



International Renewable Energy Agency

4 October 2020

Twentieth meeting of the Council
Abu Dhabi, 3-4 November 2020

**Annual Report of the Director-General
on the Implementation of the
Work Programme and Budget for 2020-2021**



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Introduction

This Report provides an account of the progress IRENA has made in the implementation of the Work Programme and Budget 2020-2021¹. To streamline the Report, the Secretariat has developed a revised structure highlighting key developments, sampling IRENA's work so far in 2020, and drawing out the interlinkages across IRENA's broad Work Programme.

Energy transitions, guided by comprehensive policies to foster the transformative decarbonisation of societies, can drive socio-economic shifts. With only ten years left until the 2030 deadline for the achievement of the Sustainable Development Goals (SDGs) and a 2020 target date for governments to submit revised and enhanced Nationally Determined Contributions (NDCs) in line with the Paris Agreement, the year was meant to inaugurate a 'Decade of Action' – a last push towards creating a safe and sustainable world for current and future generations.

The outbreak of the COVID-19 pandemic, however, has created a multifaceted crisis of unprecedented levels. The loss of life, economic downturn and ongoing uncertainty has profoundly affected all corners of the world. While the future is impossible to predict, a massive recovery effort is underway. Policy measures and investments for stimulus and recovery can drive a wider structural shift, fostering national and regional energy transition strategies as a decisive step in building resilient economies and societies. This can be achieved by linking the short-term recovery to medium and long-term strategies.

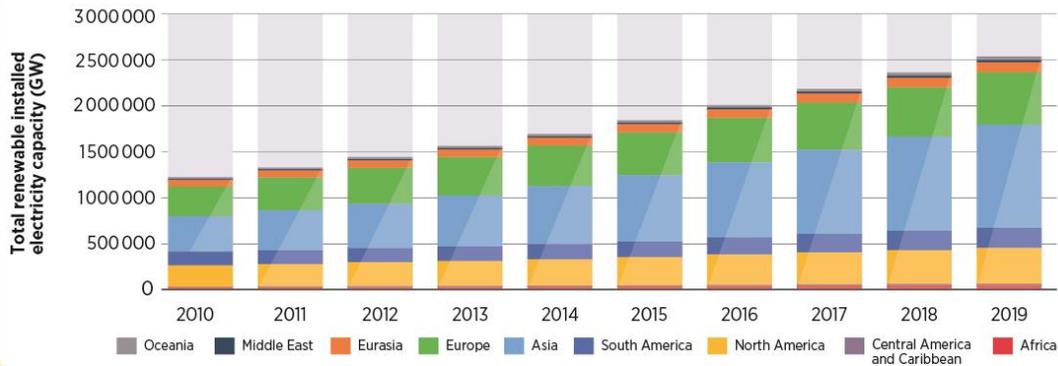
The impacts of the global pandemic is yet to be seen, but the recovery will largely depend on the steps governments will take in the coming three years. Participants in the energy transition are called to adapt their working practices not only to maintain momentum but to propel efforts towards a just energy transition. The recovery phase can indeed either trigger a decisive shift toward a sustainable future or lock in the past.

While IRENA's methods of work have been, and will continue to be, affected by the pandemic, the Agency's commitment to the realisation of its Work Programme, engagement with its Members and partners, and promotion of the energy transitions, especially during these critical times, has remained constant. The analysis that follows of the multidimensional work the Agency has undertaken this year is evidence to that effect.

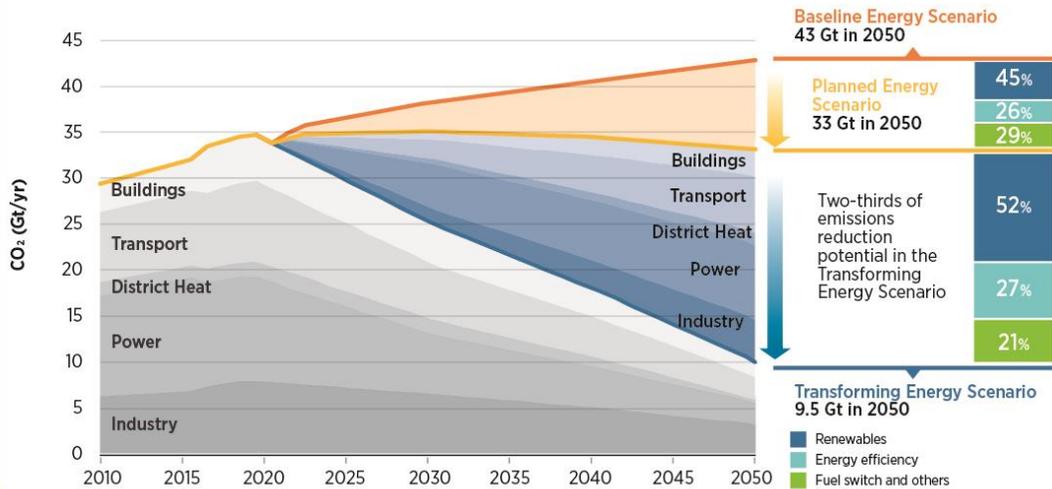
Amidst the unanticipated challenges of 2020, IRENA has adapted to ensure that the Agency continues to deliver the Work Programme and maintain momentum in the renewables-based energy transitions.

¹ International Renewable Energy Agency (IRENA), [Work Programme and Budget for 2020-2021](#), (Abu Dhabi, 2020)

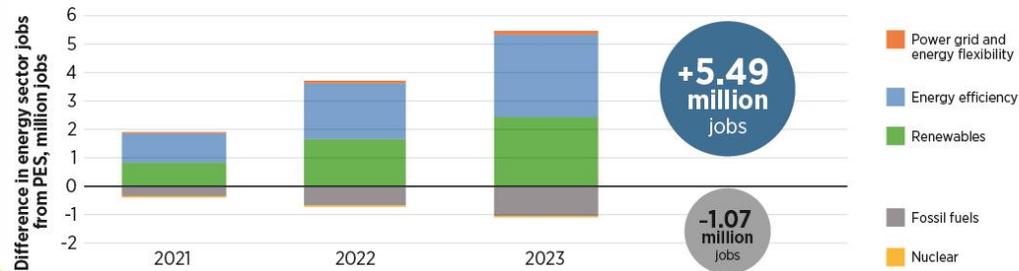
Energy transition at a glance



The bulk of emission reductions: Renewables and efficiency



Changes in energy sector jobs resulting from energy transition-related investments, 2021-2023



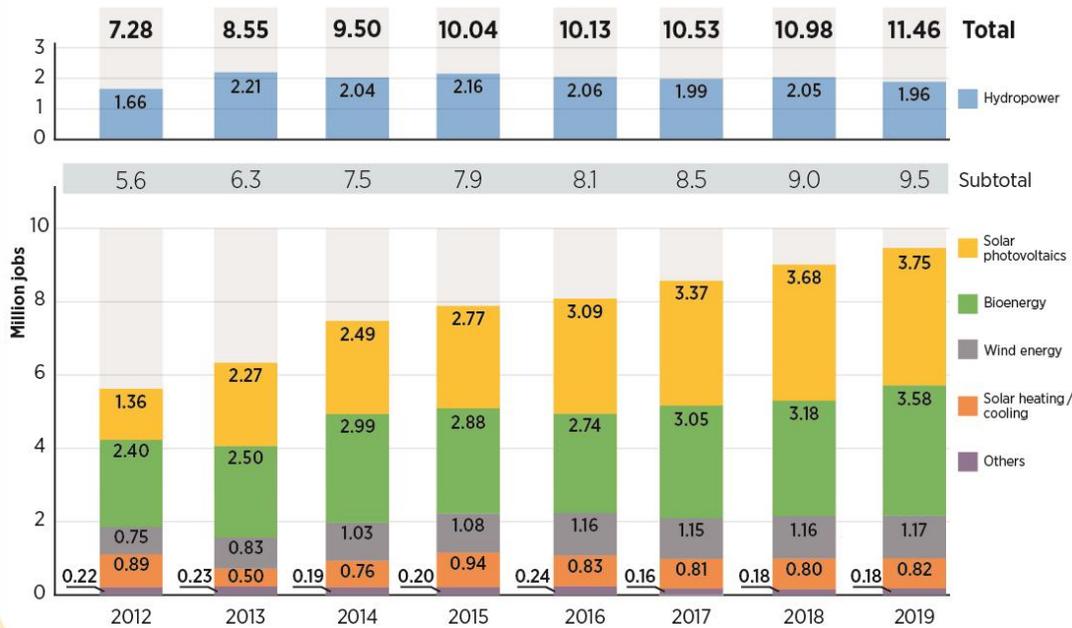
100 million
energy sector jobs

42 million in renewables
21 million in energy efficiency
14.5 million in power grids & energy

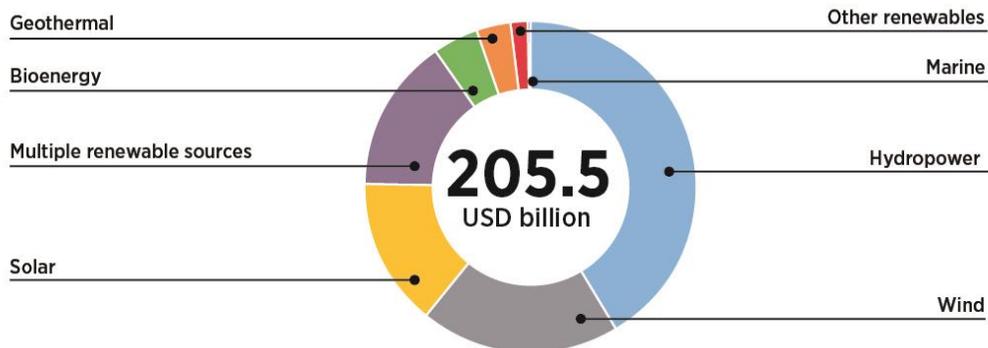
PowerGen Costs, 2010-2019



Global renewable energy employment by technology, 2012-2019



Cumulative public investment transactions, 2007-2017



Energy access is increasing

- a step towards fulfilling Sustainable Development Goal (SDG) 7.



411 million
more people gained electricity access by 2018

(compared to 2010)

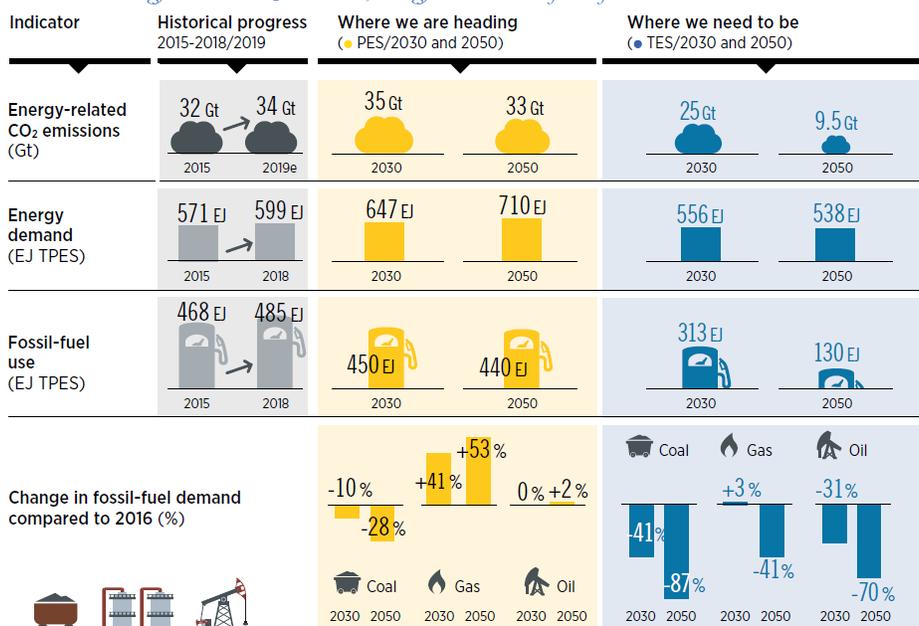
7 AFFORDABLE AND CLEAN ENERGY

Progress to Date

The widespread adoption of renewables and related technologies is already transforming the energy sector. While each country must work with a different resource mix, all of them need a 21st-century energy system. The drivers for energy transitions are many, covering a gamut of economic, social and environmental priorities. There is a decade left to meet the objectives of the Agenda 2030 on sustainable development. Moreover, the gap between aspiration and the reality in tackling climate change remains, despite mounting evidence of climate change hurtful effects.

IRENA's *Global Renewables Outlook: Energy Transformation 2050*² (GRO) report presents a pathway for achieving deep decarbonisation, aligned with the Paris Agreement. The report highlights climate-safe investment options and the policy framework needed to manage the transition and presents several scenarios and their possible socio-economic impacts. Figure 1 shows that under the ambitious, but feasible, Transforming Energy Scenario (TES) emissions could be reduced at a compound rate of 3.8% per year to some 10 Gt by 2050. GDP would grow 2.4% more by 2050 than under current plans and result in a 13.5% higher welfare indicator. Also, 100 million jobs in the energy sector will be created globally, about 40 million more than today. This includes up to 42 million jobs in the renewable energy sector (Figure 2). The transition would also result in 7 million more jobs economy-wide than under current plans.

Figure 1: The changing nature of energy and fossil-fuel use
Energy-related CO₂ emissions, energy demand and fossil-fuel outlook



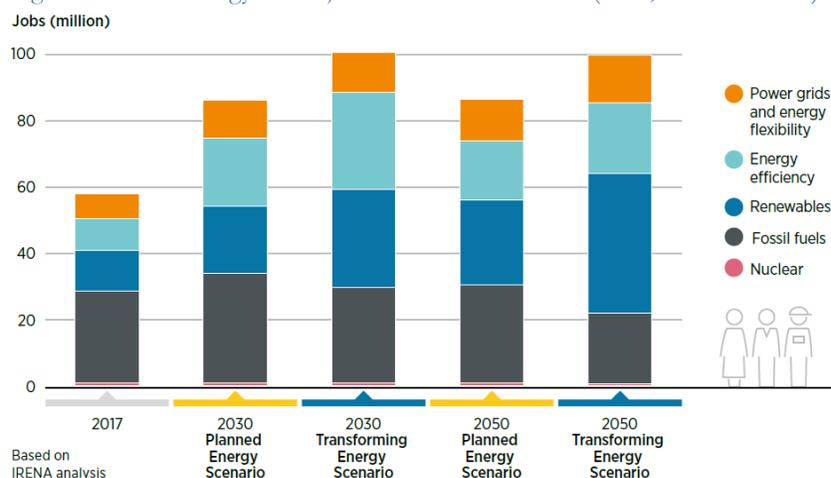
Note: TPES = total primary energy supply. e = estimate; Gt = gigatonnes; EJ = exajoules.

Based on IRENA scenarios (PES and TES), along with IEA (2019a, 2019b) for 2015-2018 historical progress of energy demand and fossil-fuel use.

Source: IRENA, *Global Renewables Outlook: Energy Transformation 2050*, (2020)

² Available [here](#). Supported by the Government of Germany.

Figure 2: Global energy sector jobs under PES and TES (2017, 2030 and 2050)



Source: IRENA, *Global Renewables Outlook: Energy Transformation 2050*, (2020)

IRENA is exploring areas to deepen knowledge on the process of decarbonisation, especially in the energy sector that remains a challenge. IRENA’s ***Reaching Zero with Renewables: Eliminating CO₂ emissions in Industry and Transport***³ report examines pathways to achieve zero emissions in the energy-intensive industry and transport sectors⁴ by 2060 and the potential impact of renewables in the process. Renewables, combined with demand reduction and energy efficiency, could account for over 80% of the CO₂ emission reductions required across them. The report highlights the momentum created by the rising public and political recognition for the need to reduce emissions and the decreasing cost of renewables that makes the business case for them. A set of sector-targeted policy recommendations for government and industry are also put forward (Figure 3).

Figure 3: Key emission reducing measure

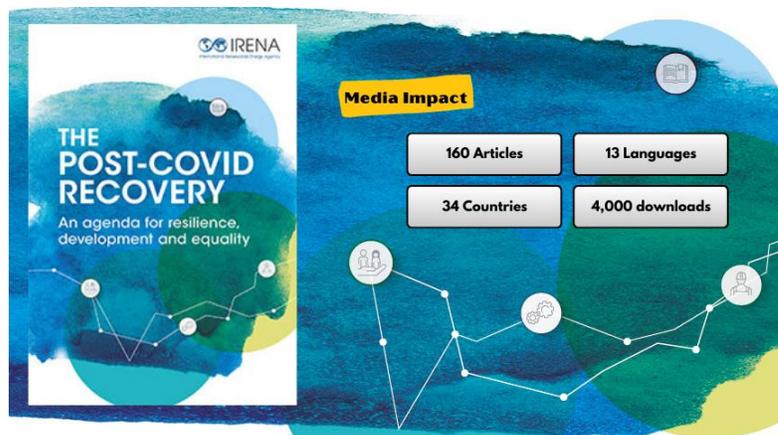


Source: IRENA, *Reaching Zero with Renewables: Eliminating CO₂ emissions in Industry and Transport*, (2020)

³ Available [here](#).

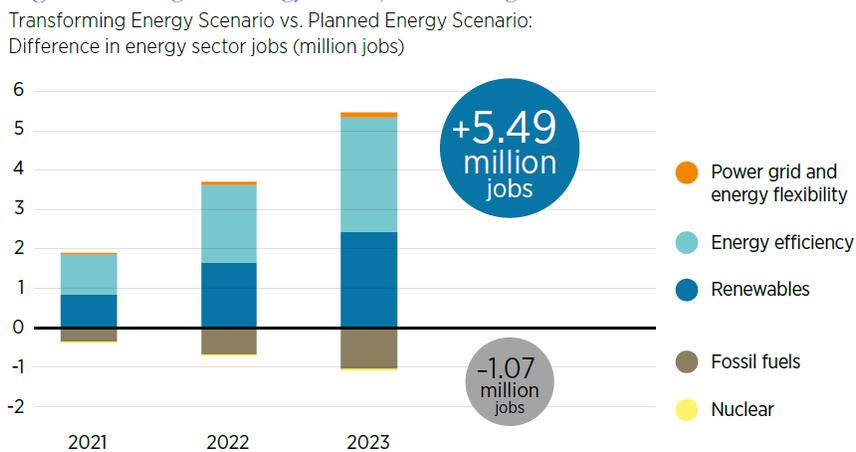
⁴ These include iron and steel, chemicals and petro-chemicals, cement and lime, aluminium, road freight, aviation and shipping

As the pandemic reduced or interrupted many social and economic activities, many of the assumptions were tested and new facts emerged that will be decisive for the way forward. The ***Post-COVID Recovery: An Agenda for Resilience, Development and Equality***⁵ report analyses the impact of COVID-19 on the global economy, energy sector, and renewable energy, with a focus on employment, and presents a short-term perspective to 2023 and a medium-term one to 2030. Energy demand fell significantly due to lockdowns, reaching 25% in countries in complete lockdown, with fossil fuels taking most of the brunt. Renewable energy investment dropped slightly in the first quarter of 2020, down 2.6% from the same period in 2019. However, early data show that investments attuned to environmental, social, and governance concerns are performing better and proving more resilient than conventional funds.



Over the 2021-2023 recovery phase, a structural shift towards policies and investments fostering energy transition can help build resilient societies. The transition would boost GDP by 1% more, on average over three years, than current plans. Energy transition-related technologies would add 5.49 million more jobs by 2023 than current plans (Figure 4). Development of domestic industrial capacities and supply chains, and promotion of green financing as well as research and development are key elements for a successful energy transition. A comprehensive set of labour and educational policies to build the needed workforce must also be adopted.

Figure 4: Changes in energy sector jobs resulting from transition-related investment, 2021-2023



Based on IRENA analysis

⁵ Available [here](#).

Soon after the launch of the Post-COVID Recovery report, the IRENA Director-General had the opportunity to discuss the report's policy recommendations and strategies in many occasions. The report was launched at a **Digital Dialogue**⁶ on “Energy transformation: Driving a Green Recovery” hosted by the Financial Times on 24 June. The Director-General also participated and presented the report in many occasions such as the 2020 **UN High-Level Political Forum (HLPF)** session⁷ on “Building back better after COVID-19 and acting where we will have the greatest impact on the SDGs: Sustaining efforts to ensure access to sustainable energy” and the side event⁸ on “Harnessing energy transformation for a sustainable recovery” in the margins of the 2020 HLPF, both held on 8 July.

In Focus: Tracking Impact of COVID-19 on Energy Transitions

IRENA began tracking monetary, fiscal, and other measures since April 2020 for a variety of energy supply and demand sectors. This tracker also logs significant political statements of intent and policy proposals of relevance for the energy sector. Information and data is collected from more than 65 countries and the European Union, and is updated regularly. The tracker is aimed for internal use to keep the Agency abreast of developments across its Membership.

According to the data collected, Governments worldwide have pledged to inject trillions of dollars⁹ into the global economy to counteract the health, social, and financial shocks caused by COVID-19. Some trends that have become apparent include:

- There is a steady increase in positive rhetoric towards a “green recovery,” with several countries attaching “green strings” to their bailout packages as well as making supportive public statements. The flow of investments, however, still favours the fossil fuel industry;
- Actions taken have generally developed in line with the progression of the pandemic. During the early stages, most energy specific measures revolved around protecting the energy supply to citizens and businesses;
- Where domestic renewables projects were at risk, in most instances governments acted to provide clarity for their stakeholders by either extending deadlines or postponing auctions;
- Recovery measures promoting energy transition (e.g. renewables, energy efficiency, enabling infrastructure) include investing in new renewable electricity generation projects, funding for energy efficiency programmes, incentives for electric vehicles etc.;
- For some countries, these measures are situated within broader policies focused on addressing climate change. These include new targets to increase the share of renewables and carbon neutrality, phasing out of coal etc.;
- Innovation funding has been another area of interest with governments investing in future solutions that have the potential to deliver jobs and economic opportunities.

These promising findings are firmly embedded in IRENA's decade-long-work on socio-economic impacts of energy transitions, most notably jobs. The 2020 edition of the **Renewable Energy and Jobs – Annual Review**¹⁰ finds that employment has expanded from about 7.3 million jobs in 2012 to 11.5 million in 2019

⁶ Available [here](#).

⁷ More information available [here](#).

⁸ More information [here](#).

⁹ To date over USD 11 trillion (IMF, <https://www.imf.org/en/About/FAQ/imf-response-to-covid-19#Q3>).

¹⁰ Available [here](#).

(Figure 5), with women holding almost a third of the jobs (though only about a fifth in the wind power industry). In 2019, a third of the total renewable energy workforce was employed in the solar PV industry, with 91% of the positions concentrated in ten countries¹¹. Bioenergy industry employs directly around 3.6 million people, followed by the hydropower sector with close to 2 million, while employment in wind power supports 1.2 million jobs.

Figure 5: Global renewable energy employment by technology, 2012-2019



Source: IRENA jobs database.

Note: Except for hydropower, where a revised methodology led to revisions of job estimates, numbers shown in this figure reflect those reported in past editions of the Annual Review.

a. Includes liquid biofuels, solid biomass and biogas.

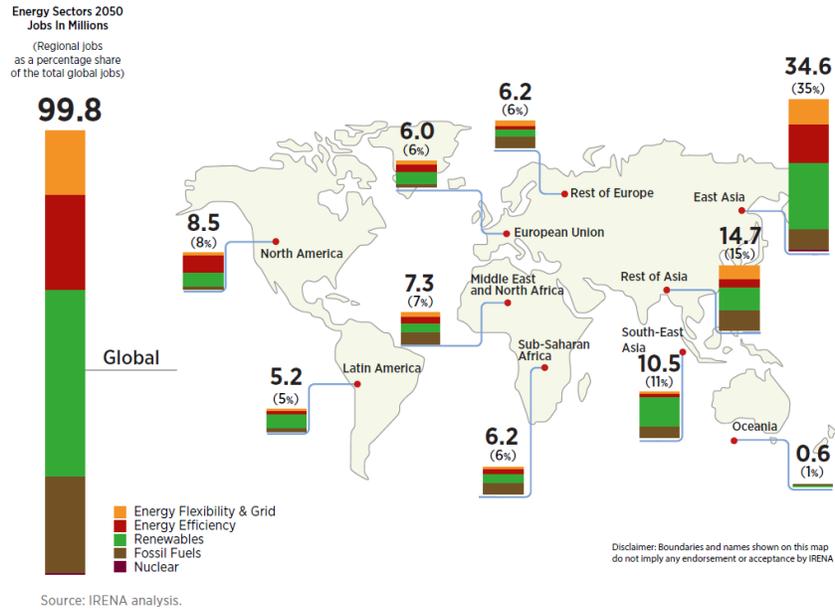
b. "Other technologies" includes geothermal energy, concentrated solar power, heat pumps (ground-based), municipal and industrial waste, and ocean energy.

The *Measuring the Socio-economics of Transition: Focus on Jobs*¹² report shows that the impact of the energy transition in countries and regions will vary depending on the volume of investments, socio-economic structures, current and planned policies, and dynamics created by it. It is estimated that about 100 million energy jobs will be created under the TES. Figure 6 shows the regional distribution of these jobs. Renewables will dominate the energy sector jobs in Asia, the Americas and Europe. The adoption of forward-looking and coherent deployment, integrating and enabling policies will help achieve economic growth and employment, energy security and access, and mitigate and adapt to climate change, while avoiding or limiting misalignments from energy transition.

¹¹ China, Japan, U.S.A., India, Bangladesh, Viet Nam, Malaysia, Brazil, Germany, Philippines.

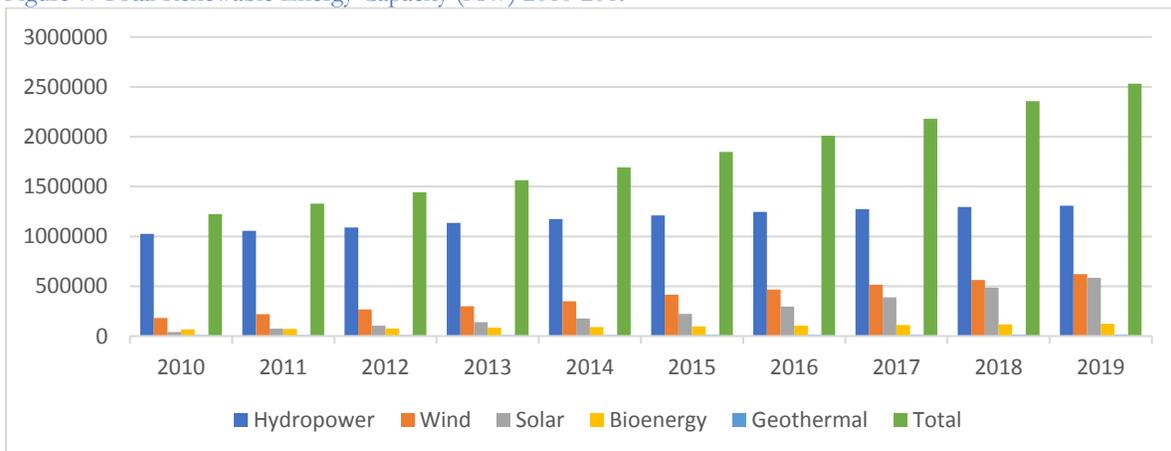
¹² Available [here](#).

Figure 6: Energy sector jobs by region with Energy Transformation in 2050



The increase in job numbers is also linked to the growing renewable capacity globally. IRENA’s *Renewable Energy Statistics*¹³ provides an insight in the trends of renewable energy capacity and production globally in the period 2010-2019. For this first time, a new section on Public Renewable Energy Finance Flows presents an overview of investment transactions for renewable energies from selected public financial institutions. Total capacity has more than doubled between 2010 and 2019 reaching 2.533 GW compared to 1.224 GW in 2010 (Figure 7). Asia experienced the biggest jump from 387 GW in 2010 to 1.119 GW in 2019, largely due to China’s rapid deployment of renewables. Total energy production has also increased since 2010, from 4.202.026 GWh to 6.586.124 GWh in 2018 (Figure 8). Hydropower remained the highest source of energy for electricity generation globally, both in terms of capacity and production, followed by wind and solar (Figure 7 and 8).

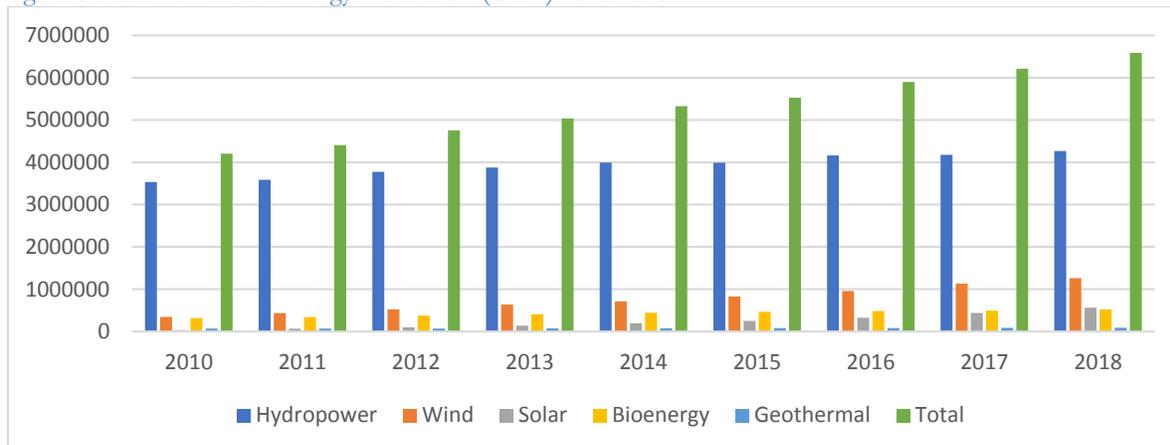
Figure 7: Total Renewable Energy Capacity (MW) 2010-2019



Source: IRENA, *Renewable Energy Statistics*, (2020)

¹³ Available [here](#).

Figure 8: Total Renewable Energy Production (GWh) 2010-2018



Source: IRENA, *Renewable Energy Statistics*, (2020)

IRENA's *Renewable Energy Power Generation Costs in 2019*¹⁴ report shows that, in the last decade, new renewable power costs have not just fallen, but are at an absolute low level. IRENA's Renewable Cost Database and Auctions and power purchase agreement (PPAs) databases¹⁵ show the compelling evolution of renewable power generation technologies into least cost solutions for new capacity in many parts of the world. This is mainly due to improving technologies, economies of scale, increasingly competitive supply chains and growing developer experience. The greatest decline has been witnessed in the costs for solar and wind power. The reports analysis of auction and PPA data shows costs are set to continue to decline. The data suggests the price of electricity generated from onshore wind could fall to USD 0.043/kWh by 2021, (down 18% from 2019) and utility-scale solar PV to just USD 0.039/kWh in that year. Offshore wind and CSP could fall respectively to USD 0.082/kWh in 2023 and USD 0.075/kWh in 2021.

In Focus: Competitiveness of Solar PV and Onshore Wind

IRENA's *Renewable Energy Auctions Status and Trends Beyond Price* report shows that price results for solar and wind auctions have decreased overall in the past decade. In 2018, solar energy was contracted at a global average price of USD 56/MWh, compared with the average price of USD 250/MWh in 2010. Wind prices also fell during that period, albeit at a slower pace. The average price in 2018 was USD 48/MWh, down from USD 75/MWh in 2010.

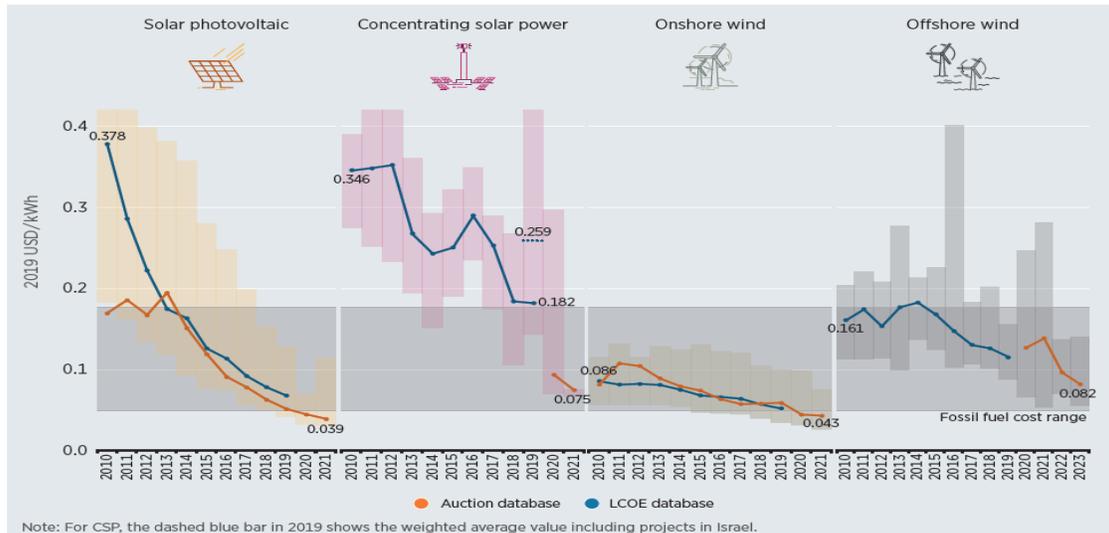
This market-driven shift has further strengthened the business case of renewables compared to conventional sources of energy. IRENA estimates that replacing 500 GW of existing coal plants (with the high-CIPest operating costs) with new utility-scale solar PV and onshore wind at costs likely for 2021 could reduce annual system costs by USD 12 to 23 billion, and potentially also the costs passed on to consumers, depending on coal prices. This would reduce CO₂ emissions by around 1.8 gigatonnes annually, while yielding a stimulus worth USD 940 billion, or around 1 per cent of global GDP.

¹⁴ Available [here](#).

¹⁵ Compiled from 18,000 real-world projects for the project cost database and 10,000 Auction and PPA projects and programmes.

In short, **Renewable Energy Power Generation Costs in 2019** demonstrated that accelerated renewable power deployment has the potential to align short-term economic needs, especially in the post-COVID-19 period, with medium- and long-term climate and development needs.

Figure 9: Global weighted average Levelised Cost of Electricity and Auction/PPA prices for CSP, onshore and offshore wind, and utility-scale solar PV, 2010 to 2023



Note: For CSP, the dashed blue bar in 2019 shows the weighted average value including projects in Israel.
 Note: The thick lines are the global weighted average LCOE, or auction values, by year. The grey bands that vary by year are cost/price range for the 5th and 95th percentiles of projects. For the LCOE data, the real WACC is 7.5% for OECD countries and China, and 10% for the rest of the world. The band that crosses the entire chart represents the fossil fuel-fired power generation cost range.

Source: IRENA, *Renewable Energy Power Generation Costs in 2019*, (2020)

Investments in renewable energy generate three times more jobs than investments in polluting fossil fuels.

Clean energy, and closing the energy access gap, are the ticket to growth and prosperity.

ANTÓNIO GUTERRES
 SECRETARY-GENERAL, UNITED NATIONS



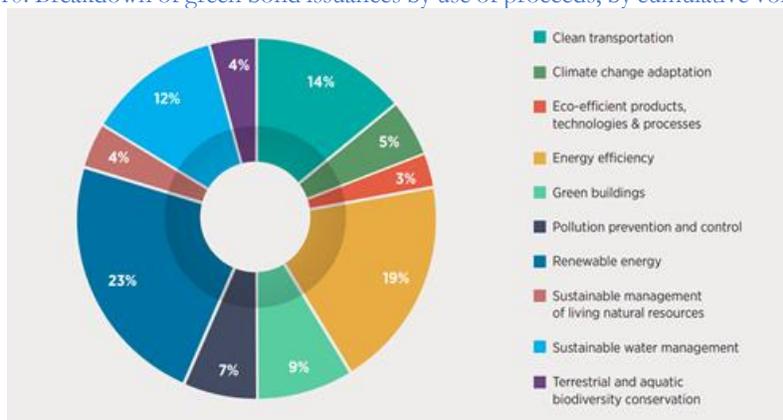
In March 2020, IRENA called for interested parties to register their interest in the *Climate Investment Platform*¹⁶. IRENA and partners, SEforAll and UNDP, in collaboration with the Green Climate Fund, launched the platform to scale up investment in renewable energy

projects in developing countries within 14 regional clusters. So far **over 175 projects** and **over 300 partners** have registered their interest. IRENA is preparing a series of regional Investment Forums to connect registered projects and financial partners, as well as to support policy-makers in developing strong enabling environments for investments in renewable energy. The details of future events will be shared in due course.

In addition to effective policies and regulations, greater participation of institutional investors will require capital innovative market solutions. The *Renewable energy finance: Green bonds*¹⁷ brief finds that the green bonds market has grown remarkably, with annual issuances rising from USD 44 billion in 2015 to USD 271 billion in 2019. Figure 10 shows that renewables dominate green bond issuances, attracting 23% of cumulative issuance volumes during 2010-2019, followed by energy efficiency projects and clean transport.

The provision of risk mitigation instruments by governments and public financial institutions can be particularly effective in mobilising private sources of capital while safeguarding limited public resources. In the brief *Renewable energy finance: Sovereign guarantees*¹⁸, IRENA examined sovereign guarantees (i.e., a government’s commitment to cover payments in case of default), as well as other solutions to mitigate risks in less-developed countries. Risk mitigation instruments seem to be even more important in the context of the current crisis, as investors have become more risk averse.

Figure 10. Breakdown of green bond issuances by use of proceeds, by cumulative volume (USD), 2010-2019



Source: IRENA, *Renewable energy finance: Green Bonds*, (2020)

Investments at scale will be necessary to meet the objectives of the global agreements on sustainable development and climate change. In 2020, IRENA chaired the development of the *Tracking SDG 7: Energy Progress Report (2020)*¹⁹ published annually by the custodian agencies²⁰ of SDG 7 indicators. Despite the

¹⁶ Supported by the governments of Denmark; Germany, as part of the German Government International Climate Initiative (IKI). The Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU) support this initiative based on a decision adopted by the German Bundestag; and UNDP.

¹⁷ Available [here](#).

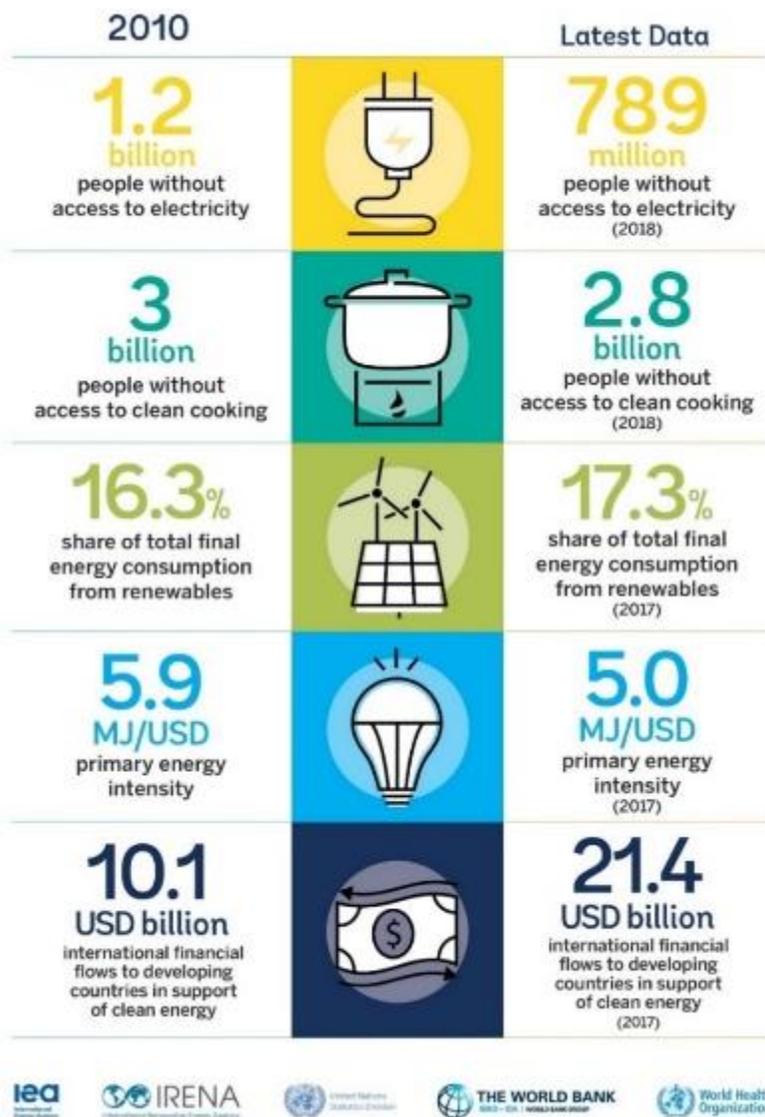
¹⁸ Available [here](#).

¹⁹ Available [here](#). Supported by the International Bank for Reconstruction and Development (IBRD).

²⁰ International Energy Agency (IEA), IRENA, United Nations Statistics Division (UNSD), World Bank, and World Health Organization (WHO).

progress (Figure 11) in energy transitions in many countries, the key targets of SDG 7 by 2030 are still out of reach under current and planned policies. Launched at a high-level virtual event on 4 June, hosted by the Group of Friends of Sustainable Energy of the United Nations, the report was also presented to a wider audience in the margins of the UN High-Level Political Forum on 7 July 2020. For the first time, this year's edition also covered SDG indicator 7.A.1 on international financial flows to developing countries in support of clean energy research and development and renewable energy production. Data jointly produced by IRENA and OECD show that international public flows reached USD 21.4 billion in 2017, double the level in 2010. Yet only 12% of such financial flows reached the least-developed countries, which may also face the greatest challenges in achieving SDG targets.

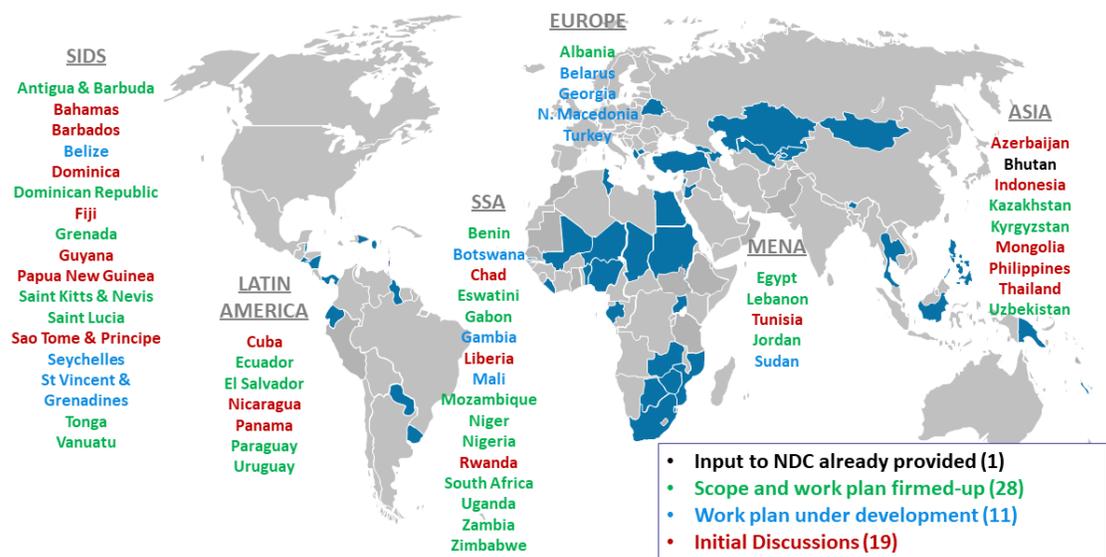
Figure 11: Key findings of the *Tracking SDG 7: Energy Progress Report 2020*



In Focus: Aligning short-term actions with long-term strategies

In the face of the pandemic, the 2020 updates of NDCs of the Paris Agreement present an opportunity to place renewables-based energy transitions at the heart of climate-compatible long-term low-emission development strategies. IRENA is at different stages of engagement with **59 countries** in realising the untapped potential of renewable energy through NDC enhancement and implementation. IRENA is collaborating with organisations to that end by supporting countries through NDC Partnership's Climate Action Enhancement Package (CAEP) and UNDP's Climate Promise.

IRENA's NDC-Energy Support



Renewable energy targets in the first NDC submissions are often less ambitious than targets countries have established in their national energy plans and strategies, as well as current global deployment trends. There is, therefore, considerable scope for countries to enhance their NDCs to meet Paris Agreement goals and send a strong signal to investors.

IRENA's NDC enhancement and implementation support²¹ is substantially contributing to national efforts by:

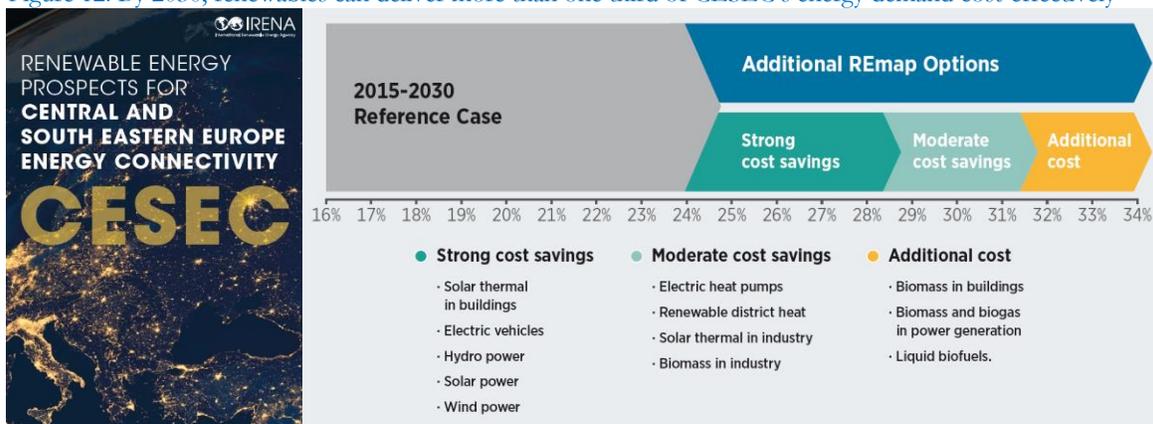
- Strengthening coordination at the national level, namely between environment and energy sectors;
- Identifying and developing robust, ambitious, and quantifiable renewable energy targets;
- Recommending enabling policy and regulatory frameworks to encourage and facilitate renewable energy deployment, and attract public and private investments and maximise socio-economic benefits;
- Identifying investment opportunities by developing project pipelines in alignment with development policies, national strategies, and long-term decarbonisation objectives;

²¹ This project is part of the German Government International Climate Initiative (IKI). The Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU) support this initiative based on a decision adopted by the German Bundestag.

- Enhancing transparency by providing technical input to improve data collection systems and analysis, designing robust Measurement, Reporting and Verification (MRV) systems, and building national capacities, long-term planning, REmaps and RRAs.

Understanding the regional energy market dynamics of the renewable energy deployment is vital for the creation of markets for rapid deployment. The ***Renewable Energy Prospects for Central and Eastern Europe Energy Connectivity (CESEC)***²², launched on 2 October 2020, shows the potential for renewable energy deployment in the region by 2030 beyond current policies and plans. Accelerating the take-up of renewables could save CESEC citizens an estimated EUR 3 billion per year in energy costs in 2030, while the economic value of avoided health, environment and climate damage could push total benefits to society to up to EUR 35 billion per year in 2030 (Figure 12).

Figure 12: By 2030, renewables can deliver more than one third of CESEC’s energy demand cost-effectively



IRENA’s energy transition path for the region estimates that additional investments of EUR 78 billion are needed between now and 2030. Additional greenhouse gas (GHG) emission reductions would reach 165 megatonnes (Mt) of carbon dioxide (CO₂)/year, comparable to one and a half times today’s total emissions of Romania. IRENA has published **30 Innovation Briefs** (15 in 2019 and the rest in 2020) under the ***Innovation landscape for a renewable-powered future***²³ report focusing on innovations in the four dimensions of the power system (enabling technologies, business models, market design and system operation). This provides a comprehensive analysis on innovation priorities that policymakers must address to successfully decarbonise the electricity systems with renewables and push for innovative renewables solutions in a COVID-19 recovery stimulus.

Along those lines, the ***Innovative Solutions for 100% Renewable Power in Sweden***²⁴, prepared in cooperation with the Swedish Energy Agency (Energimyndigheten), presented four tailor-made innovative solutions developed to help Sweden realise its goal of generating 100% of its electricity from renewable sources by 2040. The analysis of the impact and potential of renewable energy in Sweden is progressing.

The ***Innovations for a decentralised, renewable-powered system: Peer-to-peer electricity trading***²⁵ webinar, jointly organised by IRENA and the Sustainable Energy Development Authority (SEDA) of Malaysia,

²² Supported by the European Commission, Directorate-General for Energy. Available [here](#).

²³ Available [here](#).

²⁴ Available [here](#). Supported by the Government of Sweden.

²⁵ The webinar is available [here](#).

discussed how an increasing decentralised power system, innovative technologies, regulations and business models lead to higher shares of renewables in power systems.

In Focus: Green Hydrogen

One-third of global energy-related emissions come from sectors for which there is no economically feasible alternative to fossil fuels. Hydrogen has emerged as an important part of the clean energy mix needed to ensure a sustainable future. Falling costs for green hydrogen, produced with renewable energy, has given clean hydrogen unprecedented political and business momentum. Green hydrogen can replace fossil fuel-based hydrogen, fossil fuel-based feedstocks and, eventually, be converted into carbon-neutral fuels. Once scaled-up and made widely competitive, green hydrogen can become fundamental in decarbonising a wider range of end-use sectors, complementing direct electrification. For so-called “hard to decarbonise” sectors²⁶ such as energy-intensive industries as well as freight transport, green hydrogen could be a game changer for a cost-effective decarbonisation. Importantly, focused efforts can also leverage the green hydrogen opportunity to accelerate and broaden the global recovery from COVID-19.

In April 2020, IRENA participated in a webinar entitled *Online Workshop on Renewable Hydrogen*²⁷ organised by the Florence School of Regulation. Participants included representatives from the European Commission, the private sector, and universities. IRENA’s presentation focused on the Agency’s analysis on the benefits of green hydrogen and its important role in promoting the energy transition and decarbonisation.



Changing ways of working in the face of COVID-19

IRENA has been exploring new ways of advancing programmatic activities and engaging with its Members during this challenging time. The pandemic's impacts have been global and infiltrated all aspects of our societies and economies, including renewable energy. IRENA, including those that are part of the IRENA Coalition for Action, have been vocal in showing how transforming the energy system can support a sustainable, resilient and equitable recovery.

IRENA continues to forge strategic partnerships that can help advance the Agency's programmatic priorities and accelerate impact on the ground. IRENA already has a wide range of partners, with over 45 Memoranda

²⁶ E.g. industry, transport and the building sectors.

²⁷ More information [here](#).

of Understanding in place and eleven signed this year. Emergencies such as the COVID-19 pandemic highlights the importance of a holistic perspective and collaborative approaches.

IRENA continues to contribute its expertise to support discussions on the energy transformation between global leaders. The Director-General joined the Petersberg Climate Dialogue in April, in addition to several dialogues with politicians on the impacts of COVID-19 and the economic recovery. He contributed to several other discussions on clean energy²⁸.

At the Tenth session of the IRENA Assembly, the United Arab Emirates (UAE) in partnership with IRENA, proposed to invite Permanent Representatives to IRENA and the broader diplomatic community to take part in **Renewables Talk for Permanent Representatives**²⁹ starting in 2020. On 13 May, IRENA and the UAE co-hosted the first webinar of the Renewables Talk for Permanent Representatives.

The IRENA Director-General participated in the **11th Clean Energy Ministerial (CEM) and 5th Mission Innovation** meetings (22 and 23 September respectively), stressing the need for a renewables-led energy transition to secure near-term recovery and long-term success, as well as in two side events.



IRENA’s cooperation with **G20 countries** continued this year too. In the context of the 2020 Saudi Arabian Presidency, held under the theme “Realizing Opportunities of the 21st Century for All,³⁰” IRENA provided two reports focused on renewables as an input to the G20 Guide for the Circular Carbon Economy (CCE).³¹

The IRENA Director-General also attended the **G20 Energy Ministerial Meetings** on 27-28 September.

In Focus: IRENA and Youth

Following the first **IRENA Youth Forum** held on 10 January 2020 at the margins of the Agency’s Tenth Assembly, IRENA launched **IRENA Youth Talk**³² — a series of webinars aimed at strengthening the Agency’s engagement with the youth, amplifying their voice and actions in supporting renewables, achieving climate stability, and advancing the sustainable development agenda.

The first IRENA Youth Talk, held on 8 June 2020 and organised in collaboration with the SDG 7 Youth Constituency of the UN Major Group for Children and Youth, was structured under the theme ‘Impact of

²⁸ Including those organised by the Danish Ministry of Climate, Energy and Utilities and the IEA; the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU) and the World Resources Institute (WRI); the Ministry of Energy of the Russian Federation and the Institute for Energy and Finance; Switzerland and Bahrain; the Atlantic Council; the Coalition for Action; the Global Solar Council; and, Goldman Sachs etc.

²⁹ More information available [here](#).

³⁰ The three key agenda items to be addressed under this theme are: Empowering People, by creating the conditions in which all people, especially women and youth, can live, work and thrive; Safeguarding the Planet, by fostering collective efforts to protect our global commons; and Shaping New Frontiers, by adopting long-term and bold strategies to share benefits of innovation and technological advancement.

³¹ Supported by King Abdullah Petroleum Studies and Research Centre (KAPSARC).

³² More information available [here](#).

COVID-19 on the renewable energy sector: a youth perspective'. Youth representatives discussed the impact and consequences of the current COVID-19 pandemic on the renewable energy sector with IRENA's Director-General and presented successful examples of their contribution to the deployment of renewable energy in their communities.



A video contest, launched during the first IRENA Youth Talk³³, focused on the theme 'Renewable Energy in the Time of COVID-19: Youth Actions for Recovery' and encouraged young people to voice their opinion on social media. Jasper Mallonga (winner) delivered a powerful video message urging the world to get behind renewable energy to build a resilient, sustainable and inclusive future. IRENA will invite Jasper to participate in the IRENA Youth Forum in January 2021.

Collaborative Frameworks

Pursuant to discussions at the Tenth session of the IRENA Assembly and following the request of Members to advance knowledge creation and facilitate collaboration on several topics of high interest, the Secretariat has been creating the space for peer-to-peer collaboration and focused Member dialogue.

IRENA has organised two virtual meetings on the **Collaborative Framework on Hydropower**³⁴. The kick-off meeting took place on 10 June to advance areas relevant to hydropower including financing, flexibility, resilience, and sustainability. The second meeting, held on 24 September, helped paint a clearer picture of what public-private collaboration could look like under this Collaborative Framework.



The first **Collaborative Framework on Green Hydrogen**³⁵ took place on 18 June focusing on developing an effective and viable global hydrogen supply chain. The second meeting was held on 30 September and discussed ways to deepen green hydrogen deployment to achieve net-zero emissions worldwide by 2060.

Strategies to integrate renewables into energy systems is the focus of the **Collaborative Framework on Enhancing the Dialogue on High Shares of Renewables in Energy System**³⁶. In two meetings that took place to date, participants identified key focus areas. They include holistic energy planning, cross-border interconnections, energy system operation, energy markets and regulations, cross-sectoral strategies and innovation. The first **Collaborative Framework on Ocean Energy and Offshore Renewables**³⁷ meeting helped identify areas where IRENA could support its Membership in advancing joint demonstration projects and the commercialisation of new offshore technologies.

³³ More information available [here](#).

³⁴ More information available [here](#).

³⁵ More information available [here](#).

³⁶ More information available [here](#).

³⁷ More information available [here](#).

Special Feature Box: Collaborative Framework on Geopolitics of Energy Transformation³⁸

On the margins of the tenth session of the Assembly, a high-level meeting was convened to follow up on the 2019 report of the IRENA-convened Global Commission on the Geopolitics of the Energy Transformation and its report “*A New World: The Geopolitics of the Energy Transformation*”. As a result, the Assembly requested IRENA to take forward the work on the geopolitics of energy transformation a deeper understanding of the areas highlighted by the Commission. In March 2020, at the invitation of the Director-General, Members were invited to submit their views on the priorities and modalities for taking the work forward.

IRENA organised a ***Collaborative Framework on Geopolitics of Energy Transformation*** which met on 16 June³⁹ to exchange views on the geopolitical implications of the energy transformation and the future of Agency’s work in this area. Participants agreed to set the substantive agenda for the coming two years, led by IRENA and with engagement of diverse stakeholders. The next meeting will take place on 15 October 2020. Meanwhile, IRENA is actively engaging with the leading entities such as the Munich Security Conference of Germany and the Wilton Park of the UK to position renewables-based energy transitions in broader settings.

Since January 2020, IRENA has been organising fortnightly a series of short, focused webinars called ***IRENA Insights***⁴⁰ to present key findings from the Agency’s latest programmatic work, opportunities, trends, best practices, and innovative solutions. By the end of September, sixteen webinars had taken place with more planned until the end of the year. More than 5,500 people from the public and private sector as well as other stakeholders e.g. Intergovernmental Organisations, Non-Governmental Organisations, universities, think tanks etc. from all regions participated in these webinars.

IRENA continues to coordinate the Long-Term Energy Scenarios (LTES) campaign⁴¹ initiated in May 2018 and co-led by the Governments of Denmark and Germany under the Clean Energy Ministerial (CEM). Since,



IRENA has expanded this effort to create a global network of practitioners on this important issue. The 2020 ***Scenarios for the Energy Transition: Global experience and best practices***⁴² report assesses a collection of recommendations and country experiences gathered through the activities of

both the LTES campaign and the LTES Network⁴³. It shows the diversity of experiences in and approaches to long-term scenario development and use. This work is growing in relevance reflecting the interest in international collaboration on energy transitions.

³⁸ Supported by the Government of Norway.

³⁹ More information available [here](#).

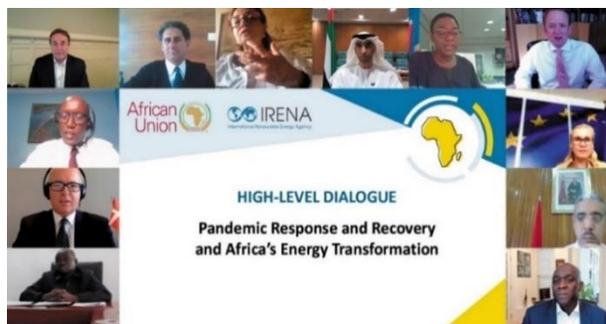
⁴⁰ More information available [here](#).

⁴¹ Supported by the Government of Denmark.

⁴² Available [here](#).

⁴³ IRENA’s extension of the LTES campaign to cover non-CEM countries.

IRENA also organised several high-level dialogues on energy transitions, including in the context of post-COVID-19 recovery. IRENA and the African Union Commission convened a *High-Level Dialogue on Pandemic Response and Recovery and Africa's Energy Transformation* on 20 May.⁴⁴ The discussion focused on Africa's needs in responding to the COVID-19 crisis and the role of the energy transformation especially given its cross sectoral relevance in health, water and ICT areas.



IRENA and the Africa Renewable Energy Initiative (AREI) also organised on 10th September a webinar on *Promoting Renewable Energy Technologies for Sustainable Development in Africa post COVID-19*⁴⁵ to gather insights on how technology innovation and digitalisation in the energy sector can ensure a speedy and robust recovery from the pandemic in Africa.

The current pandemic is further highlighting the urgent need for improved energy access in healthcare. IRENA is collaborating with the Ministries of Energy and Health in Burkina Faso to carry out a sectoral needs assessment for electrification of unelectrified healthcare facilities⁴⁶. IRENA will provide decentralised renewable energy solutions for electrifying the rural health facilities lacking access (with cost estimates) and recommendations for implementation. The inputs will also serve as a blue-print for rural health facilities to be constructed and help the government of Burkina is estimating and mobilising the required resources for implementation. Energy needs for COVID-19 management as well as possible telemedicine opportunities arising from energy availability will be part of the analysis too.

IRENA and the Government of Belize, in its capacity as Chair of the Alliance of Small Island States (AOSIS), co-hosted a virtual *High-level Dialogue on Accelerating Energy Transition in SIDS to Stimulate Post Pandemic Recovery*⁴⁷ on 1 June. SIDS and development partners highlighted the importance of multilateralism, partnerships that tailor make solutions for financing, technology and knowledge transfer that will accelerate energy transformation and stimulate quick recovery of SIDS economies.



⁴⁴ More information available [here](#).

⁴⁵ The webinar is available [here](#).

⁴⁶ Supported by the Government of the Walloon Region of Belgium.

⁴⁷ More information available [here](#).



In Focus: Follow up to the 2019 UN Climate Summit

Denmark and Ethiopia, with support from Sustainable Energy for All (SEforAll), co-led the energy track at the United Nations Secretary General’s Climate Action Summit in 2019. At the Summit, nine main initiatives⁴⁸ related to energy transition emerged. IRENA is the operational lead for the Ambitious SIDS Package initiative⁴⁹ and is participating in all other energy initiatives. In September 2020, Denmark organised a series of 10 webinars under the theme of “How to achieve the energy transition – from the Climate Action Summit to green recovery and beyond” to showcase the results of these initiatives thus far, and discuss how they can support countries’ efforts to recover better and greener and contribute to enhancing their NDCs.

IRENA’s Director-General actively participated in the webinar series by delivering a statement at the High-level Opening and presenting in several other sessions⁵⁰. IRENA also organised the webinar on “Accelerating Renewable Energy in SIDS - Energy Transformation in Small Island Developing States: Towards sustainable and climate resilient post-pandemic recover.” IRENA and Denmark co-hosted a virtual high-level event on “Energy Transformation in SIDS: Towards sustainable and climate resilient post-pandemic recovery” on 15 September. SIDS and development partners reiterated that the shift to renewables is the best remedy to address the ongoing both climate and COVID crises, SIDS need immediate support to respond to the pandemic-inflicted economic and financial crises with a particular focus on the energy-health-water-food nexus, tourism sector and debt relief strategies.



Also, in September, IRENA and Denmark forged a strategic partnership to drive ambition, leadership and knowledge on green energy transitions based on renewable energy.

⁴⁸ These are: Getting to Zero Coalition – decarbonizing shipping; Three Percent Club for Energy Efficiency; Cool Coalition; Climate Investment Platform; LDC Sustainable Energy Access Coalition; SIDS Renewable Energy Initiative “Accelerating Renewable Energy Transition in SIDS”; Latin America Renewable Energy Target “Towards cleaner electricity in Latin America and the Caribbean”; Energy Storage Initiative; Powering Past Coal Alliance (PPCA) and Beyond Carbon 2.0.

⁴⁹ SIDS related activities supported by the Government of Denmark.

⁵⁰ These are: “Leveraging renewables and energy storage through an integrated approach maximizing socio-economic benefits” and “Why South-to-South cooperation must be part of the solution in bridging the energy access gap in LDCs and ODCs”. He also provided a recorded statement to “Facilitating Energy Transition for Green Recovery: Emerging Models of Climate Finance for Clean Energy”.

Based on the global and ASEAN-specific findings of the *GRO* and *Power Generation Cost 2019* reports, IRENA, together with the ASEAN Centre for Energy (ACE), in collaboration with the regional ambassador of the UK UNFCCC CoP 26 Presidency organised on 13 August a webinar on ***Accelerating the Southeast Asian Energy Transformation***⁵¹. Along those lines, IRENA and the Latin-American Organization of Energy (OLADE) in collaboration with the Regional Ambassador of UK UNFCCC CoP 26 Presidency organised a webinar on ***Accelerating Latin America's Energy Transformation: RE and Economic Recovery***⁵² on 19 August.

Building on an existing Memorandum of Understanding **IRENA and OLADE** originally signed in 2012, the two organisations have further pledged to boost ties to put the renewables driven energy transformation at the heart of Latin America and the Caribbean's economic post-pandemic recovery.

Taking into consideration the experience of the IRENA Legislators Forum, the ***IRENA Legislators Dialogue***⁵³ was launched on 13 July to strengthen the Agency's engagement with the members of parliaments and foster discussions on the close link between renewables and the successful implementation of the 17 SDGs and the Paris Agreement.

In Focus: COP26

As the fifth anniversary of the Paris Agreement, 2020 was supposed to be the year of climate momentum, commemorated at COP26. Although the COVID-19 pandemic has caused this important milestone to be postponed to 2021, IRENA continues to support ongoing climate momentum by working closely with the UK as the COP26 Presidency and Italy as the COP26 co-host. As such, the Agency is a member of the COP26 Energy Transition Council, which is co-chaired by the UK and SEforAll and convenes the global political, financial and technical leadership in the power sector to work together through COP26 to accelerate the transition from coal to clean power as part of a green economic recovery. The COP26 Energy Transition Council was announced in an event during the UN General Assembly in September 2020, in which the Director-General participated.

The Agency is also collaborating with the COP26 Presidency at the regional level. IRENA, together with the UK COP26 Presidency and the Association of Southeast Asian Nations (ASEAN) Secretariat, hosted a virtual COP26 Climate Dialogue on NDCs and Long-Term Strategies in the ASEAN region. The Dialogue convened ASEAN Member States to share their experiences in meeting and enhancing climate pledges through NDC enhancement and implementation. The Dialogue focused on inputs from experts and practitioners in developing long-term climate strategies and exchanged lessons learned with other ASEAN Member States⁵⁴.

⁵¹ More information available [here](#).

⁵² More information [here](#).

⁵³ More information available [here](#).

⁵⁴ Supported by the Government of Denmark.



IRENA continues to serve as the focal point for energy⁵⁵ within the Marrakech Partnership for Global Climate Action⁵⁶. The Partnership supports implementation of the Paris Agreement by enabling collaboration between governments and the cities, regions, businesses and investors that must act on climate change. In this role, IRENA is leading two important activities this year that are meant to showcase and increase global climate action.

One activity is leading the update and expansion of the **Climate Action Pathway for Energy**. The Pathways, initiated by the COP25 High-level Champions, outline the longer-term vision for a 1.5°C climate-resilient world and set out actions needed to achieve that future. The 2019 Pathways⁵⁷ received positive feedback from countries at COP25. This year, the COP25 and COP26 High-Level Champions proposed to update and expand the Pathways to include sectoral deep-dives and specific actions that must be undertaken by actors, including policy-makers, financiers/investors, technology/innovation, businesses/services, and civil society, by 2021, 2025, 2030, and 2040 to reach 1.5°C by 2050. It is envisaged that these Pathways will inform discussions across sectors of the global economy.

To amplify the climate action that is being undertaken in 2020 and build momentum around the shift to a decarbonized economy ahead of COP26, the High-Level Champions are leading the **Race to Zero Dialogues**, taking place virtually on 9-19 November. Each day of the Dialogues is dedicated to a separate theme⁵⁸ and IRENA is hosting the Energy Dialogue, taking place on 16 November. The Energy Dialogue will include two sessions organised by IRENA, one on the role of clean energy in COVID recovery and second on green hydrogen. Additional sessions are organised by RE100 on the market-driven renewable electricity transition and CA100+ on Net Zero Sector Strategies for the Power and Oil & Gas Sectors. More information on the Dialogues and registration will be published on the IRENA website in early October.



⁵⁵ Other members of the energy group include: The Climate Group, International Chamber of Commerce, International Energy Agency, REN21, SEforAll, UNEP, and WBCSD.

⁵⁶ Other thematic groups include: Human Settlements; Industry; Land Use; Oceans and Coastal Zones; Transport; Water; Finance; and Resilience.

⁵⁷ https://unfccc.int/climate-action/marrakech-partnership/reporting-and-tracking/climate_action_pathways.

⁵⁸ Climate and Health; Industry; Transport; Oceans, Coastal Zones, Water; Nature Based Solutions and Land Use; Energy; Food and Agriculture; Cities, Regions, and Built Environment; and Finance.

Looking Forward

IRENA has ambitious plans for the coming months to deliver on its mandate to promote renewables in a particularly challenging year. One particular opportunity IRENA is pursuing is the submission of updated NDCs to the UNFCCC where Members have the possibility to enhance renewable energy ambition and contribute to Paris Agreement goals. Whilst some activities have been postponed or rearranged due to COVID-19, IRENA is adapting, where possible, to deliver its outputs and continue the momentum towards a sustainable energy future. This chapter provides a summary of planned IRENA activities in the last quarter of 2020.

Activating underutilised capital pools is a necessary step to achieve the scale of investment required for the energy transition. In the upcoming report *Mobilising Institutional Capital for Renewable Energy*, IRENA will explore the great potential of institutional investors in boosting the energy transition. This group of investors, which comprises pension funds, insurance companies, sovereign wealth funds, foundations and endowments, represents one of the largest capital pools in the world - about USD 87 trillion of assets under management - whose potential in the renewable energy sector remains untapped. In 2018, institutional investors accounted for only 2% of private direct investment in new renewable energy projects.

The 2020 edition of the *Global Landscape of Renewable Energy Finance* report will show that investment in renewable energy continued its steady increase from 2013 levels, peaking at USD 351 billion in 2017, before decreasing to USD 322 billion in 2018. This slowdown in investment level can be partially explained by the falling technology costs which allowed for more capacity to be installed for each dollar invested. This year's edition of the report will also provide an in-depth analysis of the off-grid renewable energy finance landscape.

As a contribution to the SIDS Lighthouse Initiative (LHI) and input to the United Nations Ocean Conference 2020, IRENA is preparing the *Offshore Renewables Fostering a Blue Economy: A Contribution to the SIDS Lighthouses Initiative and the United Nations Ocean Conference 2020* report. The report will discuss the potential of offshore renewables to contribute towards the achievement of the SDGs (particularly SDG 7 – Energy and SDG 14 – Life Below Water), in islands and coastal territories. It will also provide guidance to policy-makers on the emerging innovations pushing offshore renewables towards commercialisation and actionable recommendations to foster innovation, knowledge transfer and deployment of renewables.

Energy efficiency, electrification and renewables, three pillars of the energy transition, can be complemented by green hydrogen, to accelerate the change towards a sustainable energy system. The upcoming *Green Hydrogen Guide for Policy Makers* brief outlines the main barriers for the green hydrogen sector, presenting to policy makers options to draft national strategies and to plan policies to accelerate its uptake in all main end-uses.

IRENA, IEA and REN21 are preparing a joint report on *Renewable Energy Policies in A Time of Transition: Heating and Cooling*⁵⁹ that will examine policies for renewables deployment in heating and cooling.

IRENA is planning **regional dialogues**, in collaboration with the UK CoP 26 presidency, on the Agency's NDC support work with member countries. A regional dialogue will be held on 14 October with central American countries during the Central American Energy Congress, and another one with ASEAN member states during the ASEAN Ministers of Energy Meeting in November. IRENA will hold a dialogue with Latin America and Caribbean in November with UNFCCC and UK CoP 26 Presidency. Similar NDC events are also being planned to be held during October in the Pacific, South Asia and Sub-Saharan Africa.

⁵⁹ Supported by the Government of Japan.

IRENA is planning high-level national events to launch its **Renewable Readiness Assessment (RRA)** reports. In October the RRA for Jordan will be launched, followed by the Tunisia and El Salvador RRAs. IRENA will reschedule the 14 **sub-regional investment forums** originally planned for 2020 that will serve as physical matchmaking opportunities of renewable energy projects.

IRENA's **2020 Innovation Week**⁶⁰, scheduled to take place on 5-8 October 2020, will explore how systemic innovative solutions can support the use of renewables in the energy-end-use sectors of transport and industry. Participants will include leading policymakers, innovators, developers, young start-uppers and investors from across IRENA's diverse global Membership, who will focus on the challenges and the emerging innovations in technology, business models, and system operation that can support the decarbonisation of end-use sectors.

Building on the discussions of the first **Collaborative Framework Ocean Energy/Offshore Renewables**, a follow-up virtual meeting is scheduled to take place on 14 October to push the discussion forward.

The next **Collaborative Framework on Geopolitics of Energy Transformation**⁶¹ to be held on 15 October, will provide Members the opportunity to discuss the Terms of Reference for the formation of a new Geopolitics Alliance, bring the work forward and propose a Work Programme. Some of the priority discussion subjects proposed include green hydrogen, climate and security, and critical energy minerals and materials.

In December 2020, IRENA will organise its sixth **Policy Day** to provide a forum for renewable energy policy dialogue. Countries and stakeholders can share experiences and disseminate best practices in policy-making to ensure the efficient deployment of renewable energy, and the maximisation of the benefits realised. The Policy Day generates feedback from IRENA Members, policy makers, and experts which provides key input to support IRENA's implementation of the Work Programme in the policy realm, to ensure relevance and accuracy. The sixth Policy Day will focus on pressing issues: policies for renewable heating and cooling, green hydrogen, community energy, the just and inclusive energy transition, as well as innovative financing mechanisms.

⁶⁰ More information available [here](#).

⁶¹ Supported by the Government of Norway.

Effective functioning of the Organisation

IRENA in 2020

IRENA employs a talented and diverse workforce

70 posts filled
with
44 nationalities

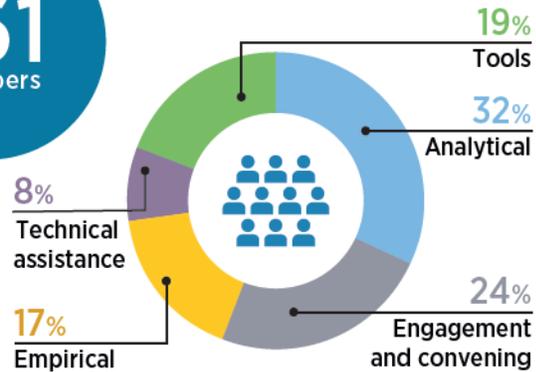
stationed in Abu Dhabi,
Bonn and New York

50% & **50%**
women & men

4 loaned or seconded
officers

161
Members

Work Programme 2020-2021 outputs



91%
in progress or completed



9 800
applications received
for 66 vacancies

31 e-books
including 19 on **interactive**
screens at 10th IRENA Assembly

25 publications
released this year to date, including:

- *Global Renewables Outlook*
- *The Post-COVID Recovery*
- *Renewable Energy and Jobs - Annual Review 2020*

85 webinars
+14 Assembly side-events
+8 ADSW side-events

110 Total events organized/
co-organized by IRENA
79 Virtual events
31 Actual events (including
22 side events during 10th Assembly
and World Future Energy Summit)

Key findings translated:



Attracting wide media coverage:
over **7 000** articles published
across **123** countries

Reports translated by Member State institutions:

ZH » 6 completed
» 1 ongoing **中文**

JP » 7 completed
» 2 ongoing **日本語**

RU » 6 completed **Русский**

As of mid-2020

To deliver the Agency's mandate, IRENA relies on the contributions and support of its Members, co-operation with a wide range of experts and institutions, and the commitment of its talented staff. This chapter summarises IRENA's key institutional and strategic activities in 2020.

Enabling delivery and increasing institutional impact

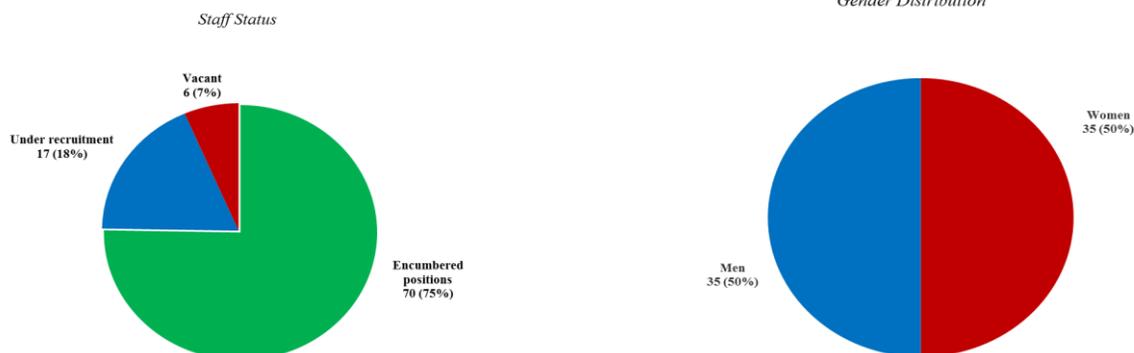
IRENA has been looking to new ways of implementing its Work Programme, whilst ensuring the safety and well-being of its staff and partners. Over the previous months, IRENA staff from all three duty stations have continued to deliver the Agency's objectives, whilst working from home. Integral to this success has been the work of IRENA's information and communications technology (ICT) teams, who have ensured the technical capability to continue working to the highest standard. Virtual meetings and collaborative ICT platforms have become the norm and provide new opportunities going forward to increase IRENA's inclusiveness.

At the beginning of the year, the Agency achieved a significant milestone as the IRENA Innovation and Technology Centre (IITC) moved to a new office location in Bonn. The official opening was planned for March but postponed due to the pandemic.

Significant effort was placed on aligning human resource policies and processes more closely with the Agency's strategic and programmatic objectives. Efforts also focused on additional personnel sourcing and building organisational capabilities needed to achieve the Agency's operational objectives with the right combination of skills, knowledge, competencies, and expertise, while promoting geographical, cultural, and gender diversity. Human resource practices, rules, and procedures have continued to be refined and updated to ensure effective and efficient responsiveness to the Agency's emerging and evolving needs and challenges, while safeguarding its core values and principles.

IRENA has stepped up its outreach efforts to attract talent from all over the world, including tapping into Members' expertise, and through the mechanisms provided by the decision of the Assembly at its second session (A/2/DC/5) such as loan arrangements and Junior Professional Officer Programme. During the period from 1 January 2020, 66 vacancies (core and project) were announced and over 9,800 applications received. Out of 93 core posts, 87 are filled or under recruitment (70 filled and 17 under active recruitment) and 6 are vacant. The 70 staff are from 44 nationalities out of which 50% are women and 50% are men.

Approved and filled/under recruitment posts by level as of 15 September 2020



Level	Approved	Filled or Under Recruitment
ASG	1	1
D-2	1	1
D-1	6	5
P-5	17	16
P-3/4	37	34
P-2/1	3	3
Sub-total Professional and above	65	60
General Services	28	27
Total	93	87

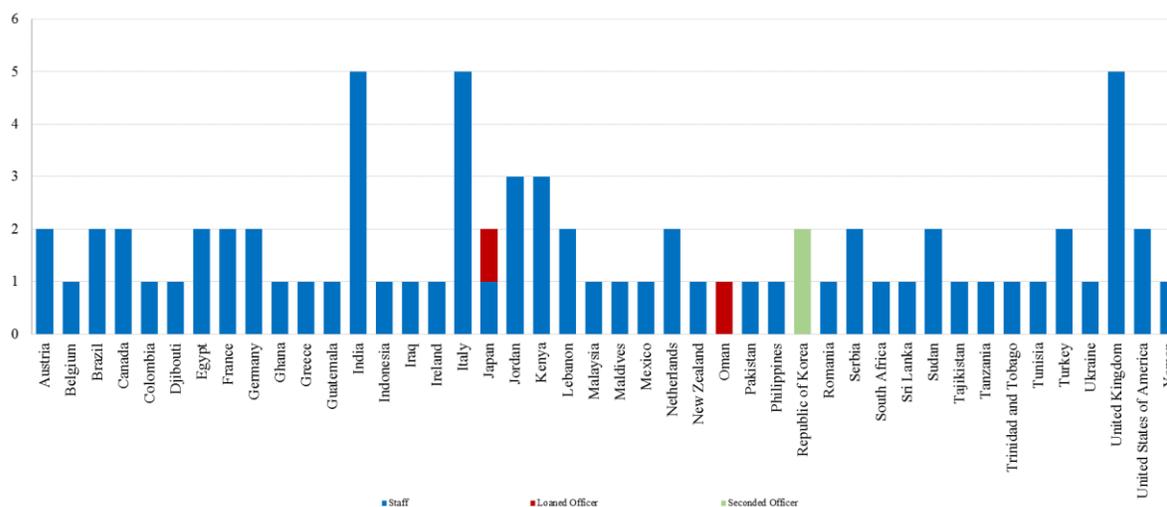
Loaned Personnel as of 15 September 2020

Division	Title	Loaned from
ODG	Liaison and Protocol Officer	UAE
IITC	Bioenergy Analyst	Japan

Seconded Officers (Voluntary Contributions) as of 15 September 2020

Division	Title	Seconded from
CEP	Programme Officer	Republic of Korea
PFS	Associate Programme Officer, Climate Finance and NDC	Republic of Korea

Geographical distribution (core posts, loaned personnel and seconded officers)



IRENA continues to strengthen its communication and outreach activities to increase the Agency’s impact. Since the beginning of 2020, IRENA has been referenced in over 7,000 media articles in 40 languages across 123 countries. The number of visitors to IRENA’s website grew by 50% significantly since the beginning of this year with an increase of 50% compared to the same period in 2019, almost reaching the mark of half a million users. IRENA’s website saw an increase in views of 45% compared to last year. IRENA has explored new formats like digital stories to encourage user interaction and increase return visitor rates to establish the Agency’s website as a reliable knowledge hub for renewables. IRENA has also continued to implement its strategy to target and deploy social media for global events, reports, and news.

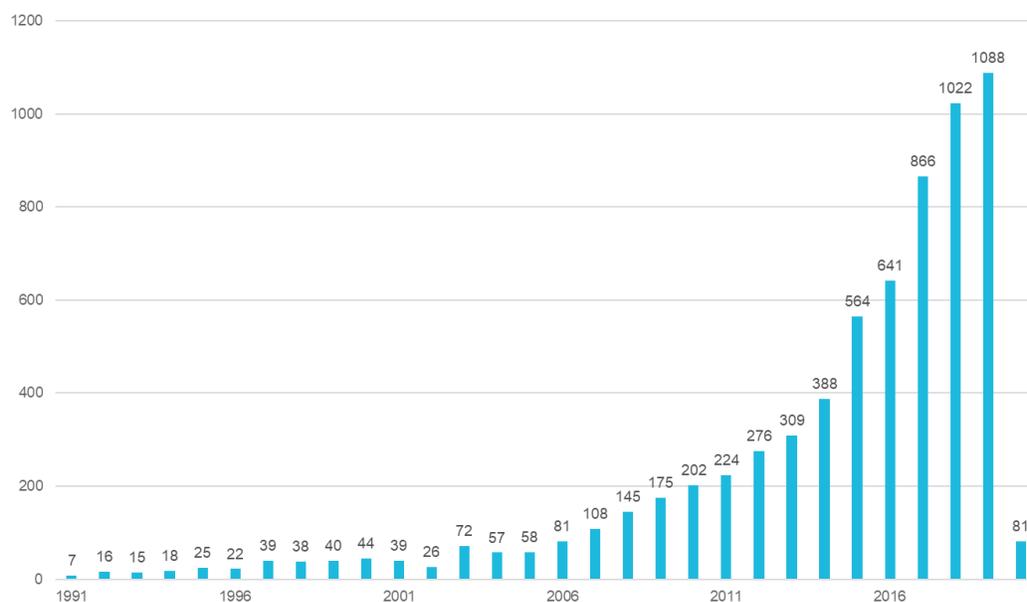
- Over 7,000 media article references
- 1.6 million webpage views
- 84,000 Twitter followers

Academic impact

As part of the Agency's drive to strengthen and embed monitoring and evaluation of programme impact, IRENA commissioned a **review of its impact in the academic sphere within the context of energy transition**.

The reach of IRENA’s publications is global, with over 130 citations by major research institutions around the world. The Agency's most-cited publications were on themes of the energy transition, optimisation of power systems and worldwide renewable energy policies. These themes are aligned with the top three themes identified when analysing all academic publications in the last 30 years using keywords related to the energy transition, highlighting the relevance of IRENA’s publications and the focus of the Medium-Term Strategy (MTS) on the transformation of the global energy system to the broader academic field. The findings from this analysis will feed into IRENA's mid-term external evaluation, which is mandated by the MTS.

Figure 13: Number of academic energy transition publications per year. A significant increase is seen since 2015 when the Paris Agreement and Agenda 2030 were adopted.



Source: ITOP.PARTNER Study contracted by IRENA, 2020

Monitoring and Evaluation

IRENA undertook its first external evaluation in 2015 at the mid-term of the previous strategic cycle. IRENA's current Medium-term Strategy 2018-2022 (MTS) includes specific provisions around strengthening the monitoring and evaluation of IRENA's programmatic impact through targeted activities and enhanced quality, type, and coverage of evaluations. These provisions include self-evaluation at the end of each programmatic cycle and mid-term external evaluation that will also inform the development of the next MTS.

Accordingly, IRENA conducted its first self-evaluation in 2019, rooted in evidence-based information on the Agency's performance in completion of its Work Programme and Budget for 2018-2019. Developing an empirical base for monitoring and evaluation was immensely useful and led to the change of several processes. In July 2020, IRENA initiated the process for its second external evaluation. The evaluation was conducted by the British consulting firm, International Organisation Development Ltd., and covered accountability in terms of relevance, effectiveness, and impact of work. The four objectives of the evaluation that will also inform the preparation of the next MTS 2023-2027 were:

- Evaluate the progress made since 2018 against the framework laid down in the MTS and a review of the Agency's positioning in the context of the global energy transition;
- Evaluate the reach, effectiveness and impact of the Agency's activities as laid down in the last two relevant Work Programme and Budget (2018-2019, 2020-2021) within the framework of the MTS and the broader context of the changing energy landscape;
- Provide conclusions and recommendations to strengthen the Agency's programme delivery under its guiding principles and provide an external perspective on its mission and strategic objectives in a dynamic working field.
- Recommend measures to strengthen monitoring and evaluation structure.

The process involved the collection of primary data through document review, interviews, and an online and anonymous survey, which were made available to all Members, as well as selected internal and external stakeholders. The interviews and surveys gathered information on IRENA's reach, effectiveness, and contribution to energy transition, and the Agency's progress made towards the fulfilment of the MTS. The external evaluation will be shared with Membership.

Overview of progress

For the first time, in early 2020 the Agency's senior management prepared an internal Directive that sets out the framework for delivery of the Work Programme and Budget for 2020-2021. Specifically, the Directive sets out the responsibilities of all Directors in the implementation of the programmatic outputs, expectations to uphold IRENA's core values of efficiency, competency, and integrity, and to promote a harmonious environment based on mutual respect that empowers staff, fosters creativity and promotes a culture of learning. It is envisaged that the Directive will be updated annually to reflect progress on the implementation of the Work Programme and set out new and refined responsibilities.

There is a total of 54 Work Programme outputs for the 2020-2021 biennium, which are spread across the four strategic objectives or pillars identified in the current MTS: 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. Of these total outputs, 9% are complete and 82% in progress.

Figure 14: IRENA's strategic objectives of the Work Programme and Budget for 2020-2021

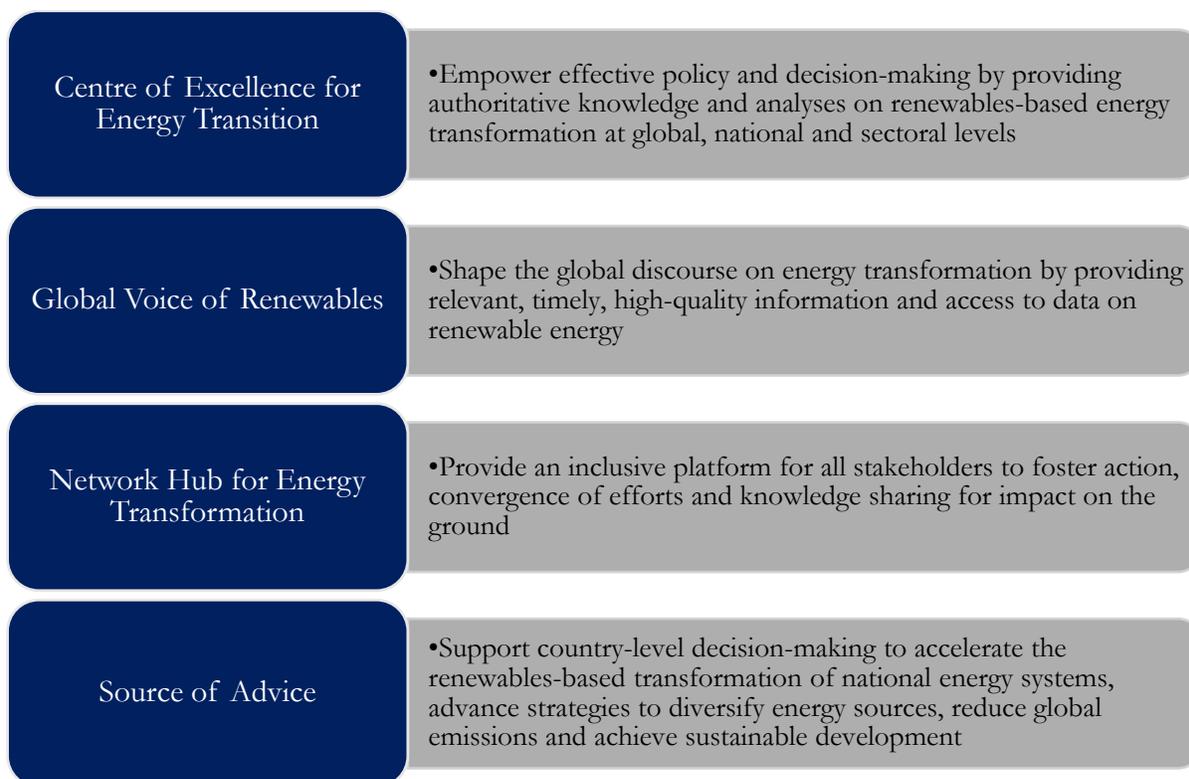
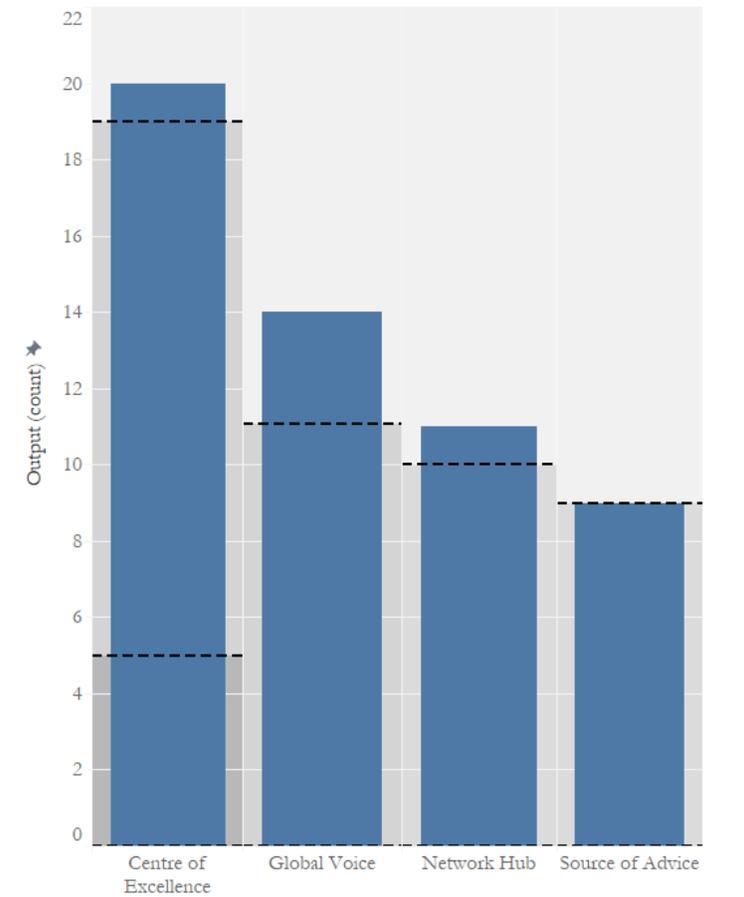
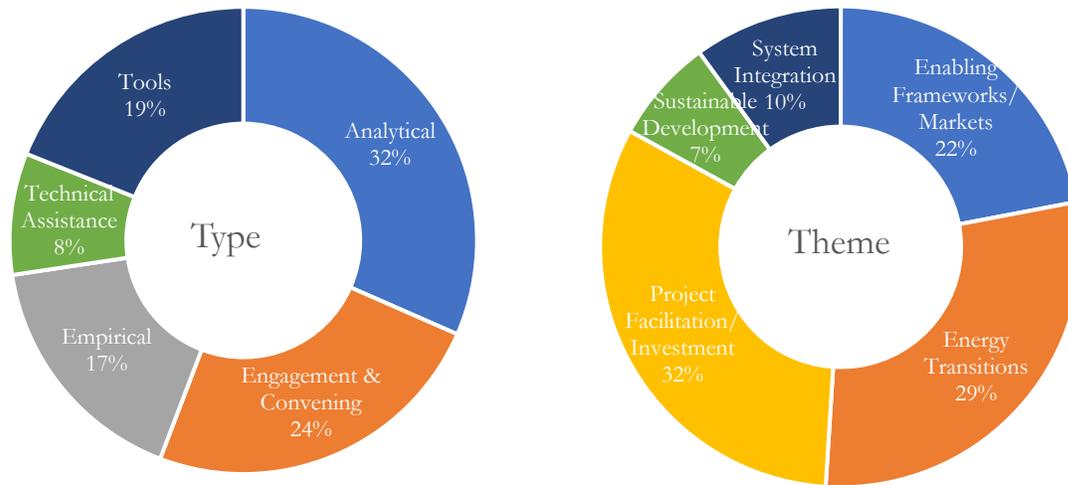


Figure 15: IRENA Work Programme 2020-2021 outputs (blue) and outputs completed (dark grey) or in progress (light grey)



The wide range of activities demonstrates the breadth of IRENA’s work. Of the Agency’s outward-facing activities (which does not include activities relating to the management of the Agency itself), the majority can be classified as analytical (*e.g.* Global Renewables Outlook, analytical briefs), followed by engagement and convening activities (*e.g.* country and regional engagement). This is a shift compared to earlier in the year where 40% of activities fell under convening and engagement. Tools (*e.g.* Renewable Readiness Assessments, FlexTool) and empirical work (*e.g.* statistics, Global Atlas) follow, with technical assistance (*e.g.* long-term planning, project facilitation) representing the lowest percentage. By topic, the majority of outputs are affiliated with project facilitation/investment followed by energy transition, a shift from earlier in the year where enabling frameworks paired with the energy transition were forefront. This analysis shows that as the year has advanced, activities are balancing out across MTS pillars and substantive priority areas. Shifts between engagement and convening activities to analytical is also reflective of the adjustments necessitated by the pandemic.

Figure 16: IRENA outward-facing activities by activity type and theme



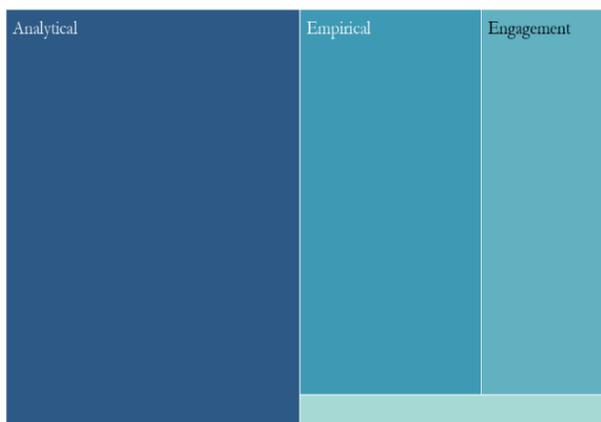
For the purpose of this analysis, IRENA’s outward-facing activities have been grouped according to the following themes:

- Enabling frameworks: improving frameworks such as policy, regulation and markets to enable renewables deployment;
- Energy transitions: global and regional energy transitions and global energy discourse;
- Project facilitation/investment: support to facilitate the implementation of renewable projects;
- Sustainable development: activities aligned with SDG 7 or cross-sectoral, sustainable agenda; and
- System integration: technical-level transition-related activities.

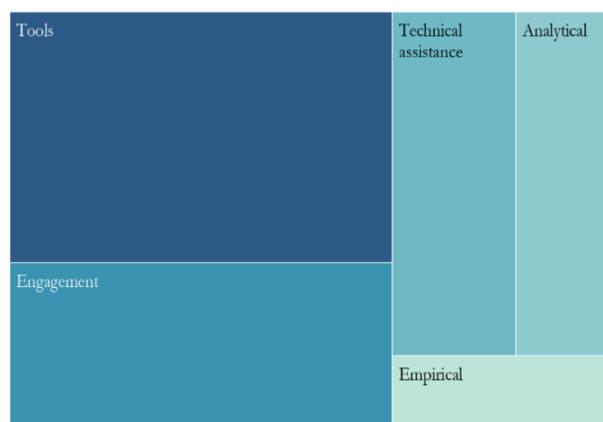
IRENA’s outward-facing work can broadly be characterised into knowledge creation (45% of IRENA outputs) and action on the ground (31% of IRENA outputs) with the rest related to institutional matters. Over 85% of *action on the ground* outputs are supported wholly or in part by voluntary contributions, compared to 30% of the *knowledge creation* work.

Figure 17: Knowledge creation and action on the ground by activity type

What is included in ‘Knowledge creation’ work?



What is created in ‘Action on the ground’ work?



Resource Overview

This chapter presents details of the core budget and voluntary contributions applicable to this Work Programme.

Biennial budget overview

Table 1: 2020-2021 Biennium Budget Utilisation by funding source (in USD Thousands)

	2020-2021 Biennium Budget	Utilisation as of 15 September 2020	
		Commitment and Expenses	Proportion of 2020- 2021 Biennium Budget
Assessed Contributions (Core Budget)	44,461	18,455	42%
Core Non-Assessed UAE			
UAE Support	5,000	1,143	23%
Governing Body Meetings	3,200	221	7%
IT Infrastructure Support	920	164	18%
<i>Subtotal</i>	9,120	1,528	17%
Core Non-Assessed Germany			
Innovation and Technology Centre	10,890	4,509	41%
<i>Subtotal</i>	10,890	4,509	41%
Core Non-Assessed Other Contributions			
Core Non-Assessed Other	1,704	227	13%
<i>Subtotal</i>	1,704	227	13%
Total Core Non-Assessed	21,714	6,264	29%
Grand Total	66,175	24,719	37%

Core Non-Assessed Contributions*as of 15 September 2020, in USD***Budgeted Voluntary Contributions**

	2020	
	Committed	Received
GERMANY		
IRENA Innovation and Technology Centre	5,445,000	5,445,000
United Arab Emirates (UAE)		
UAE Support	2,500,000	1,250,000
Governing Body Meetings	1,600,000	1,600,000
IT Infrastructure Support	460,000	460,000
Subtotal UAE Contributions	4,560,000	3,310,000

Total Budgeted Voluntary Contributions	10,005,000	8,755,000
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Other Voluntary Contributions

Donor/Project	2020	
	Committed	Received
European Commission, Horizon 2030	550,791	409,389
European Commission, Directorate-General for Energy	390,625	-
Italy	530,035	-
Japan	606,164	450,455
King Abdullah Petroleum Studies and Research Center (KAPSARC)	200,000	100,000
Korea Energy Economics Institute	82,892	82,892
NDC Partnership Climate Action Enhancement Package (CAEP)	600,000	450,000
United Nations Development Programme (UNDP)	2,200,000	576,170
World Bank (IBRD)	13,438	-
Subtotal	5,173,945	2,068,906

Fund for Developing Countries Representatives

Donor	2020	
	Committed	Received
Flanders Region of Belgium	16,784	-
United Arab Emirates (UAE)	100,000	100,000
Subtotal	116,784	100,000

Total Other Voluntary Contributions	5,290,729	2,168,906
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The **Fund for Developing Country Representatives (FDCR)**, which was established at the second session of the IRENA Assembly, facilitates the participation of representatives of developing countries in IRENA meetings. Since its establishment, the FDCR has been instrumental in ensuring a high level of inclusiveness, ownership, and transparency in the decision-making processes and activities of the Agency. The Fund supports the participation of representatives of Least Developed Countries (LDCs) and Small Island Developing States (SIDS) in all IRENA's governing body meetings, including: Assembly, Council, and Committees.

Multi-Year Voluntary Contributions

Donor/Project	Multi-Year Commitments	Received prior to 2020	Received during 2020
Government of the Walloon region, Belgium	2,207,506	-	-
Denmark*	13,457,822	6,355,549	-
Germany (International Climate Initiative)*	6,796,311	3,459,818	-
Norway	4,332,756	-	-
Total	26,794,395	9,815,367	-

*Contributions pledged and partially received prior to 2020

Figure 18: Received and outstanding assessed contributions for 2019 core budget (in USD millions, as of 15 September 2020)



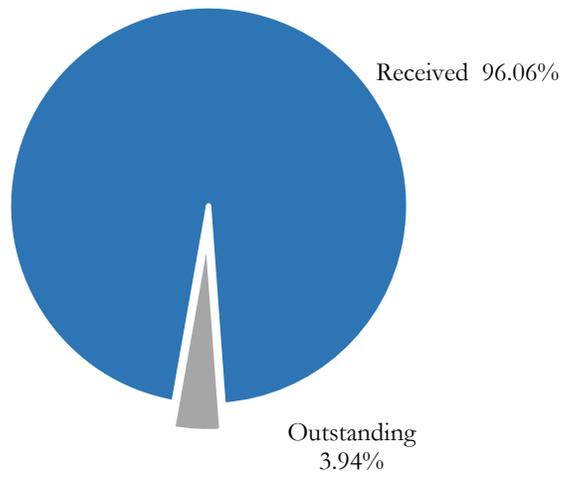
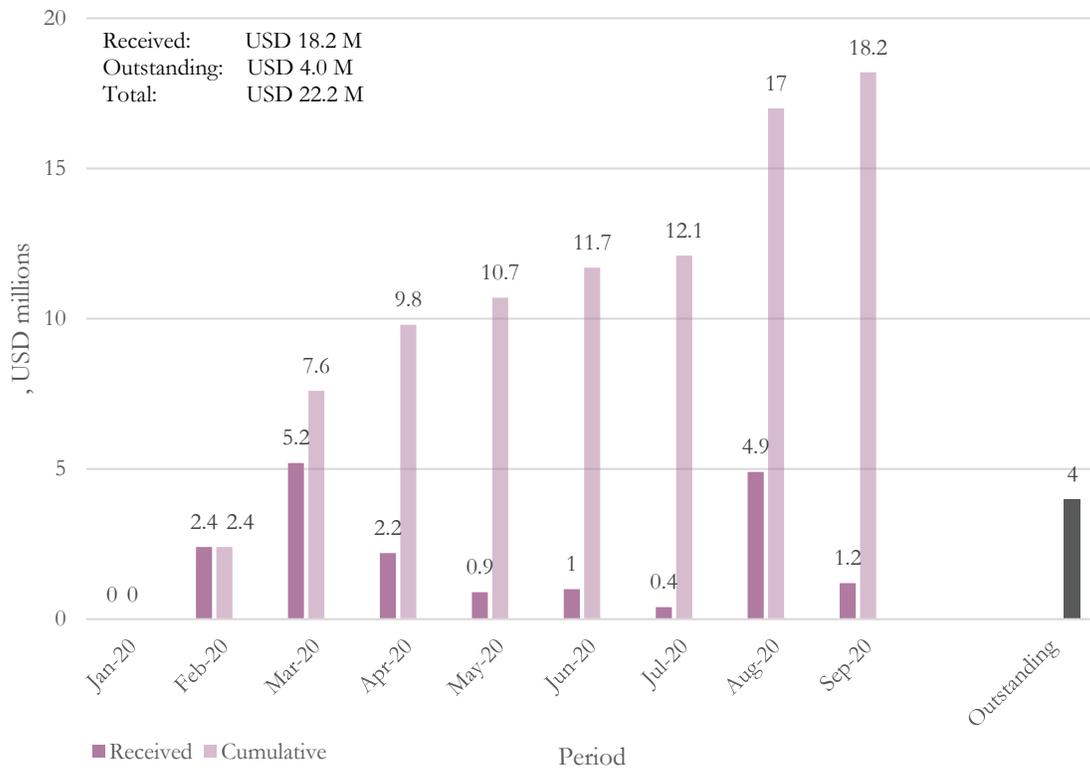


Figure 19: Received and outstanding assessed contributions for 2020 core budget (in USD millions, as of 15 September 2020)



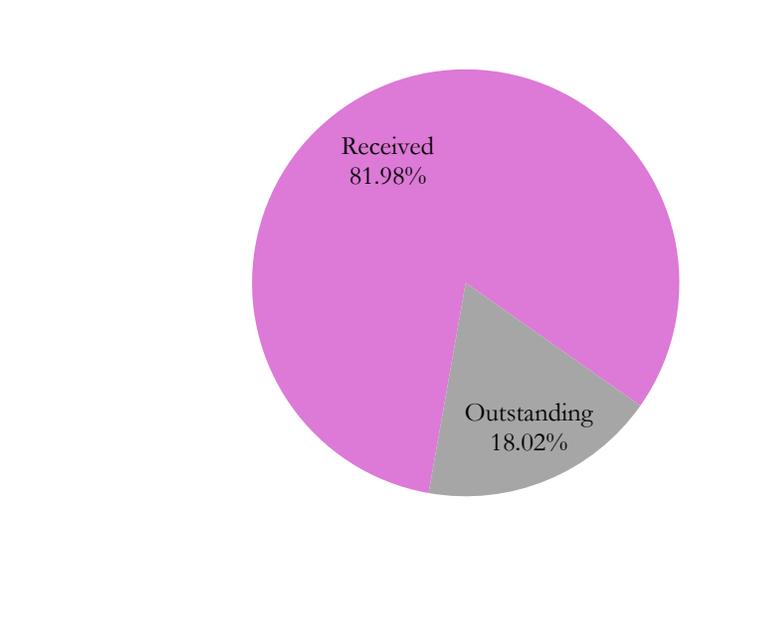


Figure 20: Number of Members with received and outstanding contributions to the 2019 core budget (as of 15 September 2020)

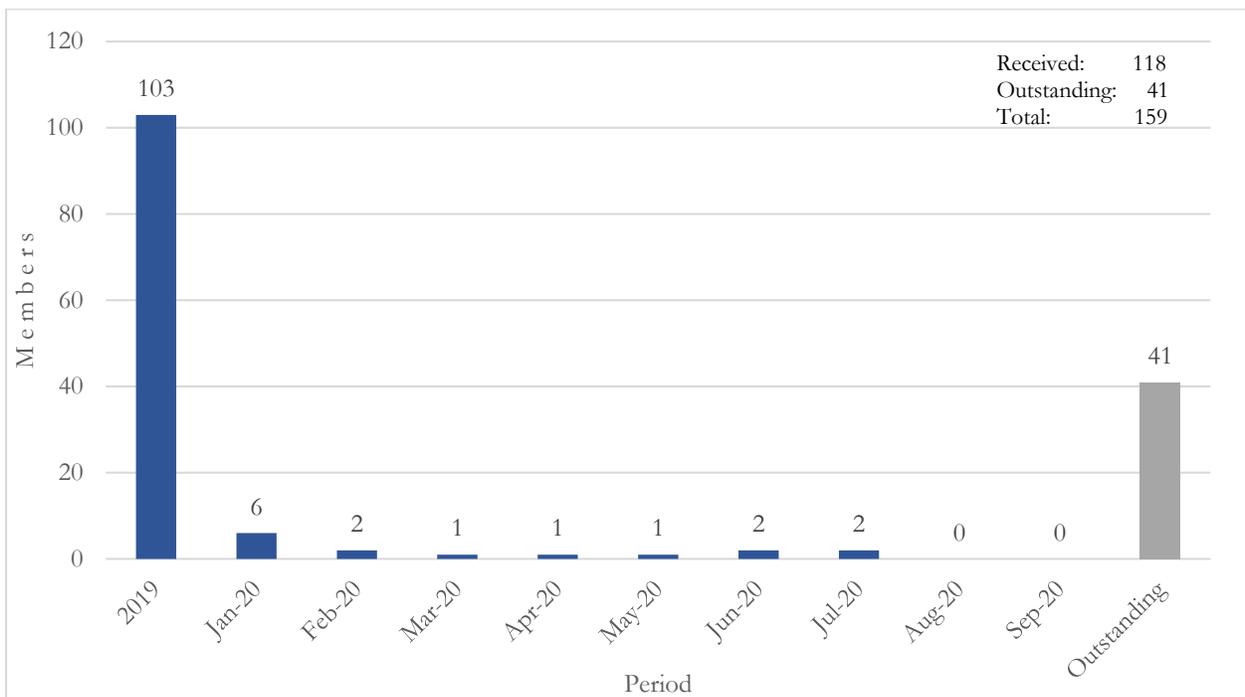
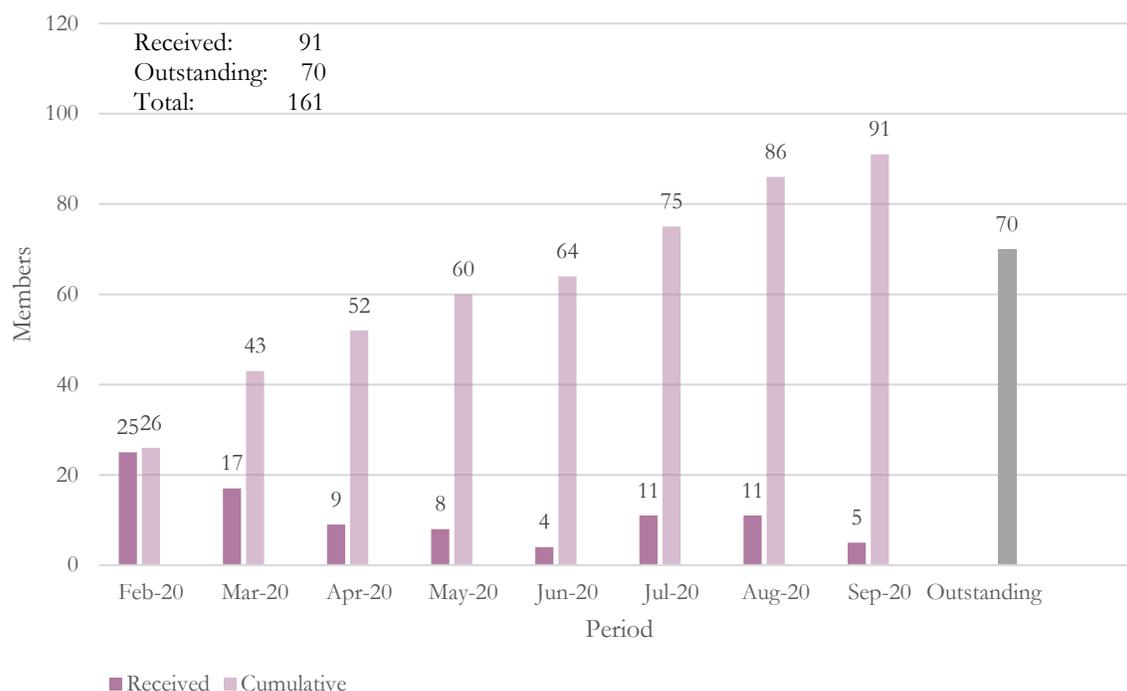


Figure 21: Number of Members with received and outstanding contributions to the 2020 core budget (as of 15 September 2020)



Voluntary contributions

Table 2: Voluntary contributions in active implementation during 2020-2021 biennium (including carry-over activities from the previous biennium)

Donor (year)	Contribution Topic
Government of the Walloon Region of Belgium	Various projects
Denmark, Ministry of Foreign Affairs (2019-2021)	Long-term Planning
Denmark, Ministry of Foreign Affairs (2019-2023)	SIDS Lighthouses Initiative 2.0
European Commission Directorate-General for Energy (2019)	Central and South-Eastern Europe (CESEC) REmap
European Commission Horizon 2030 (2020-2021)	Tracking Energy Innovation Impacts Framework
Flemish Region of Belgium	Fund for Developing Country Representatives (FDCR)
Germany, Federal Ministry of Economics and Technology (BMWi)	Global Renewables Outlook (2020 edition)
Germany, International Climate Initiative (2015-2023)	SIDS Lighthouses
Germany, International Climate Initiative (2017-2020)	Cities - Energy Solutions for Cities of the Future
International Bank for Reconstruction and Development (IBRD) (2020)	IRENA Contribution to 2020 SDG 7 Tracking Report
Italy, Ministry of Foreign Affairs and International Cooperation (2020)	Sahel/Sub-Saharan Africa
Islamic Development Bank (IsDB) (2019)	Pan Arab Clean Energy Initiative
Japan, Ministry of Agriculture, Forestry and Fisheries (MAFF) (2019-2020)	Biomass Strategy for Sustainable Bioenergy Production

Japan, Ministry of Agriculture, Forestry and Fisheries (MAFF) (2020-2022)	Development of Circular Economy with Bioenergy and Co-products
Japan, Ministry of Economy, Trade and Industry (METI)	Various projects
King Abdullah Petroleum Studies and Research Centre (KAPSARC) (2020)	G20 reports
Korea Energy Economics Institute (KEEI) (2020)	Northeast Asia Power System Interconnections: Lessons from the Regional Initiatives for the Promotion of Renewable Power Deployment and Trade
NDC Partnership (2020-2021)	NDC Partnership Climate Action Enhancement Package (CAEP)
Norway, Ministry of Foreign Affairs (2020-2021)	Various projects
Swedish Energy Agency (2018)	Innovative solutions
United Arab Emirates (2014-2020)	IRENA/Abu Dhabi Fund for Development (ADFD) Project Facility
United Kingdom of Great Britain and Northern Ireland Department for Business, Energy & Industrial Strategy (BEIS) (2019)	Impact Innovation
UN Development Programme (UNDP) (2020-2021)	UNDP Climate Promise

Work Programme 2020-2021 Biennium

This section presents a full matrix detailing the progress of Work Programme activities by pillar

I. Centre of Excellence for Energy Transition Core assessed and core non-assessed resources (in USD thousands): 13,394. Outputs supported by additional voluntary contributions are footnoted.		
<i>Objective: Empower effective policy and decision-making by providing authoritative knowledge and analyses on renewables-based energy transformation at global, national and sectoral levels.</i>		
Outputs	Status	Description
Annual statistics: renewable capacity, renewable energy, off-grid	In progress	“Renewable Capacity Statistics” (March 2020). (Click here) “Renewable Energy Statistics” (July 2020). (Click here)
Jobs Annual Review (annual)	Completed	2020 edition (September 2020). (Click here)
Annual update on power generation costs	Completed	“Renewable Energy Power Generation Costs in 2019” (June 2020). (Click here)
Annual update on patents and standards	In progress	
Global Atlas data updates on renewable potentials	In progress	Updating the renewable resource maps from data providers (member states, international institutions and private sectors). (Click here to access the platform)
IRENA/IEA Policies and Measures Database	In progress	Update for Africa and Asia under development.
The Energy Progress Report: Tracking SDG7 ⁶² (annual, jointly with IEA, WB, WHO and UN)	Completed (2020 edition)	“Tracking SDG 7: Energy Progress Report 2020” published May 2020. (Click here) SDG 7 Policy Briefs: <ul style="list-style-type: none"> • Advancing Implementation of SDG 7 in Support of the 2030 Agenda (June 2020). (Click here) • Advancing SDG 7 in Least Developed Countries. (June 2020). (Click here)
Global Energy Transformation (annual editions) ⁶³	Completed (2020 edition)	“Global Renewables Outlook: Energy Transformation 2050” (April 2020). (Click here) “Post-COVID Recovery – an agenda for resilience, development and equality” (June 2020). (Click here) COVID Tracker developed: Track of monetary, fiscal, and other measures since April 2020 for internal knowledge. Selected news articles:

⁶² Supported by the International Bank for Reconstruction and Development.

⁶³ Supported by the Government of Germany (BMW).

		<ul style="list-style-type: none"> • Renewable Energy Can Support Resilient and Equitable Recovery • IRENA Puts Energy Transformation at Heart of Sustainable Recovery Agenda • COVID-19 Intensifies the Urgency to Expand Sustainable Energy Solutions Worldwide
Measuring the Socio-Economic Footprint report		
Innovation Landscape: Renewable Electricity in End-use report.	In progress	
Global Landscape: Renewable Energy Finance report	In progress	“Global Landscape: Renewable Energy Finance 2020” (Oct. 2020)
3rd Innovation Week	In progress	IRENA Innovation Week to take place 05-08 October 2020. (Click here)
ASEAN 2050 energy transition outlook ⁶⁴	In progress	Data collection and information ongoing; Engaging with ASEAN Centre for Energy to align with the Asian Energy Outlook (AEO). FlexTool training for ASEAN conducted (June 2020). (Click here)
Central America 2050 energy transition outlook ⁶⁵	In progress	New joiner: Guatemala Costa Rica workshop postponed due to COVID-19. FlexTool analysis completed for historical data and reference scenario. FlexTool training for Latin America conducted (May 2020). (Click here)
Impact of Innovation on Energy Transition ⁶⁶	In progress	Experts consultative workshop held (Oct. 2020). (Click here) Innovations for a decentralised, renewable-powered system: Peer-to-peer electricity trading webinar (Click here)
Human resources and workforce planning strategy	In progress	118 Recruitment Actions: 58 completed, 16 on hold due to COVID-19, 44 Active.
Performance management	Completed	Online Performance Management System (e-PAR) launched.
Refinement of Staff Rules and updated HR Manual	In progress	Admin Instructions/Directives in draft on Remote Work, Performance Management, Training, Roster Management, Consultants.
System for engagement of academia, researchers and the private sector	In progress	Development of guidelines for private sector engagement released in July 2020. (Click here)

⁶⁴ Supported by the Government of Denmark.

⁶⁵ Supported by the Government of Norway.

⁶⁶ Supported by the European Commission, under Horizon 2030 programme.

		News article: IRENA Develops Guidelines for Co-operation with the Private Sector . Academic review conducted. Results are helping IRENA to improve our presence with academia.
Training and staff development strategy	In progress	Performance Management training held in AD. Performance Management and CBI training in Bonn continue to be postponed due to COVID-19. Ongoing online LinkedIn training. 70 licenses shared on a rotational basis with staff. Training policy in development as well as calendar for staff-wide training activities for 2021.

II. Global Voice of Renewables		
Core assessed and core non-assessed resources (in USD thousands): 11,011. Outputs supported by additional voluntary contributions are footnoted.		
<i>Objective: Shape the global discourse on energy transformation by providing relevant, timely, high-quality information and access to data on renewable energy.</i>		
Outputs	Status	Description
Power Market Design for the Energy Transition report	In progress	
Market Analysis: Africa	In progress	
Ecosystems for Sustainable Livelihoods report	In progress	
Policies at the Time of Transition: Transport (with IEA and REN21) report		
Leveraging Local Capabilities (selected technologies) report	In progress	
6th and 7th Global Policy Day	In progress	6th Global Policy Day postponed to December 2020 due to COVID-19.
Toolbox for long-term planning: methodologies and best practice	In progress	Development of visualisation dashboard of long-term modelling results for Africa. ⁶⁷ “Power sector planning in Arab countries: Incorporating variable renewables” ⁶⁸ (Jan 2020). (Click here)
Grid codes for variable renewable energy (VRE) report		
Value of storage in national energy systems report and toolkit	In progress	“ Electricity Storage Valuation Framework ” released (March 2020). (Click here)

⁶⁷ Supported by the Government of the Walloon Region of Belgium.

⁶⁸ Supported by the Islamic Development Bank (IsDB).

		The Framework has been presented under the partnership with the World Bank in the context of the Energy Storage Partnership (May and June 2020).
Global assessment of geothermal energy		
Gender and Renewable Energy report	In progress	Wind energy: A gender perspective (Click here)
NDCs and Renewable Energy Targets ⁶⁹	In progress	Database of Renewable Energy Targets completed. (Click here). Analysis in progress.
Geopolitics of the Energy Transformation ⁷⁰	In progress	“Collaborative Framework on Geopolitics of Energy Transformation” meeting (June 2020) (Click here).
Analytical briefs, guidelines and working papers on topical issues (bio-energy, hydrogen, hydropower, offshore wind, power-to-X, standards, VRE integration, auctions, fiscal policies, target design, distributed generation, cities, renewable options for buildings, market-based mechanisms, access and electrification planning)	In progress	<p>Briefs published:</p> <ul style="list-style-type: none"> • “Renewable energy finance: Sovereign guarantees” (Jan. 2020). (Click here) • “Renewable energy finance: Institutional capital” (Jan. 2020). (Click here) • “Renewable energy finance: Green bonds” (Jan. 2020). (Click here) • Energy subsidies: Evolution in the global energy transformation to 2050 (Apr. 2020) (Click here) • Business Models Innovation Landscape (Jul. 2020) (Click here) • System Operation Innovation Landscape (Jul. 2020) (Click here) <p>Reports published:</p> <ul style="list-style-type: none"> • “Reaching Zero with Renewables (Sept. 2020) (Click here for preview. Click here for full report) • “Innovative solutions for 100% renewable power in Sweden”⁷¹ (Jan. 2020). (Click here) • “Renewable energy auctions: Status and trends beyond price” (Click here) • “Power system organisational structures for the renewable energy era” (Click here) <p>Reports soon to be published:</p> <ul style="list-style-type: none"> • “100% Renewable Energy”

⁶⁹ Supported by the Government of the Walloon Region of Belgium.

⁷⁰ Supported by the Government of Norway.

⁷¹ Supported by the Government of Sweden.

		<ul style="list-style-type: none"> • “Energy Solutions for Cities of the Future”⁷² • “Mobilising institutional capital for renewable energy” • “Green Hydrogen Guide for policy makers” • Auctions case studies. Countries to date include Colombia, Japan and Malaysia⁷³ • “Renewable Energy Policies in a Time of Transition: Heating and Cooling”⁷⁴ • “Concentrating Solar Power: Clean power on demand 24/7” joint report with World Bank and Climate Investment Funds • Rise of Renewable Energy in Cities • Innovation Outlook: Thermal Energy Storage Re-electrification report (In collaboration with State Grid China) <p>Events:</p> <ul style="list-style-type: none"> • Collaborative Framework on Hydropower (June 2020). (Click here) • Collaborative Framework on Hydropower (Sept. 2020). (Click here) • Collaborative Framework on Green Hydrogen (June 2020). (Click here) • Collaborative Framework on Green Hydrogen (Sept. 2020). (Click here) • Collaborative Framework on Ocean Energy/Offshore Renewables (June 2020) (Click here). • Collaborative Framework on Enhancing the Dialogue on High Shares of Renewables in Energy Systems (July 2020) (Click here) • Side event on Energy Transition for the Cities of the Future at the 10th World Urban Forum (Feb 2020) (Click here for press release)
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⁷² Supported by the Government of Germany as part of the German Government International Climate Initiative (IKI). The Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU) support this initiative based on a decision adopted by the German Bundestag.

⁷³ Supported by the Governments of Germany and Japan.

⁷⁴ Supported by the Government of Japan.

III. Network Hub		
Core assessed and core non-assessed resources (in USD thousands): 11,037. Outputs supported by additional voluntary contributions are footnoted.		
<i>Objective: Provide an inclusive platform for all stakeholders to foster action, convergence of efforts and knowledge sharing for impact on the ground.</i>		
Outputs	Status	Description
IRENA Forums in regions and sub-regions	In progress	Preparations in place, delayed due to COVID19. Will start as soon as travel restrictions are lifted.
SIDS Lighthouses Initiative ⁷⁵	In progress	<p>Initiative coordination:</p> <ul style="list-style-type: none"> • Five new partners joined the initiative: Pacific Community, Pacific Power Association, Sur Futuro Foundation and the UN Office of the High Representative for the LDCS, LLDCS, e SIDS (UN-OHRLLS) and Greening the Islands. • Country profiles updated and uploaded on the SIDS Lighthouse Initiative (LHI) website and shared with SIDS. • Progress of SIDS LHI and the Enhanced SIDS Climate Package presented at the Alliance of Small Island States (AOSIS) Placencia Forum. (Apr. 2020) (Click here) • Co-hosted <i>SIDS High-Level Dialogue - Accelerating Energy Transition in Small Island Developing States to Stimulate Post-Pandemic Recovery</i> with the AOSIS (June 2020). (Click here) • Co-hosted Energy Transformation in Small Island Developing States: Towards sustainable and climate resilient post-pandemic recovery with Denmark on the progress of the Ambitious SIDS Climate Package during the UN Climate Summit Week (Sept. 2020) (Click here). <p>Country-level work:</p> <ul style="list-style-type: none"> • Joint mission with UNDP on Energy and Blue Economy to Sao Tome Principe (Mar. 2020) • Renewable energy project concept notes for Sao Tome and Principe to be submitted for funding development. • Climate Promise energy-related activities in SIDS (Click here). • With support of UNDP country offices, Climate Promise engagements established in

⁷⁵ Supported by Governments of Denmark, Germany as part of the German Government International Climate Initiative, NDP Partnership and UNDP.

		<p>Saint Kitts and Nevis, Dominica, Sao Tome and Principe and Barbados.</p> <ul style="list-style-type: none"> • Project facilitation support is provided in Sao Tome and Principe and Barbados, in developing bankable project concept notes to attract investment. • Supporting CAEP country-level activities in the AIS, Caribbean and Pacific SIDS. • Development of 100% renewable energy and transport roadmap for Antigua and Barbuda ongoing.
Global Geothermal Alliance	In progress	<p>New GGA partners : Serbian Geothermal Association. Total 46 Members⁷⁶, 40 Partners⁷⁷.</p> <p>GGA website is being developed into a knowledge sharing platform: Update of Africa (Click here), Europe (Click here), Asia (upcoming) and Latin America and Caribbean (Click here) regional profiles.</p> <p>Themes on International Training Centres and Geothermal Resource Assessment Methodologies. (Click here)</p> <p>Three webinars organised on “Integration of low-temperature renewable energy source in district heating and cooling networks”⁷⁸. (Click here)</p> <p>“Guidebook for enabling the integration of low-temperature renewable energy sources into district heating and cooling networks” (upcoming)⁷⁹.</p>

⁷⁶ Argentina, Bolivia, Burundi, Chile, Colombia, Comoros, Costa Rica, Djibouti, Ecuador, Egypt, El Salvador, Ethiopia, Fiji, France, Germany, Guatemala, Honduras, Iceland, India, Indonesia, Italy, Japan, Kenya, Kingdom of the Netherlands, Malaysia, Mexico, New Zealand, Nicaragua, Pakistan, Papua New Guinea, Peru, Philippines, Poland, Portugal, Romania, Saint Vincent & the Grenadines, Solomon Islands, Switzerland, Tonga, Turkey, Uganda, United Republic of Tanzania, United States of America, Vanuatu, Zambia, Zimbabwe.

⁷⁷ African Development Bank, African Union Commission, AGH University of Science and Technology (Poland), Andean Geothermal Center of Excellence (Chile), Asian Infrastructure Investment Bank (AIIB), Association GeoEnergy Celle e.V. (Germany), Canadian Geothermal Energy Association, Caribbean Electric Utility Services Corporation (CARILEC), Centro Mexicano de Innovación en Energía Geotérmica (CeMIEGeo), Chinese Renewable Energy Industries Association (CREIA), Eastern African Power Pool, Energy Institute Hrvoje Požar (Croatia), European Geothermal Energy Council, Geothermal Canada, GEODEEP - Geothermal Cluster for Heat and Power (France), Geothermal Power Plants Investors Association (Turkey), Geothermal Resources Council (USA), Geothermal Training Programme in Iceland (GRO GTP), Iceland GeoSurvey, Iceland Geothermal Cluster Initiative, Inter-American Development Bank, International Geothermal Association, International Renewable Energy Agency, Islamic Development Bank, Macedonian Geothermal Association, National Energy Authority (Iceland), New Partnership for Africa’s Development, Nordic Development Fund, Organization of American States, Organisation of Eastern Caribbean States, Pacific Community, Regional Center for Renewable Energy and Energy Efficiency, Serbian Geological Society, Serbian Geothermal Association, Southern Africa Power Pool, United Nations Environment Programme (UN Environment), United Nations Industrial Development Organization (UNIDO), United States Energy Association (USA), University of Geneva, World Bank.

⁷⁸ Supported by the Government of Germany as part of the German Government International Climate Initiative.

⁷⁹ Supported by the Government of Germany as part of the German Government International Climate Initiative.

		Report “Assessment of geothermal development for electricity and direct use in East Africa Rift region” under development (upcoming) ⁸⁰
5th International Off-grid Renewable Energy Conference		5th IOREC scheduled for October 2020 postponed to 2021 due to COVID-19. 4th edition of the annual ECOWAS Sustainable Energy Forum (ESEF) in partnership with ECREEE, GIZ and ARE (24-26 November 2020)
Implementation of regional action agendas and clean energy corridors ⁸¹ in Central Asia, Latin America, Middle-east and North Africa, South Asia, South East Asia Southeast Europe and Sub-Saharan Africa	In progress	<p>Implementation initiated of the “Regional Capacity-Building Programme on Long-Term Planning for Central Africa” in partnership with the Central Africa Power Pool.⁸²</p> <p>Regional training in planning on the “Economics of Power Systems Planning and Operation” in West Africa.</p> <p>Under the PACE initiative:</p> <ul style="list-style-type: none"> • Interim reports produced including outcomes of the first stage of the zoning project.⁸³ • IRENA FlexTool Training for MENA hosted in partnership with RCREEE and League of Arab States (LAS) (Click here). <p>Development of a regional parliamentary strategy in the ECOWAS region, including a regional parliamentary meeting.</p> <p>Co-organisation of a High-Level Dialogue with the Africa Union on the pandemic response and Africa’s energy transformation. (May 2020). (Click here).</p> <p>Webinar: ‘Accelerating the Southeast Asian Energy Transformation’. (Click here).</p> <p>Webinar: ‘Accelerating Latin America’s Energy Transformation RE and Economic Recovery’ (Click here)</p> <p>Organised 2nd SOME-IRENA meeting with representatives from ACE, ASEAN Secretariat and Energy Ministries from 10 ASEAN Member States on the sidelines of the 38th ASEAN Senior Officials Meeting on Energy (SOME).</p> <p>Organised workshop with ACE on sidelines of 27th Annual Meeting of the Renewable Energy Sub-Sector Network (RE-SSN) to discuss the IRENA-ASEAN MOU activity priorities for 2020-2021. (Click here).</p>

⁸⁰ Supported by the Government of Japan.

⁸¹ Supported by the Islamic Development Bank (IsDB) and the Government of Norway.

⁸² Supported by the Government of the Walloon Region of Belgium.

⁸³ Supported by the Government of Norway.

		CECCA workshop 2020: Integration of variable renewable energy sources (Oct 2020).
Partnerships to promote deployment of decentralized renewable energy solutions ⁸⁴	In progress	WHO-led Global Health and Energy Platform for Action (HEPA) operational. In partnership with the WHO, World Bank and SEforAll, IRENA is producing the Global Assessment of Electricity in Healthcare report under the auspices of HEPA.
Assessment of renewable energy in agri-food chains ⁸⁵	In progress	Partnering with ICIMOD to conduct Viability Assessment of Decentralised Renewable Energy for Food Value Chains in the Hindukush and Himalaya Regions. Inception meeting held.
Country-specific assessments for electrification of rural health centres ⁸⁶	In progress	Partnered with the Government of Burkina Faso (Ministries of Energy and Health) and the SELCO Foundation to conduct a sectoral assessment for electrification of rural health facilities. Approach and work plan adapted due to COVID-19. Inception meeting held.
Collaborative engagement with international organisations, multilateral institutions and initiatives	In progress	11 MoUs have been signed as of end September 2020 with: <ul style="list-style-type: none"> • Abu Dhabi Global Market • Cassa Depositi e Prestiti • Department of Energy of Abu Dhabi • East African Centre of Excellence for Renewable Energy and Energy Efficiency • European Bank for Reconstruction and Development • Fondazione Eni Enrico Mattei (FEEM) • International Energy Forum • United Nations Economic and Social Commission for Asia and the Pacific • United Nations Human Settlements Programme • United Arab Emirates Ministry of Energy and Industry • World Economic Forum Other cooperative arrangements include: <ul style="list-style-type: none"> • Launch of the Collaborative Framework on "Enhancing Dialogue among Countries with High Shares of Renewables in Energy Systems". First virtual meeting held on 1 July 2020 (Click here). • Input to G20 (Reduce and Recycle reports finalized; presentation during G20 working

⁸⁴ Supported by the Government of the Walloon Region of Belgium.

⁸⁵ Supported by the Government of the Walloon Region of Belgium.

⁸⁶ Supported by the Government of the Walloon Region of Belgium.

		<p>groups) in cooperation with King Abdullah Petroleum Studies and Research Center (KAPSARC), Saudi Arabia under the G20 Presidency⁸⁷</p> <ul style="list-style-type: none"> • Co-organisation of a High-Level Dialogue with the Africa Union on the pandemic response and Africa’s energy transformation. (May 2020). (Click here) • Collaboration with Africa Centre for Sustainable Development at the Africa Energy Indaba 2020, Cape Town, South Africa (Mar. 2020)⁸⁸ (Click here) • Government of Denmark and IRENA signed a Strategic Partnership in September 2020.
Coalition for Action	In progress	<p>Reports/briefs and events under preparation:</p> <ul style="list-style-type: none"> • Coalition for Action country papers of the Coalition Business and Investors Group (India and Mexico) • Coalition for Action white paper on “Towards 100% Renewables in Companies: Focus Heating/Cooling” • Coalition for Action white paper on “Enabling Community Energy Investment” • Coalition for Action white paper on “Hydrogen Best Practices: Lessons Learned” <p>Reports/Briefs published and events held:</p> <ul style="list-style-type: none"> • Public-Private Dialogue at the 10th IRENA pre-Assembly, including launch of Coalition for Action white paper “Towards 100% Renewables: Utilities in Transition” (Jan 2020). (Click here) • IRENA Coalition for Action Members Webinar: COVID-19 and Beyond. (April 2020). (Click here) • IRENA Coalition for Action Members Call to Action in Response to COVID-19: Renewable Energy is Key Part of the Solution (April 2020). (Click here). • Coalition for Action country papers of the Coalition Business and Investors Group (Algeria, Colombia, Jordan, Tunisia and Viet Nam). (Click here).
Long-Term Energy scenarios campaign and network ⁸⁹	In progress	<p>LTES Campaign extended for the third year. International Dialogue on Global Best Practices for Strategic Long-Term Energy Planning</p>

⁸⁷ Supported by the Government of Saudi Arabia, KAPSARC.

⁸⁸ Supported by UNDP.

⁸⁹ Supported by the Government of Denmark.

		<p>(January 2020). (Click here for event information, and here for proceedings).</p> <p>Second International Forum on Long-term Energy Scenarios (LTES) for the Clean Energy Transition (March 2020) (Click here for event information, and here for live videos of event)</p> <p>Campaign outputs contributed to the Policy Briefs in Support of the High-Level Political Forum 2020. (Click here for policy briefs and here for side event link).</p> <p>Joint IRENA – JRC Expert Workshop on <i>Benchmarking long-term scenario comparison studies for the clean energy transition</i> (Sept. 2020) (Click here).</p> <p>Campaign synthesis report “Long-term scenarios for the clean energy transition - Best practices and global experiences” (Sept. 2020) (Click here)</p> <p>High-level open event at the 11th Clean Energy Ministerial programme on <i>Raising global climate ambition in uncertain times with long-term energy scenario</i> (Sept. 2020). (Click here).</p>
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<p>IV. Source of Advice Core assessed and core non-assessed resources (in USD thousands): USD 5,569. Outputs supported by additional voluntary contributions are footnoted.</p>		
<p><i>Objective: Support country-level decision-making to accelerate the renewables-based transformation of national energy systems, advance strategies to diversify energy sources, reduce global emissions and achieve sustainable development.</i></p>		
Outputs	Status	Description
CIP implementation ⁹⁰ : Project Navigator and Sustainable Energy Marketplace	In progress	<p>Climate Investment Platform launched at 10th IRENA Assembly (Jan. 2020). (Click here for webpage).</p> <p>Over 260 potential partners and 180 projects sourced to date through the platform. Initiated transfer of IRENA’s Sustainable Marketplace projects to the CIP.</p> <p>Up to 14 projects under the Climate Promise progressing to be submitted to the CIP for funding consideration upon completion.</p> <p>Webinar: UNDP Community of Practice on Energy Meeting on Raising Renewable Energy Ambitions in NDCs. (Sept. 2020) (Click here)</p> <p>Webinar: Energy Transformation in Small Island Developing States: Towards sustainable and climate resilient post-pandemic recovery. (Sept. 2020) (Click here)</p> <p>Assistance provided to Antigua and Barbuda, Belize, Cuba, Dominican Republic, Ecuador, El</p>

⁹⁰ Supported by the Governments of Denmark, Germany as part of the German Government International Climate Initiative, and UNDP.

		Salvador, Grenada, St. Kitts and Nevis, St. Lucia and Uruguay in reviewing mitigation and adaptation targets set by countries towards the enhancement of their National Determined Contributions (NDC).
Project site assessments and feasibility assessments ⁹¹	In progress	Site assessment website designed and content uploaded. 19 solar PV and wind site assessments conducted for Mozambique and Ecuador. A suitability assessment conducted for Mauritania Interim reports on zoning assessment for Arab countries
IRENA/ADFD Project Facility implementation ⁹²	In progress	Facility facilitated soft loans of USD 104.54 million from ADFD for 8 projects in 7 th cycle (Jan 2020). (Click here) Report “Advancing Renewables in Developing Countries” published. (Jan. 2020) (Click here)
Renewable readiness assessments (RRA) and REmap	In progress	Completed: <ul style="list-style-type: none"> • Central and South Eastern Europe/South East Europe REmap summary report finalised (Oct. 2020) (Click here)⁹³. • Lebanon (Outlook – RRA REmap) (Click here) In progress: <ul style="list-style-type: none"> • Albania (RRA) • Belarus (RRA) • Botswana (RRA) • El Salvador (RRA) • Jordan (RRA) • Indonesia (REmap) • Malaysia (REmap) • Nigeria (REmap) • Paraguay (RRA) • South Africa (REmap) • Tunisia (RRA) New requests received from the following countries: <ul style="list-style-type: none"> • Bosnia and Herzegovina (RRA) • Burkina Faso (RRA) • Iraq (RRA) • Kyrgyzstan (RRA) • Sudan (RRA)

⁹¹ Supported by the Government of the Walloon Region of Belgium.

⁹² Supported by the Government of the United Arab Emirates.

⁹³ Supported by the European Commission.

Long-term planning for energy transition ⁹⁴	In progress	<p>Report on the prospects of the power system in Eastern and Southern Africa (analysed with SPLAT) in finalisation.</p> <p>Analysis on the prospects of the power system in North Africa completed.</p> <p>National energy masterplan development support programme established with the Cameroon government</p> <p>Support being provided to African Union Development Agency (AUDA-NEPAD) with the development of a Continental Power System Masterplan (CMP)</p> <p>Engagement and knowledge dissemination:</p> <ul style="list-style-type: none"> • Hosted fifth Roundtable Discussion on Strategic Energy Planning (Abu Dhabi, Jan. 2020) (Click here). • Energy planning brochure (Click here)
FlexTool and grid integration support ⁹⁵	In progress	Latin America: Power systems operators from 13 countries gathered for online training on IRENA FlexTool (May 2020) (Click here).
Socio-economic footprint at the country level (five countries)	In progress	
Energy transition in NDCs: development and implementation ⁹⁶	In progress	<p>IRENA is engaging with 59 countries on NDC enhancement and NDC implementation through direct country request and through its institutional partnerships with NDC Partnership's Climate Action Enhancement Package (CAEP) and UNDP's Climate Promise. (Click here for related article):</p> <ul style="list-style-type: none"> • NDC input provided to Bhutan: alignment of NDC update with RRA findings and recommendations. • Scope and work plan finalised (28)⁹⁷ • Work plan under development (11)⁹⁸ • Initial Discussions (19)⁹⁹
Entrepreneurship Facility ¹⁰⁰	In progress	First technical committee meeting of SADC Entrepreneurship Facility held to select

⁹⁴ Supported by the Governments of Denmark and the Walloon Region of Belgium.

⁹⁵ Supported by the Governments of Norway and NDP Partnership.

⁹⁶ Supported by Government of the Walloon Region of Belgium, NDP Partnership and UNDP.

⁹⁷ Antigua & Barbuda, Dominican Republic, Grenada, Saint Kitts & Nevis, Saint Lucia, Tonga, Vanuatu, Ecuador, El Salvador, Paraguay, Uruguay, Benin, Eswatini, Gabon, Mozambique, Niger, Nigeria, South Africa, Uganda, Zambia, Zimbabwe, Albania, Egypt, Lebanon, Jordan, Kazakhstan, Kyrgyzstan, Uzbekistan.

⁹⁸ Belize, Seychelles, St Vincent & Grenadines, Botswana, Gambia, Mali, Belarus, Georgia, North Macedonia, Turkey, Sudan.

⁹⁹ Bahamas, Barbados, Dominica, Fiji, Guyana, Sao Tome and Principe, Nicaragua, Panama, Rwanda, Belarus, Georgia, North Macedonia, Turkey, Azerbaijan, Indonesia, Kazakhstan, Philippines, Thailand.

¹⁰⁰ Supported by Government of the Walloon Region of Belgium.

		<p>entrepreneurs for the first cohort of training and mentorship.</p> <p>Introductory meeting held to introduce the 32 selected entrepreneurs to the Facility in preparation for training, mentorship and networking.</p>
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ADDITIONAL DIRECTIVE OUTPUTS		
Network Hub for Energy Transformation		
Outputs	Status	Description
Support for climate efforts ¹⁰¹	In progress	<p>Focal point for Energy Track within the UNFCCC Marrakesh Partnership for Global Climate Action. Lead the developemnt of Climate Action Pathway 2020 for energy.</p> <p>Hosting energy discussions during Race to Zero Dialogues (16 November).</p> <p>IRENA/UNFCCC op-ed on COVID recovery.</p> <p>Member of NDC Partnership.</p> <p>Participation in the UK-led COP26 preparation activities, including COP26 Energy Transitions Council.</p> <p>Participation in climate initiatives:</p> <ul style="list-style-type: none"> • Accelerating energy transition in SIDS initiative, for which the SIDS LHI serves as an implementing framework, • The Climate Investment Platform (CIP)¹⁰², • The Coalition for Sustainable Energy Access, • The Cool Coalition, • The Decarbonizing Shipping – Getting to Zero Coalition, • The Three Percent Club for Energy Efficiency, and • The initiative towards Cleaner Electricity in Latin America and the Caribbean.

¹⁰¹ Supported by the Government of Denmark and Government of the Walloon Region of Belgium.

¹⁰² Supported by the governments of Denmark; Germany, as part of the German Government International Climate Initiative (IKI). The Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU) support this initiative based on a decision adopted by the German Bundestag; and UNDP.

Enabling IRENA delivery		
Outputs	Status	Description
Upgrades and enhancements to the IRENA website, platforms, and projects.	In progress	CIP ¹⁰³ website launched. (www.irena.org/irenaforcip) Website upgrade. ERP quarterly upgrade. MS Teams implemented. Virtual events platforms consolidated.
Efficient budget services	In progress	Internal monthly reporting and administration of core and voluntary contributions: <ul style="list-style-type: none"> • 9 donor reports; • 8 monthly internal core budget reports; • 8 monthly VC reports; Enhancements to ERP reports in progress.
Delivery of efficient financial services	In progress	Audited IRENA and IRENA SPF 2019 Annual Financial Statements completed. Ongoing provision of full financial services to the Agency.
Support to the Provident Fund operations	In progress	Annual meeting of members conducted 22 Jan 2020. Management Board met on 12 th May 2020 to review performance.
Efficient procurement services	In progress	Procurement opportunities continue to be posted on IRENA's website www.irena.org and on United Nations Global Market www.ungm.org as well as and disseminated to the vendors registered with IRENA database (https://www.irena.org/procurement).
Effective general and travel services	In progress	Administration support, enhancement of Facility Management services. Health and Safety program enhanced to address COVID-19 pandemic measures.
Strategic Management		
Outputs		
Comprehensive communication and outreach strategy	In progress	25 publications released. Publications 2020 strategy developed, and communications and outreach strategies aligned. Communication supports provided to publication releases, webinars, press releases, website updated etc.

¹⁰³ Supported by the governments of Denmark; Germany, as part of the German Government International Climate Initiative (IKI). The Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU) support this initiative based on a decision adopted by the German Bundestag; and UNDP.

		IRENA referenced in over 7,000 media articles in 40 languages across 123 countries. 1.6 million webpage views 84,000 Twitter followers.
Governance Support Office	In progress	Published Report of the 10 th Session of the IRENA Assembly (Click here). Organization of the 19 th and 20 th Council meetings and 11 th Assembly. Organisation of IRENA Insights. (Click here) Engagement continued with candidate countries to expedite ratification process by 11 th Assembly. Preparations underway for an Observers' strategy. Organization of virtual meetings, including a Renewables Talk for Permanent Representatives (May 2020) (click here), a High-Level Dialogue on Pandemic Response and Recovery and Africa's Energy Transformation (May 2020) (click here), a SIDS High-Level Dialogue: Accelerating Energy Transition in Small Island Developing States to Stimulate Post-Pandemic Recovery (June 2020) (click here), the IRENA Youth Talk (June 2020) (click here) and the IRENA Legislators Dialogue (July 2020) (click here). Additional virtual meetings are being held in October, including the second edition of the Renewables Talk for Permanent Representatives, the IRENA Youth Talk and the IRENA Legislators Dialogue.
New York Liaison Office	In progress	Implementation of MOU with UN-OHRLLS: UN- OHRLLS joined SIDS Lighthouse Initiative and agreement developed on joint activities to support energy transition in LDCs and LLDCs. Update provided to New York Community on CIP progress during 13 May 2020 briefing. Update provided to Energy Transition Coalition on implementation of SIDS Energy Transition Deliverable as part of SIDS Climate Action Summit Package (April 2020) Inputs provided to 2020 preparations for HLPF and ECOSOC on the theme <i>Accelerated action and transformative pathways: realizing the decade of action and delivery for sustainable development</i> . (Click here)
Legal Office	In progress	Guidelines on designation of IRENA Emissaries have been finalised. The Emissaries will facilitate and promote the Agency work at national, regional and international level. Legal review of commercial contracts, MoUs and cooperation agreements concluded in the programmatic areas, providing legal advice on IRENA's privileges and immunities and the

		interpretation and application of IRENA's Statute, regulations, rules and policies, reviewing and facilitating preparation of administrative regulations, policies, strategies and contracts etc. donor, event and vendor contracts, MOUs, publications etc.
Events Unit	In progress	Events and Missions database for internal and external communication maintained. Organised 110 events, of which 79 were virtual. Hosted 85 webinars.
Diversification of resource base	In progress	Donor kit in development. New contributions concluded in 2020: <ul style="list-style-type: none"> • European Commission (Innovation) • Flemish Region of Belgium (FDCR) • Germany, International Climate Initiative (SIDS Lighthouses) • International Bank for Reconstruction and Development (SDG7 Tracking Report) • Italy, Ministry of Foreign Affairs (Desert to Power in Sahel and Climate Investment Platform) • Japan, METI (Various projects) • Japan, MAFF (Various projects) • Korea Energy Economics Institute (Report "Northeast Asia Power System Interconnections: Lessons from the Regional Initiatives for the Promotion of Renewable Power Deployment and Trade") • NDP Partnership (CAEP) Saudi Arabia, KAPSARC (G20) • UNDP (Climate Promise) • Walloon region of Belgium (Various projects)
Monitoring and evaluation system	In progress	External evaluation process concluded. Report transmitted to the Membership as part of the 20 th Council documents. Work Programme implementation database developed to monitor progress in the implementation of the DG's Directive and Work Programme.
Programmatic reports to the Council and Assembly	In progress	Progress report on implementation of the Work Programme, in a revitalised format, sent to Membership (Jun. 2020 and Oct. 2020).
Strategic outreach	In progress	DG held bilateral discussions with 70 entities (including regional bodies, non-governmental organisations and the private sector) and 48 governments.

		Active outreach by DDG and Directors to Members, IOs, multilateral and regional entities and other stakeholders.
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