

**Input
by the International Renewable Energy Agency
to the HLPF 2020**

“Accelerated action and transformative pathways: realizing the decade of action and delivery for sustainable development”

Promoting affordable, reliable, sustainable and modern energy sources, while harnessing the potential of decentralized renewable energy solutions in order to close the energy access gap and reshaping global energy system in order to achieve transition to net-zero CO₂ emissions by mid-century, including by accelerating renewable energy deployment, promoting electrification of the end-user sectors with renewable energy as well as promoting energy efficiency. Strengthening the interlinkages between energy and other SDGs to maximise socio-economic and environmental outcomes.

- 1. Key policies and measures to ensure “accelerated action and transformative pathways” for realizing the decade of action and delivery for sustainable development**
 - a. Critical gaps in implementing the 2030 Agenda within the area of responsibility of the intergovernmental body (bearing in mind interrelations with other goals and targets)**

Sustainable Development Goal 7 (SDG 7) is the first-ever UN goal on energy. Since its adoption in 2015, the energy landscape has witnessed rapid and far-reaching changes. Most notably, renewable energy has become the fastest-growing energy source and the cheapest one in most parts of the world, as a result of cost reductions, innovation and enabling frameworks. Renewable energy is also now a key solution to address climate change and our most practical climate action tool if we want to reach zero net emissions by 2050.

The International Renewable Energy Agency (IRENA) together with four other international organizations – the International Energy Agency (IEA), the United Nations Statistical Department (UNSD), the World Bank (WB) and the World Health Organisation (WHO) – have been appointed by the United Nations (UN) to annually track progress in meeting SDG 7 along its different indicators and targets. According to the 2019 *Tracking SDG 7: Energy Progress Report*, the world is making progress towards achieving SDG 7 but will fall short of meeting the targets by 2030 at the current rate of ambition.¹

¹ IEA, IRENA, UNSD, WB, WHO (2019), *Tracking SDG7: The Energy Progress Report*, International Bank for Reconstruction and Development / The World Bank, Washington DC. Please note that the 2020 Tracking SDG 7 Report will be released in May 2020 and will include updated information and numbers on SDG 7 progress.

- There are **840 million people living without electricity access** today. A projected 650 million people are likely to remain without access to electricity in 2030, and 9 out of 10 such people will be in Sub-Saharan Africa. (SDG 7.1.1)
- There are **2.9 billion people lacking access to clean cooking**. The business as usual pathway will not meet the universal access goal by 2030. Based on the projections of current and planned policies 2.2 billion people will still be dependent on inefficient and polluting energy sources for cooking. (SDG 7.1.2)
- 17,5% of total final energy consumption comes from renewables. If the traditional uses of bioenergy energy are excluded, **the share of renewables in the final energy consumption amounts solely to 10.2%**. The share of renewables in electricity consumption increased by 1 percentage point to 24% in 2016. This was the fastest growth since 1990, more than double that of 2015. Despite remarkable progress over the past decade, renewables still face persistent financial, regulatory, and sometimes technological barriers. Policies have focused on renewable electricity so far, and fewer countries have implemented policies for renewables use for heating and transport. (SDG 7.2)
- The current rate of global energy efficiency progress **falls short of the annual rate of 2.7%** that is needed between now and 2030. (SDG 7.3)

Given the strong synergies between the 2030 Agenda and the Paris Agreement, it is worthwhile noting that countries are meant to progressively increase the ambitions of their **Nationally Determined Contributions (NDCs) in 2020** and every five years thereafter as part of the “ratchet mechanism” of the Paris Agreement. This includes expanding the ambitions on renewable energy deployment. In this regard, IRENA estimates that current electricity targets of the NDCs overlook 59% of the potential for renewable electricity deployment in line with the Paris Agreement by 2030. NDCs also do not reflect the actual growth of renewable power. Implementing current NDCs would only translate into annual capacity growth of 4% for 2015–2030, even though annual renewable power growth already averaged 5.9% in 2010–2014. With current deployment trends, the 3.2 TW foreseen in current NDC power targets for 2030 would already be realised by 2022.²

b. Priority measures to:
i. accelerate action:

Closing the energy access gap. Connecting the last of the unserved populations may be more challenging than past electrification efforts since many such populations live in remote rural areas. Decentralized reliable renewable energy solutions - including off-grid solutions - provided at an affordable rate can contribute towards closing the electrification gap. IRENA estimates that some 133 million people accessed lighting and other electricity services using off-grid renewable energy solutions in 2016.³ Its data also shows that 60 per cent of new electricity access can be met by renewables in the next decade with stand-alone and mini-grid systems providing the means for almost half of new access. Scaling-up the deployment of these solutions would require to:

- Provide delivery models that make technologies and modern energy services accessible, affordable and sustainable. The models should be adapted to end-users’ needs as well as their local socio-economic conditions and current and projected demand for electricity services;
- Catalyze financing through innovative instruments combining public and private financing in large volumes;
- Mainstream policy and regulatory frameworks that build a conducive environment for growth;

² IRENA (2019), *NDCs in 2020: Advancing renewables in the power sector and beyond*, International Renewable Energy Agency, Abu Dhabi

³ IRENA (2018a), *Off-grid Renewable Energy Solutions: Global and Regional Status and Trends*, International Renewable Energy Agency, Abu Dhabi

- Foster technology innovations which reduce costs, while enhancing reliability and improving livelihoods;
- Build capacity across the off-grid value chain and foster entrepreneurship.⁴

Accelerated renewables deployment in order to achieve the transition to net-zero CO₂ emissions by mid-century. The accelerated deployment of renewables, combined with deep electrification and increased energy efficiency, can achieve over 90% of the energy-related CO₂ emissions reductions needed by 2050 to reach the well-below 2 °C objective of the Paris Agreement:

- o Electrification with renewable power, together make up 60% of the mitigation potential;
- o if the additional reductions from direct use of renewables are considered, the share increases to 75%;
- o when adding energy efficiency, that share increases to over 90%.

To achieve this reduction by 2050, IRENA's Global Energy Transformation Roadmap (GET) estimates that two-thirds of the world's energy should be renewable, and that renewable electricity must become the world's main energy source, moving from the current 20% to 50% in 2050 of total energy use. Renewable energy would need to be deployed six times faster than current rates.⁵

The year 2020 represents a significant milestone in global efforts to cut energy-related carbon dioxide (CO₂) emissions. As countries review and update their NDCs, they could simultaneously raise their ambitions to scale up renewable energy and advance energy transformation plans. The NDC round this year offers an important chance to strengthen targets for renewables in the power sector and beyond.

NDCs do not reflect the actual growth of renewable power. Implementing current NDCs would only translate into annual capacity growth of 4% for 2015–2030, even though annual renewable power growth already averaged 5.9% in 2010–2014. NDC power targets even fall short of countries' existing strategies and plans. Only 85 countries have included unconditional renewable power pledges in their current NDCs – compared to 135 with non-NDC domestic renewable power targets (either national or sub-national). While current NDCs would result in 3.2 TW of global renewable installed capacity at the end of 2030, a higher deployment level, amounting to 7.7 TW (or 3.3 times current global capacity), could be achieved in 2030 in a cost-effective way and with considerable socio-economic benefits globally.

In terms of investments, USD 3.2 trillion – representing about 2% of gross domestic product (GDP) worldwide – would have to be invested each year to achieve this low-carbon energy transformation. This is about USD 0.5 trillion more than under current plans:

- Investment to build up renewable power generation capacity needs to be twice as high as currently foreseen, reaching USD 22.5 trillion by 2050;
- Energy efficiency requires investments of USD 1.1 trillion per year, more than four times their present level.

To stay below the 1.5°C limit recommended by the IPCC, investments of nearly USD 18.6 trillion will have to be switched from fossil fuels to low-carbon technologies between now and 2050. Through informed investments starting today, countries and communities can scale up renewables cost-effectively, make steady gains in energy efficiency and achieve extraordinary synergies through electrification.⁶

⁴ IRENA (2019), *Off-grid renewable energy solutions to expand electricity access: An opportunity not to be missed*, International Renewable Energy Agency, Abu Dhabi

⁵ IRENA (2019), *Global energy transformation: A roadmap to 2050 (2019 edition)*, International Renewable Energy Agency, Abu Dhabi

⁶ IRENA (2019), *Transforming the energy system – and holding the line on rising global temperatures*, International Renewable Energy Agency, Abu Dhabi

Therefore, decarbonising the global energy system requires swift and decisive policy action in particular to:

- Set more ambitious renewable energy targets, within and beyond the power sector (energy efficiency, electrification, energy flexibility measures) in the 2020 revision of the NDCs;
- Establish long-term energy planning strategies, define targets and adopt policies and regulations that promote and shape a decarbonised energy system. There needs to be better alignment and co-ordination between energy and climate policies. Setting a long-term strategy for the energy transition that considers both climate and energy needs is critical, considering action plans in the power sector and in each end-use sector (coupled with the SDGs and the NDCs);
- Promote policies which create the right conditions for investments not only in energy efficiency and renewable energy supply but also in key enabling infrastructure;
- Foster close co-operation between the public and private sectors, including the financing schemes;
- Promote systemic innovation by creating a regulatory environment that enables smarter energy systems through digitalization, promote the coupling of sectors through greater electrification of the end-user sector. This innovation needs to be expanded beyond technology and into markets, regulations, new operational practices in the power sector and new business models;
- Implement ambitious action at the national and sub-national levels;
- Scale up the investments in the clean energy sector while exploiting the system-wide synergies between energy and the broader economy and shifting the investments from the fossil fuel sector.

ii. **ensure transformative pathways to realize the decade of action for achieving the 2030 Agenda**

A sustainable, affordable, secure and inclusive energy system is critical to ensure transformative pathways to achieve the whole 2030 agenda. Without sustainable energy many SDGs like poverty reduction (SDG 1); access to effective social, health and education systems (SDG 3, SDG 4); gender equality (SDG 5); promotion of productive employment (SDG 8); safe drinking water and adequate sanitation (SDG 6) as well as adequate and safe housing (SDG 11) will not be achieved. 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) and to addressing climate change (SDG 13). It is also a key factor in the development of sustainable production and consumption (SDG 12). Below are some examples which illustrate the inter-linkages between SDG 7 and the SDGs above mentioned.

Energy and poverty reduction. Increasing access to affordable, reliable modern energy for productive uses such as in the agricultural sector can increase incomes, enhance resilience to shocks and catalyze socio-economic development, bearing in mind that most of the world's poor people live in rural areas and rely on farming, livestock, aquaculture, and other agricultural work.⁷

Energy and employment. The global shift to renewables is creating job opportunities. The sector now employs at least 11 million people worldwide, including over 100 000 through off-grid solar deployment in Sub-Saharan Africa.⁸ According to IRENA, the energy transition results in a total renewable energy employment of 42 million jobs by 2050.⁹

Energy and health. With over a billion people globally served by health facilities without access to electricity, off-grid renewables can deliver reliable, affordable and sustainable energy to power medical

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⁸ IRENA (2019), *Renewable Energy and Jobs Annual Review 2019*, International Renewable Energy Agency, Abu Dhabi

⁹ IRENA (2020), *Measuring the socio-economics of transition: Focus on jobs*, International Renewable Energy Agency, Abu Dhabi

devices (e.g., vaccine refrigeration; surgical, laboratory and diagnostic equipment) and to support the provision of basic amenities (e.g., light, communications, water).¹⁰

Energy and gender equality. The global energy transition offers an unprecedented opportunity to transform the energy sector in all aspects. While opportunities exist to improve gender balance and make greater use of women's skills, IRENA findings show that women already hold 32% of jobs in renewables compared to 22% in oil and gas.¹¹ At the same time, women represent only 21% of the wind energy workforce.¹² Furthermore, the transformative effect on women of access to affordable, reliable and sustainable modern energy is well-known. Switching to modern fuels can reduce the amount of time spent collecting wood, time spent on manual agricultural activities, free up time for other economic activities, with the benefits accruing mostly to women.¹³

Energy and displacement. Refugees and displaced people mostly depend on the energy that is unsustainable and can harm their health and well-being. Sustainable energy based on renewables, in contrast, bridges the gap between humanitarian response and development, enhancing the well-being of displaced people and communities.¹⁴

There are vast opportunities offered by renewable energy, in particular off-grid solutions, in not only meeting growing energy demand, but also stimulating economic growth, low-carbon development, and achieving social inclusion. Given these opportunities, governments need to better harness the cross-sector linkages of renewable energy to meet other SDGs. Dedicated targeted initiatives, best practices and multi-stakeholder platforms can further help harness these interlinkages.

2. Contribution of the intergovernmental body to accelerated action and transformative pathways and realizing the decade of action and delivery for achieving the 2030 Agenda within its area of responsibility (including its cooperation with ECOSOC and other intergovernmental bodies)

With close to universal membership, IRENA is the lead intergovernmental organization on energy transformation supporting countries to transform their energy systems and accelerate renewables deployment. IRENA's work is aligned with a diverse set of objectives of its member countries, including development imperatives, sustainable growth, climate change, energy security, energy poverty, and local pollution considerations.

IRENA's mission set out in the Medium-term Strategy (MTS) 2018-2022 calls for the Agency *"to play a leading role in the ongoing transformation of the global energy systems as a centre of excellence for knowledge and innovation, a global voice of renewable energy, a network hub for all stakeholders and a source of advice and support for countries"*.

In January 2020, IRENA adopted its Work Programme and Budget 2020-21. In line with the drive to realize the decade for action, **IRENA seeks to strengthen support to its Members through greater impact and action on the ground** particularly in terms of mobilizing investments and finance.

The MTS strategic objectives below provide orientation to the Work Programme and Budget 2020-21.¹⁵

¹⁰ IRENA (2019), *Off-grid renewable energy solutions to expand electricity access: An opportunity not to be missed*, International Renewable Energy Agency, Abu Dhabi

¹¹ IRENA (2020), *Renewable Energy: A Gender Perspective*, International Renewable Energy Agency, Abu Dhabi

¹² IRENA (2020), *Wind Energy: A Gender Perspective*, International Renewable Energy Agency, Abu Dhabi

¹³ IRENA (2019), *Off-grid renewable energy solutions to expand electricity access: An opportunity not to be missed*, International Renewable Energy Agency, Abu Dhabi

¹⁴ IRENA (2019), *Renewables for refugee settlements: Sustainable energy access in humanitarian situations*, International Renewable Energy Agency, Abu Dhabi

¹⁵ IRENA (2020), *Work Programme and Budget for 2020-2021*, International Renewable Energy Agency, Abu Dhabi

- i. *Centre of Excellence for Energy Transformation: Empower effective policy and decision-making by providing authoritative knowledge and analysis on renewables-based energy transformation at global, national and sectoral levels.*

IRENA is a trusted source of transparent data, widely used by Members, the private sector, international organisations, media outlets and others, inter alia including the data **on jobs, power generation costs, patents and standards, renewable potentials, international public financial flows to developing countries in support of renewable energy, which** is updated on the annual basis. This data also serves as the basis for the Agency's knowledge products, advisory services, demonstrates the business case of renewables and facilitates work on the ground. This work is continuously fed into the **tracking of SDG 7** on energy, where IRENA serves as co-custodian of the energy goal.

IRENA's **Renewables Outlook develops medium- and long-term global and regional scenarios, aligned with global development and climate objectives.** IRENA also continues to explore and strengthen the interlinkages between energy and other SDGs through its analytical work. IRENA furthermore systematically provides ground-breaking analysis **on the socio-economic footprint of renewables, innovation landscapes in technology, business models, market design as well as global landscape in finance.**

- ii. *Global Voice of Renewables: Shape the global discourse on energy transformation by providing relevant timely, high-quality information and access to data on renewable energy.*

IRENA is the authoritative voice of renewable energy, its business case and its potential for a just transition. The agency influences the global energy discourse and promotes cross-sectoral thinking through its analytical work at the global, sub-regional, regional and national level. In 2020, countries have an opportunity to communicate new or **updated NDCs.** Alignment of NDCs with energy strategies and long-term plans is required for further progress. IRENA provides the knowledge and tools to assist Members in this regard, working in close collaboration with UNDP under its Climate Promise, which supports 100 countries in the revision of their NDCs.

Under this objective, IRENA systematically feeds into discussions by providing analysis on **gender and renewable energy, NDCs and renewable energy targets, the geopolitics of the energy transformation.** Analytical briefs, guidelines and working papers further elaborate on such topics as **bio-energy, hydrogen, hydropower, off-shore wind, VRE integration, auctions, distributed generation, cities, access and electrification planning.**

- iii. *Network Hub for Energy Transformation: Provide an inclusive platform for all stakeholders to foster action, convergence of efforts and knowledge sharing for impact on the ground.*

Supported by rigorous analyses, objective information and timely data, IRENA devotes considerable efforts to translating its knowledge into targeted action on the ground.

IRENA's work is guided by regional action plans and initiatives, developed through iterative processes and wide consultations. These include the Communiqué on the Africa Clean Energy Corridor and the West Africa Clean Energy Corridor (WACEC), the Economic Community of Central African States (ECCAS) Renewable Energy Roadmap, the ASEAN-IRENA Memorandum of Understanding, the Astana Communiqué on Accelerating the Uptake of Renewables in Central Asia, the Abu Dhabi Communiqué on Accelerating Renewable Energy Uptake in Latin America, the Clean Energy Corridor for Central America (CECCA), the Pan-Arab Clean Energy Initiative (PACE), the Abu Dhabi Communiqué on Accelerating the Uptake of Renewables in South East Europe (SEE) and RE Solutions for Mountainous Communities in Hindu Kush Himalayas.

Collaboration with regional institutions and entities is central to IRENA activities as they are key partners for the organization of regional and sub-regional Forums. These include the Arab League, ASEAN and its Centre for Energy (ACE), African Union Commission, Central American

Integration System (SICA), Energy Community, the European Union, International Centre for Integrated Mountain Development (ICIMOD), Latin American Energy Organization (OLADE) and Regional Centre for Renewable Energy and Energy Efficiency (RECREEE), among others.

Since April 2019 IRENA has strengthened its partnership with the **United Nations** concluded numerous MOUs with a range of UN Agencies and entities (UNDP, UNFCCC, UN DESA, UN OHRLLS, UNCCD, UNIDO, ESCWA, ESCAP and UN HABITAT) and actively participated in the Climate Action Summit convened by the UN Secretary-General. With the strong support of IRENA Members, the **SIDS Lighthouses Initiative** is a central pillar and implementing framework of the SIDS Climate Package and its Energy Transition Deliverable launched at the summit. As part of this package, IRENA's future work with SIDS will prioritise the enhancement of NDCs and will continue to work toward the implementation of the S.A.M.O.A. Pathway.

IRENA is an active member of the multi-stakeholder Technical Advisory Group on SDG7, which was convened by UN DESA to facilitate stocktaking of progress to-date and to seek advice on the technical preparation of the review of SDG 7 and its interlinkages with other SDGs at HLPF.

The creation of collaborative platforms for engagement with the industry and other non-governmental stakeholders is essential to ensure the sustained impact of IRENA's work. In this regard, the **IRENA Coalition for Action** forms a key international network, gathering renewable energy industry associations, private sector companies, civil society and research organisation, to discuss industry trends, determine actions, share knowledge and exchange best practices with the vision to drive the global energy transition in line with SDG7.

Just recently, IRENA launched a **Sustainable Energy Jobs Platform** at its 2020 Assembly meetings. The main purpose of the Platform is to coordinate relevant activities with partners, improve data quality and underlying methodologies, explore the policy implications of a just transition, and share experiences and best practices.

Under this mandate, IRENA will continue working on the **assessment of renewable energy in agri-food chains, country-specific assessments for electrification of rural health centers, and partnerships to promote the deployment of decentralized renewable energy solutions.**

- iv. *Source of Advice: Support country-level decision-making to accelerate the renewables-based transformation of their energy systems, advance strategies to decrease global emissions and achieve sustainable development.*

Increasing renewables investments through developing bankable projects and mobilising finance is a key priority for IRENA. In this regard, the Agency has developed a range of tools, methodologies and platforms to support renewable energy project facilitation. Its site assessments help characterise, qualify and screen potential sites, which saves project development costs by addressing site identification risk. IRENA's Project Navigator provides capacity building and support to developers to create investment-ready projects. These tools were used to support the work of the IRENA/Abu Dhabi Fund for Development (ADFD) Project Facility which provide concessional loans to renewable energy projects in developing countries.

Going forward, IRENA will consolidate its project facilitation work within a new division in the Secretariat, the **Project Facilitation and Support (PFS)** division. The **Climate Investment Platform (CIP)** is a new initiative launched by IRENA, UNDP, Sustainable Energy for All (SE4All), in cooperation with the Green Climate Fund in September at the UN Secretary's General Climate Summit. It aims to connect low-carbon energy projects with available climate finance to advance the global energy transformation and support the implementation of ambitious NDCs. IRENA's contribution to CIP has entered its operational phase. Partners have been invited to join the platform, and projects seeking financing have been invited to register

with it. IRENA will convene Investments Forums in fourteen sub-regional clusters to connect project developers with investors and financial institutions.¹⁶

Given the multifaceted nature of the energy transition, it is important to support Members in maximising its benefits. Upon request, **capacity building and technical assistance** will also be provided for the development and implementation of NDCs, as well as Members' sustainable development agenda, for a just transition that leaves no one behind.

3. **Selected recommendations for accelerating progress and moving on transformative pathways for realizing the decade of action, for possible use in drafting the HLPF declaration.**
 - I. **Intensify efforts to accelerate the implementation of SDG 7 through scaling-up decentralized off-grid renewable energy solutions** to close the energy access gap, by promoting adequate delivery models, catalyzing financing through innovative instruments, adopting enabling policies and regulations, building capacity across the value chain and fostering entrepreneurship.
 - II. **Raise the level of ambition to scale up renewable energy deployment** through long term plans that align climate and energy objectives and through strengthened targets for renewables in revised and enhanced NDCs.
 - III. **Increase renewable energy investments** through support to sound enabling policy frameworks, development of bankable projects, risk mitigation instruments and match-making as provided in initiatives such as the Climate Investment Platform (CIP).
 - IV. **Adopt proactive policies and measures to ensure a just transition and maximize the socio-economic benefits of renewables** by strengthening interlinkages between sustainable energy and other SDGs - through a more holistic approach to energy policy and greater collaboration across sectors like employment, health, agriculture, and water - as well as strengthening cooperation at the regional and sub-regional levels to promote innovation, investment, and capacity building.
 - V. **Mainstream gender in energy sector frameworks at all levels** - including policy making, programme design and project implementation - to harness the opportunities of greater gender equality that come with the transition to a renewables-based energy system.

¹⁶ See IRENA for CIP at: <https://www.irena.org/irenaforcip>