50 percent. (McKinsey, 2015)

⁶ Compared to 13,000 kWh per capita in the United States and 6,500 kWh in Europe (AfDB, 2017).

⁷ According to SEforALL (2017), these countries are called ‘high-impact’, as they cannot afford delays in making progress on energy access.

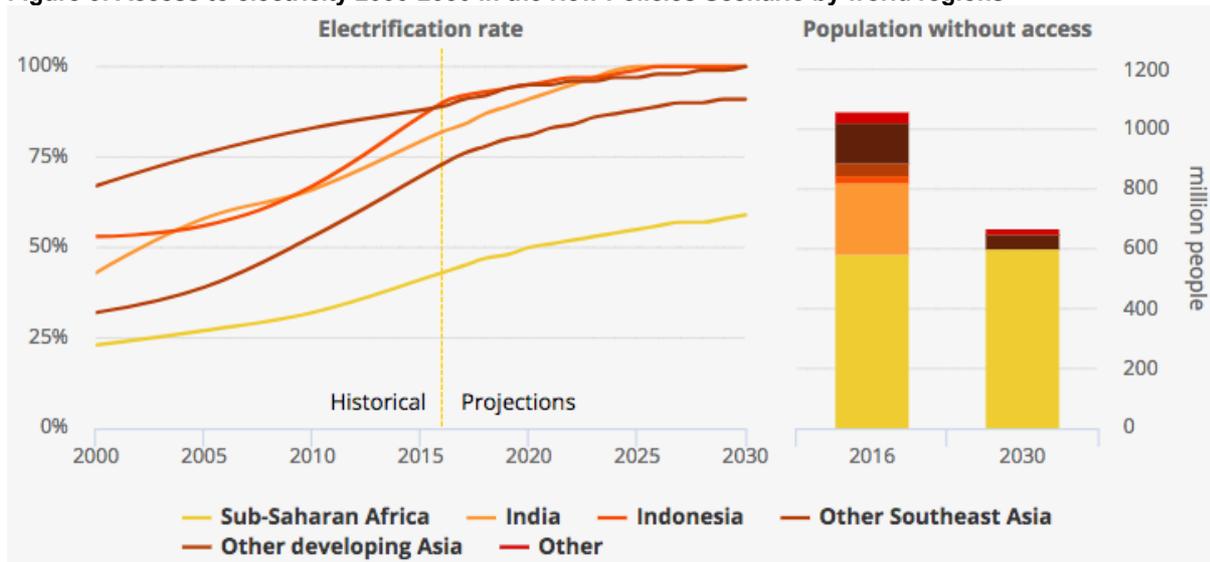
Figure 2: Access to electricity, and to clean fuels and technologies for cooking



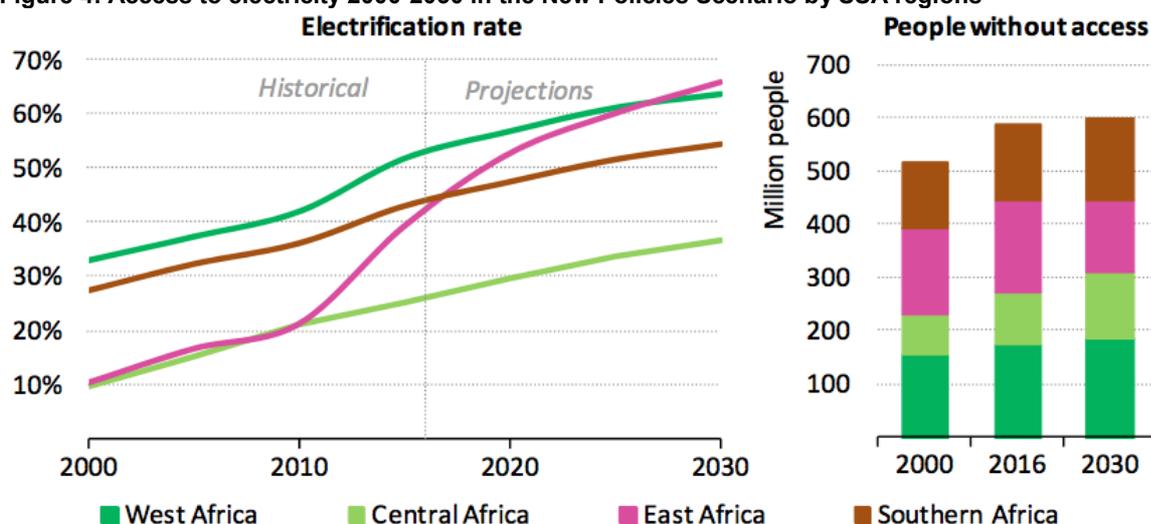
Source: [SE4ALL, 2017](#).

In fact, if current trends continue (in terms of electricity access and demographic growth), more people may be without access to modern energy services in 2030 than today ([WEF, 2016](#), [Bazilian et al., 2012](#)). For sub-Saharan Africa that means that access rates will grow to 59% in 2030, from 43% in 2016, but number of people without access to electricity will grow again due to failing efforts to accelerate ([IEA, 2017](#)): “of the 674 million people still without access to electricity in 2030, 90% live in sub-Saharan Africa, illustrated by Figure 3. And within sub-Saharan Africa, there are large disparities among regions, with Central Africa clearly lagging behind, whereas East Africa is rapidly increasing access to electricity, as shown in Figure 4.

Figure 3: Access to electricity 2000-2030 in the New Policies Scenario by world regions



Source: IEA, 2017.

Figure 4: Access to electricity 2000-2030 in the New Policies Scenario by SSA regions

Source: IEA, 2017.

Access rates for electricity also vary strongly between urban and rural areas in sub-Saharan Africa with almost 80% of those without access living in rural areas (IEA, 2017). This particularly affects the life of the most vulnerable, including women and girls, as they (especially in rural and peri-urban areas) are mainly responsible for procuring and using cooking fuels - thus carrying the burden of “energy poverty” with the resulting negative effects, such as devoting less time to income-earning or educational activities (AfDB, 2016). Particularly concerning though is the impact of household air pollution on health due to using polluting fuels for cooking and lighting causing around 600,000 premature deaths each year (WHO, 2014).

Access to energy is not only crucial for poor and remote people but a key factor for successful economic transformation, including enhanced production processes. This holds true for both urban and rural areas in their process of industrialisation and increased connectivity as well as the need to create more decent jobs. Power generation and granting access to energy for productive activities can have a sustainable impact on development and help lifting millions out of poverty. Addressing the issue of (rural) electrification will be key to ensure universal access to modern energy services and sustainable and inclusive development, including women’s economic empowerment.

While the bulk of investments out of the total US\$5.6 billion of international public finance allocated for energy goes “toward large-scale energy and to high and middle income countries”, approximately half of that (US\$2.8 billion) supports “grid-connected projects (‘utility-scale’), with the remainder split across sub-sectors including buildings, industry, transport and decentralised energy” (Rai et. al., 2016). Only a very tiny share of funding - approximately 0.1% of approved energy finance - goes toward clean cooking solutions. Further, it should be noted that particularly sub-Saharan Africa due to its population growth has experienced “that the number of people relying on biomass for cooking [almost 80% of the population] has grown by 400 million people” despite the associated health risks and available clean cooking solutions (IEA, 2017). Off-grid support, such as for clean cooking services, currently receives not only far less financial means, but also far less attention compared to on-grid, utility and large scale projects (ibid.). It seems that decentralised solutions are often too small to be utility-scale and it seems more difficult

to identify economically viable projects. However, according to Hystra (2017), “more than US\$1 billion is needed to provide off-grid solutions to the 20 million households that need it most”.⁸

The concentration of people without access to electricity in rural areas therefore requires appropriate energy access strategies and solutions (IEA, 2014), as it disproportionately affects the poor and hampers their overall development prospects, while at the same time making them spent “up to one hundred times more than those in developed countries on inferior energy products, and exposes them to life-threatening indoor pollutants” (Acumen, 2017). The poor tend to rely on biomass, fuel and coal, and for clean energy tend to rely on solar access where available, keeping in mind that only pico-light systems⁹ are reaching those in extreme poverty (ibid.).

For above reasons, donors have for a long time identified access to energy as a key focus area for their interventions. In this regard, the European Union (EU) has been particularly active. It has committed to facilitate investments leading to an increased renewable energy (RE) generation capacity of at least five gigawatt (GW). Since increased generation capacity does not automatically translate into higher access rates, the EU has also upped its commitments to increase access to energy, including to poor and remote areas recognising that off-grid sustainable energy systems and technology can decrease the “rural-urban divide in electricity access, including supply through solar systems for rural households”.¹⁰

Recently, the European Council, the European Commission (EC) and the EU and its Member States have reaffirmed their commitments and contributions towards contributing to improved energy access in Africa:

- **In November 2016, the Council in its Conclusions** “recognises that access to energy is crucial for eradicating poverty and for delivering on the 2030 Agenda and achieving the sustainable development goals (SDGs), notably SDG 7 on access to affordable, reliable, sustainable and modern energy for all, and SDG13 on climate action”. It further stresses the EU’s ambitions to provide energy access to 500 million people currently without access by 2030 recognising the important role of decentralised renewable energy to reach universal energy access. Due to the large amounts of investments required - estimated to be almost €1 trillion up to 2030 - it also emphasises the need to crowd in private sector finance by using “innovative financing and project development initiatives and instruments, such as the Electrification Financing Initiative (ElectriFI), the Africa-EU Renewable Energy Cooperation Programme (RECP), and the Regional Investment Facilities, as well as through the guarantee fund proposed as part of the External Investment Plan”.
- **In March 2017, the EU Commissioner for international cooperation and development Neven Mimica** announced the EU contribution of about €300m for the preparation of 19 new renewable energy projects under the Africa Renewable Energy Initiative (AREI), with a total potential investment of €4.8 billion, supporting the EC’s goal for 2020: to give 30 million more people access to sustainable energy, to save 11 million tonnes of carbon dioxide annually, and to help generate 5 Gigawatts of new renewable energy in Africa. This is part of the EU’s development funding towards sustainable energy in Sub-Saharan Africa for the period 2014-2020 that amounts to approximately €2.7 billion overall.¹¹

⁸ [Energy Webinar 20 September 2017](#): Reaching Scale in Access to Energy - Overcoming challenges for solar success beyond peri-urban areas of East Africa and India.

⁹ Pico-solar lights are small, portable solar lights that provide a single light point, often with an integrated panel, and sometimes with mobile phone charging capacity.

¹⁰ Council conclusions 28 November 2016 on [energy and development](#)

¹¹ Europe strongly advancing renewable energies in Africa, EC press release, [4 March 2017](#)

- **In June 2017, the EU and its Member States through the New European Consensus on Development** “will support the poorest communities in improving access for all to land, food, water, and clean, affordable and sustainable energy, while avoiding any damaging effects on the environment”. By promoting an integrated approach through policy initiatives and partner countries support they also aim to “address the most relevant interlinkages between land, food, water and energy”. Equally and if not more importantly they will simultaneously work towards improving regulatory frameworks to foster a conducive, competitive and sustainable energy sector while leveraging private investments.¹²

As “there are concerns that current flows of development finance for energy are not reaching poor people and rural areas where energy access deficits are greatest” (IIED, 2016:11), this study will aim to provide some insights into the approaches and instruments adopted by the EU to promote access to energy, and their ability to reach the poor and remote areas and contribute to SDG 7. It will look at EU’s financial instruments (FIs) to leverage private finance in view to promote universal access to energy. The aim is to better understand their opportunities and challenges, notably in reaching out the poor and remote areas in Africa in the context of SDG 7.

It will draw on experiences and lessons from a number of specific examples of EU FIs, such as ElectrIFI and the Africa Investment Facility (AfIF) and its predecessor, the EU-Africa Infrastructure Trust Fund (EU-AITF). By doing so, this study will attempt to shed light on the current thinking about how to best integrate access to energy objectives in the new European External Investment Plan (EIP), including in the investment windows of the European Fund for Sustainable Development (EFSD), especially the one focusing on sustainable energy.

The study is organised as follows: Section 2 contextualises energy access in the broader policy framework of the EU. Section 3 provides an overview of the main EU FIs in place to support universal access to energy, highlighting how they work and complement one another towards a coherent EU approach. Section 4 then discusses the key challenges and opportunities of these instruments supporting sustainable access to energy for all. Section 5 concludes with preliminary implications for policy-makers, and opportunities to improve the current financial architecture to meet the universal access to energy goals.

Methodology

To identify challenges and opportunities of the relevant FIs supporting access to energy, we have conducted both interviews and desk research. A selected number of interviews has been done with relevant stakeholders from the EU institutions, the European Investment Bank (EIB), the European Bank for Reconstruction and Development (EBRD), and other relevant actors, including some of the European Development Finance Institutions (EDFIs) and some stakeholders in receiving countries. The findings coming out of these interviews were further enriched with desk research, while also building on previous work of ECDPM related amongst others to [blending](#) and the [EIB’s ACP Investment Facility](#).

¹² New European Consensus on Development - 'Our world, our dignity, our future', [8 June, 2017](#)

The scope of this study being rather specific, some of its limitations must be acknowledged. First the EU support goes beyond some dedicated financial instruments aimed at leveraging private finance, notably aid through grants alone (e.g. for projects, technical assistance and policy dialogue), for instance under its regional and thematic indicative programmes towards Africa, which are beyond the scope of the present study. The study does not provide an exhaustive mapping of the EU's FIs but rather focuses on selected salient ones. Additionally, it should be stressed that concrete results and impact achieved are extremely difficult to obtain from either documents or interviews due to a lack of dissemination or reference to confidentiality clauses. This closely relates to attribution and direct and indirect impact, as support through a specific financial instrument is only one among many factors for success stories and sustainable development results. It is also rather difficult to assess the additionality of such instruments, as they claim to only support private sector projects, if there is no equal or even better market option. The private sector actor or investor might also be holding back information, as “the true financing cost is only observed by the entrepreneur”, hence, there might be an incentive to misrepresent the costs in order to receive a subsidised loan despite the project being viable at market rates (Carter et al., 2017).

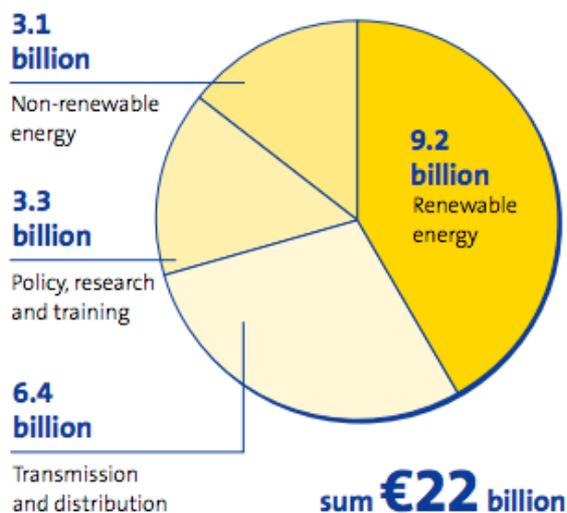
2. Overall EU energy-related development cooperation

Recognising that “without access to reliable, affordable energy services, crucial tasks (...) can be difficult or impossible to accomplish”, the [European Union's 2011 Agenda for Change](#) identifies “energy as one of EU's highest priorities for the future and as a key driver for inclusive growth” and strongly supports the SDG 7. The EU's strategy to energy is based on three pillars: (i) ensuring universal access to modern energy services - in line with SDG 7; (ii) Fostering renewable energy in the global energy mix thus contributing to the fight against climate change (as reflected in the 2015 Paris Agreement) and; (iii) private sector engagement in the energy sector. Up to 2020 the EU, in the framework of the Sustainable Energy for All initiative, wants to leverage around €30 billion of energy investments in developing countries by allocating at least €3.5 billion to the energy sector (EC, 2016).

Put in numbers, the EU and its Member States (MS) are the largest energy ODA donors, by committing a total of over €22 billion¹³ in the energy sector worldwide (including €9.2 billion in renewable energy) between 2010 and 2014, of which €8.1 billion (37% of the overall European energy ODA portfolio) was channelled to Africa, making it the largest energy ODA recipient ([EUEI, 2017](#)), as illustrated in Figure 5. More than half of that amount (i.e. €4.4 billion in 2010-2014 by the EU and its Member States) went to sub-Saharan African countries ([EUEI PDF, 2017](#)). It should be noted however that three countries in particular were the main beneficiaries of that support - Kenya (€980 million), South Africa (€630 million) and Mozambique (€250 million) - which raises questions about the allocation of European support and willingness (or capacity) to reach the most remote and poor. Overall, [according to IEA estimates](#), in the period 2010–2014 the EU and its Member States “allocated around 10% annually of the estimated total of \$50 billion annual investment required to achieve universal energy access by 2030” ([EUEI PDF, 2017](#)). This is more than twice the level that is currently mobilised or planned for and “of the additional investment, 95% needs to be directed to sub-Saharan Africa” (IEA, 2017).

¹³ This represented eight per cent of overall European ODA in the period 2010 – 2014 (€287 billion).

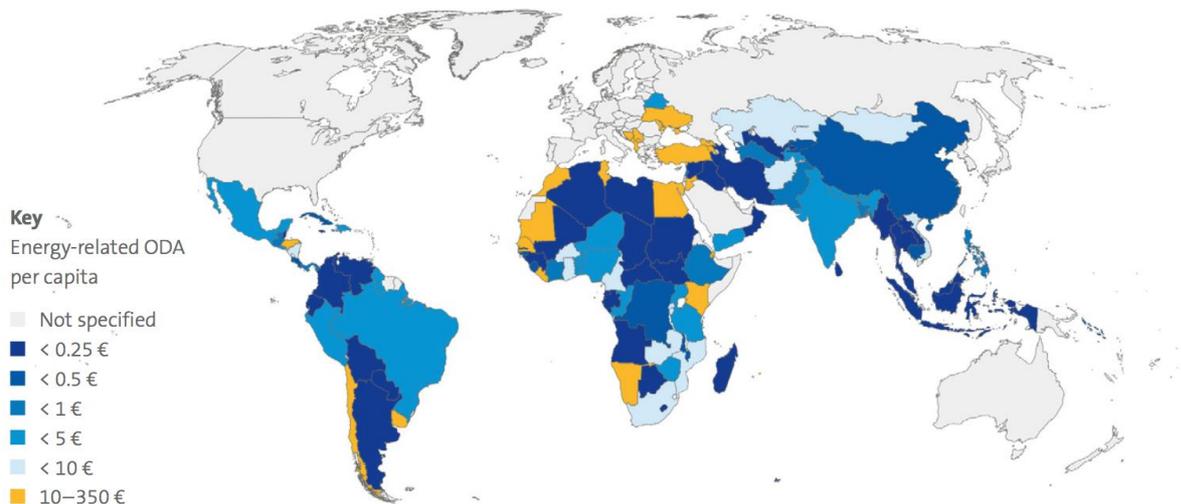
Figure 5: Fields of Intervention of European Energy ODA (2010-2014)



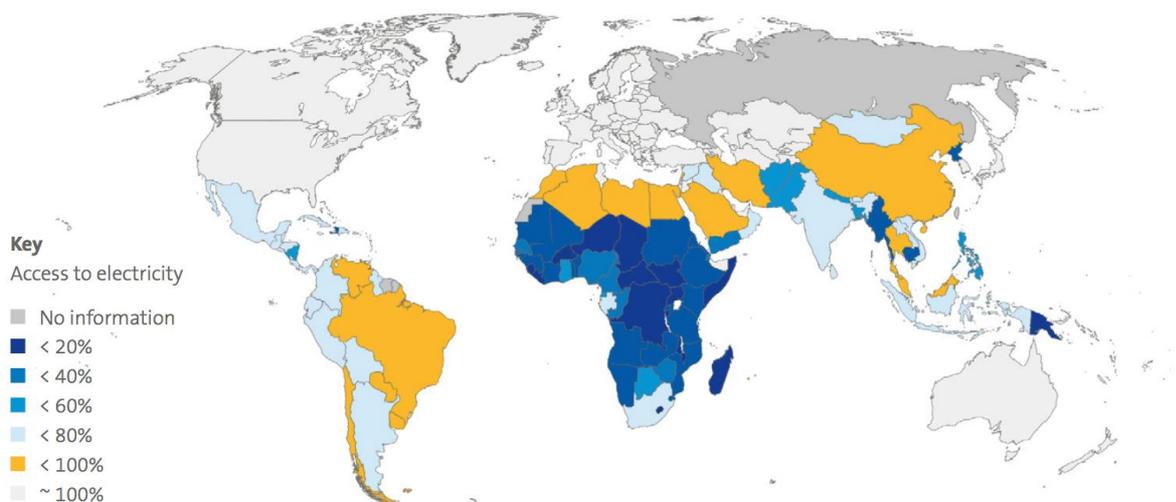
Source: EUEI PDF, 2017

Besides, eight of “the ten partner countries (all of which are lower-middle-income countries) that receive the largest share of European energy ODA” worldwide, have an electrification rate that is higher than 90%. This seems to suggest that the bulk of the EU energy ODA does not seem to reach extensively low income countries or countries where electrification is least developed. Figures 6 and 7 further illustrate that point: energy-related ODA per capita spending by the EU seems comparatively low particularly in those countries, where electrification rates are also rather low.

Figure 6: European Energy-Related ODA by Capita allocation



Source: EUEI PDF, 2017.

Figure 7: Percentage of Total Population with Access to Electricity

Source: EUEI PDF, 2017.

It needs to be recognised through that sub-Saharan African partner countries do identify their own priority sectors for support, according to which the EU allocates funding and support, which may not include energy but other issues, such as social infrastructure, food and agriculture, or peace and security.

In terms of private sector engagement, EU funding for energy has had a significant leveraging effect increasing the importance of blending, where energy blending makes up 41% of total blending funding through EC instruments. Accordingly, the EC estimates its €3.5 billion dedicated to energy can leverage up to €30 billion from other sources,¹⁴ which implies that a total of €22 billions of EU contributions could potentially leverage up to €180 billion, if there is the right mix of financial instruments used by the Member States ([EUEI PDF, 2017](#)). These expectations seem to match the experience of the AfIF, which leveraged €23 billions of loans with €2.7 billion EU grants, with a leverage ratio over 8.

As noted before, using aid to leverage private finance or to blend with funding coming from IFIs and DFIs is only a minor part of the EU's contribution towards increased energy access. Grant funding is and will continue to be very important for a number of (renewable) energy projects in very poor and remote areas that are not yet sufficiently financially attractive to crowd in the private sector. Interviews suggested that especially in the context of political dialogue, technical assistance, assistance to regulatory reforms and making projects bankable and viable, grant funding through e.g. budget support or dedicated instruments will continue to play an important role that blending instruments cannot substitute. Examples are the Renewable Energy Cooperation Programme or the Technical Assistance Facility (TAF). While this study focuses on financial instruments, it is therefore important to keep in mind the different tools the EU uses in order to foster energy access in Africa and beyond, and their connections.

While there is an indisputable need for infrastructure and private sector investment (notably through blending) in the energy sector in Africa, it must also be recognised that such investments in infrastructure do not necessarily target the poor and remote areas. The next section will consider some of the key EU initiatives and instruments, with a view to better understand how they work and whether they can (or not) reach the poor and remote areas.

¹⁴ European Commission's [Empowering Development - Delivering results in the Decade of Sustainable Energy for All](#).

3. Key EU energy initiatives and financial instruments

The EU has a number of instruments in place that financially support and promote private investments towards renewable energy projects and more importantly access to energy in third countries, particularly Africa (Table 1). Having committed to providing sustainable energy access services to 500 million people by 2030 (EC, 2016), the EU aims to play a key role in supporting actions in the energy field. To do so, it has put in place a comprehensive approach articulated around three main drivers:

- (i) **policy dialogue** to ensure local ownership (through e.g. the National Indicative Programmes¹⁵);
- (ii) **technical assistance** (through e.g. Technical Assistance Facility with a total budget of €65 million) to build local capacities; and
- (iii) **innovative financing instruments** to support and boost energy (private sector) investments in partner countries, such as the [Electrification Financing Initiative](#) (ElectriFI), a thematic blending instrument funded by the European Commission and Power Africa with an initial amount of €115 million (see Table 1) (EC, 2017).¹⁶ These also include the [Africa Investment Facility](#) (AfIF) (which replaced in November 2015 the [EU-Africa Infrastructure Trust Fund](#) (EU-AITF)) with a budget of €329 million already allocated in addition to already invested €392 million, and the [Global Energy Efficiency and Renewable Energy Fund](#) (GEEREF) with an allocation of €20 million that has been added to the already invested €108 million.¹⁷

While EU blending instruments have generated strong attention, it is equally important to note that they are only a minor part (about 4%) of the overall EU support in general and towards energy access in particular - looking at the total EU funding of approximately €2 billion allocated to the regional investment facilities during 2007-2014, representing 4% of EC's funding ([ADE et al., 2017](#)).

Table 1: Non-exhaustive list of EU led initiatives and instruments in the energy field

	Key EU-level instruments
Financial instruments	<ul style="list-style-type: none"> • the Africa Investment Facility (AfIF) (2015-2017) <ul style="list-style-type: none"> ◦ The EU-Africa Infrastructure Trust Fund (ITF) (2007-2015), managed by EIB • the Electrification Financing Initiative (ElectriFI) • ACP-EU Energy Facility (2005-2017) - including the "Pool Mechanism" • European External Investment Plan's (EIP) Regional Investment Platform for Africa (2017-...) with a specific investment windows on renewable energy <p>European Investment Bank (EIB), such as:</p> <ul style="list-style-type: none"> • Africa Sustainable Energy Facility (ASEF) • Africa Energy Guarantee Fund • the Global Energy Efficiency and Renewable Energy Fund (GEEREF) • Microfinance and Impact Investment Equity Fund <p>EIB jointly with other EDFs:</p> <ul style="list-style-type: none"> • Interact Climate Change Facility (ICCF) • European Financing Partners (EFP) • EU - EDFI Private Sector Development Facility <p>European Bank for Reconstruction and Development (EBRD)¹⁸</p>

¹⁵ It is worth noting that 30 National Indicative Programmes, half of which are for African countries, include energy as one of the focal sectors, as stated in the [European Parliament resolution of 1 December 2016 on access to energy in developing countries](#) (2016/2885(RSP)),

¹⁶ <http://electrifi.org/what-we-do/>

¹⁷ https://ec.europa.eu/europeaid/sectors/energy/energy_en

¹⁸ <http://www.ebrd.com/what-we-do/sectors-and-topics/sustainable-energy-initiative.html>

Technical assistance	<ul style="list-style-type: none"> • The European Union’s Technical Assistance Facility (TAF) for the Sustainable Energy for All (SE4ALL) • The Africa-EU Renewable Energy Cooperation Programme (RECP), incl. a Finance Catalyst
Business environment/ policy dialogue	<ul style="list-style-type: none"> • The Africa-EU Energy Partnership (AEEP) • Africa Renewable Energy Initiative (AREI) • EU Energy Initiative (Partnership Dialogue Facility (EUEI (PDF)) • Contribution to National/Regional and Global Indicative Programmes with (€2.7 billion to sustainable energy in Sub-Saharan Africa) • Covenant of Mayors in SSA to strengthen the role of local authorities • 22 Joint Declarations on enhanced energy cooperation

In a context where US\$55 billions of energy related infrastructures are required over the next 15 years to match with the growing demand for energy access in Sub-Saharan Africa ([Johnson et al., 2017](#)), the pillar concerning financial instruments of the EU has naturally attracted significant attention. This is even more so with the recent announcement of the Africa Investment Platform in the European Fund for Sustainable Development, as part of the European External Investment Plan, under which a specific investment window will be dedicated to sustainable energy.

Several financial instruments to finance energy have been established by international financial institutions, such as the European Investment Bank (EIB) and the European Bank for Reconstruction and Development (EBRD). This is part of a dedicated effort by the EU to leverage private finance, together with other regional blending facilities and IFIs, to contribute to the sustainable development goals (SDGs), most notably SDG 7 ‘Affordable and clean energy’, so as to ensure access to affordable, reliable, sustainable and modern energy for all. These efforts are intended to be better coordinated and managed under the EIP to find the appropriate mix of public and private (financial) support that channels the right type of funding and instruments according to local conditions and specific needs.

The EIB has its own Investment Facility (IF) for African, Caribbean and Pacific states (ACP) that support amongst other areas renewable energy projects and through its Impact Financing Envelope (IFE) also supports energy-related development and impact funds and initiatives (Bilal and Grosse-Puppendahl, 2016b). The EIB also offers the Africa Energy Guarantee Facility as well as advises on the Global Energy Efficiency and Renewable Energy Fund (GEEREF). As a main contributor - together with the EBRD, accounting for 27.5 per cent) and the United Nations Development Programme (UNDP) - to the Green Climate Fund (GCF), the three IFIs account for over half of all allocated funds. However, “only 4.7 per cent of the total GCF funds allocated so far have energy access as a primary focus, with several others including energy access as a minor component”, which again raises questions about whether too much emphasis is put on energy generation rather than distribution capacities and access (FoE US & IPS, 2017). This at the same times raises concerns about the aim to be “country-driven” and as relevant as possible for local communities rather than driven and decided by large IFIs.

Sustainable development for the poor and remote areas?

Table 1 in the annex presents a comparative overview of some of the main EU energy-related financing initiatives, highlighting some of their similarities and differences in terms of the type of support they provide, and the criteria and results measurement they used - which evolved over time. While the ITF was criticised notably for not emphasising enough the pro-poor dimension ([EC, 2016](#)), its successor the AfIF has tried to address some of these concerns and shortcomings by adapting the governance of the instrument (with the EC managing it) to ensure that the political objectives of the European Union are met, in particular in the context of the Sustainable Energy for All (SE4All) initiative ([EC, 2012](#)). It is therefore not surprising to see

the AfIF including increased availability and access to renewable and green energy including in rural areas as one of its objectives. Preliminary findings however suggest that while the poor and remote segments are often explicitly mentioned they are not necessarily the main target particularly when looking at blending instruments. This has also been partly confirmed by the recent blending evaluation though from 2015 onwards improvements have been made.

Following this trend, ElectriFI seems even more ambitious to put greater emphasis on rural, underserved areas affected by unreliable power supply and on decentralised energy solutions. This is further reaffirmed in its results monitoring framework, which does not only look at GW or amount of investments but rather connections and access to electrification, particularly for rural and often the poor segment of the African population. Table 1 in the annex not only specifies the eligibility and investment criteria for ElectriFI projects but also refers to the main measure for impact - serving as a selection criteria for projects - which is the “number of directly attributable new electricity connections (min. 1000)”, where preference is given to rural areas, as specified in the second call for investment proposals.¹⁹

At the same time, the EIB upgraded its approach and activities in ACP countries through the impact financing envelop (IFE), which aims to achieve higher development impact by taking more risk and different types of investments, such as social impact funds that support energy access at smaller scale. Despite their simultaneous upgrade of the results measurement framework (ReM) to ReM+²⁰, when it comes to reporting on results, this is still done on expected and projected rather than actual results. The EIB seems committed to increasingly report on actual results in the forthcoming ‘Outside the EU’ annual reports by doing a 2nd ReM review at project completion +3 years, or end of fund life (for microfinance and equity).²¹ Therefore, the recent evolutions in the EU blending instruments seem to suggest that energy related FIs dedicate more importance to development aspects, including energy access in rural areas. At the same time, the EU continues to put much emphasis on financial viability, renewable energy generation and access to energy in general in market segments that are underserved by aid or blending.

FIs coordination for a wider impact

As the current share of EU aid spending through blending overall amounts to four per cent, one cannot expect it to achieve the EU’s energy-related objectives alone. However, to deliver maximised developmental impacts requires blending instruments to be complementary among them, and with other more technical and long-term instruments, such as technical assistance, budget support, and regulatory reforms for instance.

Indeed, as highlighted in the annexed Table 1, the EC tries to achieve complementarity between the different FIs (ACP IF, ITF, SE4ALL initiative, GEEREF, ElectriFI) in order to build synergies. For example, while the AfIF focuses rather on on-grid solutions, ElectriFI puts emphasis on decentralised energy solutions; GEEREF being structured as a fund of funds, offers financing for small scale RE projects, which slightly differs from ElectriFI and AfIF which seem to focus on larger type of projects.

The EC also tries to foster complementarities with other technical and political (and long-term) instruments such as the TAF, RECP, EUEI, AEEP, and more generally budget support. Coordination there is of utmost importance as (i) blending instruments relies on reliable regulatory and business environment; and (ii) that

¹⁹ ElectriFI Guidelines - Call for Investment Proposals #2017-1.

²⁰ This expanded framework goes further down the beneficiary line to assess impacts on final beneficiaries. It also goes deeper in terms of the profile of the final beneficiaries, estimating the share of bottom-of-the-pyramid beneficiaries as well as gender and youth dimensions. ([EIB, 2015](#))

²¹ EIB lunch dialogue 21 June 2017. Investment for development: measuring results and identifying challenges ahead. Agenda.

in some cases, projects require not only financial but technical support, without which they could not come to reality. These synergies seem necessary in order for FIs to reach the poor and remote areas, as these are often considered too risky for the private sector to invest in (more details in the section below).

Keeping in mind that blending is by no means a one-to-one substitute for pure public or aid financing, it is important to see the broader picture and identify those cases and contexts where blending is less appropriate. This has to do with cases where infrastructure development for energy access (and consumption) is not financially or commercially viable, or needs to be mainly subsidised to go ahead.

The next section therefore provides an overview of where ambition (goals and objectives) and reality (results and practice) at times diverge but also meet depending on context and instrument.

4. Ambition and reality

Blending for energy access for the poor and remote areas - limited reach

The idea of crowding in private sector finance and investments to achieve development objectives rests on the idea that by providing investment grants, interest rate subsidies or technical assistance the private sector engages due to lower costs, a better managed or diversified risk and incentive structure, while development impact can be enhanced. This requires that the impediments to investment such as the perceived risk are not too high, so that a grant element can be the tipping point for a positive investment decision and greater development impact. If the investment climate/business environment is however constrained in terms of poor financial infrastructure, high uncertainty and a high risk profile characterising many of the (energy) projects - especially in remote areas (more details in the Table 2), or that the energy project is not financially sustainable in the long run, such a market-oriented instrument loses relevance at the benefits of aid-type of instruments such as budget support, or no support at all if the projects are not realistically viable (as often the case).

Table 2: Rural electrification in ACP countries: key issues

Financial issues	Governance issues	Technical challenges
<ul style="list-style-type: none"> • Rural electrification is often not a profitable business • Inadequate tariffs • Limited investment capacity of the national utilities • Inadequate size of projects (small) • Lack of credit for independent local producers 	<ul style="list-style-type: none"> • Insufficient attention to rural electrification • Coordination between the national utility and the rural electrification agency/fund • Political interference in the choices made by the company • In peri-urban areas, reduction of losses (unpaid electricity) is a ACP-EU Energy Facility huge challenge 	<ul style="list-style-type: none"> • Improving capacity of private local actors (decentralised solutions) • Development of new management modalities • Training of qualified staff

Source: [EC, 2016](#)

Given the limits of blended finance as a financing instruments to promote access to energy, which ultimately rests on financial sustainability, the objectives of the ITF in the past and the AfIF and ElectrIFI to crowd in private investors to support RE or electrification projects is rather difficult to achieve for the poor and remote areas. This is notably due to the lack of conditions in place that would allow to do business and achieve a certain return on investment. Interviews confirm this finding, arguing that there are hardly bankable and financially-viable projects in more difficult and poor regions that could qualify under blending instruments, such as ElectrIFI.

This also means that most projects financed through the AfIF, and to a lesser extent ElectriFI and GEEREF, take place in relatively safe business environment, able to attract private sector investments (as demonstrated by the 1:8.5 leverage ratio of the AfIF). Though there is no available data, it would not be a surprise, if the majority of the EU's energy-related FIs focused mostly on lower-middle-income countries rather than in LICs, and in urban or at least more accessible areas rather than remote areas. While there are certainly differences between the FIs - ElectriFI going more towards rural electrification projects compared to the AfIF, there is no publicly available evidence that could support that argument.

Ambition vs pragmatism

While at the start of ElectriFI there was a clear emphasis on new and improved connections, including access to energy particularly in rural areas, the EC soon realised that if it wanted to reach scale and be ambitious, a focus on new connections as a selection criteria for eligible projects is perhaps not leading to achieve the ambitious goals under the SDG 7. Hence, in the second round of calls for proposals more emphasis has been put on MW and amounts of generated investments, which hints at a potential dilemma where the pressure for results and impact needs to be reconciled with the objective to reach a certain number of new connections, knowing that 588 million people (57% of the overall population) are currently without electricity access in sub-Saharan Africa, of which 80% live in rural areas. This helps understand that energy investments in poor and remote areas do not only face technical issues, but also political challenges. In terms of development objectives, it is also questionable whether a focus on the poorest segment of the population in most remote areas is a viable focus for blended finance instruments, or should only part of the mix, when financially viable.

Coordination

Numerous Interviews with relevant stakeholders suggested that there is a close collaboration between the different instruments - financial and non-financial support ones. One such example is the cooperation between Electrifi and RECP, where potential investors can allow the exchange information between both programmes, so that projects that are not yet of sufficient quality to become fundable under ElectriFI can receive technical assistance under RECP to develop the project up to the point where it becomes bankable and hence qualifies for ElectriFI support. This not only increases complementarity between different instruments but ensures at the same time that projects potentially supporting electrification in rural areas are not dismissed. It also addresses the challenge of having too little bankable projects available, which is particularly illustrated by the fact that ElectriFI for instance received almost 300 applications but can only select 10-15 that meet its quality and relevance criteria to be financially supported.

Results measurement - lost in translation

Overall, it is rather difficult to obtain results achieved or solid reporting against set-out objectives for any of the instruments, which makes it difficult, if not impossible, to say anything meaningful about their impact and contribution to energy access in poor and remote areas. This has to do with a number of challenges, which will be elaborated on in the next section, but also the fact that it is not possible to add up the various instruments' reported results due to i) double counting of projects supported and connections established and ii) how they are categorised in light of SDG 7 (energy access) vs. SDG 13 (combatting climate change and its impacts).

Figure 8 provides an overview of the expected results of the EIB's energy support in 2016, aimed at creating 1.2 million new connections, which would satisfy approximately 0.16% of those currently without access to illustrate the dimensions and gap in energy access support. While this gives an idea about the

results and outcomes, it also shows the limitations of that type of standard reporting being done and information available, with a focus on generation capacity and power lines.

Figure 8: EIB energy support – overview of key expected results for new projects in 2016

Expected outputs		Expected outcomes		
Generation capacity	375 MW	➔	Annual electricity production	975 GWh
From renewables	348 MW		Households potentially served	338 000
New/upgraded substation capacity	1 697 MVA	➔	Annual electricity transported	1 200 GWh
New/upgraded power lines	9 550 km		New households connected	1.2 million

Source: EIB, 2017.

The EIB in its **Business Strategy 2016-2018 for ACP countries** specifies to develop social and economic infrastructure, including “responding to strategic infrastructure needs in sectors such as energy (...)” as well as it entails a commitment towards Climate change mitigation and adaptation, including “Climate action focusing on renewable energy, energy efficiency”.²² Additionally, the EIB’s Economic Resilience Initiative (ERI) “aims to bring €15 billion of new investment to [the Southern Neighbourhood and Western Balkans countries] to improve social and economic infrastructure, including to bring about “enough energy generated for over 400 000 households [and] 150 000 MWh of energy efficiency savings”.²³

For sub-Saharan Africa, the EIB provided €3.1 billion of investments in energy between 2012-2016, while planning to invest a further €1.2 billion between 2017-2020.²⁴ One of the most prominent examples of EIB support and energy-related contribution to SDG 7 is the Lake Turkana wind farm in Kenya, which is expected to generate around 20% of Kenya’s power supply, while the objective is providing over 300 MW of reliable, low cost electricity to the national grid (EIB, 2016). This is being done by blending an EIB loan with grant financing from the EU-AITF. The Lake Turkana project has recently faced some criticism and generated discussions among civil society with regard to a land dispute - illustrating the delicate balance between development impact and level of private sector interventions - and information on results in terms of increased access to energy for the population are not available.²⁵ Another example of how the EIB supports energy access out of a total of €2.14 billion of loans provided to Africa in 2016 (€8.4 billion in loans outside the EU in 2016) is through providing equity for social impact funds, like the Energy Access Ventures Fund (Box 1).

Box 1: Example of a social impact fund supported by the EIB: the Energy Access Ventures

The Energy Access Ventures Fund (EAVF) is a €55m venture capital fund that provides not only equity finance but also mentoring and other support for young investee companies, which aims at leading to energy solutions, particularly for the poorest in Africa. By investing in high-growth businesses it aims to “deliver reliable and affordable energy to rural and underserved areas and populations” with an EIB contribution of €10m in 2015.

By 2016, the EAVF had invested in three investee companies (Off Grid Electric, D.Light and PEG) that are “dedicated to the rapid roll-out of affordable, off-grid, solar-powered solutions for electricity supply, particularly lighting, for households and small businesses”. The EIB reports that these three companies connected 343,000 households (comprising 1.7 million people) and 1,000 MSMEs around Sub-Saharan Africa with off-grid products, of which “it is estimated that more than half of clients are from the poorest sections of society. 83% live in rural areas.”

Source: EIB, 2017.

²² The European Investment Bank in Africa, the Caribbean and Pacific [Business Strategy 2016-2018](#).

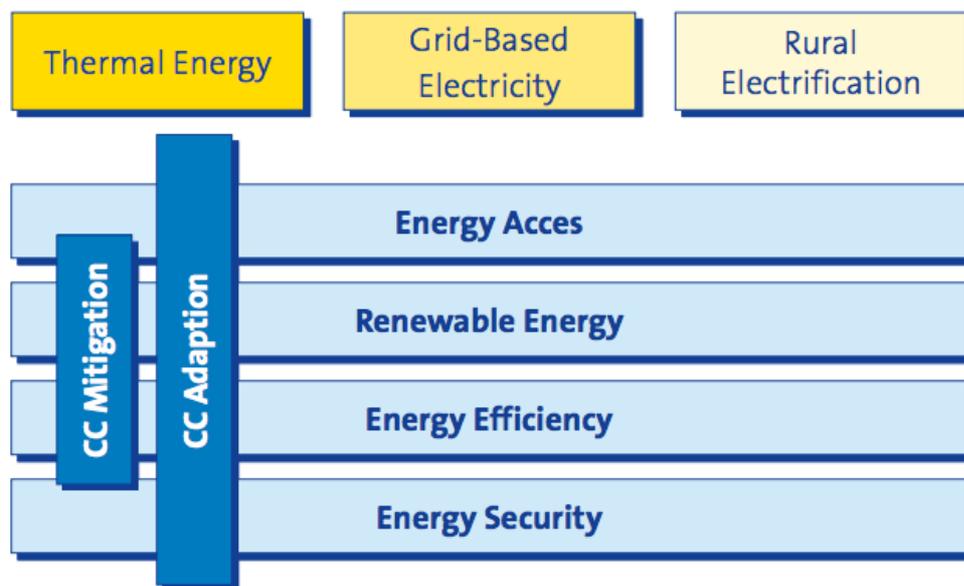
²³ [EIB: a powerful multiplier of EU External Policy in Africa](#), March 2017.

²⁴ EU Communication 4 May 2017. [Factsheet n°5: Toward the 5th Africa-EU Summit - Energise Africa](#).

²⁵ Business Daily Africa. Lake Turkana Wind Power land case on after talks collapse. June 7, 2017.

This has to do with the challenge of monitoring energy goals: while projects that contribute to energy access, energy efficiency and renewable energy also contribute to climate change adaption, only those projects, which contribute to energy efficiency and renewable energy contribute to climate change mitigation action (EUEI, 2017). This exemplifies both i) methodological problems when trying to count specific contributions and ii) the inter-relations between achieving the energy targets (SDG 7) and climate change targets (SDG 13) respectively (Figure 9), which is however part of the overall challenge of SDG monitoring and measurement. Therefore, some projects which positively impact energy efficiency and reliability of energy access may be reported under SDG 13 in terms of climate change adaption, which makes assessing the EU’s support and contribution to SDG 7 not only more difficult but perhaps even smaller than it is in reality.

Figure 9: The challenge of monitoring energy goals: target dimensions vs. energy sub-sectors



Source: EUEI, 2017

Another factor, when looking at ambition and reality is the importance of qualitative rather than quantitative results. The quality of and impact on the business environment and ‘doing-business’ conditions in place is paramount and heavily influence how instruments perform and what they are able to sustainably achieve. However, qualitative results are more difficult to measure and hence report on but are equally, if not more important, when it comes to crowding in private investments for energy projects, as both businesses and investors need reliable and conducive framework conditions. An interesting example of how TA and financial support instruments can work together is the EU’s Technical Assistance Facility (TAF) for the Sustainable Energy for All (SE4ALL), which assists “partner countries in fine tuning their energy policies and regulatory frameworks to allow for increased investments in the energy sector”.²⁶ Table 3 provides an overview of such factors that relate to the enabling environment and which are key to address in order to bring ambition and reality closer together.

²⁶ https://ec.europa.eu/europeaid/sites/devco/files/leaflet-taf-2015_en.pdf

Table 3: Enabling environment factors affecting specific functions and market chain actors within energy market systems²⁷

	Enabling environment factors
Political and Regulatory → affecting “the energy market chain and inputs and services”	National rural electrification plans, National forestry and agricultural development plans, Energy tariff and electricity concession regulations, Quality control regulations, Regulatory permits and licences, Fiscal regulations, including VAT (or conversely VAT exemption) on appliances and fuels, such as ethanol or LPG, Economic regulations, including subsidies on fuels and appliances, Trade regulations, including import taxes on energy goods such as solar PV equipment, batteries and imported improved cook stoves
Social and cultural → affecting “the effective exploitation of particular energy services and appliances as well as their demand by the end users”	Lack of awareness and specific knowledge about the benefits or negative impacts of energy use, Informal community ownership rules of resources such as rivers and forests, Social norms concerning cooking habits, such as the use of smoke from stoves for eliminating insects, Misconceptions around the performance of energy technologies, such as the level of lighting from solar PV systems
Financial and Economic → influencing “the delivery and affordability of a range of energy products and appliances”	Income levels and livelihood strategies of end users, End users’ ability to pay, Formality of payment systems, Level of local economic activity
Wider aspects → “may take a very long time to overcome and may require extensive resources beyond the ability of most market actors and stakeholders”	Global market trends, Macro-Economics, Social and Cultural Norms, Major Infrastructure, Environmental and Ecosystem Factors, Legal System and Enforcement

Another important factor, when it comes to the question of quality over quantity in development results, is the issue of “energy capability”. This refers to once the ability to access energy is provided, how is this access being used and what is the impact on poverty reduction and transformational change. Here, it is key to “spur income-generating activities through the productive use of renewable energy” rather than “only” providing lighting or the possibility to charge your phone.²⁸

Results in poor and remote areas

It seems to be an overall challenge across instruments to better understand the reach and results in poor and report areas in Africa. While some instruments report on applications for financial support, such as ElectriFI, there is no clarity on specific AfIF projects on how supported investments have benefitted poor countries, let alone remote and poor areas within beneficiary states. This does not only hamper getting a better overview of what instruments have been able to achieve but more importantly raises questions related to transparency, accountability and additionality.

In this regard, the EIP has not only the responsibility to do a better job in terms of reporting on results and achievements but also to live up to the promise that by bringing more coherence and coordination, notably through the ‘one-stop-shop’, current shortcomings can be better addressed and turned into opportunities for enhancing instruments and making them fit for reaching set objectives.

²⁷ Building energy access markets - A Value Chain Analysis of Key Energy Market Systems ([EUEI PDF, 2015](#))

²⁸ ARE-ENERGIA Position Paper: Women and Sustainable Energy. April 2017.

This would also be in line with the [European Parliament resolution of 1 December 2016 on access to energy in developing countries \(2016/2885\(RSP\)\)](#), point 8, which “Calls on the Commission to regularly report on its website what progress has been made towards achieving the target of its ‘Energising Development’ initiative, to specify what proportion of the total funding for energy in developing countries has gone to renewable energy, remote regions, staff training, the creation of local know-how and skills and to local and off-grid solutions, and to briefly, but as precisely as possible, describe the involvement of different stakeholders in concluded and ongoing actions”.

While both reporting/measurement challenges and focus on quantitative rather than qualitative results already touch upon some of the key challenges, the following section will more closely look at the key challenges but also opportunities of the key innovative instruments and the political economy attached to them.

5. Challenges and opportunities

Challenges

The EU’s FIs to support energy access in poor and remote areas face several challenges, which can broadly be divided into two categories, technical and political factors. The main ones - identified and selected from the literature and through interviews, are described in this section. It should also be noted that some of them overlap, impact each other and depending on the progress in one area, might be more or less important.

Technical barriers often relate to three key aspects: i) blending is not a silver bullet for providing energy access in all segments of the population, ii) depending on the type of reporting, stakeholders’ and instruments’ incentives change, and iii) learning opportunities in the course of the instrument’s implementation are key to address shortcomings or potentials.

1. Blending - fit for context and needs?

While it is key to achieve attractive risk-return profiles for private companies and investors, ensuring access and affordability of services is the ultimate objective. Rural electrification however poses several challenges, which one cannot expect to be exclusively addressed by blending that delivers significant pro-poor results, particularly in rural areas. While it may be do in more financially-developed contexts and perhaps urban areas, there is a need to balance the push for private-sector investments with effective public investments complementing blending efforts. This underlines the continued need for grant funding to provide access to energy, particularly through technical assistance that can serve to make more projects bankable and economically viable - a precondition for blending operations. It additionally requires identifying the right balance between the available instruments, where the local context drives the instruments choice and where technical assistance also serves to enhance local capacities and institutions.

To do so, Europe has created a variety of instruments available, which Tagliapietra (2017) considers “a myriad of fragmented initiatives to promote electrification in sub-Saharan Africa, limiting their potential leverage in crowding-in private investment and in stimulating energy sector reforms in sub-Saharan African countries”. According to Tagliapietra (2017), a better coordination of these EU and EU member states initiatives could be achieved through a unique platform, which he calls the “EU Electrify Africa Hotspot”, resulting in a comprehensive approach really using the instruments that will serve the goal.

However, such a single platform also entails risks of potentially becoming too bureaucratic or difficult to manage. Hence, a 'sustainable energy'-related investment window under the EFSD might be a conducive way to help bring more coherence and coordination into the EU approach, notably through the one-stop-shop, where the approach is more integrated and goes beyond pure financial assistance. This would also allow to better understand, where blending can be an adequate solution to tackle access to energy challenges and where not, being realistic about ambitions in regard to the resources available.

2. Reporting incentives and constraints

When it comes to blending, there is often criticisms, notably by civil society, about some of the methods and indicators used to monitor results and impact, which may not sufficiently focus on additionality and direct sustainability impact of blended operations. Setting criteria on what is exactly measured and reported on also contributes to provide incentives and/or constraints for stakeholders to take more or less risks, when it comes to assessing investment proposals under financing instruments, such as ElectriFI for instance. Although the first call for proposals placed a strong emphasis on energy access for all and new connections established, the reporting and selection criteria now focus a lot on generated investments and energy capacity generated. This is not only easier to report and monitor on but from the Commission's perspective also better to communicate and advertise. This makes it legitimate to reflect on measurement methodology in line with objectives and results publicly reported. One of the challenges remains the strong public pressure to quickly show results, and the fear of underperforming.

3. Learning opportunities?

Challenges when it comes to measurement methodology can in turn limit learning opportunities, as there is a need to incentivise exploratory actions. At the same time, feedback by beneficiaries and involved stakeholders can increase the effectiveness of instruments and hence maximise the use of public funding. As a consequence, there is a strong need to work with EU Delegations (EUDs) and energy-related private sector actors on the ground. Systematically building in such feedback loops would additionally allow for a better understanding of the challenges local businesses face and the specific needs they may have to facilitate doing business. This can further mean that the private sector can actively contribute to promoting a better energy policy framework, thus potentially strengthening and completing the envisioned EU policy dialogue. The issue of learning and adjusting is exemplified by the large number of applications to ElectriFI, while only few proposals could ultimately be selected, which suggests that there is a far larger market but a lack of bankable energy projects that could have more impact on energy access in rural areas. Despite doing well, ElectriFI is comparatively small and a built-in selection bias towards less risky but therefore successful projects seems comprehensible. ElectriFi seems to have a strong potential to scale up, should more funding be available, including through grant funding for technical assistance that improves project proposal and a bankable project pipeline.

Political barriers for such FIs that are often more difficult to overcome in the short run relate to three key aspects: i) context-specific political economy aspects, ii) stakeholders' vested interests, and iii) public and internal pressure to demonstrate results. Again, these are not exhaustive categories but shall help structuring key challenges of political nature that often are systemic and due to factors, that are less likely to address in the instruments design. While some of the technical challenges can partly be overcome through more innovative business models - public support allowing to reduce risk perception and potentially maximise the return on investment - systemic issues require a better understanding of the political economy at play.

1. Context-specific aspects

There is a clear need to better understand the economic, social, institutional and political context of where such instruments are intended to support. Taking into account the economic and social conditions requires to design tailor made approaches that go beyond instrument development in the headquarters but take into account voices and lessons learnt on the ground - both from public and private stakeholders. It is therefore key to overcome challenges that relate to communication and exchange of information between the field and Brussels, so that all context-relevant information can be taken on board. Energy-related support and especially blending instruments require financial architecture in place that is more mature than pure grant support, hence, this should feature strongly when aiming at rural electrification and energy access in remote and poor areas. At the same time this means that blending - under AfIF but especially under ElectriFI - may not be suitable in a given context - most likely a very poor or conflict-affected region for instance - and therefore either pure grant funding is necessary to increase access, or technical assistance can make the project bankable, thus becoming eligible under a blending instrument, such as ElectriFI.

2. Stakeholders' vested interests

Another major challenge for the effectiveness of the EU's FIs seems to be vested interests, different priorities and needs. There is a variety of stakeholders involved that consider certain elements more or less important ranging from local stakeholders, businesses and public utilities and authorities, to the EUDs on the ground and most importantly consumers that expect low electricity costs. Interviewees pointed to the difficulty of aligning those interests, which is not only difficult but often impossible because local utilities for instance have very different interests than EU actors and envisioned projects have. As argued by Plunkett (2001, p. 9), fostering electricity access requires "overcoming the natural reluctance of national utilities to give up their monopoly power in favor of a more reliable and cheaper regional electricity system." These structures and their leadership can be deeply entrenched in the economic and political status quo (Karaki, 2017) and may be difficult to convince that "electricity trading for the greater public good is more beneficial than maintaining the status quo, for their own personal gain and wellbeing." Similarly, Morris and Martin (2015) illustrate how leveraging private sector investment and participation in the energy sector, among other, can alter the political economy prevailing under a monopolistic state-owned energy utility, as in the case of South Africa.

Consumers in local and urban areas also face different constraints and therefore priorities that need to be balanced. While blending can serve certain situations and types of projects, stakeholders' interests determine its resources available and objectives set-out. For ElectriFI to do more, this would require reassessing the instrument's capacity and selection criteria, particularly if it wants to reach mainly remote areas and poor segments of the population.

This holds particularly true when it comes to off-grid solutions, such as solar-home systems or mini-grid solutions. Diverging interests and priorities can also evoke wrong incentives, where for instance grid connection projects are implemented by more than one donor in the same region just because public funding was available and accessible. This poses questions related to a duplication of efforts and alignment of initiatives and EU actors, which includes member states.

3. Public and internal pressure to demonstrate results and impact

A third major political challenge is the pressure to demonstrate impact and justify that a certain instrument is working well and achieving tangible results. This ultimately determines whether an instrument will be continued and whether its funding will be increased. The dilemma however can be observed in various other areas than energy alone and relates to development impact and results vs. risk willing to take. It requires taking more risk and the willingness to accept failure in order to achieve energy access and solutions particularly for poor segments of the population and in fragile or conflict-affected countries. While

the risk profile of a project can be addressed through providing TA or capacity-building, the financial viability is the lowest particularly in poor and remote areas.

At the same time however, there is pressure by civil society and various other actors, such as the European Parliament, the Court of Auditors, etc., to demonstrate results, which is more easily achievable by taking less risk and going for projects in more developed countries and regions. Reconciling those 'easy' options and more visibility with pro-poor impact, which is often more small-scale, is highly political and impact the effectiveness and reach of blending instruments for poor and remote people's ability to access energy. Since blending is not pro-poor per se, there is a legitimate question of balancing ambition and reality taking requirements for successful blending for rural electrification on board and being realistic about the continued relevance and need for grant funding.

Opportunities

While some of these challenges already point to a number of opportunities that can lead to better energy access results, a few key opportunities deserve more attention and allow for specifying more nuanced implications and propose tentative recommendations for future energy-related support.

1. African agenda

There is clearly an opportunity and need to more systematically link and align with African actors, including their regional development banks and financing institutions, development plans, (national energy plans) most notably the Agenda 2063 of the AU, and policy environment reforms. This supports not only the effectiveness of the EU's FIs but can make them in the long run redundant (purely temporary means of assistance) by building and triggering local capacities, knowledge and a local financial system. It also helps to better tailor such instruments to the needs and priorities of African private sector actors and public, institutional and private investors. Notable examples of such African-own initiatives are the *Africa GreenCO* initiative which aims to increase private sector investments in energy generation "by mitigating the credit risks associated with the current lack of creditworthy offtakers".²⁹ This is an important area that merits further analysis and research but is beyond the scope of this study.

2. Instruments alignment and complementarity

Because blending often cannot reach the poorest and most remote people, its contribution to and significance for sustainable development should not be overestimated. It should therefore be better linked with and complementary to other forms of EU development cooperation, such as budget support, policy dialogue and technical assistance. This to some extent already takes place but represents an opportunity for the future to do more and better, particularly true in light of the EIP addressing potential fragmentation and coordination challenges. Overlaps between instruments not only seem relevant but already show that synergies and complementarities can be better harnessed, as exemplified by the RECP-ElectriFI cooperation.

It also relates to the question of sequencing, where reform programmes have significantly been able "to improve efficiency and to bring in new capital, including from private investors, and off-grid-based generation" resulting in large improvements in terms of coverage and reliability of centralised electricity supply in urban areas (ERB, 2015). Since 70% of those with access in rural areas rely on mini-grid and off-grid systems, efficiency gains from reform programmes and new capital investments that enhance both coverage and reliability need to reach out also to more remote and rural areas.

²⁹ <http://africagreenco.com/>

3. Monitoring and evaluation

A third opportunity clearly arises when looking at the role of monitoring and evaluation (M&E) and how these results are used to inform current instruments and programmes. In that regard power supply and electrification go beyond 'simple' access to energy and touch upon its relevance for promoting gender-equality, education, infrastructure, ease-of-doing business etc. Particularly the gender aspect, "in terms of different needs of women and men as end-users of electricity" calls for gender-sensitive electricity approaches, when it comes to policy, planning and programmes, as investments in electrification do not benefit women and men equally (ARE, 2017). Hence the cross-cutting nature of energy access is not only important but key for progress in so many other areas. This makes M&E essential to properly understand impact and potentials beyond the instruments' primary objectives.

6. Policy implications

This section intends to provide a set of options and recommendations on the way forward taking into account both challenges and opportunities but also the divergence and convergence of ambition and reality discussed in the previous sections. The arising implications are meant to ensure that public funding provides energy access in an efficient way also for the poorer and more remote areas and segments of the population, as reflected in EU energy policies, instruments and commitments.

It is important to keep in mind though that **sustainable energy** does not only refer to renewables but is also about identifying the right mix of energy supply resources, including gas for instance, and making on-grid and off-grid support and solutions complementary. Additionally, public debates are often very focused on electricity access rather than more broadly **access to energy**, which includes clean cooking and productive uses or transport fees. Particularly, the issue of clean cooking merits far greater attention: it is not just about a lack of investments, but also about identifying and relying on pragmatic solutions available. This is especially relevant in the context of women's economic empowerment and their more inclusive role in productive economic activities.

The following seven recommendations are based on the literature review and stakeholder interviews and consultations. They should not be considered exhaustive or rigid but rather **in the light of the recently agreed European External Investment Plan** (Bilal and Grosse-Puppendahl, 2016a), whose European Fund for Sustainable Development (EFSD) and the integrated Africa Investment Platform (AIP), which builds on the AfIF, will have a dedicated investment window on 'Sustainable Energy and Sustainable Connectivity'.

(i) Ensure complementarity and coordination between and within instruments!

It seems key to maintain and improve where applicable the exchange of information and channels of coordination among financial and non-financial instruments, such as between ElectrIFI and RECP. Those two initiatives seem to have managed effective cooperation within the specific instruments steps. One such example is that when a project proposal is being submitted, the potential investor can allow to exchange information with RECP. This allows for a project that is not being selected under ElectrIFI because not sufficiently developed and bankable or fundable yet, to qualify for RECP support to make it bankable in the future. This ensures a more effective support overall and better use of public funding to promote private investments. However, greater coherence and coordination should not be pursued for ideological reasons or go against speed and efficiency but should rather be done where it can sustainably enhance development outcomes in terms of higher access rates and better quality projects.

(iii) Make reporting on results and impact aligned with objectives!

In order to communicate and report on achieved results, solid indicators and criteria both for investments and eligibility are key. As there currently seems to be a lack of publicly available data on projects results and performances, the EIP will have an important task ahead to meet both transparency and accountability expectations. This requires balancing the pressure to show results with committed EU objectives, such as connecting 500 million people by 2030 with power expressed in the 'Energising Development Initiative'.³¹ For the EIP's energy window it could mean to be clear on primary objectives, so generated investments and installed MW vis-a-vis new connections, thus, being very clear about how project success is being monitored and reported on.

(iv) Make the business environment a key priority area!

While it seems that the EU is placing greater emphasis on blending and using public funding to crowd in private investments, the EIP seems to be moving towards the right direction by stressing the importance of the business environment (Pillar 3), so that finance (Pillar 1) can be more effective and have more reach supported by technical assistance (Pillar 2). Interviews suggest that there is a lack of bankable and financially viable projects, as exemplified by the low ratio of proposal and actual projects both under ElectrIFI and the RECP programme.

Hence, putting more focus on business environment reforms and improving the investment climate is key to unlock investments and make existing instruments more effective in remote areas and less financially-developed regions in Africa. This however does not mean that business environment improvements alone can compensate for adequate and sufficient (public) investments and attractive financial models for companies in place, such as results-based financing.

(v) Make better use of EUDs and actors on the ground!

Interviews also suggest that there is at times a disconnect between those actors on the ground, who understand the political and economic reality in terms of identifying market failures as well as challenges and opportunities for firms to fill gaps, and headquarter based policy-makers. Experiences of ElectrIFI activities suggest that understanding the local political economy dynamics as well as incentives and interests is key for supporting investments that are both sustainable and inclusive. Here the EIP ambition to foster structured dialogue and make greater use of the EUDs' intelligence seems both appropriate and much needed. However, increasing presence and intelligence on the ground would require to significantly increase capacity and resources at EUDs level, including technical experts that understand the specific energy-related challenges and current shortcomings.

(vi) Make the instruments choice context-specific towards needs and conditions in place!

This very much links to recommendations one and four but is more about the channels and ways of exchange between the various stakeholders. They should be more systematic and built-in in current and future instruments, so that feedback from private investors and project implementers benefits the instruments design. This can also allow to better reflect political economy dynamics, including interests and priorities, which, as interviewees expressed, still too often do not reach Brussels for reasons of scarce resources but also lacking channels to provide such feedback. It would further allow to identify the right balance and mix between public, private and public-private approaches/instruments, as illustrated in Figure 10.

³¹ Announced by José Manuel Barroso, former President of the European Commission during EU Sustainable Energy for All Summit on 16 April 2012.

(vii) Ensure domestic ownership and build on local initiatives!

In moving forward, the EU's success in supporting energy access in Africa will ultimately hinge on the issue of ownership, where different political economy dynamics hint at rethinking the type of approach the EU wants to take. While the World Bank, IFC or AFD for instance actively help develop projects that they then financially engage in, the EIB is largely reactive and responds to project opportunities. Both approaches have their merits. In any case, it means that an external actor intervenes to partly substitute or compensate for the deficiencies in local African markets. In doing so, it is necessary to consider the opportunities for building local capacity and long-term development, building on domestic initiatives. The objective is thus not to replace (at times deficient) African instruments, but to also contribute to develop African-own financial markets and institutions that can sustainably support energy development in the longer run. While this more general question is beyond the scope of this paper, it seems most relevant in light of the upcoming EIP and the approach it aims to promote: that is enabling and strengthening African financing institutions and environment for sustainable development, including sustainable energy generation and access.

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Annex

Table 4: Selected EU FIs supporting RE projects and energy access in Africa

	<i>Africa Investment Facility (AIF)</i>	<i>Electrification Financing Initiative (ElectriFI)</i>	<i>European Investment Bank (EIB)</i>
Objectives	To foster investments in infrastructures, agriculture and private sector development, in particular SME's, by leveraging additional financing for development	EU initiative that supports electrification investments that will lead to new & improved connections, with strong features for scalability	SE4ALL initiative in line with SDGs 7/13, incl. through EU-AITF (remaining resources are expected to be fully committed in 2017) Africa Energy Guarantee Facility (expected to be approved in 2017) → to address lack of adequate risk- mitigation products → to leverage (re-)insurance and banking sector expertise for eligible energy projects in Africa GEEREF's → to bring equal benefits for a triple bottom line: i) people (access to energy & energy efficiency), ii) planet (fighting climate change and contributing to a sustainable environment); and iii) profit (robust financial returns)
Scope	Nat./regional projects in all African countries eligible to receive financing under the EDF regional/nat., the intra-ACP, and DCI Pan-African programmes Blending: "renewable energy, with a primary focus on grid-connected renewable electricity production (hydro, wind, solar, geothermal, biomass/waste-to-energy)" ³²	Electrification investments leading to new and improved connections, with a focus on rural, underserved areas affected by unreliable power supply & particular emphasis on decentralised energy solutions	Sub-Saharan Africa's huge potential for RE (wind power, solar, hydroelectricity, geothermal) → investing in equity funds focussing on RE, and small-scale Projects with focus on climate action → finding sustainable solutions for gaps in essential services for underserved populations

³² EC. 2015. Tools and Methods Series Guidelines No 5 - [Guidelines](#) on EU Blending Operations. November 2015, Brussels: European Commission.

<p>Energy priorities & results framework</p>	<p>Better/more sustainable/ green energy infrastructure, e.g. increased availability and access to renewable and green energy including in rural areas</p> <p>Selected indicators:</p> <ul style="list-style-type: none"> • Transmission and distribution lines installed or upgraded • New connections to electricity • Additional capacity from conventional electricity production • Additional capacity from RE sources • Population benefitting from electricity production • Power production • Variation in CO2 emissions • Energy efficiencies <p>Cross sector indicators:</p> <ul style="list-style-type: none"> • Total number of beneficiaries • Number of beneficiaries living below the poverty line (whose living conditions are improved by the project) • Variation CO2 / Greenhouse gases <p>Application subject to current practices and methodologies by Financial Institutions: Jobs sustained / created</p>	<p>→ increased or improved end-user access to affordable, reliable, sustainable, and modern energy</p> <p>→ replicability and scalability as important considerations for innovative business models</p> <p>→ main measure for impact: number of directly attributable new electricity connections (min. 1000)</p> <p>→ other considerations: capacity installed, number of jobs created, leveraged capital, and greenhouse gas emissions saved</p> <p>→ for IPP projects: impact on electrification, so creation of new connections to electricity</p>	<p>ReM Framework's 3 pillars: i) fit with CPA, ii) projected social, economic and environmental outcomes, and iii) EIB role in terms of additionality</p> <p>ReM+ under IFE → assess impact on final beneficiaries</p>
<p>Funders</p>	<p>Total: €1.8 billion for the 2016-2020 period</p>	<p>EC with €116m for 10 years, with possibility for extension, if additional funding is secured & Power Africa</p>	<p>GEEREF was launched in 2008 with funding from the European Union, Germany & Norway, totalling €112m</p>
<p>Governance</p>	<p>Manager: Board, chaired by EC with EEAS and MS; EIB as observer.</p> <p>Implementers: Multilateral/ bilateral EDFIs and RDBs/IFIs, e.g. AfDB</p>	<p>Joint EC-EDFI project; jointly implemented by FMO with EDFI MC</p>	<p>GEEREF advised by EIB Group, combining EIB expertise with EIF Fund-of-Funds management expertise</p>

<p>Type of support</p>	<ul style="list-style-type: none"> • Investment grants • Technical assistance • Risk capital • other risk sharing instruments 	<ul style="list-style-type: none"> • Flexible financing instruments that are appropriate to the venture's needs • Project development finance, debt, (quasi-)equity and guarantees with a maximum term of funding of 7 years • Financial support of €500k-10m • Funding / support to developers/investors with different business models, incl. projects operating on the Independent Power Producer (IPP) model benefiting from contractually-based revenue streams, and models fully exposed to market forces 	<p>GEEREF fund-of- funds providing equity to ultimately benefit smaller-scale RE projects in developing countries</p> <p>EIB IF: provision of grants for financing interest rate subsidies as well as project-related technical assistance plus loans, equity, guarantees and local currency lending</p>
<p>Eligibility / investment criteria</p>	<p>Principles for strengthening the role of the private sector in EU development cooperation</p> <p>i) Focus on employment creation, inclusiveness and poverty reduction; ii) A differentiated approach to the private sector; iii) Create opportunities through market-based solutions; iv) Follow clear criteria in the provision of direct support to private sector actors; v) Account for different local contexts and fragile situations; vi) Put strong emphasis on results; vii) Observe policy coherence in areas affecting the private sector in partner countries</p> <p>Criteria for supporting private sector actors (EC, 2014)</p> <p>i) Measurable development impact; ii) Additionality; iii) Neutrality; iv) Shared interest and co-financing; v) Demonstration effect; vi) Adherence to social, environmental & fiscal standards</p>	<ul style="list-style-type: none"> • Investment support to projects or businesses that are at least at the active development stage but before traditional financial institutions come in <p>Eligibility Criteria</p> <ul style="list-style-type: none"> • Geographical Coverage particular focus on Sub-Saharan Africa. • Sector – projects offering both on-grid and off-grid solutions. All renewable technologies (excluding first generation biofuels) are eligible. • Sustainability – only projects undertaken by entities deemed capable of attaining financially sustainability. <p>ElectriFI Investment criteria: Eligible applicants, Sponsor's equity, Track- record Impact, geographical coverage, Sector, Technology, Viability, Type of financial instrument, Pricing and Returns, Sustainability, Leverage, Additionality, Active development stage</p>	<p>Specialist managers operating in ACP countries are eligible for GEEREF investment</p> <p>EIB's environmental & social standards: human rights, gender, conflict sensitivity, biodiversity and climate change</p>

<p>Results</p>	<p>2015 - today: More than €2.7 bn of EU grants led to almost €23 bn of loans → total investment volume in partner countries of more than €50 bn; an indicative pipeline of 148 projects and a total envisaged grant amount of around €2 billion for projects that have a total investment cost of more than €25 billion (EC, 2016)</p>	<p>ElectriFI applications: IPP: 100; captive power: 30; mini-grid: 52 standalone systems: 27; other: 29 10 out of 36 (=28%) countries with above 10 applications, incl. RECP applications: Nigeria, Tanzania (each 39), Zambia (23), Kenya (18), Uganda (17), SA, Madagascar (each 15), Senegal, Rwanda (each 14), Ghana (11)</p>	<p>Expected results outside the EU from new EIB projects in 2016: 1.2 mio households connected to electricity networks (SDG7) & energy production from renewables sufficient for 250k households equalling 758 GWh/year new energy supply from renewables</p> <p><u>2016 in ACP countries:</u> 6300 km of new, modern transmission lines installed & 434k new households connected to power</p> <p><u>Since July 2013</u>, the EU-AITF has been supporting the SE4ALL initiative with grants from an envelope of €330m earmarked for energy projects that meet SE4ALL eligibility criteria published by the EC → As of Dec. 2016: 32 grant operations (€259.7m) had been approved under the SE4All Envelope in support of 25 projects → 6 new projects approved by the EU-AITF in 2016</p>
<p>Synergies</p>	<p>→ Regular internal consultation processes and exchanges between the different EC Services to achieve complementarity between the different aid modalities and tools (budget support actions, projects and programmes implemented under central management, ACP IF, ITF, SE4ALL initiative, GEEREF, "ElectriFI"); → Extensive information provided in grant application form of each project to ensure coherence with relevant EU policy objectives and principles → Additionality & complementarity with other EU measures during decision making and preparatory process, by close FI coordination with the partner(s), EC and EEAS³³</p>	<p>Closely working with other EC programmes that have mandates to provide technical advisory support to RE projects → RECP mainly</p>	<p>Memorandum of Understanding between the EC and the EIB in respect of cooperation and coordination in the regions covered by the External Mandate</p> <p>EIB manages the EU-AITF on behalf of EC + EC provides a representative to the EIB's Board of Directors</p> <p><u>Investment Facility Committee</u> consisting of EU MS + one EC representative under the EIB auspices to approve proposals and provide opinions</p>

³³ EC. 2015. [ANNEX](#) of the Commission Decision on the individual measure "creation of an Africa Investment Facility" under the 11th EDF. Action Document for the creation of the AfIF.

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