Council of the European Union

Brussels, 19 December 2017
(OR. en)

15866/17

DEVGEN 295
ACP 147
RELEX 1128
ENER 517
CLIMA 360

COVER NOTE

From:	Secretary-General of the European Commission, signed by Mr Jordi AYET PUIGARNAU, Director
date of receipt:	15 December 2017
To:	Mr Jeppe TRANHOLM-MIKKELSEN, Secretary-General of the Council of the European Union
No. Cion doc.:	SWD(2017) 482 final
Subject:	COMMISSION STAFF WORKING DOCUMENT Empowering Development: Implementation of the new European Consensus on Development in energy cooperation

Delegations will find attached document SWD(2017) 482 final.

Encl.: SWD(2017) 482 final

EUROPEAN
COMMISSION

Brussels, 15.12.2017
SWD(2017) 482 final

COMMISSION STAFF WORKING DOCUMENT

Empowering Development:
Implementation of the new European Consensus on Development in energy cooperation

CONTENTS

EXECUTIVE SUMMARY

Sustainable energy is fundamental to social and economic development and to power sustainable growth. It is needed to improve livelihoods in developing countries, ensuring access to clean water, cooking, education and healthcare for their people. Energy poverty is also among root causes of migration in search of better livelihoods, whereas sustainable energy powers industry and agriculture. It gives rise to novel business models and services, to creating prosperity, jobs and opportunities at home. At the same time, ensuring that energy is sustainable is essential to protect ecosystems and public health.

'Empowering development' constitutes a response to this complex challenge: it contributes simultaneously to Sustainable Development Goal (SDG) 7 —'access to affordable, reliable, sustainable and modern energy for all by 2030'— as well as to SDG 13 on climate action and the Paris Agreement[1].

This Staff Working Document (SWD) explains how energy cooperation contributes to the implementation of the new European Consensus on Development[2]. In particular, it takes forward the special focus the new Consensus puts on the close coordination of the 2030 Agenda for Sustainable Development[3] (2030 Agenda) key themes for *People*: increasing access to affordable energy, *Prosperity:* benefitting from the high potential of the sustainable energy sector for growth and job creation, both directly (sustainable energy value chain) and through productive uses; and *Planet*: tackling climate change and addressing environmental degradation.

The SWD also draws on the new Consensus *Partnership* objective, through fostering common action of the EU and its Member states and inclusive multi-stakeholder partnerships for the implementation of the 2030 Agenda. Good examples are the renewed impetus of the Africa-EU Partnership[4], the Global Strategy on the EU's Foreign and Security Policy[5], and the Energy Union[6], including its research and innovation pillar. The SWD also takes into account the Council Conclusions adopted on 28 November 2016[7] and 6 March 2017[8].

Although the approach laid out in this SWD applies to all development cooperation countries, particular attention is paid to the cooperation with **Africa**, which represents a privileged

---

[1] United Nations — Framework Convention on Climate Change (2015) Adoption of the Paris Agreement, 21st Conference of the Parties, Paris: United Nations.
[2] *The New European Consensus on Development — Our World, Our Dignity, Our Future* — Joint Statement by the Council and the Representatives of the Governments of the Member States Meeting within the Council, the European Parliament and the European Commission, 7 June 2017. Official Journal of the European Union, C 210, 30.6.2017.
[3] *Transforming our world: the 2030 Agenda for Sustainable Development* — Resolution 70/1 adopted by the General Assembly of the United Nations on 25 September 2015.
[4] *For a renewed impetus of the Africa-EU Partnership* — Joint Communication to the European Parliament and the Council, JOIN(2017) 17, 4.5.2017.
[5] Shared Vision, Common Action: A Stronger Europe — A Global Strategy for the European Union's Foreign And Security Policy, 56 p., June 2016. (https://europa.eu/globalstrategy).
[6] *Energy Union package — A Framework Strategy for a Resilient Energy Union with a Forward-Looking Climate Change Policy*, COM(2015) 80. See, in particular, Accelerating Clean Energy Innovation, COM(2016) 763.
[7] *Energy and Development* — Council of the European Union 14839/16, 28.11.2016.
[8] *Implementing the EU Global Strategy — strengthening synergies between EU climate and energy diplomacies and elements for priorities for 2017*, Council of the European Union 6981/17, 6.3.2017.

partner. Europe and Africa's fates are interlinked**.** Africa is as close as 15 kilometres to Europe. Access to affordable and reliable energy services is limited and remains a critical challenge to economic growth and industrialisation in the continent. Africa's energy sector presents vast business and investment opportunities and thus a significant potential for boosting growth and jobs, both domestically as well as in Europe, for example in the field of renewable energy technologies where the EU aspires to be a global leader.

In 2014 in sub-Saharan Africa, 609 million people (6 out of 10) do not have access to electricity[9] despite substantial progress being made. Furthermore, 75 % of the global population without electricity access will concentrate in rural areas of sub-Saharan Africa by 2040[10].

Sustainable growth in partner countries is promoted through the energy sector, highlighting three areas of particular focus: increase **access** to energy; increase **renewable** energy generation and energy efficiency; and contribute to the fight against **climate** change. These preferences are supported by three drivers: political **ownership** and partnerships on sustainable energy; unlocking the potential of indigenous sustainable energy resources through adequate **regulatory** frameworks, market reforms and improvement of the governance of the energy sector; and boosting **investments** in renewable energy generation and interconnections, notably through innovative financial instruments.

Under the 2014-2020 financial perspective, EUR 3.7 billion have been allocated to sustainable energy cooperation for development[11] to contribute to the three EU global objectives by 2020 of providing access to energy to about 40 million people, increasing renewable energy generation by about 6.5 gigawatt and contribute to fighting climate change, by saving about 15 million tons of CO_{2e}/year. Of this budget, around EUR 2.7 billion have been allocated to sub-Saharan Africa contributing to the provision of access to energy to about 30 million people, about 5 gigawatt of renewable energy generation, and to saving about 11 million tons of CO_{2e}/year[12].

Given the size of the investments needed to achieve a universal access to energy, it is necessary to crowd in additional funds, including through the involvement of the private sector. Further efforts are therefore oriented to support the governance of the energy sector and to provide innovative financial mechanisms (blending) to leverage private sector finance. The European External Investment Plan (EIP)[13] is expected to significantly leverage the efforts already launched in this crucial sector.

---

[9] World Bank — State of electricity access report 2017.
[10] International Energy Agency — http://www.worldenergyoutlook.org/resources/energydevelopment/energyaccessprojections/
[11] Indicative allocations done in accordance with existing Commission's Decisions (National and regional indicative programmes, European Development Fund (intra-ACP) and Development Cooperation Instrument (Global public goods and challenges programme).
[12] Joint Communication to the European Parliament and the Council for a renewed impetus of the Africa-EU Partnership, JOIN(2017) 17, 4.5.2017.
[13] Strengthening European Investments for jobs and growth — Towards a second phase of the European Fund for Strategic Investments and a new European External Investment Plan, Communication from the Commission to the European Parliament, the Council, the European Central Bank, the European Economic and Social Committee, the Committee of the Regions and the European Investment Bank, COM(2016) 581, 14.9.2016.

1. INTRODUCTION: ENERGY IN THE DEVELOPMENT CONTEXT

Without access to energy, there is no development. Increasing sustainable energy services in the developing world offers the opportunity to address poverty, create additional jobs, allow for education, reduce pollution, improve human health and conservation of ecosystems while contributing to climate change mitigation. Energy poverty is one root cause of migration. It is also critical for meeting the targets contained in the Paris Agreement on climate change.

1.1. Billion people in energy poverty

Worldwide, about 1.2 billion people have no access to electricity, mainly in rural areas. Up to a billion more have access only to unreliable electricity networks. Women disproportionately bear the burden of energy poverty. The biggest challenges are located on the African continent, where access to electricity in rural areas can be as low as 10-15 % in some countries. Africa is also the only region where, because of demographic pressure, the number of energy poor is increasing over time despite international efforts. Nevertheless, the issue is global and affects many other parts of the world (Figure 1). Modernising economies, demographic growth, changing lifestyles and expectations together with the need for reliable, clean and affordable energy access are expected to require tripling of the electricity supply across Africa by 2030[14].

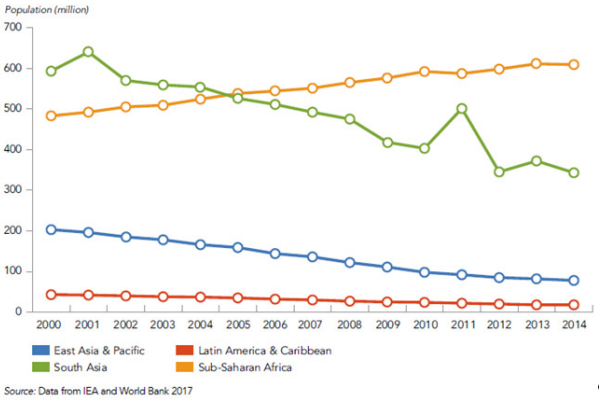

Figure 1: Trends in population lacking access to electricity (2000-2014). Sub-Saharan Africa is not keeping up with population growth for electricity access (State of electricity access report 2017, International Bank for Reconstruction and Development / World Bank).

More than 2.7 billion people, mostly in Asia and Africa, still rely on wood, charcoal, animal dung, crop waste and coal, for cooking and heating. According to the World Health Organisation[15], over four million people die prematurely every year from illness attributable to the household air pollution from cooking with solid fuels.

The use of such fuels also poses a major burden on sustainable development. Fuel gathering consumes considerable time for women and perpetuate child labour, limiting other productive activities (e.g. income generation) and taking children away from school (Figure 2). In less secure environments, women and children are at risk of injury and violence during fuel gathering. Last but not least, black carbon (sooty particles) and methane emitted by inefficient

[14] IRENA *Africa 2030*.
[15] WHO — *Household air pollution and health*, Fact sheet N°292, Updated February 2016.

stove combustion are a recognized cause of health impacting indoor pollution and also contributing to climate change[16] while wood collection done in a non-sustainable manner risks leading to deforestation and land degradation. At the same time, women are largely absent in the industries that produce modern sources of renewable energy, comprising only 20 per cent of the workforce[17].

There are also negative impacts from various types of predominantly large scale energy production: carbon emissions and impacts on air quality, but also loss of land from dam construction and distribution networks, and risks of accidents and spills from storage facilities, amongst others. The focus on sustainable and renewable energy therefore is important to ensure maximum benefits with few trade-offs in other areas.

As it is for access to electricity, demographic growth makes the universal adoption of clean cooking facilities also a moving target.

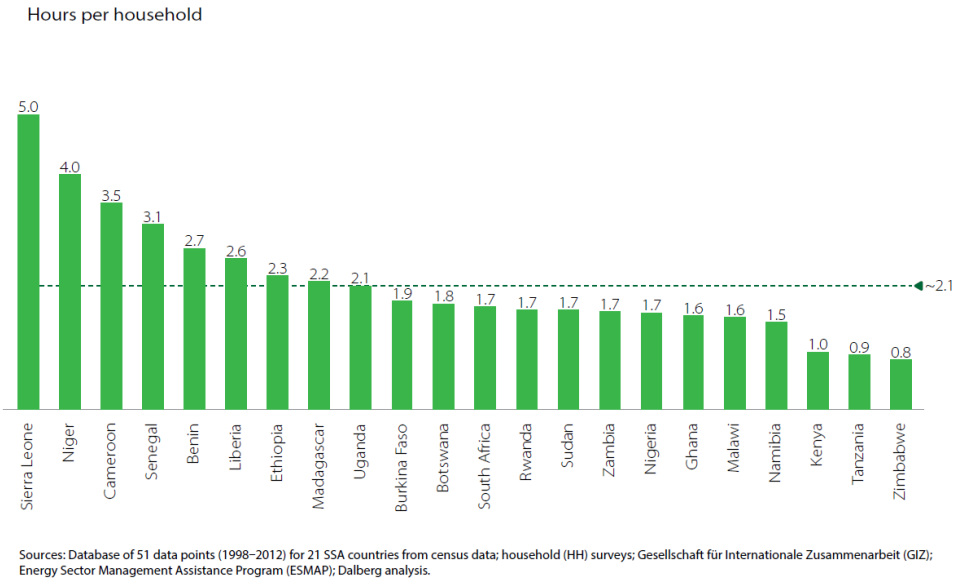

Figure 2: Time spent on average per day on firewood collection in Africa. Source: Clean and improved cooking in sub-Saharan Africa — A Landscape Report, World Bank, 2014 (second edition, November 2014).

1.2. Climate change as a global challenge to sustainable development

The challenge of climate change threatens development gains and disproportionately affects the poor, thus being 'one of the greatest challenges of our time … Its adverse impacts undermine the ability of all countries to achieve sustainable development'[18]. Climate change is already exacerbating environmental impacts more than ever before in terms of water crisis, land degradation, food shortage, and affects economic growth, societal cohesion and security[19]. Energy security is also impacted by climate change – for example hydropower generation can be jeopardised by droughts and energy-related infrastructure could be damaged

[16] World Health Organization — *Household air pollution and health*, Fact sheet N°292, Updated February 2016.
[17] UN WOMEN data — http://www.unwomen.org/en/news/stories/2017/6/press-release--un-women-at-expo-2017.
[18] *2030 Agenda for Sustainable Development* — para. 14.
[19] World Economic Forum — *Global Risks Report 2016*.

by severe weather conditions. At the same time, the energy sector represents roughly two-thirds of all anthropogenic greenhouse gases emissions[20]. Effective action towards a safe and sustainable low-carbon climate-resilient energy system is, consequentially, essential to tackling climate change.

1.3. Unlocking the potential of the energy sector

Developing countries are often among those richest on sustainable energy resources, yet experience the highest levels of energy poverty. In most of the developing countries a series of barriers impede the energy sector from benefiting from investments, in particular from private actors that would ensure a rapid expansion of access and renewable energy generation. The EU sustainable energy cooperation is intended to unlock the energy potential of developing partners, by supporting their efforts to overcome barriers to transparent and well-functioning markets and investment-enabling governance. Shared efforts with developing partners would be needed, for example, in order to:

- Make legislative frameworks clearer and more predictable and introduce more transparency in the planning of the necessary infrastructures (electricity generation and grid expansion master plans) ;
- Encourage private sector involvement by tackling public control and vertical integration of the energy supply chain;
- Enhance the accountability of the sector institutions and operators;
  Strengthen the financial stability of energy utilities thus alleviating the burden on the government's budget by improving payment recovery and phasing out non-cost-reflective tariffs (Figure 3); an associated issue is a customer base often lacking financial solvency, with low energy consumptions per capita and limited purchasing power, contributing to the low profitability of the sector;
- Boost investment in renewables and other climate change mitigation actions by phasing out inefficient subsidies (production and consumption);
- Pricing-in pollution, climate change and other negative externalities;
- Improve institutional capacities of energy administrations;
- Facilitate credit for local investments by enhancing experience/knowledge of the energy sector by local financial institutions;
- Enhance technical qualifications of workforce;
- Promote cross-border interconnections, as well as harmonised regulations and standards, curtailing the options for international power exchange and regional integration;
- Strengthen understanding and knowledge of the potential of energy efficiency, particularly in fossil fuel producing regions.
- Fill the gaps in research and innovation capacities in order to support transition to and steady implementation of a low-carbon energy system in developing countries.

[20] IEA's *2015 World Energy Outlook — Special Report on Energy and Climate Change*. The Energy sector refers to energy supply, energy transformation (including power generation) and energy consuming sectors (including buildings, industry, transport and agriculture).

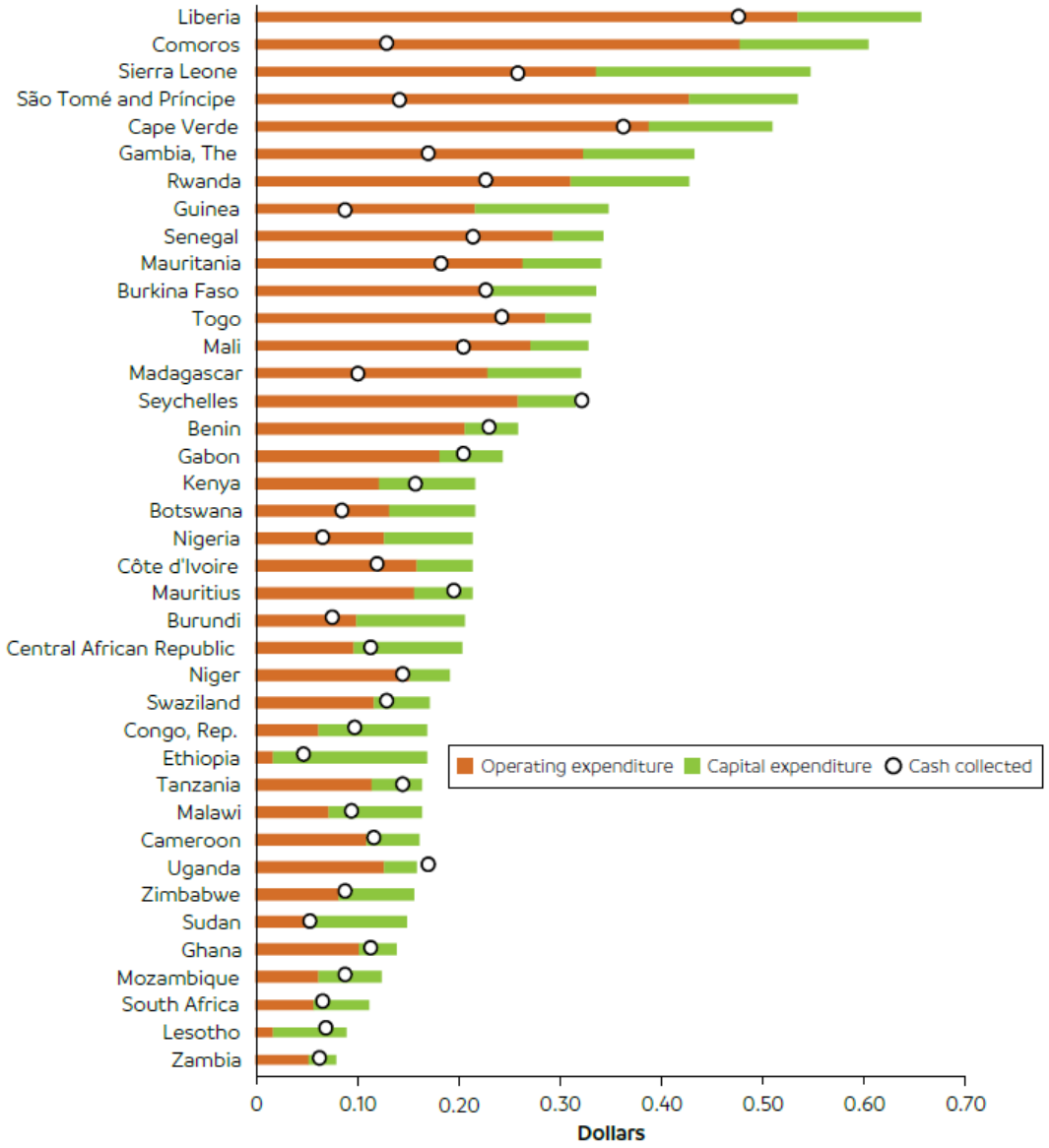

Figure 3: Comparison of electric supply costs with cash collected in 2014 U.S. dollars per kWh billed. Most African utilities do not collect enough cash to cover costs. Source: Masami Kojima and Chris Trimble. Making power affordable for Africa and viable for its utilities. World Bank, 2016.

1.4. The cost of the required investments

More than USD 1 trillion of annual investment from both public and private sectors will be needed to achieve the goals of universal access to modern energy services and doubling the share of renewable energy and energy efficiency in the global mix by 2030[21].

Annual investment needed to achieve the universal access to modern energy services and doubling the share of energy efficiency and renewable energy in the global mix (http://www.se4all.org/sites/default/files/SE4All-Advisory-Board-Finance-Committee-Report.pdf).

- USD 50 billion (2011 annual spending was an estimated USD 9 billion) to provide universal energy access mainly in Sub-Saharan Africa, South Asia and East Asia & Pacific.
- USD 442-650 billion to double the share of renewable energy from a current baseline of USD 258 billion. Except for Europe all regions need to increase investment to meet targets. The largest annual funding gap by far is in developing Asia.
- USD 560 billion to doubling the rate of improvement in energy efficiency (current spending is USD 130 billion). Energy efficiency investment needs to increase by 4.3 relative to current levels, with the greatest opportunities in Europe, developing Asia and North America.

IEA's latest estimates indicate that fossil-fuel consumption subsidies worldwide amounted to USD 493 billion in 2014, over four-times the value of subsidies to renewable energy.

[21] SE4All Advisory Board's Finance Committee Report *Scaling up Finance for Sustainable Energy Investments*, 2015, http://www.se4all.org/sites/default/files/SE4All-Advisory-Board-Finance-Committee-Report.pdf.

2. THE EU IN THE GLOBAL DEVELOPMENT ARENA

2.1. The 2030 Agenda for Sustainable Development

Sustainable energy has become a high topic of interest for the EU as well as for the international community, as acknowledged by the fact that one of the 17 Sustainable Development Goals (SDG 7, ensure access to affordable, reliable, sustainable and modern energy for all) is specifically dedicated to this objective. In addition, the achievement of SDG 7 is closely linked to that of several other SDGs. The EU is also fully committed to support partner countries in their energy transition towards sustainable energy, low carbon growth and the achievement of SDG 7 and SDG 13.

2.2. The Paris Agreement

The Paris Agreement[22], which entered into force on 4 November 2016, points to the need of accelerating energy system transformation and creating new opportunities for jobs and growth. Implementation of the Nationally Determined Contributions (NDCs)[23] will be closely linked with the achievements of the 2030 Sustainable Development Agenda. The EU has been at the forefront of international efforts towards a global climate deal and will continue to support action to reduce emissions and build resilience to climate change impacts in developing countries.

2.3. Addis Ababa Action Agenda (Financing for Development)

The Addis Ababa declaration on Financing for development[24], an integral part of the 2030 Agenda, sets out a vision of how development financing should evolve, bringing together a full range of mutually reinforcing means of implementation, including domestic resources, aid and investment. It also put an emphasis on the use of international public finance, including official development assistance, to catalyse additional resource mobilisation from other sources, public and private. The private sector is recognised as a key driver for inclusive growth and job creation[25]. An appropriate regulatory environment and innovative ways of financing, are recognised to play an important role in leveraging resources —an area in which the EU has been a pioneer.

---

[22] United Nations — Framework Convention on Climate Change (2015) Adoption of the Paris Agreement, 21st Conference of the Parties, Paris: United Nations.

[23] The EU Foreign Affairs Council conclusions on European climate diplomacy after COP21 (15 February 2016) recognised the importance to be placed on securing ambitious global implementation of NDCs and identified support for the INDCs as one of the main strands of work to maintain the positive momentum from Paris, taking into account third countries' strategies and circumstances. The EU Environment Council (4 March 2016) also stressed the importance of supporting the implementation of the NDCs.

[24] *The Addis Ababa Action Agenda* of the Third International Conference on Financing for Development (July 2015).

[25] *A Stronger Role of the Private Sector in Achieving Inclusive and Sustainable Growth in Developing Countries* — Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, COM(2014) 263, 13.5.2014.

The Africa-EU strategic partnership for energy: 'Energising Africa'

The Joint Africa-EU Strategy (JAES) is the formal channel through which the European Union and the African continent work together. It contributes also to the ongoing reflection, launched through the Joint Communication on a renewed partnership with the countries of Africa, the Caribbean and Pacific[26].

In May 2017, in order to renew the impetus of the Africa-EU partnership[27], the EU proposed to take the partnership a step further, and in the energy sector, committed to (i) spur public and private investments in sustainable energy in Africa, in particular in the context of the proposed EIP and (ii) deepen strategic alliances and collaboration. The African Union-European Union Summit of November 2017 envisages a stronger, deeper and more action-oriented strategic partnership for more prosperity and stability on the two continents. One of the proposed actions for 2018 to 2020 and beyond, to be coordinated and strengthened with EU Member States and further developed jointly with African partners, in response to Africa's own Agenda 2063, is 'Energising Africa', in which three flagships are proposed: support to the Africa Renewable Energy Initiative (AREI), a high-level platform to facilitate EU and African public-private cooperation, and a new Partnership on Research and Innovation on climate change and sustainable energy.

The first flagship is the EU's contribution to the Africa Renewable Energy Initiative (AREI) targets (10 GW) of renewable energy generation capacity by 2020. The objective is to increase Africa's renewable energy generation and access to sustainable energy, in support to the implementation of countries' Nationally Determined Contributions and the objectives of SDG 7, SDG 13 and the Paris Agreement.

The second flagship intends to facilitate EU and African public-private cooperation on increased investment in Africa's sustainable energy sector. A high-level platform will be established to improve the business climate and de-risk private investment. In addition it will facilitate knowledge-sharing on innovative business, financing models and best practice on public finance leveraging.

The third flagship is the AU-EU Partnership on Research and Innovation on climate change and sustainable energy, which provides a long term framework for cooperation for jointly funded and co-owned climate and energy actions and aims to boost alignment and consolidation of relevant Research and Innovation activities. The roadmap for its implementation foresees five main action fields for joint research in the energy sector (development and integration of renewable energy in the energy system; planning and modelling future sustainable energy systems; including society as an important stakeholder; market, pricing and business models for future sustainable energy systems; strengthening basic research and technology development) combined with cross-cutting capacity building activity.

---

[26] *A renewed partnership with the countries of Africa, the Caribbean and the Pacific* — Joint Communication to the European Parliament and the Council, JOIN(2016) 52, 22.11.2016.

[27] *For a renewed impetus of the Africa-EU Partnership* — Joint Communication to the European Parliament and the Council, JOIN(2017) 17, 4.5.2017.

2.4. Global Strategy on the European Union's Foreign and Security Policy (EUGS)28

EU climate and energy diplomacies are fundamental instruments to implement the EU Global Strategy on the European Union's Foreign and Security Policy[29]. European investments in the field of renewable energy and energy efficiency in Africa will build stronger links between trade, development and security policies in Africa, and blend development efforts with actions notably on energy and climate. As recalled in the Council Conclusions of 6 March 2017[30], EU climate and energy diplomacies must continue to encourage and back initiatives in vulnerable countries that are affected by the impacts of climate change as well as from lack of or uneven access to, safe and sustainable energy.

2.5. The international dimension of the EU Energy Union

The framework strategy for a resilient Energy Union with a forward-looking climate change policy[31] calls on the European Union to improve its ability to project its weight on global energy markets and to become number one in renewables. In addition, together with its major partners, the European Union works towards improved global energy architecture, leading to more competitive, transparent and sustainable global energy markets.

Strategic documents implementing the EU energy policy[32] emphasise the need for sustainable energy production, efficient energy use, research and innovation activities on climate and clean technologies and modern and adequate infrastructure. The EU is committed to devoting (from 2014 to 2020) at least 20 % of the EU budget to climate change-related actions[33].

The Commission aims to ensure coherence and complementarity of development actions in the field of energy with efforts in related EU policy areas, such as trade, environment,

---

[28] *Shared Vision, Common Action: A Stronger Europe — A global strategy for the European Union's foreign and security policy*, High Representative of the Union for Foreign Affairs and Security Policy, June 2016; see Council conclusions on the *Global Strategy on the European Union's foreign and security policy*, Council of the European Union, 17.10.2016 (13202/16).

[29] The Global Strategy for the European Union's Foreign and Security Policy states that, in light of 'the growing interconnections between North and sub-Saharan Africa, as well as between the Horn of Africa and the Middle East, the EU will support cooperation across these sub-regions. This includes fostering triangular relationships across the Red Sea between Europe, the Horn and the Gulf to face shared security challenges and economic opportunities. It means systematically addressing cross-border dynamics in North and West Africa, the Sahel and Lake Chad regions through closer links with the African Union, the Economic Community of Western African States (ECOWAS) and the G5 Sahel'.

[30] *Implementing the EU Global Strategy — strengthening synergies between EU climate and energy diplomacies and elements for priorities for 2017. Council of the European Union* 6981/17, 6.3.2017.

[31] *A Framework Strategy for a Resilient Energy Union with a Forward-Looking Climate Change Policy —* COM(2015) 80.

[32] The European Union and its Member States were the first major economy to communicate their INDC on 6 March 2015, setting a target of at least 40 % domestic reduction in greenhouse gases emissions by 2030 compared to 1990.

- *Energy 2020 — A strategy for competitive, sustainable and secure energy*. COM(2010) 639.
- *A policy framework for climate and energy in the period from 2020 to 2030*. COM(2014) 15.
- *Energy Roadmap 2050*, COM (2011)885.
- *Clean Energy For All Europeans*, COM(2016) 860 and EU legislation energy package of 30.11.2016.

[33] *A Budget for Europe 2020*. Communication from the commission to the European Parliament, the Council, the European economic and social Committee and the Committee of the regions — COM(2011) 500, 29.6.2011. This target was recalled when signing the Paris Agreement.

migration, employment, agriculture and research[34]. In the context of the implementation of the Energy Union package, the EU institutions cooperate in order to ensure a better Policy Coherence for Development. For instance, regarding innovation[35], the Energy Union focuses on strengthening strategic research partnerships and exchanging knowledge, expertise, technology and qualified personnel to support developing and emerging countries in their energy transition. Similarly, the EU uses its trade policy instruments and related technical assistance to encourage third countries to adopt climate-neutral solutions.

2.6. Sustainable energy in the EU policies for development

2.6.1. New European Consensus on Development

The new European Consensus on Development[36] proposes a shared vision and framework for development cooperation for the EU and its Member States, aligned with the 2030 Agenda. Particular emphasis is put on cross-cutting drivers of development, such as gender equality and youth, sustainable energy and climate action, investment, migration and mobility. Development cooperation will support improving the access for all to clean and affordable energy without damaging the environment. Cooperation with all relevant parties, including the private sector, will be increased on energy demand management, energy efficiency, renewable energy generation and clean technology development and transfer.

The new Consensus framework for action reflects the key themes of the 2030 Agenda[37]. The key theme *People* encourages supporting the poorest communities in improving access for clean, affordable and sustainable energy, while avoiding any damaging effects on the environment, increasing cooperation with all relevant stakeholders, including the private sector. The mobilisation of private resources for development for safe and clean energy is also relevant for the key theme *Prosperity* as the sector has significant transformation potential for sustainable development. Energy is a critically important development enabler and is central to solutions for a sustainable *Planet* in order to fostering the transition to renewable energy to tackle climate change and address environmental degradation.

2.6.2. Council conclusions on energy and development

On the 28 November 2016, the Council adopted conclusions on energy and development[38], stressing the need for strengthened cooperation and development in energy and setting the objectives of this cooperation.

---

[34] In particular through Horizon 2020 important investments are already foreseen in the years 2018-2020 in line with the recently adopted roadmap for the AU-EU Research and Innovation Partnership for climate change and sustainable energy, to support climate services for climate adaptation in Africa and for the launch of a joint programme in the area of renewable energy.
[35] *Accelerating Clean Energy Innovation*, COM(2016) 763.
[36] *The new European Consensus on Development — Our World, Our Dignity, Our Future* — Joint Statement by the Council and the Representatives of the Governments of the Member States Meeting within the Council, the European Parliament and the European Commission, 7.6.2017.
[37] The new European Consensus on Development sets 4 key themes, a framework for common action for the EU and its Member States: People, Planet, Prosperity, and Peace.
[38] Energy and Development — Council of the European Union, 14839/16, 28.11.2016.

2.6.3. European External Investment Plan[39] (EIP)

As part of the broader efforts the EU is pursuing on the basis of the new Partnership Framework, the EIP complements the Union's development aid, strengthens its partnerships, promotes a new model of active participation of the private sector and contributes to achieving the Sustainable Development Goals. The purpose of the European External Investment Plan is to provide an integrated and comprehensive structure to finance investments in Africa and the EU neighbourhood.

The EIP is based on three pillars: (i) the European Fund for Sustainable Development (EFSD)[40], (ii) technical assistance and (iii) improved investment climate and overall policy environment. The EFSD constitutes the integrated financial package of the EIP, combining regional blending facilities and an EFSD Guarantee, backed by an EFSD Guarantee Fund. The EFSD Guarantee follows the same logic as the European Fund for Strategic Investments (EFSI): use of public funding as a guarantee to attract public and private investment.

The European Commission singles out five areas of investment, so-called 'investment windows', in which the first actions of the EIP will be implemented. One of the windows is dedicated to 'Sustainable Energy and Connectivity' – to attract investments in renewable energy, energy efficiency and transport[41].

[39] *Strengthening European Investments for jobs and growth — Towards a second phase of the European Fund for Strategic Investments and a new European External Investment Plan*, Communication from the Commission to the European Parliament, the Council, the European Central Bank, the European Economic and Social Committee, the Committee of the Regions and the European Investment Bank, COM(2016) 581, 14.9.2016.
[40] Regulation (EU) 2017/1601 of the European Parliament and of the Council of 26 September 2017 establishing the European Fund for Sustainable Development (EFSD), the EFSD Guarantee and the EFSD Guarantee Fund.
[41] The first four other investment windows are:
- 'Micro, Small and Medium Sized Enterprises (MSMEs) Financing' – to improve MSME's access to finance. Such businesses are the main employers in Africa and the EU Neighbourhood, and offer important and more sustainable alternatives to the informal economy.
- 'Sustainable Agriculture, Rural Entrepreneurs and Agribusiness' – to provide better access to finance for smallholders, cooperatives and micro, small and medium sized enterprises agribusiness, allowing to address food security issues.
- 'Sustainable Cities' – to mobilise investments in sustainable urban development of municipal infrastructure, including urban mobility, water, sanitation, waste management, renewable energy services.
- 'Digital for Development' – to promote investments in innovative digital solutions for local needs, financial inclusion and decent job creation.

3. EMPOWERING DEVELOPMENT

The challenges of energy poverty and climate change (addressing SDG 7 and 13) and the opportunities to strengthen the energy sector in developing partner countries are addressed through three 'thematic bets' and three 'methodological drivers'.

3.1. The three 'big bets' for Empowering Development

In order for the EU to reach its commitments, implementation of the European Consensus on Development in the area of sustainable energy will focus on:

Access to energy
Renewable energy generation and energy efficiency
Contribution to the fight against climate change

3.1.1. Access to energy

Currently, there is not a common internationally agreed definition of 'access to energy' yet[42]. While acknowledging the work of international partners on a common definition, for the purposes of this document, energy access is considered in a broad sense, taking into account direct new access from new connections or off-grid technologies as well as improved and inferred access resulting from grid rehabilitation, new generation or extension of transmission lines.

The objective is to increase access, especially for vulnerable customers (e.g. women, youth and the poor), to electricity and modern energy services, including lighting as well as clean/improved cooking systems. Regarding electrification, both grid extensions, including cross-border interconnections and off-grid solutions (from mini-grids to stand-alone systems) are supported. The provision of electricity for productive uses (creation and improvement of economic activities and employment, such as energy for agri-business value chains, MSMEs) is prioritised. In order to ensure quality and sustainability of the energy services that are supported, as a general principle, cost-reflective business models are privileged. The role of natural ecosystems that provide services essential to renewable energy production, such as water provision and regulation for hydropower plants, must be promoted in all energy programs. Robust environmental impact assessments and strategic impact assessment can help ensure that projects have reduced environmental footprints.

[42] IEA 2017 defines energy access as 'a household having reliable and affordable access to both clean cooking facilities and to electricity, which is enough to supply a basic bundle of energy services initially, and then an increasing level of electricity over time to reach the regional average'. The World Bank[42] 'multi-tier energy access tracking' redefines energy access from a binary count to a multi-dimensional definition as 'the ability to obtain energy that is adequate, available when needed, reliable, of good quality, affordable, legal, convenient, healthy and safe for all required energy applications across households, productive enterprises, and community institutions'. Energy access is measured in the tiered-spectrum, from Tier 0 (no access) to Tier 5 (the highest level of access, that most citizens enjoy in developed countries).

Grid extension and off-grid development in Africa

Grid extension of the electricity backbones and additional on-grid distribution are crucial actions for increasing access to modern energy, enabling regional integration of power markets (for example African Power Pools), and allowing transboundary energy trade, connecting resources with demand hot spots, optimising return on investments, achieving system efficiencies and balancing consumption and production from variable sources like renewables as well as reinforcing security of power supply.

Granting universal access to electricity in a vast continent like Africa cannot realistically be achieved only by extending the electricity grid. The cost of connecting remote villages and sparsely populated areas to the national grid is disproportionally high, while low consumption from village households would yield very little revenue for utilities. Such an option would be too expensive and seriously jeopardise the financial health of utilities in the mid-long term. In addition, many countries apply a subsidised tariff policy instead of a cost reflective tariff policy, with the effect that energy utilities are often in a dire financial situation. The planning for electrification should take into account financial and technical realities. As a consequence, populations in remote areas risk to be left behind without basic energy services while waiting for the grid to arrive.

Innovative solutions allows now for covering most of the electricity needs of remote villages in a sustainable and autonomous way. These solutions range from independent local mini and micro grids, to community managed systems, and stand-alone solar home systems (SHS) combined with portable photovoltaic appliances for light. These systems overcome the distance barrier as they utilise local renewable resources such as hydropower, wind, renewable biogas and in most instances solar power. They can become the main energy source or can be used to hybridise existing power sources (such as diesel generators). Community involvement is important to handle demand side management as well as maintenance, production and distribution aspects.

Grid extension and rural electrification planning should be realistic and predictable in order to allow for evidence-based decision-making (for example, reducing the risk of off-grid investments losing value because the area has been electrified sooner than it was expected). Planning of rural electrification should carefully define suitable areas for off-grid systems development based on economic and proximity to energy resource criteria. The framework for rural electrification businesses should be conducive to attract local entrepreneurs and private investments as part of a government strategy. Electricity tariffs (on- and off-grid) should be cost covering in order to unlock investments in decentralised electrification—the so called 'off-grid utilities'. Lastly, it is important that local ownership and capacities are developed within the communities.

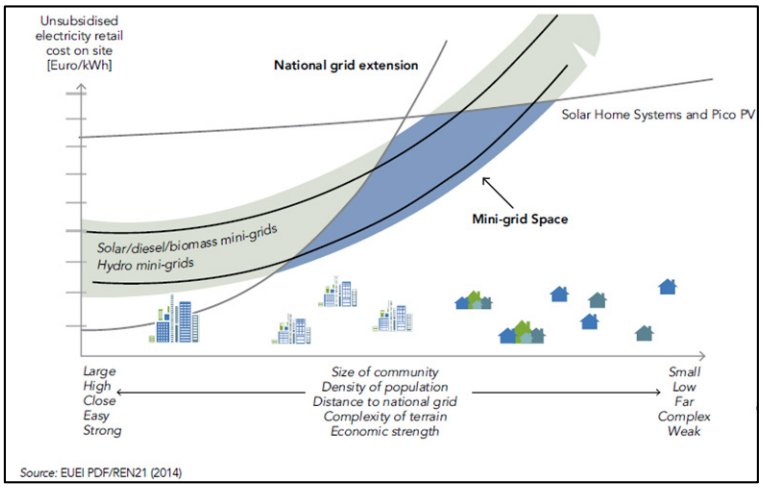

Figure 4: A growing role for mini grids and renewable energy. Opportunities for grid extension, mini grids and distributed renewable energy systems. EUEI PDF and REN21.

3.1.2. Renewable energy generation and energy efficiency

As a global leader in fostering low carbon economy, the EU considers the development of renewable energy and energy efficiency as part of the solution to fight against climate change and preserve the environment, reduce the air pollution burden on human health, as well as a source of creation of quality jobs. The increased use of renewable energy and energy efficiency is further enhanced by progress achieved in technological development and transfer, including significant cost reductions and digitalisation, and allows a consumer-centred approach. In particular, many developing countries have significant renewable energy potential. According to the international renewable energy agency (IRENA)[43], the potential for solar, geothermal, hydro and wind energy in Africa is among the highest in the world. Optimising the use of these resources would shield economies from price volatility of fossil fuels and from foreign currency drain, allowing them to diversify their energy supply and leapfrog the energy transition. With more renewable energy in the energy mix, sustainable growth could be decoupled from harmful emissions causing climate change. Renewable energy is also important to provide energy access through off-grid or mini-grid solutions in both rural and peri-urban areas. Energy efficiency keeps in check growing energy demand and frees up capacity to increase access for those in need.

Partner countries are supported in their efforts to increase the energy generation capacity from renewables, and diversify the energy mix by exploiting various renewable energy sources and technologies, according to the most appropriate and efficient solutions available. A particular care is given to ensure the sustainable use of natural resources (including water, land, forests, biomass), especially when possible risks of competition exist, such as for hydro or bioenergy projects. Ensuring consistency with EU policies on environmental and social sustainability is essential in that regard. Circular economy approaches, for instance, contribute to efficient use of resources[44] and to reducing energy demand, for example, through increased recycling or efficient use. Beyond energy generation, energy efficiency measures are a key complement tool to reduce energy and resources needs and improve the quality of life.

Of course, just as within the EU's borders, partner countries remain in charge of choices on the energy mix that best responds to their energy needs. However, policy dialogue plays a crucial role in supporting sustainable low carbon energy transitions, and the bulk of available financial support, dedicated to increase the capacity of energy generation, is reserved for sustainable renewable energy projects and hybridisation of existing systems towards more renewables. Setting up conductive and stable regulatory frameworks, building capacity, improving governance and the business environment benefit the entire energy sector.

3.1.3. Contribution to the fight against climate change

For many countries, the elaboration of the NDC was the first opportunity to articulate a programmatic vision for low greenhouse gas emissions in line with national development

[43] *Africa 2030 — Roadmap for a renewable energy future*, IRENA, 72 p., 2015.
[44] As mentioned in the *Report on the implementation of the Circular Economy Action Plan* — COM(2017) 33: 'on 30 November 2016, in its recast of the Renewable Energy Directive as part of the package on Clean Energy for all Europeans, the Commission adopted sustainability criteria for all bioenergy uses. In order to limit pressure on limited biomass resources, the Commission proposed that only efficient conversion of biomass to electricity should receive public support. This will facilitate synergies with the circular economy in the uses of biomass and particularly wood, which can be used for a range of products as well as for energy'.

plans and aspirations. In addition, population growth and rampant urbanisation rates in developing countries create a specific challenge and mega cities remain major hotspots of vulnerability to the impacts of climate change. Local authorities and Mayors are therefore critical partners in a bottom-up transition to global low-carbon and climate resilient economies and societies.

The support to partner countries in the development of sustainable energy projects and in the implementation of their NDCs involves reducing greenhouse gas emissions from the energy system while satisfying the increasing demand for energy e.g. fostering energy efficiency of products, systems and buildings, including grid and power plant rehabilitation. Encouraging low carbon technology deployment covers the support to additional renewable energy generation or replacing/hybridising fossil fuel generation with renewable energy. Smart energy uses and energy efficiency solutions are prioritised in urban and peri-urban areas, where currently most of the economic activities take place and most greenhouse gas emissions are generated. Support is provided to strengthening capacities, fostering twinning arrangements and building a network of local authorities and cities for climate action on a global scale. This contribution from the energy sector comes in addition to other measures taken to fight climate change in other sectors of cooperation.

3.1.4. Crosscutting issue: women and sustainable energy

The opportunities for human development and economic growth arising from progress in the energy sector often do not offer equal participation and impact between men and women. Benefiting women and girls requires more than just providing energy. Improved sustainable energy access is most beneficial to women if their status is raised and they can make decisions in the household and in their communities, if they have access to resources like credit, if they are involved in helping design energy access projects, and if they have opportunities to be employed in the energy sector. The social and economic rights and empowerment of girls and women are promoted as one of the pivotal areas of the EU as mentioned in the staff working document on Gender Equality and Women's Empowerment: transforming the lives of girls and women through EU external relations 2016-2020[45], in particular ensuring equal access and control over energy resources as well as equitable engagement in their management. Existing energy projects, programmes and policies explicitly recognise imbalances and intentionally strive to reduce inequalities. Women are not only energy users for domestic purposes or for economic activities. They should also contribute actively in the energy value chains, in particular in promoting renewable energies distribution and increasing access to energy and energy services.

As supporting the empowerment of women contributes to sustainable and inclusive growth, the EU mainstreams gender equality in all development actions. In the energy sector, specific programmes are designed to foster women involvement in the energy value chain, increase their technical and business capacity and strengthen their role as energy entrepreneurs.

[45] *Gender Equality and Women's Empowerment — Transforming the Lives of Girls and Women through EU External Relations 2016-2020*, SWD(2015) 182.

3.2. The three methodological drivers for Empowering Development

Transparent and efficient energy markets and well-functioning energy institutions are an important enabler for universal access to affordable, reliable, sustainable and modern energy services. In order to attract public-private investments in renewable energy and energy efficiency, the business environment should be conducive and the legislative/regulatory framework and governance adequate. It is only then that the innovative financial instruments can be deployed to unlock and boost investments. Blending available resources is a way of reaching the investment level needed to achieve SDG 7 targets. Therefore, three main drivers are promoted in the implementation of the approach:

Promoting political ownership & partnerships for implementation
Improving governance and reforms of the energy sector
Boosting investment through innovative financial instruments

3.2.1. Promoting political ownership & partnerships for implementation

The EU works in close cooperation with partner countries, and bilateral development policy aligns to and complements as much as possible countries' and regions' own policies and plans. Ownership of the reform process is the most important precondition for any action to be successful and yield sustainable and durable impact.

EU Delegations facilitate a structured dialogue on development cooperation in energy matters with national authorities, agreeing on specific interventions and projects, identify technical support needs, fostering sector coordination with all stakeholders — local and international. In some cases, political joint declarations on reinforced cooperation in the field of sustainable energy, agreed with governments or regional organisations and the most active donors in each country, provide a framework for strengthened cooperation and a stronger sense of ownership of the reform agenda to the partner country's governments.

Africa *is a privileged partner for the EU development cooperation. The continuous coordination with African Partners in the energy sector is organised in the context of the Africa-EU Energy Partnership*[46]*.*

Toolbox for promoting political ownership & partnerships

EU Delegations and Offices around the world play a key role in the policy dialogue with stakeholders in partner countries. The policy dialogue on energy cooperation is promoted not only in the countries/regions where energy is a focal sector. It represents in fact an important tool to design all national and regional indicative programmes (**NIPs** and **RIPs**) together with the countries' governments and regional organisations, and to plan and implement a development programme fully aligned with partner's plans and strategies.

In addition **joint declarations** on reinforced cooperation on sustainable energy have been signed with partner countries and regions.

Budget support, through the Sector Reform Contracts, can be an important tool to promote reforms and economic governance in the energy sector through its comprehensive sector-wide dialogue and continuous

[46] Joint Communication to the European Parliament and the Council for a renewed impetus of the Africa-EU Partnership, JOIN(2017) 17 of 4.5.2017.

monitoring of the eligibility and performance criteria. It can be complementary to blending and technical assistance projects. In the energy sector the beneficiary government is supported through budget injection in the setting-up and implementation of sustainable energy policy with the aim of improving the enabling environment, attracting investments, reducing energy poverty and boosting sustainable growth. Budget support is applied when the governance and the capacity of the sector as well as political willingness are sound enough to engage in a constructive dialogue, to share all relevant information and to successfully implement the appropriate reforms and financial measures required for the sustainable development of the energy sector.

Coordination with Member States and their implementing agencies on energy cooperation is fostered through the EU Energy Initiative (**EUEI**), a platform for regular information exchange on policy and programmes.

The EU has been active in promoting the objectives of the SE4All initiative since its launch and remains committed to its objectives which are now translated into the objectives of **SDG 7**. The EU works closely with key partners, including in the frameworks of the G7 and G20 to contribute towards SDG7.

As a result of a Memorandum of Understanding with the **USA** signed in 2016[47], the EU and USAID/Power Africa strengthened their relations with the common aim of increasing access to energy in sub-Saharan Africa. Areas of cooperation include scaling-up off-grid efforts to increase access to energy services, coordinate respective technical assistance activities and policy dialogue, work on energy efficiency. As a result of closer cooperation, Power Africa also contributed USD 10 million[48] to the EU ElectriFI initiative[49] (see below).

A partnership with cities under the **Covenant of Mayors in sub-Saharan Africa**[50] aims to increase the capacities of cities to provide access to sufficient, sustainable and safe energy services to urban and peri-urban populations, and to support actions at city-level to combat climate change and its impacts. This initiative is one of the Regional Covenants forming the Global Covenant of Mayors for Climate and Energy, a global coalition of cities and local governments with a shared long-term vision of moving to a low emission, resilient society.

The EU supports, through the Technical Assistance Facility, the increasing number of African countries interested in joining the International **Energy Charter**[51] which ultimate goal is 'to strengthen the rule of law on energy issues, by creating a level playing field of rules to be observed by all participating governments, thereby mitigating risks associated with energy-related investment and trade'. Amongst the signatories of the European Energy Charter (1991) are Burundi, Chad, Mauritania, Morocco, Niger. Amongst the signatories of the new International Energy Charter (2015) are Benin, Economic Community of West African States, Swaziland, Tanzania and Uganda.

3.2.2. Improving governance and reforms of the energy sector

As described above, the energy sector in developing countries is often perceived by private investors as difficult and risky. Market distortions and non-cost-reflective tariffs (including non-inclusion of negative externalities) applied by national utilities and other key stakeholders can limit the effectiveness of investments in the sector. In some countries, legislation/regulations explicitly forbid the engagement of private sector. In addition, targeted and inefficient subsidies distort consumption patterns, drain public finances and lead to poor

[47] Memorandum of understanding between the European Union and the United States of America for reducing energy poverty and increasing energy access in sub-Saharan Africa. Signed in Addis Ababa, 14 July 2015. European Commission, European Union and the U.S. Power Africa Initiative Join Forces to Assist Partner Countries to Reduce Energy Poverty and Increase Access to Electricity in sub-Saharan Africa, 14 July 2015, https://ec.europa.eu/europeaid/sites/devco/files/web-release-power-africa-eumou-addis_en.pdf.
[48] Commission implementing decision of 14.6.2016 amending Commission implementing Decision C(2014) 9451 of 15.12.2014 on the Annual Action Programme 2014 for Sustainable Energy under the Global Public Goods and Challenges, to be financed from the general budget of the European Union.
[49] C(2016) 3788, C(2017) 7497.
[50] C(2015) 7244, C(2016) 8086, C(2017) 7497.
[51] http://www.energycharter.org/process/international-energy-charter-2015/overview/

performance in public utilities (apart from often working against stated objectives such as tackling climate change). In other cases, investors could simply lack the confidence to engage in the sector because of (real or perceived) risks and dysfunctions. In any case, investments need healthy public economic governance, clear rules and a stable environment with regard to sector policy legislation and regulations, strategic planning of investments, articulation with a stability-oriented macroeconomic policy and good public finance management (e.g. procurement reforms, PPP risk management or asset monitoring). Institutional capacity and skills of workforces are also important factors.

The starting point for a well-designed energy sector framework is the strategy level, where the policy direction must be defined on the basis of sound evidence and information. This includes, for example, long-term planning for renewable energy deployment, electrification and infrastructure development, as well as the definition of the sector objectives and structure. Primary regulation at legislative level sets the legal foundation and assigns roles and responsibilities to executive bodies. Key rules and provisions, essential elements for investment decisions of private developers, are set at the level of the secondary regulation, put in place by executive bodies (e. g. energy ministries and regulators). They define the framework that governs project development and guide investments according to the different business models. Policymakers may also design fiscal incentives or subsidy schemes tailored to steer and direct investment flows. Licensing, import regulations and taxation affect all market segments and can make a crucial difference to the viability of business models and entire markets. Generally, a close coordination with the NDCs under the Paris Agreement shall be sought. Going beyond national boundaries, an integrated regional energy market requires harmonisation of regulations and compatible standards.

The EU supports partner countries and regions throughout the policy-definition process notably in providing —following partners' requests— support and expertise for drafting sector reforms and missing regulations, strengthening technical capacities of ministries and regulators, restructure utilities' financial situation. The main tools are policy dialogue and technical assistance. The expected improvement in efficiency and governance includes for instance the application of cost-reflective tariffs, better maintenance of energy infrastructure, more transparency in financial transactions and better process of award of concessions (such as support to define auction procedures). Beyond that, the EU's own sophisticated policy framework on energy and climate could be shared and benchmarked as an accelerator for domestic policy reforms.

Progress regarding sustainable energy policies and regulation in Africa is needed. In the Regulatory Indicators for Sustainable Energy (RISE) 2016 Report[52], which assesses national policy and regulatory frameworks for sustainable energy, score is moderate in 15 countries and few or no elements of a supportive policy framework have been enacted in 19 countries (see Figure 5).

[52] RISE scores reflect a snapshot of a country's policies and regulations in the energy sector, organized by the three pillars of the SEforAll initiative: energy access, energy efficiency, and renewable energy. RISE 2016 Regulatory indicators for sustainable energy, A global scorecard for policy makers. 2017 International Bank for Reconstruction and Development / The World Bank (http://rise.esmap.org).

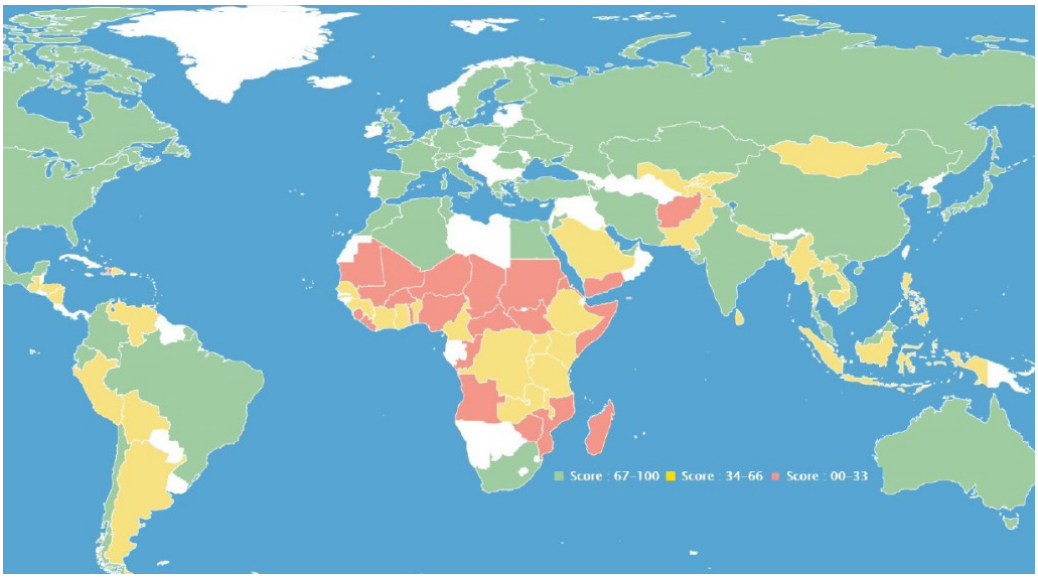

Figure 5: Assessment of national policy and regulatory frameworks for sustainable energy. Green: most elements of a strong policy framework to support sustainable energy are in place – Yellow: Significant opportunities exist – Red: Few or no elements of a supportive policy framework have been enacted (RISE 2016 report, World Bank).

Improving the enabling and regulatory environment – the catalysing role of the EU's Technical Assistance Facility

Through its Development Cooperation Instrument, the EU makes available a Technical Assistance Facility (TAF)[53] to all partner countries to support them elaborating appropriate sector policies and reforms towards a better enabling environment. With a total budget of EUR 65 million for 48 months, the TAF helps developing countries to set up country action plans for energy and carry out the regulatory reforms needed to unblock the necessary private investments to implement these plans. The TAF Sub-Saharan Africa started in December 2013 and has implemented more than 100 missions in 34 countries. Since December 2014, the TAF covering Asia, Neighbourhood, Latina America, Caribbean and Pacific carried out 15 missions in 8 countries.

TAF provides support upon request from the partners in countries, for the elaboration and implementation of national energy sector policies and reforms; capacity building in policy and regulatory framework; technical support in the programming and preparation of concrete investment projects; mobilisation of funds and facilitation of partnership (with particular emphasis on the private sector and the banking institutions); industrial and technology cooperation; project demonstration.

In Côte d'Ivoire the TAF helped operationalising the renewable energy law by developing the detailed provision in the relevant decrees. Such actions created the relevant framework for private sector participation and for concessions in the electricity sector. In Rwanda the TAF provided support for the development of the electricity master plan for increased energy access. In Cameroun and Burkina Faso cooperation with the regulatory authorities and stakeholders created the framework for solar power generation at a large scale. In Kenya, the TAF team has been studying how EU funds can assist promising initiatives for off-grid solutions such as the Kenya's bio-digester programme. Support is also provided to the Department of Infrastructure and Energy of the African Union Commission on harmonising the different regulatory framework on the African continent.

The EU TAF cooperates with other similar mechanisms as the Africa-EU renewable Energy Cooperation Programme, the EU Energy Initiative Partnership Dialogue Facility and the ElectriFI team, as for instance producing common studies[54].

[53] C(2012) 5436.

[54] Enabling policies for addressing climate change and energy poverty through renewable energy investments in Africa, policy paper, 6 pages,2017 — http://electrifi.org/wp-content/uploads/2016/12/Policy-Paper-ElectriFI-TAF-RECP-6pager-112016-single-page.pdf

3.2.3. Boosting investment through innovative financial instruments

Energy infrastructures require a high amount of investments which, in general, would bring together different sources of funding into complex financial arrangements. Projects need to be bankable to ensure sustainability. While energy could be a revenue-generating activity and can stimulate commercial interest, underlying market barriers and a perception of high risk still hamper the development and financing of renewable and energy efficient projects, especially in more fragile countries where additional uncertainties (of political, inflationary, security nature) enter into consideration. Financial risk mitigation schemes, such as guarantees, can be instrumental in making projects possible. Early stage/seed finance and support for project preparation are also crucial to bring more projects to maturity. Small projects need to be aggregated to make them more interesting for financing and attract the interest of mainstream investors. These are the areas where public intervention from international donors such as the EU is needed, to unblock and move forward investments that would have not happened otherwise.

To address the investor's reluctance and unlock investments, the EU response introduced blending operations, which involves the combination of grant aid[55] in various forms (including, when appropriate, reimbursable grants, early stage finance and provision of guarantees) and private or public sources of finance, such as loans, risk capital and/or equity. Partnerships with financial institutions such as the European Investment Bank (EIB) and with multiple other development banks, under the blending frameworks, aim at the provision of an efficient support to investments in sustainable energy.

Toolbox on innovative financial instruments

The use of blending in the external cooperation of the EU is promoted increasingly in order to unlock additional public and private resources and thereby increase the impact of EU development policy. Grants provided through blending can take a number of forms, most commonly direct investment grants and/or technical assistance.

EU development aid contributes to the financing of large scale infrastructures, such as generation plants or transmission lines, through the **EU regional blending facilities** which are evolving into regional investment platforms within the context of the **External Investment Plan (EIP)**. Additionally, the EIP includes the European Fund for Sustainable Development Guarantee to providing guarantees to eligible counterparts, which in turn would conclude agreements with co-financing private sector partners, financial intermediaries or final beneficiaries to cover the risks of different forms of support, such as loans, guarantees, equity and other credit enhancement products. A specific window dedicated to 'Sustainable Energy and Connectivity' is one of the EFSD investment windows.

In addition to the regional blending facilities, and in order to support small and medium scale projects, the EU launched a dedicated financing initiative, **ElectriFI**, together with Member States, private sector actors, civil society and the involvement of European Development Financial Institutions (EDFIs). The aim of ElectriFI is to boost private sector investments providing access to reliable, affordable and renewable electricity and energy services in developing countries. To best address the needs of the market, all forms of support available under the blending facilities can also be provided under ElectriFI (i.e. investment grants, equity, guarantees, local bank credit lines, currency risk mitigation, technical assistance). A number of partner countries have decided to earmark part of their National Indicative Programmes' energy allocations for dedicated ElectriFI 'country windows'[56], with the objective of boosting in-country private sector participation in renewable energy projects.

[55] Both thematic and EDF funds can be used for blending, with the agreement of partner countries.
[56] As for instance Zambia, C(2017) 6314.

One of the first ElectriFI approved projects[57] to be supported is NextGen Solawazi, a 5 MW solar photovoltaic power plant to be connected to the isolated mini-grid of Kigoma region to support the strategic rural electrification efforts of the Government of Tanzania. The solar plant will replace and complement diesel generators, having a positive impact not only on the environment but also on the cost price to the off-taker, the national power utility of Tanzania. Lowering the cost price for such isolated grids will make it more attractive to expand the distribution network to more remote areas. Another example of an ElectriFI funded project is the Sigora Haiti Northwest electrification project making it the first privately owned utility company in Haiti with the right to distribute electricity and collect payments from the population. It will expand the company's existing pilot grid network from 5,000 customers to 136,000 (27,000 accounts) and have a renewable energy capacity of 3.5 MW. The project deploys prepaid metering and revenue management technology designed to enable utilities in frontier markets to consistently and effectively collect revenue.

Other financial instruments implemented through the Infrastructure Trust Fund (ITF)[58] include the **European Union-European Development Finance Institutions Private Sector Development Facility[59],** created in order to catalyse private investment in small and medium scale energy projects in Africa. The programme comprises a Guarantee Facility whereby the EU shares risk with EDFIs to enable the financing of riskier energy projects. It can also provide funding for early-stage development projects and technical assistance to build the capacity of private sector enterprises in the energy sector in Africa. The EU ITF contributes also to the **Global Energy Efficiency and Renewable Energy Fund – GEEREF[60]**, a fund-of-funds catalysing private sector capital into clean energy projects in developing countries and economies in transition. GEEREF, managed by the European Investment Bank, provides global risk capital through private investment for medium scale renewable energy and energy efficiency projects. The current portfolio of funds supports 525 MW of renewable capacity with the aim of reaching 1.83 GW by the end of the implementation period of the project. And finally, the EU ITF contributes up to EUR 30 million to the **Geothermal Risk Mitigation Facility (GRMF)[61]** to support geothermal development in East Africa. GRMF provides financial support for surface studies, exploration drilling and testing programmes. It has supported for instance, notably with private developers, two drilling projects in Kenya, one surface study project and one drilling project in Ethiopia and one project in Comoros.

The EU InnovFin Energy Demonstration Projects (EDP) Facility[62], by which the European Commission provides guarantees for loans from the EIB to innovative projects in the area of renewable energy, is also open to projects with implementation in Africa.

[57] http://electrifi.org/
[58] C(2012) 8793, http://www.eu-africa-infrastructure-tf.net/
[59] http://www.eib.org/projects/regions/acp/index.htm
[60] http://geeref.com/
[61] http://www.grmf-eastafrica.org/
[62] Financed under the Horizon2020 programme.

4. FINANCIAL ASPECTS

In the period 2014-2020, EUR 3.7 billion have been allocated from EU development funds to sustainable energy actions in developing countries[63], out of it, around EUR 2.7 billion for sub-Saharan Africa[64]. More in detail, 30 partner countries[65] either have energy as focal sector of cooperation with the EU or have significant allocations to the energy sector under other thematic sectors (such as rural development/agriculture or sustainable infrastructure); of these countries, 17 are located in sub-Saharan Africa. In addition, energy is among the priority areas for EU cooperation with sub-Saharan African, ACP, Central Asia and Caribbean regions (through their regional indicative programmes and intra-ACP). Finally, sustainable energy is one of the five thematic areas under the Development Cooperation Instrument (DCI) thematic programme Global Public Goods and Challenges (GPGC) for 2014-2020[66].

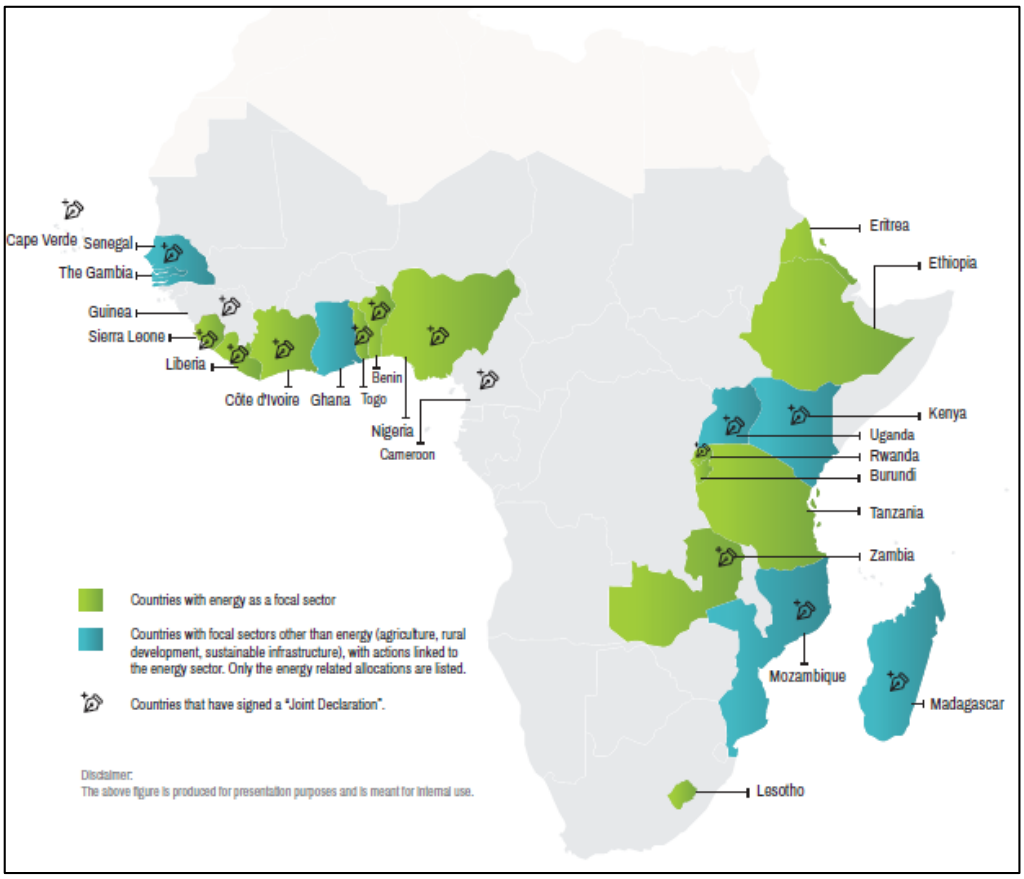

Figure 6: EU energy sector cooperation in sub-Saharan Africa at national level.

[63] Indicative allocation done in accordance with existing Commission's decisions (national and regional indicative programmes, European Development Fund (intra-ACP) and Development Cooperation Instrument (Global public goods and challenges programme).
[64] Including contributions of the Intra-ACP and global instruments, estimated.
[65] Countries in the EU Neighbourhood (East and South) are not considered for the purposes of this SWD. In addition to Africa, countries that have chosen energy as focal sector of EU cooperation are Iraq, Philippines, Vietnam, Barbados, Belize, Dominica, St Kitts and Nevis, Marshall Islands, Micronesia, Nauru, Niue, Palau and Tonga.
[66] C(2014) 5072 of 23.7.2014.

5. IMPLEMENTATION

5.1. Estimation of impact of EU cooperation in sustainable energy

By mean of a number of assumptions[67] formulated on the likely implementation of sustainable energy programmes and projects for the amount foreseen in the current multi-annual financial framework, it can be estimated ex-ante that the EU would contribute to the three global objectives of access to energy, increasing renewable energy generation and contribute to fighting climate change, with the minimum following figures:

	Globally	In sub-Saharan Africa
Access to energy	about 40 million people	about 30 million people
Renewable energy generation	about 6.5 gigawatt[68]	about 5 gigawatt
Contribution to the fight against climate change (emission savings)	about 15 million tons CO_{2e} saved per year	about 11 million tons CO_{2e} saved per year

Substantial variation of these figures would be reached, considering the range of options in assumptions, as for instance the expected leverage of the support, the part of blending operations in the portfolio, the level of energy services reached by each projects or the costs of the involved technologies, all these factors being not yet known.

An ex-post evaluation of impact of projects implemented under the current multi-annual financial framework will be prepared taking into account the methodological constraints mentioned below and in the next section.

5.2. Challenges faced

Initial forecasts on the actions approved so far show that by September 2017 we are on track. Nevertheless a number of challenges are still to be faced:

- Lack of mature projects submitted to the EU blending facilities by international financing institutions, especially in Eastern, Central and Southern Africa regions, addressed with an intensification of dialogue and cooperation with financial institutions active in the area.
- Projects submitted to the investment facilities (especially in Africa), particularly to be financed under regional funds, are more often targeting transmission lines and interconnections rather than renewable energy generation plants. This trend has been reversed in most regions recently, thanks to improved cooperation with financial institutions. Yet for Central Africa the need for investments in renewable energy generation but also electrical grids too is huge.

[67] Assumptions include: an average leverage factor of 4 applied to 60 % of the available budget (considering that 40 % is spent through modalities different than blending); a balanced portfolio of actions covering a mix of on- and off-grids operations and both projects contributing to increasing renewable energy generation and to access to energy (such as transmission and distribution lines), in line with NIP indications in the different countries; estimated number of direct and indirect beneficiaries; and average costs of technologies in line with market surveys.

[68] Of which 5.8 gigawatt new generation and 0.7 gigawatt through energy savings initiatives.

- It is a challenge to aggregate forecasts on energy access, generation capacity and greenhouse gases emissions from various instruments, because of a lack of harmonised methodologies (this aspect is discussed in the next section).

5.3. Monitoring EU cooperation in sustainable energy

Monitoring and measurement of the impact in partner's countries are considerable challenges. There might be a significant time lag between reporting of achieved results, since in some projects, access can only be counted once the last mile connection is operational, which could be years after the EU is no longer involved. It is also very complex to estimate greenhouse gas emission savings. Therefore, due to the complexity of the issue and the lack of internationally agreed methodologies, the EU is working with the international community on the definition of a shared methodology and a robust set of indicators.

The monitoring of the ongoing supports to the energy sector for internal purposes and for external communication[69] has so far been implemented for each initiative in isolation and with standalone appropriate methodologies and indicators[70]. This prevent aggregation and consolidation of data, specifically for forecasting purpose or at the moment of ex-post evaluation of EU cooperation in the energy sector performed in the context of the EU result framework.

EU aggregated indicators would have to cover different aspects of energy access (including on- and off-grid, direct and indirect access), renewable energy generation (capacity and production) and greenhouse gas savings, and be aligned and compatible with indicators selected for the tracking of progress towards the achievement of SDG 7 and SDG 13. Using the appropriate indicators would help streamlining incentives which will end up with a strong set of projects supporting the effectiveness of the intervention. Data collection should start well in advance and be an explicit part of project preparation. A timely and accurate result reporting methodology is promoted throughout all interventions supported by the EU, to allow for a more efficient monitoring of results of EU energy cooperation.

[69] For instance: the annual report where energy indicators are collected as part of the corporate result framework.
[70] For example: the 9th and 10th EDF Energy Facility projects are monitored through a specific contract; the energy projects financed through the Africa Infrastructure Trust Fund (AITF) are monitored by the fund manager (EIB) which periodically reports to the Commission; each project financed through the African Investment facility is monitored in the framework of the specific PAGODA contract.

6. APPLYING THE EMPOWERING DEVELOPMENT APPROACH

The implementation of the new European Consensus on development in energy cooperation is reinforced and further sharpened through numerous ongoing processes.

- The EU policy agenda on EU sustainable energy cooperation is pursued with all interested developing partner countries, to ensure strengthening synergies and links between EU energy and climate diplomacies[71]; using policy dialogue as the primary instrument to address governance issues.

- Mutually beneficial knowledge and technology-transfer with developing countries is implemented in line with the EU's commitments under the Paris Agreement and preferably by sharing the European stock of best practices in (e.g. building a model of integrated market, promoting the interconnected pan-European infrastructures, increasing the share of the renewables in the energy mix and of clean technologies, promoting innovative energy efficiency measures), taking due account of partner's specific needs and circumstances.

- Innovation in sustainable energy and climate change in developing countries is fostered by the EU working closely with its Member States. To this end, research and innovation programmes targeting developing countries in the areas of renewable energy have been launched, with a focus on Africa as a privileged partner and participant[72].

- The deployment of technical assistance can be sharpened, including by better coordinating it with relevant research and analysis. That way, it contributes even more to: i) creating an environment conducive for mobilising private sector stakeholders into energy investments in developing countries, ii) providing services dedicated to project development and pipeline boosting, available to financing institutions as well as private developers, to work in synergy with other financial instruments such as ElectriFI; iii) integrating climate and disaster risk management into energy sector interventions to build resilience and to safeguard future gains.

- Strengthening the coordination of actions with international partners active in the energy cooperation sector so as to pass consistent messages on sustainable energy and ensure consistent monitoring methodologies. This is all the more true for the interaction with EU Member States' actions. Coordination with EU Member States continues and can be reinforced through the EUEI mechanism.

- In line with the Joint Communication on a renewed partnership with Africa, the unique relationship with Africa in the area of sustainable energy must be highlighted in the context of the African Union-European Union Summit process. The Summit of November 2017 offered the opportunity for reiterating the crucial role played by sustainable energy for the future of the African continent and for securing political backing at the highest level from countries and institutions.

[71] In line with Council of the European Union 6981/17, 6.3.2017.
[72] C(2017) 7124 of 27.10.2017.

- Partnerships with the private sector continue. To this aim, a High-Level Public-Private Platform on Sustainable Energy Investments, in particular with Africa, is promoted[73], with the aim to support private sector engagement and foster public-private cooperation to improve the business climate and help de-risk investments in African countries.

- Regional and thematic blending instruments adjusted to offer financial support (convertible grants, equity, junior loans, guarantees, etc.) tailored according to the specific needs of the energy sector (type of promoter, scale of the project, level of associated risks, etc.) are used in development cooperation.

- In order to reflect the crucial role of cities in taking actions, deepen strategic alliances and collaboration, by partnering with local authorities in a bottom-up transition to a global low-carbon and climate-resilient economy and society, including through initiatives such as the Global Covenant of Mayors (which builds on the successful EU Covenant of Mayors) and the further extension of its regional Africa components.

- In cooperation with partner countries, their statistical capacity, production and analysis of data should be strengthened in order to further inform policy and decision-making.

- Addressing energy nexuses providing cross-sector responses to complex situations should be reinforced, in line with the European Consensus on Development. For instance, climate objectives under the NDCs are further integrated into national energy strategies. The water-energy-food nexus, energy and ecosystem services (in particular in and around protected areas), energy-science, energy-mobility-ICT for smart cities, and the opportunities offered by digital communications for development, which can facilitate access to the electricity market by mobile devices and facilitate grid management operations and demand side management.

7. CONCLUSIONS

The EU is committed to reinforcing its sustainable energy cooperation with the objectives of (i) increasing access to energy, (ii) increasing renewable energy generation capacity and (iii) contributing to the fight against climate change in developing countries, in line with international commitments. This is planned to be achieved through a well-coordinated and targeted set of measures, with a three-fold approach working at the same time on the political ownership and partnership of actions, on the improvement of energy sector governance and on the deployment of innovative financial instruments able to catalyse additional investments particularly from private sector.

Empowering Development is not implemented in isolation, but in synergy and coordination with relevant stakeholders: first and foremost partner countries, regions and cities, EU Member States, international donors, financial institutions, sector bodies and institutions, private sector operators, civil society, in the common strive to achieve the targets of SDG 7 and a sustainable development powered by sustainable energy. The monitoring system is progressively adapted and made more consistent in order to regularly report on development cooperation on sustainable energy in line with the global commitment of the EU.

---

[73] Joint Communication to the European Parliament and the Council for a renewed impetus of the Africa-EU Partnership, JOIN(2017) 17, 4.5.2017.