ACCELERATING SDG 7 ACHIEVEMENT

POLICY BRIEF 1

ENERGY, CLIMATE CHANGE AND SUSTAINABLE DEVELOPMENT

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Developed by

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In collaboration with

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Key Messages

The energy sector must play a critical role in any efforts to reduce emissions and mitigate climate change, thereby achieving SDG 13, because energy accounts for two-thirds of total greenhouse gas emissions and 80 per cent of carbon dioxide (CO_2)emissions (IEA, 2018). Achieving universal access to electricity and clean fuels and technologies is not necessarily in conflict with achieving climate objectives, but higher energy demand to support additional productive uses of electricity for economic development in underserved areas can lead to corresponding increases in emissions if that demand is not met exclusively by renewable energy.

The rapid deployment of renewables, coupled with energy efficiency, can achieve around 90 per cent of the emission reductions in the energy sector needed by 2050, while at the same time advancing economic growth and development. Energy-related CO_2 emission growth from 2014 to 2016 was flat, but estimated emission levels increased by 1.7 per cent in 2018 to reach a historic high of 33.1 Gt, with the power sector accounting for nearly two-thirds of the emissions growth (IEA, 2019).

Currently, the world is not nearly on course to meet the well below 2°C climate objective, and even further from attaining the aspirational target of limiting warming to 1.5°C. Only through the consistent use of renewable energy and energy efficiency measures, including the implementation of SDG 7, can SDG 13 be met. Therefore, we need to create a framework to massively expand renewable energy and widely integrate energy efficiency measures.

Short term:

We want countries to establish long-term ambitious renewable energy and energy efficiency targets by:

- Setting up new initiatives as well as strengthening existing initiatives, that link energy and climate, stressing the importance of renewable energy and energy efficiency to limit climate change to 2°C (and ideally to 1.5°C)
- Setting up the enabling framework and policies needed to massively scale up renewable energy and promote energy efficiency, which will inter alia uplift private investments
- Aligning energy infrastructure investments with 1.5°C climate scenarios and ensuring their resilience to the expected impacts of climate change
- Revising countries' Nationally Determined Contributions (NDCs) under the Paris Agreement and including ambitious goals for renewable energy and energy efficiency in each NDC—quantitative goals as well as clear policy measures in particular, integrating national, sub-national and local level goals as well as the energy end-use sector

Mid term:

We want to achieve massive renewable energy expansion—and growth in energy efficiency—internationally. This requires the revision of SDG 7 indicators for 2030 and beyond:

- Integrating measurement of 'Energy Access for Productive Uses' (for low-emission economic development)
- Setting a renewable energy target for Agenda 2030 sufficient to achieve the Paris Agreement's climate goals
- Promoting measures to achieve the SDG 7 target for Energy Efficiency

Long term:

We want to reach close to 100 per cent decarbonisation of economies by 2050 through:

- Fostering innovation and digitalisation
- Promoting sector coupling: efficient use of electricity from renewable energy in heating, cooling, and the transport sector
- Applying not only top-down but also bottom-up approaches to ensure a just energy transition

Introduction

Energy is essential for any economic and social development. However, burning fossil fuels to generate energy is the biggest driver of climate change. It is a major cause of the increasing concentration of greenhouse gases in the atmosphere and the associated negative effects on our ecosystems. A sustainable energy supply must therefore, above all, be climate-friendly. We must overcome our dependence on fossil fuels and at the same time develop energy systems that provide people with climate-neutral energy in line with their needs.

Universal access to affordable, reliable, sustainable, and modern energy (SDG 7) is closely interlinked with measures to implement the National Determined Contributions (NDCs) of the Paris Accord. Only through the consistent use of renewable energy and energy efficiency measures, including the implementation of energy access for all in accordance with SDG 7, and hence the immediate fight against climate change and its effects, can SDG 13 be met. Without timely and effective implementation of a global energy transition, the SDG 13 sustainability objective will remain unattainable.

SDG 7 is furthermore of outstanding importance for achieving other sustainability goals of Agenda 2030, including but not limited to:

- for poverty reduction in all dimensions (SDG 1);
- for the promotion of productive employment and decent work for all due to inclusive and sustainable economic growth (SDG 8);
- for access to effective social, health and education systems (SDG 3, SDG 4); and
- for meeting the basic human needs such as adequate and safe housing (SDG 11) as well as safe drinking water and adequate sanitation (SDG 6).

The increased use of renewable energy also contributes to reducing the contamination of air, water, soil and land with hazardous chemicals (SDG 6, 14 and 15). It is also a key factor in the development of sustainable production and consumption (SDG 12).

Climate related effects of the universal access to affordable, reliable and modern energy (SDG 7.1)

According to International Energy Agency's (IEA) Energy Access Outlook 2017, providing energy for all generally does not have a significant impact on energy demand. The "Energy for All" case accounts for an additional increase of just 0.23 per cent in global energy demand in 2030. Accordingly, achieving universal energy access is not in conflict with achieving climate objectives at a first glance.

However, energy and cooking access in this sense refers principally to the very basic energy services, such as the provision of lighting. At the same time, productive uses of electricity that go beyond the consumption for private household applications, for example in a small family-run workshop or larger commercial energy uses, are expected to catalyse an increase in economic development across all sectors. Systematic encouragement of productive uses, as well as its adequate monitoring, leads to exorbitantly higher energy demand and consequently corresponding GHG-emissions if not met exclusively by renewable energy.

Climate related effects due to deployment of the conventional power sources (SDG 7.2)

SDG 7.2 calls for a substantial increase of renewable energy share in the global energy mix by 2030. Because energy accounts for two-thirds of total greenhouse gas emissions and 80 per cent of CO_2, any

effort to reduce emissions and mitigate climate change must include the energy sector.

The UN's "Sustainable Development Goals Report" (2018) indicates an only modestly growing share of renewables in final energy consumption (from 17.3 per cent in 2014 to 17.5 per cent in 2015). Yet only 55 per cent of the renewables share was derived from modern forms of renewable energy. The pace of global capacity additions in modern renewable energy, such as solar-PV and wind, is already not enough to successfully meet the goals of SDG 7.2, and even more so to comply with the Paris' climate goals. Based on current trends, the renewables share is expected to only reach 21 per cent by 2030. The recently published IPCC report on "Global Warming of 1.5°C" determines that in "In 1.5°C pathways with no or limited overshoot, renewables are projected to supply 70–85 per cent (interquartile range) of electricity in 2050."

Against this backdrop, urgent policy action is needed to scale up electricity generation capacity based on renewable energy as well as application of renewable energy in the end-use sectors. We need to refrain from the mode of modest increases immediately in favor of disruptive upscaling of renewable energy and start to think big for the future wellbeing and viability of humankind. At the same time, an interpectoral dialogue (Water, Energy, Food Security Nexus) is needed to increase renewable energy potential without negative impacts in other sectors (and their SDGs).

Emissions from the energy sector due to primary energy intensity and inefficient applications in the end use sector (SDG 7.3)

Goal 7.3 strives for doubling the global rate of improvement in energy efficiency by 2030. Improvements in global primary energy intensity, the ratio of energy used per unit of GDP, are critical to limiting emissions from fuel combustion. Furthermore, changes in energy demand are associated with improvements in energy efficiency and behavior change. According to the SDG7 Tracking Report (2018), the current rate of global energy efficiency progress falls short of the annual rate of 2.7 per cent that is needed between now and 2030. IRENA's Roadmap to 2050 report (2018) states that by 2050 the global economy needs to reduce energy intensity by 2.8 per cent per year on average, compared with the 1.8 per cent annual fall achieved in recent years.

In order to achieve this decline, urgent fiscal measures to promote energy efficiency and efficient energy applications in the end use sector are needed.

Linking renewable energy and energy efficiency to NDCs.

NDCs set out the actions that countries plan to undertake to achieve the Paris agreement's objectives, focused on limiting the rise in average global temperatures to well below 2°C, ideally to 1.5°C. NDCs will be revised or updated by 2020, and every 5 years thereafter—with each revision aimed at being more ambitious than the previous one.

According to IRENA (2017), as of today, **most countries have included renewable energy in their NDCs.** Of the 194 Parties to the UNFCCC that submitted NDCs, 145 referred to renewable energy action to mitigate and adapt to climate change, while only 109 Parties included some form of quantified target for renewables.

Most NDCs treat renewable energy deployment primarily as a mitigation measure. However, renewable energy deployment can contribute to adaptation efforts, for example, by promoting the diversification of the power supply and by building resilience through improved energy access. Larger numbers of countries have the opportunity to broaden the scope of their future NDCs and to include renewable energy targets as part of their adaptation strategies.

Only 53 countries mention building energy efficiency in their NDCs, indicating its importance to our climate future. Government policies and measures (e.g. energy efficiency Standards for Appliances, Building Codes, and Vehicle Emission Standards), including mandatory energy efficiency regulations, can

drive many improvements in energy. Nevertheless, energy efficiency is still not broadly seen as one of the major measures to combat climate change in the NDCs. Energy efficiency and energy demand reduction are fundamental to reach renewables based energy supply.

Recommendations

Current commitments to renewable energy and energy efficiency are not sufficient to achieve the Paris Accord and the 2030 Sustainable Development Agenda, therefore governments should implement radical measures. There a numerous potential synergies and trade-offs between climate action and sustainable development. These synergies and trade-offs can still be managed in order to deliver the best possible outcome.

In the short term, countries should establish ambitious renewable energy and energy efficiency targets.

- Set up new initiatives as well as strenghthen existing initiatives, which link energy, climate, and hence sustainable development, stressing the importance of renewable energy and energy efficiency to achieve growth and to limit climate change to 2°C, ideally to 1.5°C

Initiatives with a strong governmental support promoting national, subnational, and local action can raise attention and mobilize substantial funding for the common goal. Such initiatives as African Renewable Energy Initiative (AREI) activate inclusive effort to accelerate and scale up the harnessing of the continent's huge renewable energy potential.

- Set up the enabling framework and policies to massively scale up renewable energy and energy efficiency and uplift private investments in this area, aligning energy infrastructure investments with 1.5°C

There are numerous direct and indirect fiscal mechanisms for upscaling of renewable energy and energy efficiency. Capacity building and skills development should go hand in hand with this scale up.

Carbon pricing. The carbon price stimulates clean technology and market innovation, fueling new, low-carbon drivers of economic growth. There are two main types of carbon pricing, namely Emission Trading System (ETS) and Carbon Tax. The choice of the instrument should depend on national and economic circumstances and ensure that the pricing does not penalize the poorest population.

As in February 2019, 46 national jurisdictions and 28 subnational jurisdictions are putting a price on carbon.57 carbon-pricing initiatives are implemented or have been scheduled for implementation (Carbon Pricing Leadership Coalition, 2019). These carbon-pricing initiatives would cover 11 gigatons of carbon dioxide equivalent ($GtCO_2e$) or about 20 per cent of global GHG emissions.

Efforts to phase out fossil fuel subsidies. Fossil fuel subsidies are still substantial, and even growing, and have adverse effects, according to climate friendly incentive structures. According to IEA WEO 2018, the value of global fossil-fuel consumption subsidies in 2017 is estimated at more than US$ 300 billion, significantly higher than the estimate for 2016, which was around US$ 270 billion. Strategic alliances for phasing out of fossil fuel subsidies, such as the World Bank's Energy Subsidy Reform, can facilitate the path towards sustainable future.

The direct mechanisms as well as complementary policies to uplift the renewables and energy efficiency include:

- renewable energy support mechanisms, such as tendering and net metering
- performance standards for buildings, including for lighting, windows, ventilation, and heating and cooling systems
- fiscal instruments such as tax exemptions or tax breaks for appliances and energy efficiency improvements

- renewable portfolio standards, which require electricity providers to include a minimum share of clean energy in their output mix
- trade policies, e.g. cutting tariffs on green goods such as solar panels, wind turbines, and energy-efficient light bulbs.

Making concessional finance available at a greater scale to developing countries through MDBs and other channels is furthermore important. According to IRENA (2017), the decarbonisation of the energy sector would require a total of US$ 25 trillion to be invested in renewables up to 2050, or on average more than US$ 700 billion per year.

- Revise NDCs and include ambition goals for renewable energy and energy efficiency in each NDC, including quantitative goals and clear policy measures

According to IRENA (2017), the inclusion of renewable energy components in NDCs can help attract additional investment in the renewable energy sector. In fact, over US$ 1.7 trillion would be needed by 2030 to implement renewable energy targets contained in NDCs.

Planning and implementing NDCs requires coordination across sectors, complex laws and policies, new sources of finance, and sophisticated monitoring and evaluation. The NDC Partnership has a unique insight into the successes and challenges as countries plan and implement their NDCs. Energy experts of NDC partnerships, such as IRENA and the Word Bank, can facilitate the dialogue and promote smooth integration of renewable energy and energy efficiency targets across all NDCs. They can help broadening the scope of renewable energy components in NDCs by including renewable energy targets for end use sectors (transport, heating and cooling) as well as by including renewable energy targets for adaptation.

National, sub-national and local level goals as well as the energy end-use sector should be integrated into NDCs, Inclusion of renewable energy into countries' mitigation strategies can build up more resilient systems.

In the short- to midterm, both international community as well as national governments should further promote integration of climate change and sustainable development goals as those are inextricably linked.

In the mid term, the international community should revise SDG 7 indicators for 2030 and beyond by creating more ambitions targets linked to other SDGs. The mid-term measures to fully exploit the contribution of the energy sector to achieve Paris Accord and Agenda 2030 goals forsee the revision of SDG 7 goals. For 7.1, it is essential to integrate productive use, hence to abstract from the idea of having energy access only as a key for economic development. For 7.2, the target for renewable energy deployment should be set. For 7.3, the pathways to achieve an adequte energy efficiency supply should be displayed.

In the long term, those efforts should strive for 100 per cent decarbonization of economies by 2050. In the long run we should start **thinking big**: climate neutral development pathways are feasible and competitive. Low Carbon resilient infrastructure is now more cost effective than conventional infrastructure and avoid risks of stranded assets. 100 per cent decarbonisation is technically and economically viable and will require innovation, a higher degree of digitalisation, and sector coupling by integration of renewable energy into the transport, heating, and cooling sectors coupled with energy storage. Intersectorial planning is the key for achieving the Agenda 2030 and thus, we need to consider the close linkages between water, energy, and food security for sustainable development.

In order to **leave no one behind**, not only the top down but also bottom up pathways for **just transition** should be developed.

The Paris Agreement invites Parties to formulate and communicate long-term low greenhouse gas emission development strategies by 2020. Against the pressing need outlined in this policy brief, the argument could be made that rather than developing abstract high-level national strategies, it is most important to focus

on specific sectors, working toward a single end point—for example, a decarbonised energy sector in 2050.

Beyond NDCs, clear long-term strategies aligned with the Paris goals are key to avoid locking in high-carbon technologies and losses associated with stranded assets. 2050 pathways are not forecasts but backcasts that establish a 2050 objective and ask what steps are needed to get there. Backcasting helps to indicate transformational decisions and significant barriers.

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HIGH-LEVEL POLITICAL FORUM
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7 AFFORDABLE AND CLEAN ENERGY