

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

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IRENA AT A GLANCE



DIRECTOR-GENERAL

Francesco La Camera has been Director-General since 4 April 2019

YEAR OF ESTABLISHMENT



DEPUTY DIRECTOR-GENERAL

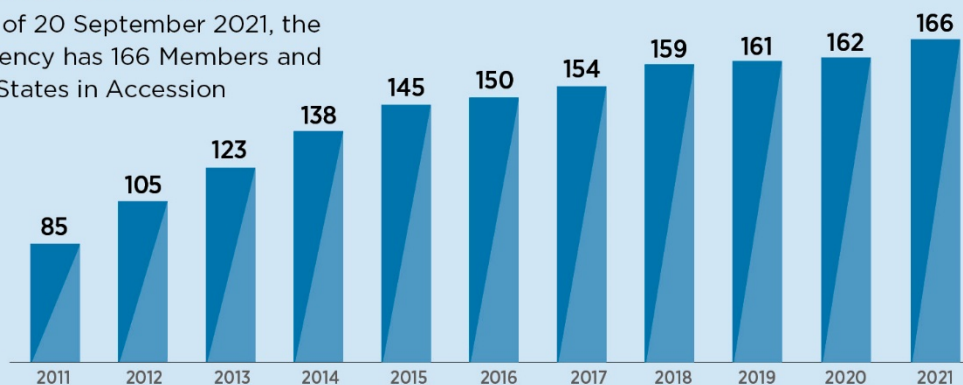
Gauri Singh has been Deputy Director-General since 8 January 2020

OFFICES





In addition to its Headquarters in Abu Dhabi, IRENA has an office in Bonn, and a UN liaison office in New York.

IRENA MEMBERSHIP

As of 20 September 2021, the Agency has 166 Members and 18 States in Accession



11TH ASSEMBLY BUREAU

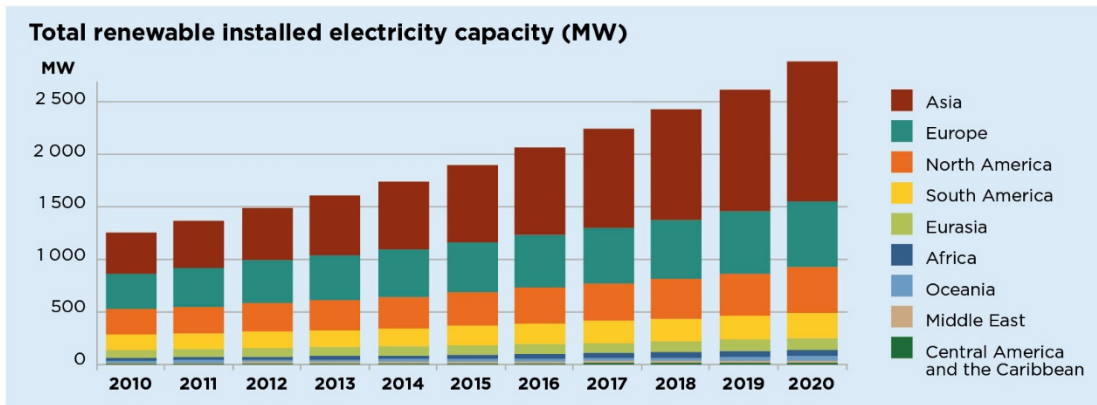
-  President: Spain
-  Vice-President: Albania
-  Vice-President: Costa Rica
-  Vice-President: Ghana
-  Vice-President: India

COUNCIL

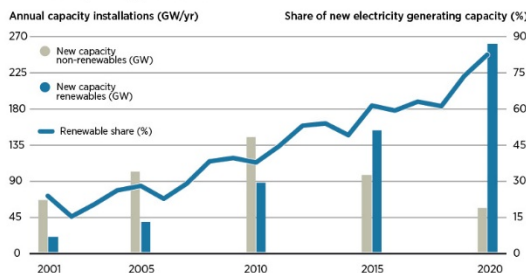
21 Members



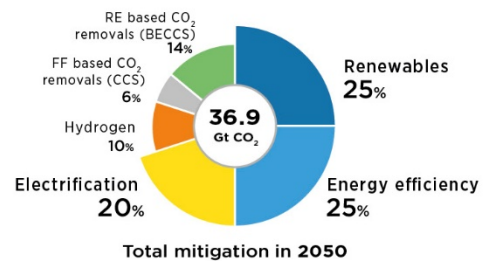
ENERGY TRANSITION AT A GLANCE



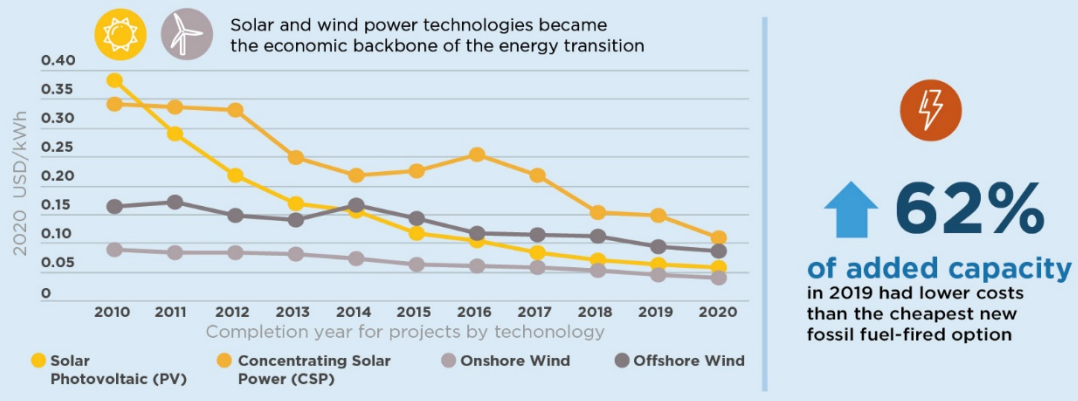
Share of capacity, 2021-2020



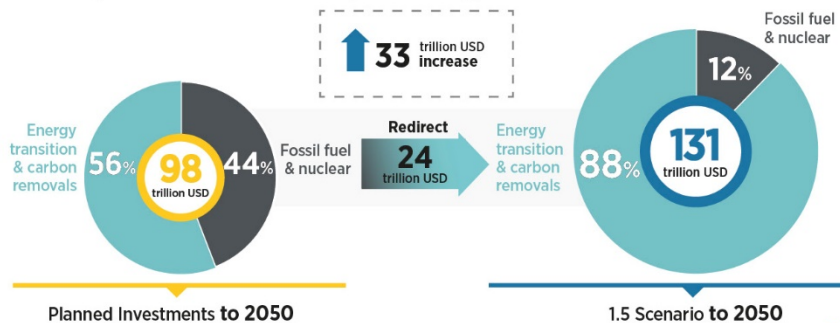
Six components of the energy transition strategy



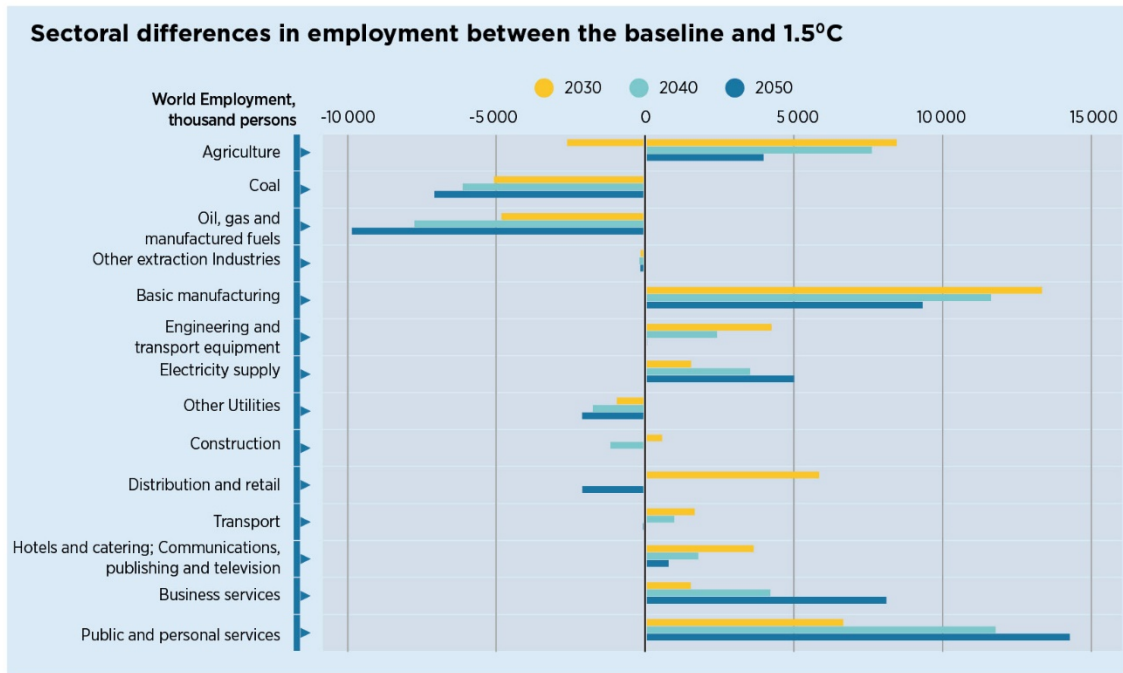
Decline in solar and wind power generation costs



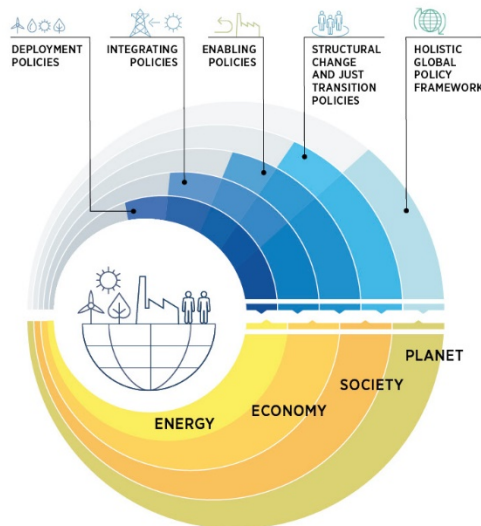
New investment priorities: renewables, efficiency, electrification and infrastructure







ENERGY TRANSITION AT A GLANCE



Enabling policy framework for a just energy transition

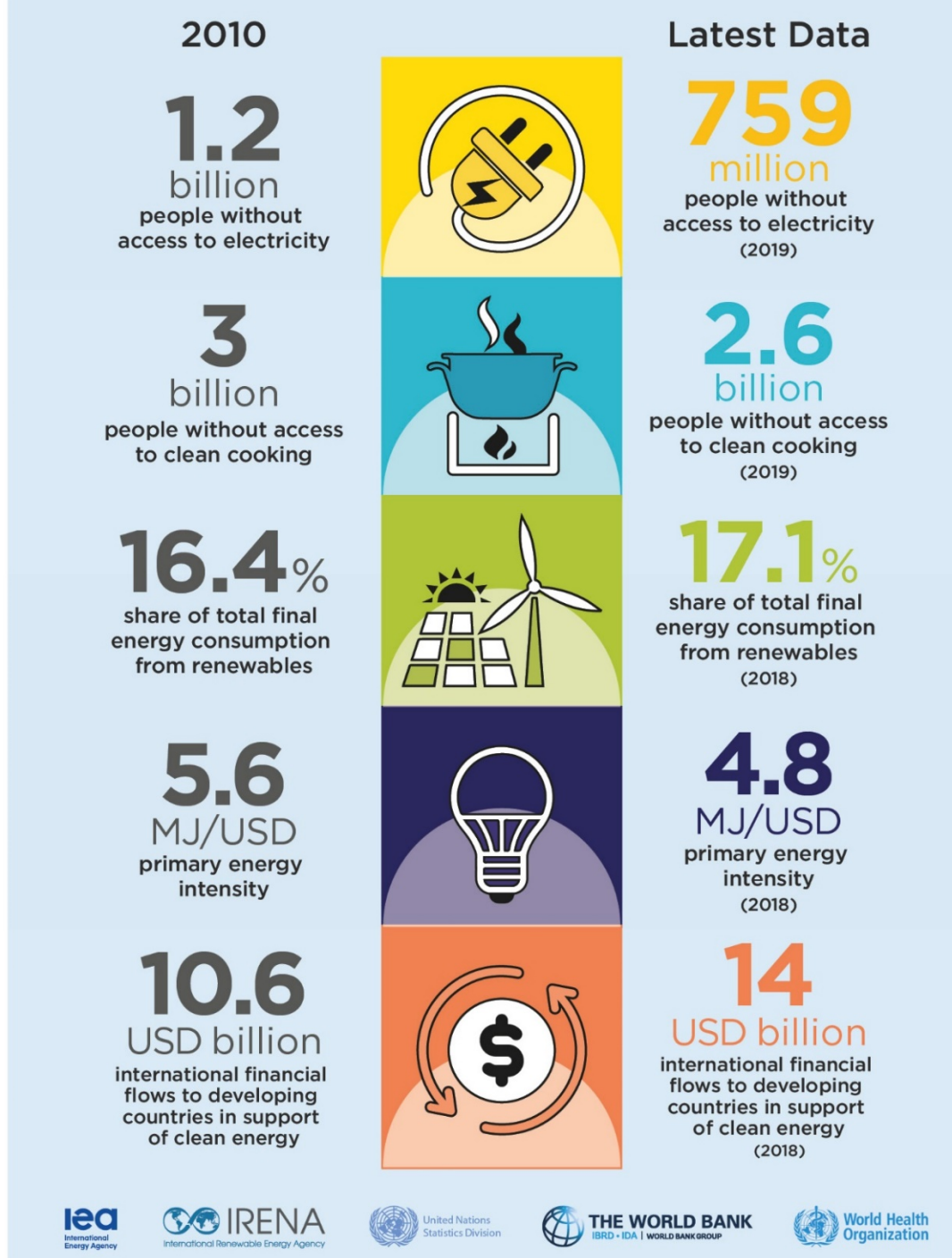


Policy measures to accelerate green hydrogen production

<p>Policies accelerating manufacturing capacity and tackling high investment costs of electrolyzers and enabling infrastructure</p> <ul style="list-style-type: none"> • Grants • Loans • Tax credits 	<p>Policies reducing costs of renewable electricity for green hydrogen production</p> <ul style="list-style-type: none"> • Changes to electricity taxes and grid fees • Carbon contracts for differences • Auctions • Feed-in tariffs/premiums 	<p>Policies addressing sustainability</p> <ul style="list-style-type: none"> • Certification schemes • Eco-labels • Additionality measures/mandates 	<p>Policies enabling demand and market entry for green hydrogen</p> <ul style="list-style-type: none"> • Electrolyser capacity targets • Green hydrogen mix targets • Green product mandates • Public procurement schemes • Carbon taxes 
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ENERGY TRANSITION AT A GLANCE

Key findings of the Tracking SDG 7: Energy Progress Report 2021



SECRETARIAT AT A GLANCE

IRENA employs a talented and diverse workforce

196 posts filled



31 under active recruitment

7 loaned or seconded officers

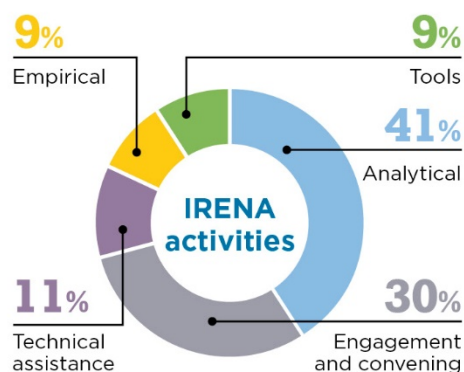
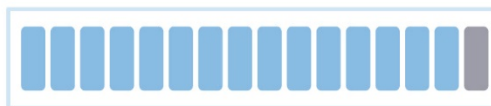
68 nationalities

stationed in Abu Dhabi, Bonn and New York

47%  and **53%** 

Work Programme 2020-2021 outputs:

98% in progress or completed



 **9 500** applications received for 69 vacancies



248 events organised/co-organised by IRENA

198 virtual events + **12** hybrid events

106 publications released (year to date) including:

- **World Energy Transitions Outlook**
- **Renewable Capacity Statistics 2021**



26 publications were translated into:



IRENA publications were downloaded **3.3 million** times



Media coverage:

47 600 media articles

in

45 languages

across

172 countries

Progress to Date

This Report provides an account of the progress IRENA has made in the implementation of the Work Programme and Budget for 2020-2021 since January 2020. Despite the lingering challenges of the ongoing pandemic, the Agency has maintained the same level of high quality and multidimensional work undertaken to deliver on its mandate. The overview detailed in this report is proof of that.

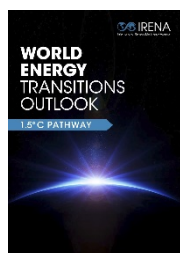


IRENA's **Post-COVID Recovery: An Agenda for Resilience, Development and Equality**¹ report delivered an in-depth analysis of the pandemic's impact on the global economy, energy sector, and renewable energy, with a focus on employment, and presented a short-term perspective to 2023 and a medium-term one to 2030. While the stimulus and recovery trends continue to fall short of what is needed to reap the benefits of the proposed Agenda, several trends are indicating a renewed focus on the energy transition and net-zero strategies. The most recent report of the



Post-COVID

Intergovernmental Panel on Climate Change (IPCC) stressed that human actions still have the potential to determine the future course of climate and that carbon dioxide (CO₂) is the main driver of climate change, even as other greenhouse gases and air pollutants also affect the climate. As such, stabilising the climate will require strong, rapid, and sustained reductions in greenhouse gas emissions, and reaching net zero CO₂ emissions.²



IRENA's **World Energy Transitions Outlook (WETO)**³ report provides a clear pathway towards a renewables-based future, aligned with a 1.5°C trajectory, by outlining a concrete set of actions for a just, inclusive and orderly transition by 2050. The report underlines that the window of opportunity is increasingly narrowing, thus amplifying the imperative need to align all efforts with the achievement of this goal through vital policies, investments and transformative technologies in areas where accelerated improvement is necessary to maximise impact.

Recent developments in the energy field reveal that IRENA's renewables-centred approach has now become mainstream and widely accepted as the only realistic option for a climate-safe world. IRENA's WETO encapsulates IRENA's theory of change and presents a guiding framework (Figure 1) with investment and policy choices, along with socio-economic impacts of the transition, to benefit and guide policymakers. It also provides a timeline and clarity on the steps to be taken to manage the transition from fossil fuels. The report prioritises technologies available today that can be deployed at scale by 2030, and calls for accelerating their deployment, while innovating for a net-zero energy future.



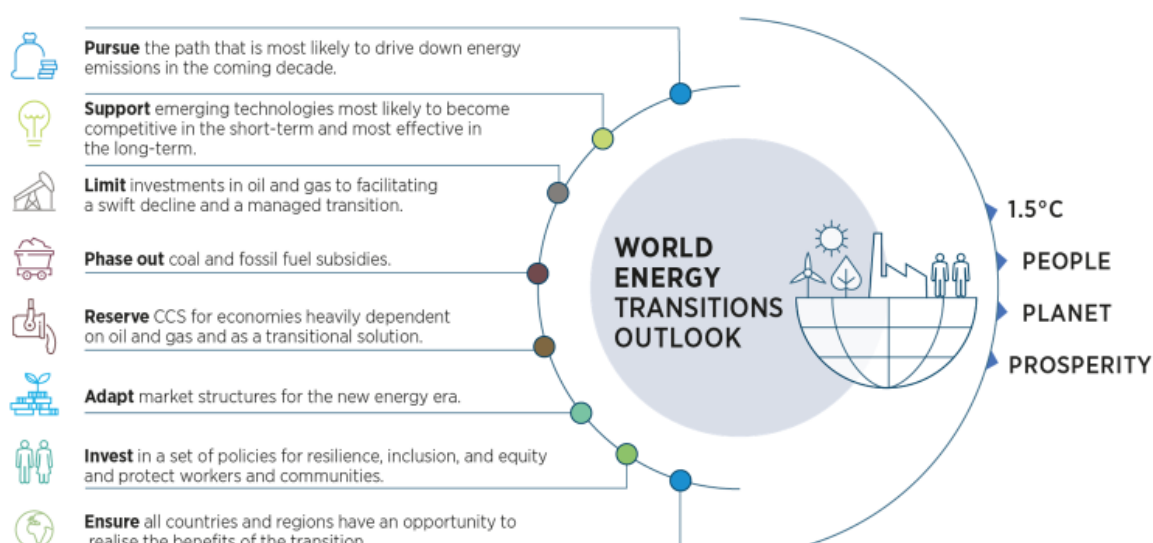
WETO

¹ Available [here](#).

² Available [here](#).

³ Available [here](#).

Figure 1: Guiding framework of WETO theory of change

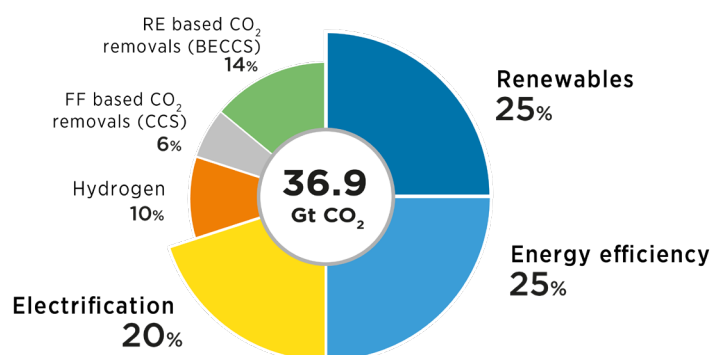


Source: IRENA, *World Energy Transitions Outlook*, 2021

Critically, WETO identifies the six main components of the CO₂ emissions abatement (Figure 2), with electrification and energy efficiency as main decarbonisation drivers, enabled by renewables, green hydrogen and sustainable biomass. According to the report, significant reduction of emissions is feasible with the use of established technologies. WETO considers that the electrification of end use sectors, utilising renewables, will be instrumental in the transition, and highlights hydrogen as significant energy carrier by 2050.

To achieve this, WETO calls for USD 24 trillion of the planned investments to be redirected away from fossil fuels towards transitional fuels and an additional USD 33 trillion over the planned investments, for a total of USD 131 trillion through 2050. Moreover, investing in the transition will create three times more jobs than fossil fuels, for each million dollars of spending, thus delivering comprehensive socio-economic benefits in terms of jobs and overall welfare, with the most direct impact on the energy sector.

Figure 2: Main components of the energy transition strategy



Source: IRENA, *World Energy Transitions Outlook*, 2021

CCS = carbon capture and storage; CCU = carbon capture and utilisation; BECCS = Bioenergy with CCS

The urgency to intensify and strengthen international cooperation and take action in support of the energy transitions was the key take away of the eleventh session of the IRENA Assembly. To this end, the Assembly established the **Global High-Level Forum on Energy Transition**⁴ to lead the global discourse on energy transition; promote common initiatives to accelerate energy transition

worldwide; share experiences and follow up on important global events; guide future research and analysis to promote solutions for a sustainable energy system; and undertake other activities as deemed appropriate by IRENA Members. The Forum held its first meeting on 30 June 2021 to discuss the relation between science and raising ambition and explore actions to accelerate a just, inclusive and systemic energy transition. A recorded moderated fireside chat between the IRENA Director-General and H.E. Ms Teresa Ribera, Fourth Vice-President and Minister for Ecological Transition, Spain was part of the Forum. Discussions stressed the need for bold commitments and actions for the energy transition, given the climate challenges. The Forum also marked the release of WETO, which provided input into the Forum discussions.



Encouragingly, IRENA's **Renewable Capacity Statistics 2021**⁵ showed that despite the economic slowdown, more than 260 gigawatts (GW) of renewables were added, exceeding expansion in 2019 by close to 50% and constituting the biggest expansion in recent years (Figure 3). Specifically, the global renewable generation capacity experienced a 10.3% increase in 2020, amounting to 2,799 GW. Asia accounted for 64% of new capacity, mainly in China, whereas capacity in Europe and North America also expanded. Africa saw an increase of 2.6 GW, slightly more than in 2019, but still below its potential and Oceania remained the fastest growing region, although its share of global capacity is small and almost all occurred in Australia. Hydropower remained the highest source of renewable energy for electricity generation globally, in terms of capacity and production, followed by wind and solar, whose expansion jointly accounted for 91% of all net renewable additions in 2020.

Renewable electricity generation also increased by 5.5% in 2019, compared to 2018, as shown in the 2021 edition of the **Renewable Energy Statistics**⁶ report (Figure 4). Moreover, the total amount of electricity generated from renewables reached 6 963 TWh in 2019, with hydro accounting for about 61% (4 207 TWh), followed by wind (1 412 TWh), solar (693 TWh), bioenergy (558 TWh), geothermal (92 TWh) and marine (1 TWh). Solar and wind generation experienced an increase of 23% and 12% respectively in 2019, and thus, continued to dominate growth in renewable generation, accounting for 71% of growth since 2015 (Figure 5). The greatest growth was again remains in Asia, with the continent's share of global renewable generation reaching 42%, while Europe and North America had shares of 19% and 18% respectively, followed by South America (11%) and Eurasia (5%). Notably, public investment in renewable energy continued to decline across all technologies in 2019, with a total investment of USD 17 billion⁷ compared to USD 22 billion and USD 34 billion in 2018 and 2017 respectively.

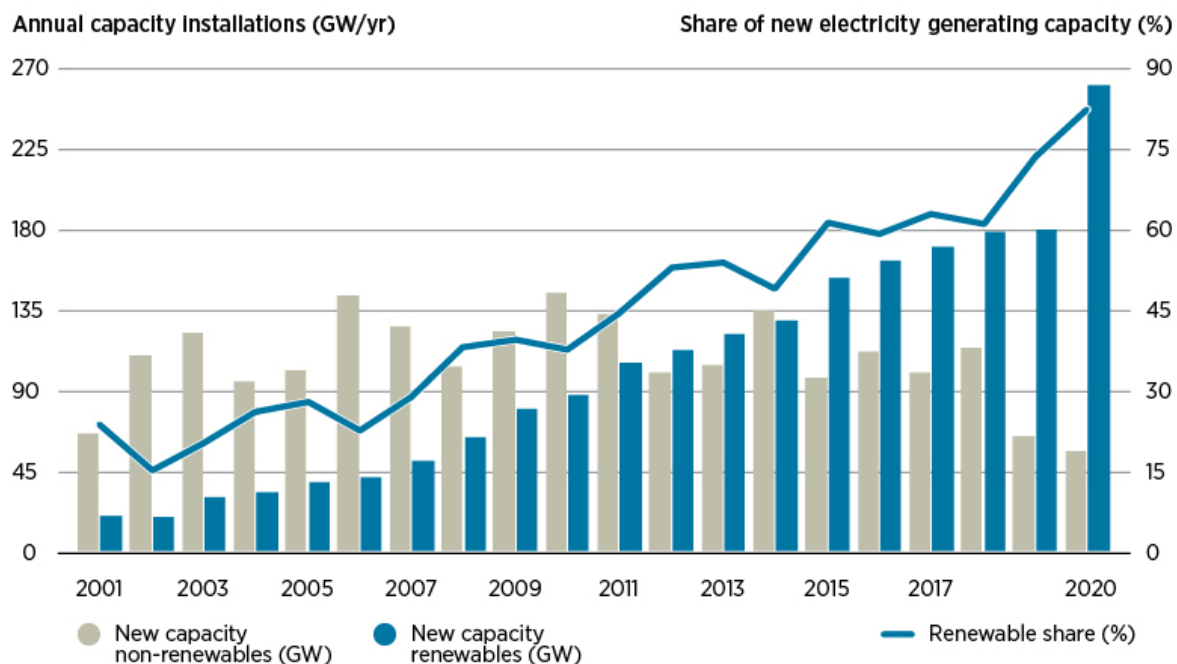
⁴ More information available [here](#).

⁵ Available [here](#).

⁶ Available [here](#). The report provides data sets on power-generation capacity for 2011-2020, actual power generation for 2011-2019 and renewable energy balances for over 130 countries and areas for 2018-2019.

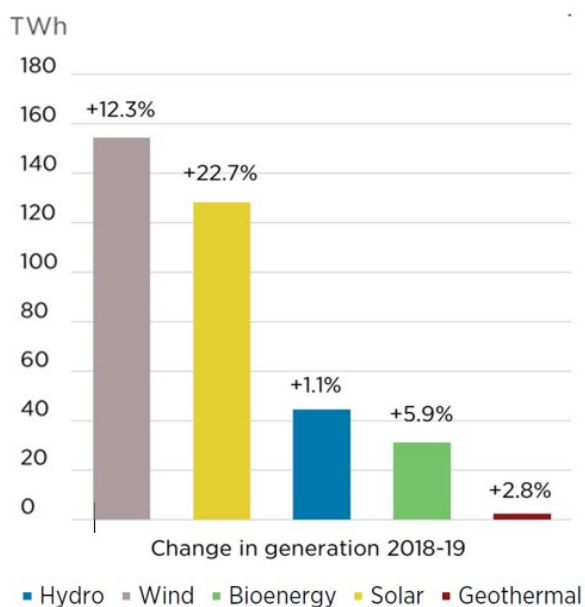
⁷ Calculated at 2019 prices and exchange rates.

Figure 3: Renewable Share of Annual Power Capacity Expansion



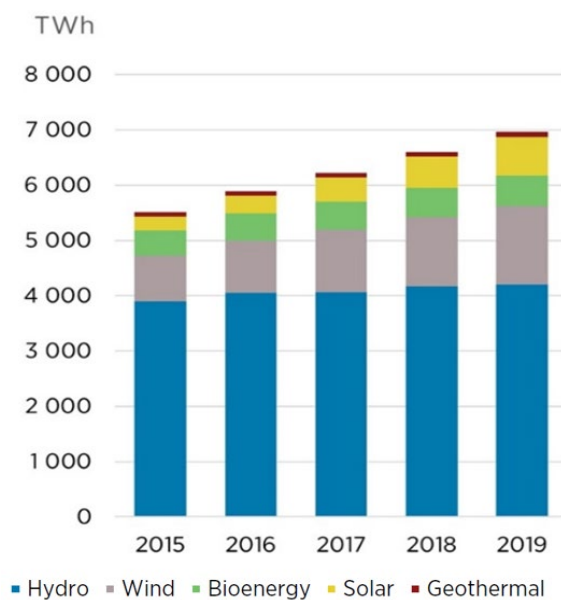
Source: IRENA, *Renewable Capacity Statistics*, 2021

Figure 4: Additions in renewable energy generation capacity from 2018 to 2019



Source: IRENA, *Renewable Energy Statistics*, 2021

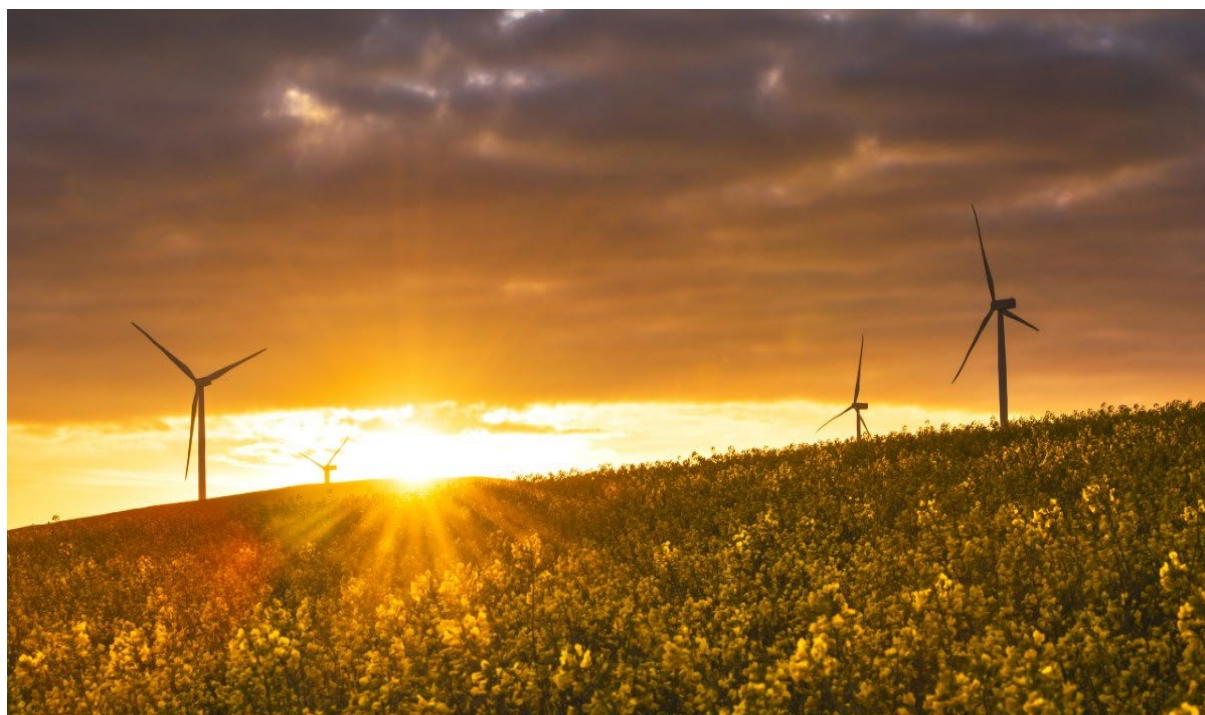
Figure 5: Cumulative renewable electricity generation



Source: IRENA, *Renewable Energy Statistics*, 2021

Drawing from IRENA's Renewable Cost Database and Auctions and power purchase agreement (PPAs) databases, IRENA's **Renewable Power Generation Costs in 2020**⁸ report highlights that cost for solar and wind power continued declining in 2020, despite the pandemic. Between 2000 and 2020, renewable power generation capacity worldwide increased 3.7-fold, from 754 GW to 2 799 GW, as steadily improving technologies, economies of scale, competitive supply chains and improving developer experience decreased the cost. Solar and wind power costs declined most steeply. The cost for electricity produced from utility-scale solar photovoltaic (PV) fell 85%, while from CSP decreased by 68% and onshore wind by 56%, in this timeframe (Figure 6). In addition, new solar and wind projects are increasingly undercutting even the cheapest and least sustainable of existing coal-fired power plants as 800 GW of existing coal-fired capacity has operating costs higher than new utility-scale solar PV and onshore wind. It is also estimated that system costs would be cut by USD 32 billion per year and CO₂ emissions could be reduced by around 3 Gigatonnes per annum, by replacing these coal-fired plants (Figure 7).

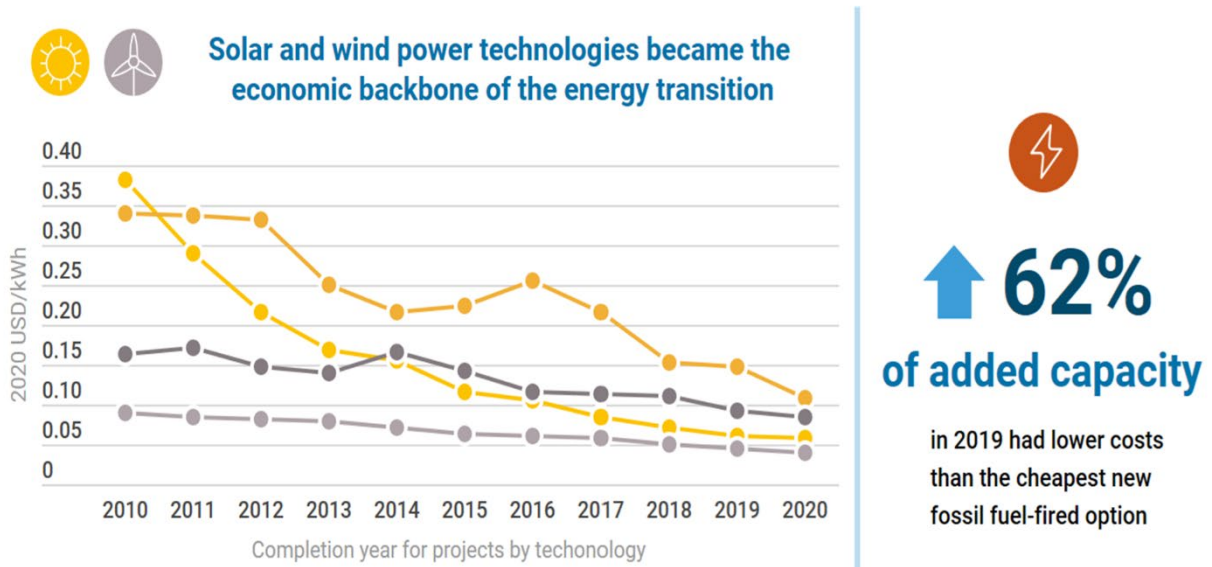
The world has significant renewables potential that remains untapped. To assist countries in addressing this challenge, in May 2021, IRENA unveiled the **Global Atlas for Renewable Energy 4.0 (Platform)**⁹ that incorporates more than 1000 revised renewable energy resource maps, complemented by key information such as the availability of transmission networks, population density and protected areas. The platform has been operational for the past nine years, providing renewable energy data required in resource and infrastructure planning. The updated renewable energy resource information, **including hydropower and infrastructure datasets**, aids project planning and development through its country support services.



⁸ Available [here](#).

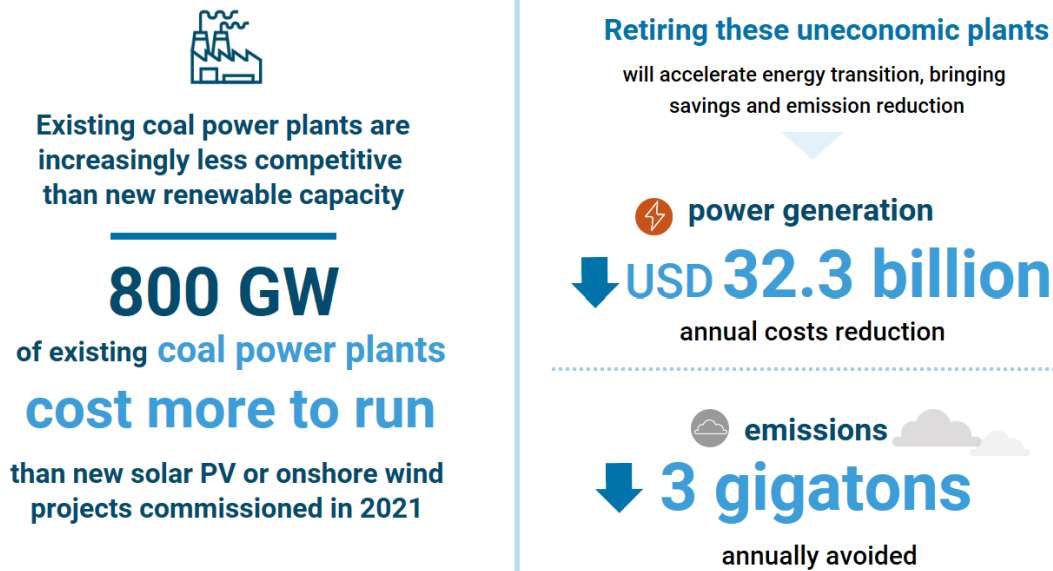
⁹ Available [here](#).

Figure 6: Decline of solar and wind power generation costs



Source: IRENA, *Renewable Power Generation Costs in 2020, 2021*

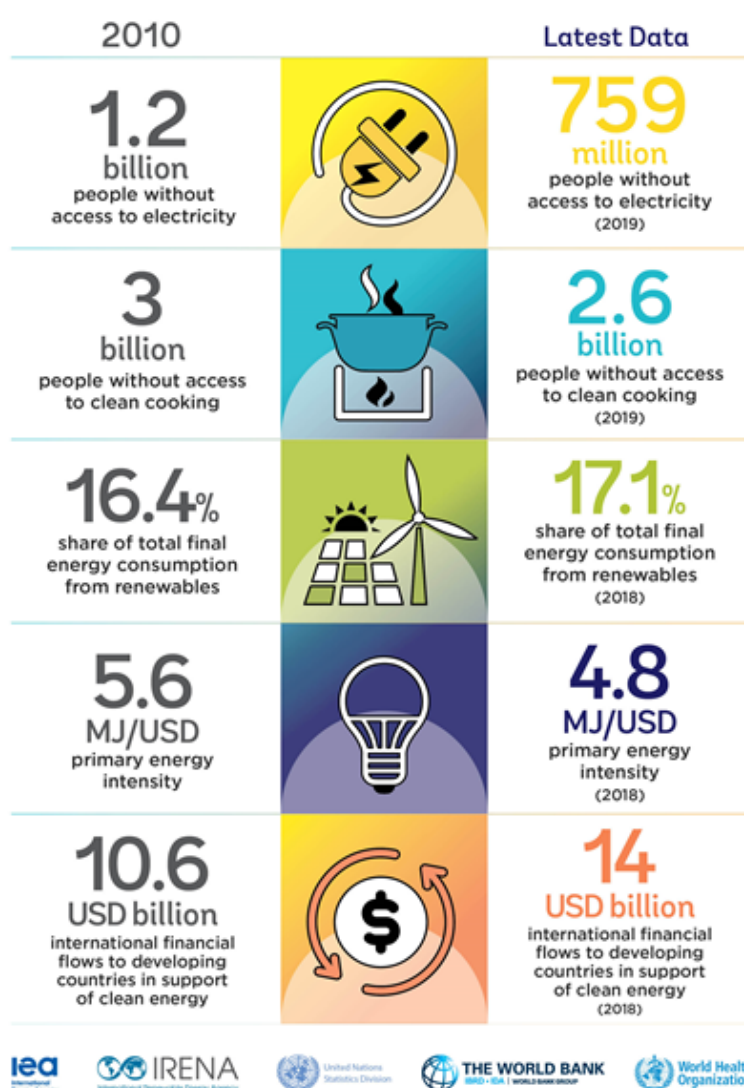
Figure 7: Cost effectiveness of powering past coal



Source: IRENA, *Renewable Power Generation Costs in 2020, 2021*

Yet, the 2021 edition of the **Tracking SDG 7: Energy Progress Report**¹⁰, published annually by the custodian agencies¹¹ of SDG 7 indicators, shows that despite progress (Figure 8) in energy transitions in many countries, the key targets of SDG 7 are still out of reach under current and planned policies. While renewable energy has demonstrated remarkable resilience during the pandemic, gains in energy access throughout Africa are being reversed with the number of people lacking access to electricity set to increase in 2020. The report examines various ways of bridging the gaps such as by significantly scaling up renewable energy while maximising socio-economic benefits. The 2021 edition also introduces for the first time a full chapter on indicator 7.A.1: international financial flows to developing countries in support of clean energy. Data show there has been a positive trend in public financial flows during 2010-2018, as they have increased threefold, when viewed as a five-year moving average. However, the concentration of financial commitments in a few countries – the 46 least developed countries (LDCs) received a mere 20% of public financial flows over this period – demonstrate some important distributional discrepancies.

Figure 8: Key findings of the Tracking SDG 7: Energy Progress Report 2021



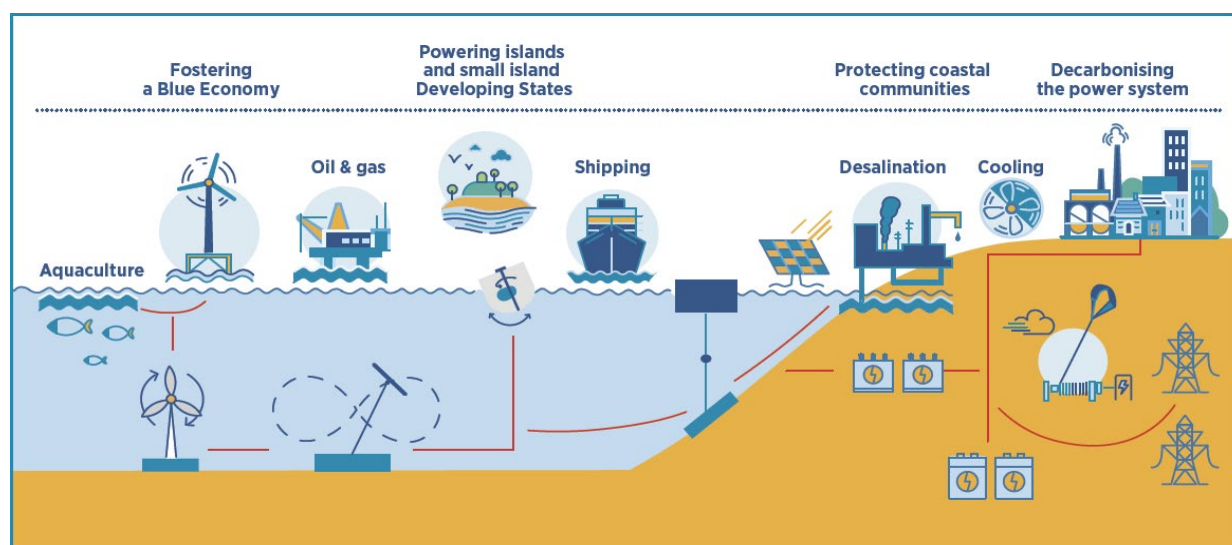
¹⁰ Available [here](#).

¹¹ IRENA, International Energy Agency (IEA), United Nations Statistics Division (UNSD), World Bank, and World Health Organization (WHO).

Off-grid solutions are expected to considerably impact the provision of universal access to clean and reliable energy. However, off-grid electricity production from renewables is largely unrecorded in most countries due to technical and institutional barriers, although it is believed to be expanding rapidly. IRENA's 2020 **Quality infrastructure for smart mini-grids**¹² report highlights the crucial role of quality infrastructure – standards, testing, certification – for a rapid and sustained market growth for renewable mini-grids that can be key providers of electricity in remote areas and islands.

The world's oceans are also a source of abundant renewable energy, with offshore renewables having the potential to make a significant contribution towards the achievement of the SDGs in islands and coastal territories (Figure 9). Upon the request of the G20 Italian Presidency of 2021, IRENA analysed and developed a proposed action agenda to foster offshore renewables deployment globally, presented in the **Offshore Renewables: An Action Agenda for Deployment**¹³. The report includes 50 concrete actions for consideration when defining national strategies for offshore renewables, such as strengthening oceans governance according to the UN Law of the Sea, proper integration of offshore renewables in national Marine Spatial Planning, and the provision of public revenue support and early planning for the needed infrastructure. The report was launched by IRENA's Director-General Francesco La Camera during the meeting of G20 Environment, Climate and Energy Ministers in Naples, in July 2021. The G20 welcomed the set of recommendations on offshore energy presented by the report, and the latter has been acknowledged among relevant documents of the Communiqué¹⁴ itself. Discussions at the **Energy from the sea: an action agenda for deploying offshore renewables worldwide**¹⁵ event – held in the margins of the second meeting of the G20 Working Group on Energy – on the status and outlook of offshore renewable energy technologies and markets, and the latest trends and developments fed into the report.

Figure 9: Contributions of offshore renewables to the blue economy and the energy transition



Source: IRENA, *Offshore Renewables: An Action Agenda for Deployment*, 2021

¹² Available [here](#).

¹³ Available [here](#).

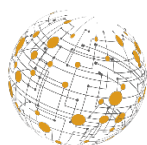
¹⁴ Available [here](#).

¹⁵ More information available [here](#).

IRENA's **Tracking the Impacts of Innovation: Offshore wind as a case study**¹⁶ report provides an initial output of two interlinked projects focused on tracking innovation impacts: Innovation Impacts.

Dashboard (IID)¹⁷ and Tracking Energy Innovation Impacts Framework (TEIIF) project¹⁸. Both projects also contribute to the Mission Innovation Tracking Progress workstream. The methodology analyses 30 indicators across three categories: Innovation ecosystem; Technology progress; and Market formation. The main output of the pilot is an online dashboard, which provides a visual presentation of indicators, showcasing trends and the geographical distribution of activities in offshore wind.

Thermal energy storage (TES) can also help to integrate high shares of renewable energy in power generation, industry and buildings. The **Innovation Outlook: Thermal Energy Storage**¹⁹ report highlights key attributes of TES technologies and highlights priorities for ongoing research and development in this field.



GLOBAL GEOTHERMAL ALLIANCE

At the **Annual Thematic meeting of the Global Geothermal Alliance (GGA)**,²⁰ held on 22 June 2021, members and partners of the Alliance exchanged experiences and shared the latest geothermal developments and planned activities in their respective jurisdictions. Geothermal experts also had the opportunity to network and discuss pressing needs in the geothermal industry.

The lack of global standards, guidelines and codes for geothermal energy projects, however, increases the uncertainty with the compatibility and risks associated with geothermal energy development. Launched at the annual meeting of the GGA, the **United Nations Framework Classification for Geothermal Energy: Pilot applications in the Caribbean, Ethiopia and Indonesia**²¹ report²² employs the United Nations Framework Classification (UNFC) for geothermal energy resources in a pilot programme. The report highlights the main challenges and way forward to adapt the broader UNFC specifications and guidelines to geothermal energy resources.

The development of the GGA knowledge-sharing platform continued with the inclusion of the geothermal regional and country profiles to the **GGA website**²³. The profiles contain information about installed capacity for electricity and heat, the programmes instituted at the country or regional level to support geothermal development, and existing regulatory frameworks.

The countries of the East African Rift region hold significant geothermal potential, giving them valuable options for sustainable electricity generation and direct use. But harnessing these resources requires investments and enabling policies and regulatory frameworks to be in place. The **Enabling Policies and Regulatory Frameworks for Geothermal Power in the East African Rift**²⁴, co-organised with the African Union Commission and the United Nations Environment Programme (UNEP) and held on 27 July 2021, provided a platform for policy makers to exchange knowledge and lessons learned concerning the development of an enabling environment.

¹⁶ Available [here](#).

¹⁷ Funded by the Government of the United Kingdom of Great Britain and Northern Ireland.

¹⁸ Funded by the Horizon 2020 Programme of the European Union (EU).

¹⁹ Available [here](#).

²⁰ Available [here](#).

²¹ Available [here](#).

²² The report was jointly prepared by IRENA, the International Geothermal Association (IGA) and the World Bank's Energy Sector Management Program (ESMAP) and supported by United Nations Economic Commission for Europe (UNECE).

²³ Available [here](#).

²⁴ More information available [here](#).

The countries of Latin America are endowed with excellent but often underdeveloped geothermal resources, utilised mainly to generate electricity. In collaboration with the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH through the Programme on Geothermal Heat Utilization for Industrial Processes in the SICA²⁵ member countries (GEO II), IRENA co-organised a webinar on **Scaling-up Geothermal Direct Use for Industrial Applications in Latin America**²⁶ on 11 August 2021. Discussions focused on direct use applications of geothermal energy in the agri-food, industrial and urban sectors.

Solar thermal systems for water heating, or solar water heaters, are a mature technology that has been successfully deployed in several countries for more than 30 years. As renewables increasingly become cost-competitive, solar alternatives for heating water are becoming more common. The deployment of solar water heaters is particularly important to increase the energy security of fossil-fuel dependent countries. IRENA's **Renewable Energy Benefits: Leveraging Local Capacity for Solar Water Heaters**²⁷ report analyses the necessary steps to develop a local market for solar water heaters, and the existing capabilities that can be leveraged to do so to create local value.

Figure 10: Human resources required along the value chain for water heater systems



Source: IRENA, *Renewable Energy Benefits: Leveraging Local Capacity for Solar Water Heaters*, 2021

On 15 April 2021 and under the framework of the **Cool Coalition**²⁸, IRENA, UNEP and Sustainable Energy for All, organised the **Hot Climate for Renewable Cooling**²⁹ webinar as part of the #ThisIsCool webinar series. The goal of the meeting was to provide an overview of the various cooling technologies coupled with renewable energy existing in the market and the experiences, learnings and challenges of countries that are implementing these technologies.

²⁵ Sistema de la Integración Centroamericana

²⁶ More information available [here](#).

²⁷ Available [here](#).

²⁸ More information available [here](#).

²⁹ Available [here](#).

IRENA is also exploring areas to deepen knowledge on the process of decarbonisation, especially in the energy sectors that remain a challenge. IRENA's **Reaching Zero with Renewables: Eliminating CO₂ emissions in Industry and Transport**³⁰ report examines pathways to achieve zero emissions in the energy-intensive industry and transport sectors 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 11).

Figure 11: Key emission reducing measures



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

The aviation sector is one of the largest emitters of greenhouse gases at 2% of total global emissions. Biojet fuels are the most approved type of Sustainable Aviation Fuel available with many additional pathways under consideration. The report **Reaching Zero with Renewables: Biojet Fuels**³¹ provides a comprehensive study of biojet fuels as a decarbonisation option for the aviation sector with a focus of reaching zero in time to fulfil the Paris Agreement and hold the line on rising global temperatures.

Innovative solutions are reshaping the energy system and opening new possibilities for a decarbonised future much faster than expected. Green hydrogen is a viable solution to reducing greenhouse gas emissions and transitioning away from fossil fuels for “hard-to-abate” sectors. The supply chain for hydrogen is not yet fully developed. Several barriers, such as the high cost of green hydrogen compared to non-renewable alternatives and the lack of dedicated infrastructure, are still impeding hydrogen’s full contribution to the energy transition.

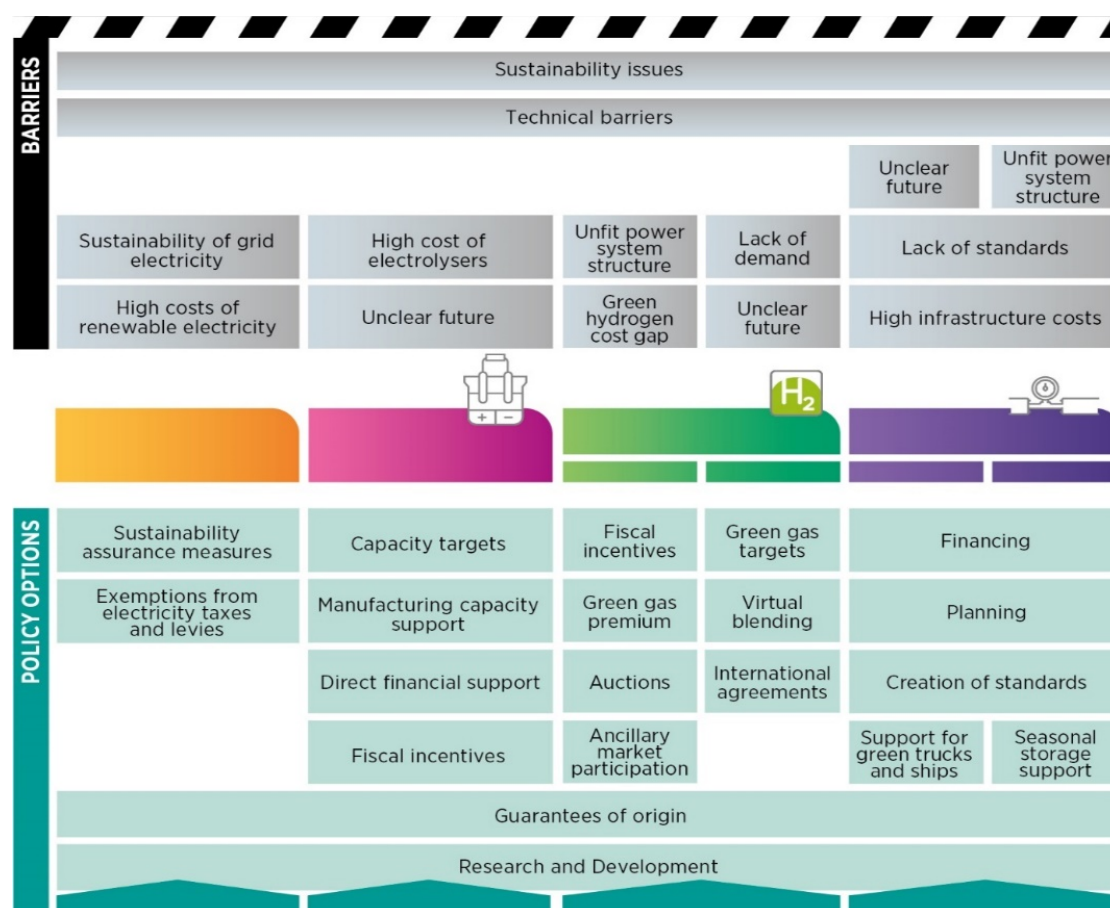
³⁰ Available [here](#).

³¹ Available [here](#).

IRENA has produced two policy making guides on the topics. The 2020 **Green Hydrogen: A Guide to Policy Making**³² report outlines the main barriers inhibiting green hydrogen uptake and the policies needed to address these. It also offers insights on how to kickstart the green hydrogen sector as a key enabler of the energy transition at the national or regional level. The 2021 **Green Hydrogen: A Guide to Policy Making**³³ report analyses the challenges and solutions (Figure 12), and provides a range of policy options such as measures to support electrolyser capacity deployment; ensure electricity is renewable and cost-competitive; increase green hydrogen demand; and develop a hydrogen transport infrastructure. Critically, the report suggests policy recommendations to allow the formulation of appropriate policy pathways based on a country's level of deployment of green hydrogen. In the margins of the Vienna Energy Forum, IRENA organised the **Green hydrogen policy making**³⁴ event to discuss key opportunities and challenges in scaling up green hydrogen, focusing on policies for the supply side of green hydrogen.

IRENA's Coalition for Action has prepared a report entitled **Decarbonising end-use sectors: Practical insights on green hydrogen**³⁵ that features several case studies on pioneering green hydrogen projects and first-hand interviews. The report provides insights from a renewable energy industry perspective on the growth opportunities of green hydrogen and what is needed from policy makers to accelerate its adoption worldwide (Figure 13).

Figure 12: Barriers and policy options for the supply of green hydrogen



Source: IRENA, *Green Hydrogen: A Guide to Policy Making*, 2021

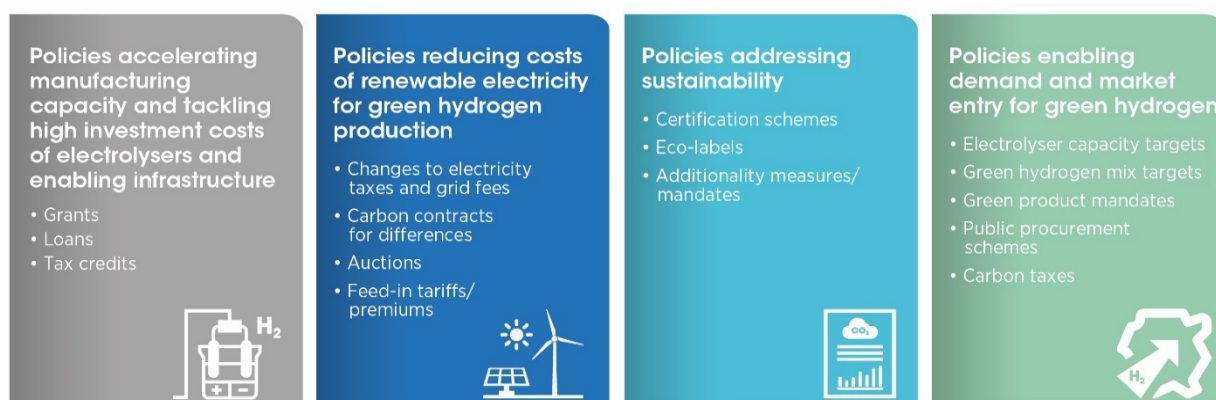
³² Available [here](#).

³³ Available [here](#).

³⁴ Available [here](#).

³⁵ Available [here](#).

Figure 13: Policy measures to accelerate green hydrogen production



Source: IRENA, *Decarbonising end-use sectors: Practical insights on green hydrogen*, 2021

To increase the share of e-fuels in electrification in the end-use sectors by 2050, the adoption of innovative solutions must be mainstreamed. Methanol, for example, is a chemical building block and emerging energy fuel mostly produced from fossil fuels. The cost of renewable methanol production remains high and production volumes low. The **Innovation Outlook: Renewable Methanol**³⁶ report, jointly prepared with the Methanol Institute, highlights that transitioning to renewable methanol could expand its use as a chemical feedstock and fuel, while moving industrial and transport sectors toward net carbon neutral goals. The report also shows that the combination of the right policies could render renewable methanol cost-competitive by 2050 or earlier, thus making it a more attractive option as fuel.

IRENA Insights, a series of short, focused webinars, have also been offering invaluable access to key findings from the Agency's latest programmatic work. Recent webinars explored opportunities, trends, best practices and innovative solutions in areas such as thermal energy storage, smart mini-grids and hydrogen, among others. By mid-September, thirteen webinars had taken place fortnightly, with the participation of more than 2,800 representatives from the public and private sector, intergovernmental organisations, non-governmental organisations, universities, think tanks etc. from all regions.

While the energy transition, with renewables at its heart, is increasingly gaining ground, the unequal access to positions and underrepresentation of women in the sector – only 32% are women – especially at higher levels, is also becoming more prominent. On the occasion of the International Women's Day on 8 March 2021, IRENA organised a virtual event on **Gender Equality for an Inclusive Energy Transition: Women Leading the Way in Solar Energy**³⁷ to present the challenges and barriers, the lessons learnt, and success stories of women leaders in the Solar Photovoltaic (PV) sector. The event also served as the official launch of the new **IRENA Global Gender Survey of the PV Industry**³⁸ that will be an important input to the upcoming **Solar PV Energy: A Gender Perspective** report. The deadline for the survey is 15 October 2021.



Together with REN21 and UNEP's Youth and Education Alliance, and sponsored by the Green Learning Network, IRENA held an event to share innovative approaches to skill building for a more sustainable future. The **Education for the Energy Transition: Approaches, Resources and Next Steps**³⁹ event explored challenges and solutions in adapting curricula to meet emerging knowledge and skills requirements; the role of educators across all levels and disciplines in guiding students; and systemic reform needs.

³⁶ Available [here](#).

³⁷ Available [here](#).

³⁸ The Survey can be accessed [here](#).

³⁹ More information available [here](#).

Regional electricity interconnections can support the transition from fossil fuel to renewables-based electricity generation and offer economic and environmental benefits by promoting renewable energy trade across the region. The IRENA **Renewable Energy and Electricity Interconnections for a Sustainable Northeast Asia**⁴⁰ report, prepared jointly with the Korea Energy Economics Institute (KEEI), provides new perspectives on the interconnection potential in Northeast Asia and valuable insights for policy makers and key stakeholders. The report shows that renewables-based electricity development will not only support these ambitious targets, but also comprise the centrepiece of a multilateral political agenda in the region.

To achieve the climate neutrality goal by 2050, EU has put in motion a plan to increase the efficiency and storage capacity of their energy systems, improve integration between sectors and make them smarter. This calls for higher shares of renewables in the production of electricity, the adoption of innovative solutions as well as more flexible transmission and distribution grids. In the context of the revision of the regulation on the trans-European networks for energy, the **Trans-European Networks for Energy a Milestone Towards a Renewables-Powered EU**⁴¹ conference gathered experts from various backgrounds, political leaders, industry and civil society organisations to discuss the future of the EU energy infrastructure.

In Focus: Energy Modelling of the Future

IRENA continues to develop its **MESSAGE-SPLAT** long-term capacity expansion models that are behind the Agency's analytical work presented in the planning and prospects for renewable power publication series as well as energy planning capacity building activities in Africa. IRENA and the International Atomic Energy Agency (IAEA) have been selected to develop the African Continental Power Systems Master Plan (CMP). The initiative is led by the African Union Development Agency (AUDA), with the technical and financial support of the European Union (EU) and aims at establishing a long-term continent-wide planning process. IRENA and IAEA will also train AUDA-NEPAD staff and Power Pool experts on the use of the modelling tools and support the team in the development of the CMP, ensuring knowledge transfer and capacity building.⁴²

Simultaneously, IRENA developed an **atlas of African hydropower**, containing spatiotemporal availability profiles of existing and future hydropower plants for the entire African continent. The atlas will help improve the resources available to the energy modelling community for exercises focused on Africa. Such resources had been lacking, resulting in sub-optimal assessments of power system expansion planning in hydro-rich regions, which are ubiquitous across the continent. The new resource has the potential to become a go-to database for energy modellers focusing on the African continent.

IRENA has led the exchange of knowledge and good practices in the use and development of model-based Long-term Energy Scenarios (LTES) to guide the clean energy transition. The LTES activities achieved several key milestones during this reporting period. The Clean Energy Ministerial (CEM) Secretariat adopted LTES to be an official Initiative of the CEM. The new **LTES Initiative**⁴³ will continue to be co-ordinated by IRENA and supported by two co-lead governments, Denmark and Germany. The **3rd International Forum on Long-term Scenarios for the Clean Energy Transition**⁴⁴ also took place from 8 to 10 June 2021, under the theme: "The role of LTES in achieving net-zero commitments", focusing on ways to strengthen the development and improve energy scenarios to guide the clean energy transition. Furthermore, IRENA sought to carry out joint activities with partner institutions. In collaboration with the United Nations Economic Commission for Latin America and the Caribbean (ECLAC) and the GET.Transform programme of GIZ, IRENA has been organising a series of bi-weekly webinars on **The development and use of long-term energy scenarios in developing national plans in Latin America**.⁴⁵ This regional series ran from February to June 2021 and featured presentations from governmental energy planning experts from planning agencies and offices from 14 countries.

⁴⁰ Available [here](#).

⁴¹ More information available [here](#).

⁴² More information available [here](#).

⁴³ Available [here](#).

⁴⁴ More information available [here](#).

⁴⁵ Available [here](#).

At the local level, cities are critical enablers of socio-economic development, accounting for more than 80% of global gross domestic product. Despite being less visible than megacities, small and medium-sized cities (with less than one million inhabitants) are home to 59% of the world's urban population and are growing faster than any other urban category. Yet, they often lack access to sufficient financing and policy support. The **Renewable Energy Policies for Cities: Experiences in China, Uganda and Costa Rica**⁴⁶ series of reports aims to provide much-needed knowledge regarding the deployment of renewable energy in medium-sized cities in these countries, focusing on the challenges faced and successes achieved to date.

Cities also account for about 75% of global primary energy use, thus playing a major role in advancing and shaping the global energy transition. They will also need to accommodate two-thirds of the world's population in a liveable, low carbon environment by 2050. IRENA's 2020 **Rise of Renewables in Cities**⁴⁷ report explores three key pillars – renewable energy resource potentials and renewable energy targets, technology options and urban energy system planning – that will enable cities to scale up their use of locally available renewables as they move to decarbonise their energy systems. In 2021, IRENA also developed a series of briefs on **Renewable Energy Policies for Cities** focusing on three highly polluting sectors: buildings, power and transport, that provide policy recommendations to help policy makers accelerate efforts to create sustainable cities powered by renewable energy (Figure 14). To accelerate the energy transition, the **Renewable Energy Policies for Cities: Power Sector**⁴⁸ brief provides guidance to municipalities on how to promote the production or procurement of electricity from renewable sources, rather than continuing to rely on the polluting fuels that today are generating the majority of power supplies.

Figure 14: Roles of municipal governments in the energy transition



Moreover, the operation of buildings accounted for 30% of world energy demand in 2019, while emissions from building operations ran to 10 Gt of CO₂, the highest ever, and were equal to 28% of total global energy-related CO₂ emissions. Moreover, the expected growth of global energy demand in buildings is expected to increase by 50% by 2050. Therefore, cities are critical actors in energy and climate policy making. In this context, the **Renewable Energy Policies for Cities: Buildings**⁴⁹ brief focuses on a critical issue and provides a set of options to reduce and eventually eliminate buildings' carbon footprint. Considering that the transport sector is one of the largest energy users in urban settings, accounting for 29% of total final energy consumption worldwide in 2018, whose CO₂ emissions increased by 29% between 2000 and 2016, action to decarbonise it should be a priority. The **Renewable Energy Policies for Cities: Transport**⁵⁰ brief highlights best practices in sustainable urban transport and showcases city actions that accelerate the creation of sustainable transport systems.

⁴⁶ Available [here](#).

⁴⁷ Available [here](#).

⁴⁸ Available [here](#).

⁴⁹ Available [here](#).

⁵⁰ Available [here](#).

Along those lines and in the context of the Italian Presidency of G20, IRENA co-organised with Italy a side event on **Resilient cities: Renewable Energy Policies & Technologies**⁵¹ on 31 March 2021 to showcase policy options, technical solutions, and examples in support of the development of the renewable energy sector at a city-level based on local contexts, needs and priorities. With the participation of China, Germany and Uganda, discussions covered policy instruments, strategies, planning tools and technologies for urban energy transformations.

IRENA's **SolarCity Simulator**⁵², a tool allowing users to test policy instruments, incentive schemes, and system specification that could lead to potential economic savings as well as social-environmental benefits, was launched in a webinar on 29 June 2021. This innovative web-based platform is designed to support countries to fully explore the opportunities of deploying solar PV systems at the local municipality level.



Investments for a sustainable future

A climate-safe future calls for the scale-up and redirection of investments from fossil fuels towards energy transition technologies – renewables, energy efficiency and electrification of heat and transport applications. The creation of an enabling environment in this regard is paramount in attracting financing, promoting trade and investment, and developing capacity-building. IRENA's work in improving project quality, market visibility, and access to finance by facilitating renewable energy project development and financing has been instrumental. For example, IRENA has completed twenty draft Project Information Documents (PIDs).⁵³

As part of the **Climate Investment Platform (CIP)**⁵⁴, IRENA continues to work with partners to enhance climate action and translate ambitious national climate targets into concrete investments. The CIP is a demand-driven platform that facilitates the development and scale up of renewable technologies through tailored technical assistance to Members. Project proponents, registered in the platform, are considered for technical assistance and project facilitation support to reach commercial feasibility readiness for financing matchmaking with registered financial institutions or for financing under the New Facility.

⁵¹ Available [here](#).

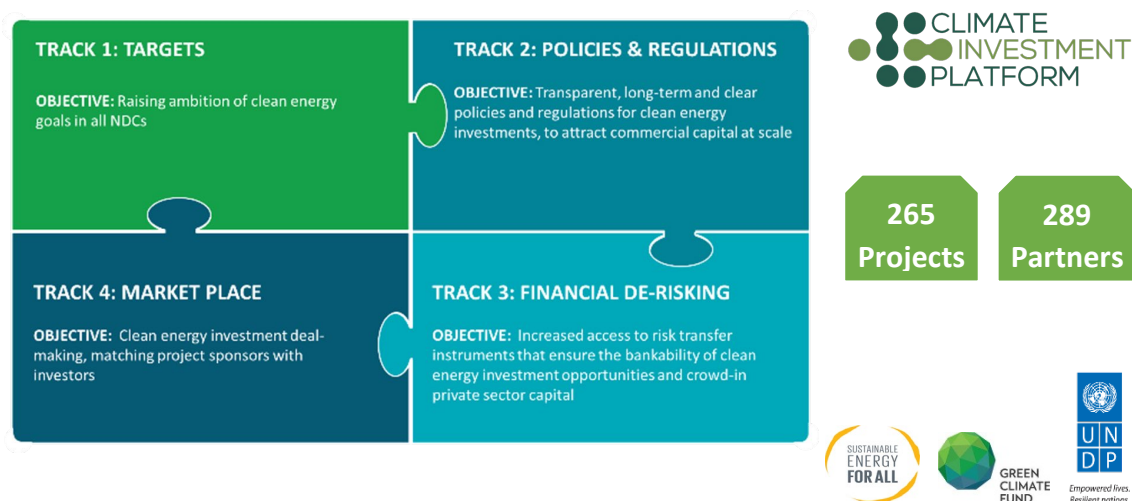
⁵² Available [here](#).

⁵³ Comprehensive business documents that entail financial and technical information of a specific project to help project proponents identify gaps in the technical, financial, legal, and regulatory considerations, and ensure effective presentation of the project information

⁵⁴ Available [here](#). CIP is a joint initiative of IRENA, United Nations Development Programme (UNDP), Sustainable Energy for All (SEforALL), and the Green Climate Fund (GCF).

As of September 2021, CIP has around 289⁵⁵ registered partners, of which 52 can provide significant support including development partners and investors. Of these, 7 are financial institution agreements, signed with the private sector. New registrations include 5 bilateral financial organisations, 11 multilateral organisations, and 14 international development organisations (Figure 15). These projects come from a diverse geographic distribution from Africa, Asia and Latin America, representing the unique reach of IRENA's initiatives and credibility. Once projects qualify for support under the CIP, IRENA provides technical assistance to develop comprehensive Project Information Documents (PIDs) that verify, summarise, and detail all the relevant information necessary to attract the interest of financiers to the project in question. Currently, 51 projects are provided with technical assistance and advisory services, such as guidance to prepare business plans and PIDs to introduce them to registered financing partners for funding considerations. There are 15 new projects ready for financing matchmaking, while 23 PIDs are in the final stages of preparation. It should be noted that the transfer of IRENA Sustainable Marketplace projects to the CIP is underway.

Figure 15: Climate Investment Platform



International cooperation and partnerships

This year, IRENA's Eleventh Assembly featured a series of virtual high-level meetings on current topics of interest to the Membership. The **High-level Panel on Energy Transition for Sustainable Post-COVID Recovery**⁵⁶ that opened the eleventh session of the Assembly, comprised of Ministers and High-level representatives from international organisations taking stock of the ongoing trends in energy transitions and recovery, with the view to drawing out the strategies to advance economic, social and climate priorities simultaneously. The discussion also highlighted experiences and concrete actions that can accelerate the energy transitions in support of the 2030 Agenda for Sustainable Development and the Paris Agreement.

⁵⁵ A reclassification of the partner database impacted the previously reported numbers.

⁵⁶ Available [here](#).



In the margins of the Assembly, a series of Ministerial Plenary Meetings took place. The **Ministerial Plenary Meeting on Renewables and Pathway to Carbon Neutrality - Innovation, Green Hydrogen and Socioeconomic Policies**⁵⁷ highlighted the necessary steps for a successful rapid transition to net-zero and the contribution of renewables, highlighting the importance of international collaboration. The **Ministerial Plenary Meeting on Scaling up Finance for Renewables**⁵⁸ focused on the central role investment mobilisation plays in accelerating the energy transformation, the global nature of financial markets, and the need to facilitate the flow of significant capital to developing countries. To showcase national perspectives and best practices in reinforcing energy planning and implementation and aligning them to global climate action and goals through NDCs, IRENA organised a **Ministerial Plenary Meeting on National Energy Planning and Implementation for Fostering Energy Transition**.⁵⁹ Lastly, the **Ministerial Plenary Meeting on Driving the Agenda for Energising Healthcare**⁶⁰ offered an opportunity to analyse the crucial energy-health nexus, especially in light of the pandemic, and challenges and opportunities in the deployment of renewables-based solutions to power healthcare infrastructure in developing countries.

To ensure all voices are heard, IRENA also organised virtual meetings with various stakeholders. The IRENA Coalition for Action and IRENA Legislators Forum organised the **IRENA Public-Private Dialogue**⁶¹ to discuss COVID-19's impacts, public and private responses to the crisis, and the steps needed to accelerate the pace of the energy transition. The sixth edition of the **IRENA Legislators Forum**⁶² was also convened to discuss global, regional and local agendas relating to a renewables-based energy transition and avenues to accelerate the deployment of renewables. IRENA also held the second edition of the **IRENA Youth Forum: The New Generation of Decision Makers**⁶³, under the theme 'Promoting an Inclusive and Just Energy Transition', to discuss the challenges and opportunities in the process, the role of renewables and avenues to promote youth participation to ensure inclusivity and equity.

Collaborative Frameworks

IRENA's **Collaborative Frameworks**⁶⁴ are strong evidence of the Agency's commitment to enhancing Member engagement and ownership of the programmatic output, while enabling peer-to-peer collaboration and exchange of national experiences, challenges, and respective solutions. In 2021, the **Collaborative Framework on the Geopolitics of Energy Transformation (CF-GET)** has focused work on the geopolitics of hydrogen economy and the climate and security nexus. To achieve a deeper understanding of the geopolitical consequences of hydrogen deployment and the rise of hydrogen economies as well as

⁵⁷ Available [here](#).

⁵⁸ Available [here](#).

⁵⁹ Available [here](#).

⁶⁰ Available [here](#).

⁶¹ Available [here](#).














⁶² Available [here](#).

⁶³ Available [here](#).

⁶⁴ More information available [here](#).

assess and present policy options and considerations, IRENA is preparing a report on Geopolitics of Hydrogen Economy. The report will be officially presented at the twelfth session of the IRENA Assembly. At the third meeting of the CF-GET on 4 May 2021, Members exchanged views, experiences and strategies on the geopolitics of hydrogen economy and discussed the role of hydrogen in the energy transition. The discussions formed an essential input into the framing of the report. The next meeting of the Framework is scheduled for 30 September 2021 and will serve to discuss the preliminary findings of the report.

Figure 16: List of Collaborative Frameworks and their respective Co-facilitators

Collaborative Framework on Enhancing Dialogue on High Shares of Renewables in Energy Systems		
Collaborative Framework on the Geopolitics of Energy Transformation		
Collaborative Framework on Green Hydrogen		
Collaborative Framework on Hydropower		
Collaborative Framework on Ocean Energy/Offshore Renewables	 	
Collaborative Framework on Just and Inclusive Energy Transition		

The third meeting of the **Collaborative Framework on Green Hydrogen** was held on 17 May 2021 to discuss some of the challenges in developing the supporting infrastructure to enable global trade of hydrogen, as well as best practices, share lessons and drivers to develop green hydrogen, among others. At the meeting, Members highlighted examples of progress on multiple fronts and underlined the importance of international cooperation with regard to global trade. IRENA is also working together with the World Economic Forum (WEF) to accelerate the development of green hydrogen by leading one of the working groups of the “Accelerating Green Hydrogen Initiative”⁶⁵ that WEF launched in 2020. It should be noted that IRENA recently signed a partnership agreement⁶⁶ with the Hydrogen Council to jointly advance green hydrogen across the energy system and make a significant contribution to global net zero goals as well as achieve the aims of the Framework.

⁶⁵ More information available [here](#).

⁶⁶ More information available [here](#).

The third meeting of the **Collaborative Framework on Hydropower** took place on 3 May 2021 to share Members' expertise and experiences on the main priority areas of the Framework's work, namely, sustainability, refurbishment, policies and market frameworks, and pumped storage as well issues to be addressed at the San José Declaration. On 22 September 2021, IRENA organised its first High-Level Meeting of the Framework,⁶⁷ focusing on key hydropower-related issues and experiences and helped identify potential pathways and concrete actions to chart a bright future for hydropower. The meeting took place back-to-back with the World Hydropower Congress, hosted by the International Hydropower Association (IHA) and the Government of Costa Rica, to allow Members to engage in deliberations on the San José Declaration as well as other matters under discussion at the Congress.

The **Collaborative Framework on Enhancing Dialogue on High Shares of Renewables in Energy Systems** focuses on energy markets and regulations, energy system planning and operation, cross-border strategies and interconnections and innovation. The pilot phase includes thematic discussions on three of the six workstreams, including (i) cross-border interconnections to promote cross-border trade of renewable electricity; (ii) optimised operation of energy systems with high penetration of variable renewable energy in the energy systems; and (iii) reinforced energy system planning through effective use of long-term energy scenarios. At the third meeting convened on 5 May 2021, Members elaborated on one of the workstreams for 2021, namely cross-border interconnection and looked at ways to promote regional trade of renewable electricity. The meeting also looked into implications of different levels of system and market integration. The next meeting of the Framework is scheduled for 20 October 2021.

In 2021, IRENA established a new **Collaborative Framework on Just and Inclusive Energy Transition**. The first meeting of the Framework was held on 20 May 2021. Participants from 53 countries plus the European Union registered to participate in the meeting. Countries adopted the general principles and modalities that will provide the foundation for the Framework's work and the United States of America and South Africa were designated as Co-Facilitators. Members also shared national experiences and challenges that can inform the design of the Framework as well as possible focus areas. A second meeting will take place in October 2021.

The **Collaborative Framework on Ocean Energy/Offshore Renewables** agreed on 13 topics around the areas of technology development, research and innovation, market incentives, and sustainability. The topics include analyses on accelerating technology cost reduction, grid integration, resource mapping, and coupling of offshore renewables with Power-to-X technologies. At the third meeting on 8 June 2021, Members had the opportunity to provide input to the report on Innovation in Offshore Renewables commissioned by the G20 Presidency to IRENA and share good practices to foster regional collaboration for offshore renewables. The next meeting of the Framework is scheduled for October 2021.

The Collaborative Framework on oil and gas sectors and the energy transition is currently under development.

⁶⁷ More information available [here](#).

HIGH-LEVEL DIALOGUE ON ENERGY

U.N.O.R.G / E.N / C.O.N.F.E.R.E.N.C.E.S / E.N.E.R.G.Y.2021



In the margins of the United Nations (UN) General Assembly, the UN Secretary-General convened the **High-level Dialogue on Energy**⁶⁸ at a summit level on 24 September 2021. The Dialogue focused on the energy-related goals and targets of the 2030 Agenda for Sustainable Development. In addition, multi-stakeholder action-focused events took place on 22-23 September, to highlight Energy Compacts and partnerships by all stakeholders.



HLDE

The preparatory process for the Dialogue involved several thematic streams of work. As a member of UN-Energy, IRENA co-led one of the five Technical Working Groups (TWGs), namely on Energy Transitions. In co-operation with UNEP and the UN Economic Commission for Asia and the Pacific (UN-ESCAP), and with inputs from experts, IRENA prepared a **Theme Report on Energy Transition**,⁶⁹ recommendations of which comprise the global energy roadmap to 2030. IRENA also provided substantive input to the other four reports⁷⁰ (Figure 17). Together these five reports will comprise a global roadmap for achieving SDG7 by 2030.

Figure 17: Thematic Reports for the High-level Dialogue on Energy



⁶⁸ United Nations General Assembly resolution 74/225. More information on the Dialogue available [here](#).

⁶⁹ Available [here](#).

⁷⁰ Available [here](#).

The IRENA Director-General spoke at the High-Level Dialogue, announcing IRENA-EU partnership on regional outlooks for Africa, Europe, and Latin America. He also participated in a fireside chat on **Celebrating bold ambition: Energy Compacts** on 22 September to launch the Green Hydrogen Compact catalogue. The catalogue is a result of a broad and inclusive partnership among Denmark, Germany, Chile, IRENA, World Economic Forum, the COP26 High Level Champions, the Global Environment Facility, Bloomberg Philanthropies and UN Energy. At present, this Catalogue consists of 29 private sector compacts, along with 1 regional, 3 national and 2 subnational. Consolidated, this accounts for a total commitment of 129 GW electrolyzer capacity and 268 GW renewable energy production. IRENA is also a partner in several other compacts including on offshore wind with the Global Wind Energy Council and on food-energy nexus with FAO.

IRENA has Energy Compacts, in various stages of preparation, with several countries and partners:



To pave the way towards the High-level Dialogue on Energy and COP26, IRENA, together with Denmark, UNEP and WEF, organised the **Energy Action Day**⁷¹ on 16 September 2021. The event, opened by the Prime Minister of Denmark and the Deputy Secretary-General of the United Nations, convened stakeholders to discuss how to accelerate collective action towards net zero and climate-resilient energy systems while promoting decarbonisation to meet the 1.5°C thresholds. The Energy Action Day featured in-depth discussions with key stakeholders on issues such as decarbonising hard-to-abate sectors, the promotion of hydrogen and energy efficiency, clean energy investments, and the role of cities, among others, and showcased ambitious energy transition-related commitments and initiatives.

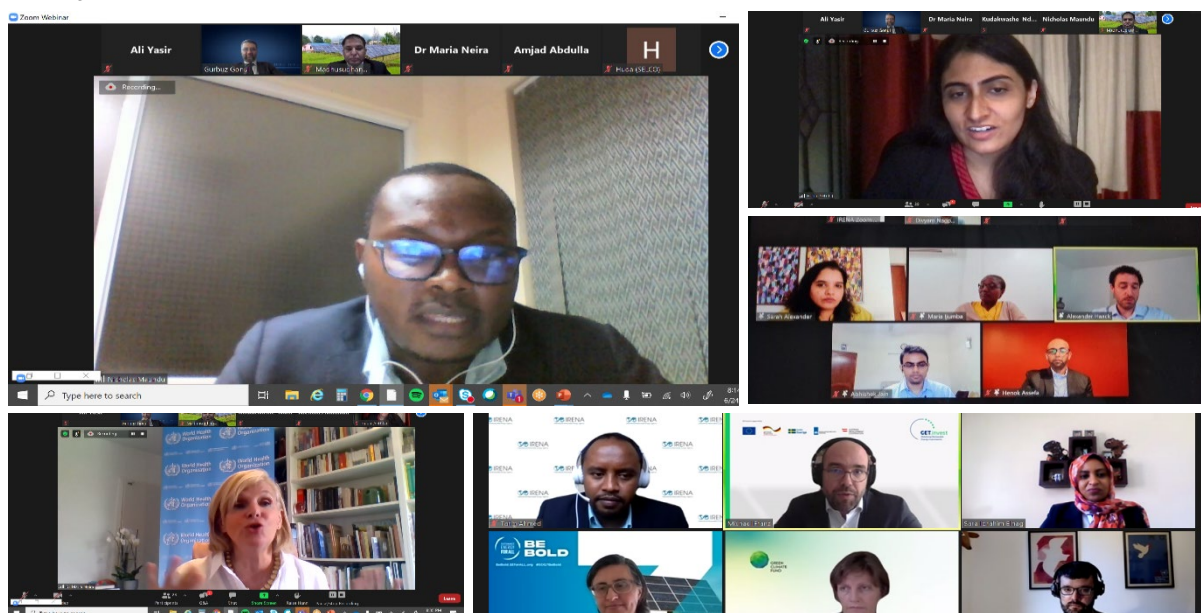


⁷¹ More information available [here](#).

Ministerial-level Thematic Forums⁷², organised from 21 to 25 June 2021, brought together key stakeholders to mobilise actions as a major milestone on the road to the Dialogue. On 23 June 2021, the Forum on Energy Transition was held, with a Multi-Stakeholder Dialogue covering issues of scaling up renewables, technology solutions and innovations as well as partnerships and cooperation. At the Ministerial Segment, Mr La Camera together with the Principals of UNEP and UN-ESCAP, officially launched the TWG's theme report.



In the margins of the Forums, IRENA organised side events on relevant topics, namely on **Financing Solar at the Last Mile: Perceived Challenges, Risks and Opportunities**⁷³ on 21 June 2021, on **Innovative Strategies to Deliver the Deep Decarbonisation of Industrial Processes**⁷⁴ on 22 June 2021, on **Renewable Energy Transition in Africa**⁷⁵ on 23 June 2021, on **Climate Action Pathway for Energy**⁷⁶ and on **Decentralized Renewable Energy Solutions for Sustainable Livelihoods**⁷⁷ on 24 June 2021, as well as on **Unlocking Renewable Energy Investments through Project Facilitation**⁷⁸ on 25 June 2021.



IRENA co-led the preparation and contributed to several **SDG7 Policy Briefs**⁷⁹ on all facets and intersections of the goal such as energy access, climate action, poverty eradication, healthcare, employment and economic growth, sustainable cities and regional implementation. The briefs served as substantive inputs into the annual **High-level Political Forum (HLPF)** that took place from 6 to 15 July 2021 as well as into the Dialogue in September.

⁷² More information available [here](#).

⁷³ In collaboration with UNDP and the SDG Geneva Summit 2021. More information available [here](#).

⁷⁴ More information available [here](#).

⁷⁵ In collaboration with the Federal Ministry for Economic Cooperation and Development, Germany, also a Country Champion of the Energy Transitions Theme. More information available [here](#).

⁷⁶ In collaboration with REN21. More information available [here](#).

⁷⁷ In collaboration with SELCO Foundation. More information available [here](#).

⁷⁸ In collaboration with CIP partners. More information available [here](#).

⁷⁹ Available [here](#).

On the sidelines of the 2021 HLPF, IRENA organised an event on **Renewable Energy as a Key Element of Post-COVID Recovery**⁸⁰ on 13 July 2021. The meeting brought together national and sub-regional stakeholders from across Africa to reflect and agree on the role of the energy transition in Africa's response to the current crisis and beyond, in order to achieve sustainable development and climate objectives.

IRENA attended the 39th ASEAN Senior Officials Meeting on Energy (SOME) on 14-17 June 2021 and participated in the **3rd ASEAN SOME – IRENA Dialogue**, hosted by Ministry of Energy Brunei Darussalam, on 15 June 2021. The Dialogue focused on progress of the MoU and Action Plan Implementation and preparation for the 4th ASEAN Ministers on Energy Meeting (AMEM) – IRENA Dialogue.

In the margins of the **Regional Energy Congress of Central America (COREN 2021)**⁸¹, IRENA hosted the **Renewable Energy Day** on 26 August 2021. At the meeting, panelists from Governments and international institutions addressed topics ranging from decarbonisation strategies and more ambitious climate action to the implementation of commitment made under the energy component of their revised NDCs.

The UN Food Systems Summit

was held on 23 September 2021 in New York, two months before COP26 in Glasgow, to promote the 2030 Agenda and decouple food and energy systems from greenhouse gas emissions. In January 2021, the first joint **Ministerial Meeting**⁸² of the two UN Summit processes was held to identify potential outcomes such as initiatives, targets, policies, and other concrete deliverables, with simultaneous food, energy, and climate benefits that can be considered for both Summits, as well as COP26. The Meeting was convened by the UN Food Systems Summit, UN High-Level Energy Dialogue, IRENA, and the United Arab Emirates as part of Abu Dhabi Sustainability Week and IRENA Assembly.



Targeted climate action

Updating Nationally Determined Contributions (NDCs) represents a significant milestone in global efforts to cut energy-related emissions. As of the end of August 2021, 110 Parties have submitted NDCs. Since the beginning of 2020, IRENA has increased focus to support countries in enhancing and implementing the energy components of their NDCs, as well as with long-term decarbonisation pathways to 2050.

IRENA has been engaging and supporting around 70 countries around the world – touching upon the lives of 1.8 billion people – in NDC enhancement and implementation, as well as with long-term decarbonisation pathways to 2050, with total energy related greenhouse gas emissions close to 3.5 billion tonnes of carbon dioxide equivalent per year (Figure 18). IRENA's NDC enhancement and implementation support includes 135 activities, including Data and Statistics, Climate innovation and technology, Measurement and Reporting and Verification (MRV) systems, and project facilitation support, among others. The following countries have recognised IRENA's support in their updated NDC submissions: Belize, Bhutan, Dominican Republic, Grenada, Guinea, Lebanon, Nepal, Nigeria, Papua New Guinea, Paraguay, Seychelles, and the United Arab Emirates.⁸³

⁸⁰ More information available [here](#).

⁸¹ More information available [here](#).

⁸² Available [here](#).

⁸³ This list spans submissions made from November 2020 to 1 September 2021.

Figure 18: IRENA's NDC Engagement



In the lead up to **COP26**, IRENA has continued to engage with partners in the climate space to highlight the importance and urgent need of energy transitions. IRENA continues to support ongoing climate efforts 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**⁸⁴, 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. As a member, IRENA supports the Council's target countries in accelerating their respective energy transitions.

IRENA, in cooperation with the UK COP 26 Presidency and other partners, have hosted a series of virtual regional meetings to raise ambition of the national climate pledges, in the run up to COP26, and promote their successful implementation, through the enhanced energy component of the NDCs. Against this backdrop, IRENA, in partnership with the UK COP26 Presidency, hosted the **Advancing the Energy Transition in Central Asia through NDCs and Long-Term Strategies**⁸⁵ webinar on 8 July 2021.

With the Energy Community Secretariat, IRENA and the UK COP26 Presidency hosted a Conference on **Advancing the Energy Transition in Western Balkans and Eastern Europe countries through Enhanced Nationally Determined Contributions**⁸⁶ on 6 May 2021. In partnership with the UNFCCC, IRENA and the UK COP26 Presidency co-hosted a webinar on **COP 26 Climate-Energy Dialogue in the Middle East and North Africa region**⁸⁷ on 27 April 2021, while on 6 April 2021, they organised a webinar on **Advancing the Energy Transition in Africa through Nationally Determined Contributions**⁸⁸ in co-operation with the African Union. In partnership with the Regional NDC Pacific Hub, IRENA and the UK COP26 Presidency hosted a virtual event on **Pacific NDC Dialogue: Enhancing and Implementing the Pacific Small Island Developing States (SIDS) Commitments to the Paris Agreement through Energy Transformation**⁸⁹ on 23 February 2021.

⁸⁴ More information available [here](#).

⁸⁵ More information available [here](#).

⁸⁶ More information available [here](#).

⁸⁷ More information available [here](#).

⁸⁸ Available [here](#).

⁸⁹ Available [here](#).

The Energy Segment of the **Latin America and Caribbean (LAC) Implementation Lab**⁹⁰, held on 13 May 2021, was co-organised by IRENA – as the coordinator of the SIDS Lighthouses Initiative – and the High-level Champions. The event was part of a series of Implementation Lab events that took place during the 2021 Regional Climate Weeks in LAC, Asia-Pacific and Africa and hosted by UNFCCC, in partnership UNDP, UNEP and the World Bank. The event fostered open and solutions-oriented dialogue between government representatives and non-Party stakeholders, to identify opportunities to enhance the implementation of climate action through energy transition. The event built on the outcomes of the **Net-Zero Investment Lab**, held in March 2021, which focused on accelerating green investment in SIDS through public and private collaboration.

On 26 July 2021, IRENA, together with the UN High-level Climate Action Champions, co-hosted **The Africa Renewable Energy Dialogue**⁹¹, in partnership with the African Climate Foundation, Dalberg, and the UN Economic Commission for Africa. The Dialogue served to explore opportunities and enablers to accelerate the delivery of distributed renewable energy to the last mile in Africa. Discussions fed into the **Africa Climate Week** in September 2021.

In the margins of the Asia Pacific Climate Week, IRENA organised an event on **Nationally Determined Contributions in the Asia Pacific Region as the main driver of decarbonisation**⁹² on 7 July 2021, to discuss how NDCs drive the energy transition and outline emerging technology and innovation strategies to support the implementation of mitigation and adaptation measures in the region.

IRENA continues to serve as the focal point for energy⁹³ within the **Marrakech Partnership for Global Climate Action**⁹⁴. 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 leads the annual update of the **Climate Action Pathway for Energy**.⁹⁵ The Pathways, initiated by the COP25 High-level Champion, outline the longer-term vision for a 1.5°C climate-resilient world and set out actions needed to achieve that future by 2050. It is envisaged that they will remain living documents to inform discussions across sectors of the global economy.

Under the umbrella of the **IRENA Youth Talk**, IRENA, in cooperation with Enel Foundation, launched a new series of events on the road to COP26 under the overarching title Energy Transition Heroes. The meetings will showcase ideas and foster informed discussion on key issues. The first meeting took place on 8 June 2021 and focused on the theme **Addressing Equity and Climate Challenges through Renewables-based Energy Transitions**⁹⁶ by examining the direct and indirect effects of the climate crisis on equality, poverty and opportunity. The second meeting was organised under the theme **Youth Powering Sustainable Energy Technology**⁹⁷ on 13 July 2021. The webinar showcased a combination of technologies and innovative solutions to decarbonise the energy system and achieve a 1.5°C Pathway as well as positively impact the living standards of young people by improving access to key services, such as education and health.



⁹⁰ More information available [here](#).

⁹¹ Available [here](#).

⁹² More information available [here](#).

⁹³ Other members of the energy group include: The Climate Group, International Chamber of Commerce, International Energy Agency, REN21, SEforAll, UNEP, and WBCSD.

⁹⁴ Other thematic groups include: Human Settlements; Industry; Land Use; Oceans and Coastal Zones; Transport; Water; Finance; and Resilience.

⁹⁵ Available [here](#).

⁹⁶ More information available [here](#).

⁹⁷ More information available [here](#).

Communications and Outreach – Amplifying Impact

IRENA continues to strengthen its communication and outreach activities. Since the beginning of 2021, IRENA has been referenced in over 23,800 media articles in 40 languages across 153 countries. Overall, IRENA's global media coverage continues to grow with an increase of 38% in comparison to the same period last year (Figure 19). Particularly, IRENA mentions in top-tier media grew by 7% compared to 2020.

During this period, several IRENA flagship reports and key initiatives were launched. For example, the Agency's **World Energy Transitions Outlook** was disseminated through press releases in 10 languages and all regions globally. Media relations including a virtual global media roundtable with lead journalists have led to more than 1,280 articles in 77 countries since its launch and generated anchor content on CNN, Financial Times, CNBC, The Guardian, Forbes, Reuters etc. The publication page of the full WETO report attracted 56,500 views and led to 28,336 report downloads, preview and full report combined (Figure 20). The WETO-focused press releases were read by over 25,000 people, placing them in the top 5 most read articles in 2021 to date.

Furthermore, global media outreach also accompanied the launch of the Agency's **Renewable Power Generation Costs in 2020** report, resulting in 581 articles in 51 countries since its launch. Similar global

outreach for the launch of the Agency's **Renewable Capacity Statistics 2021** report resulted in 612 articles in 53 countries since its launch. Renewable Capacity Statistics 2021 and Renewable Power Generation Costs reports press releases attracted the highest number of readers, with 63,000 and over 40,000 views respectively. The 11th Assembly Blog hosting the event's live streaming remained in top 5 most read articles with over 22,000 views. In addition, both the **Capacity Statistics and Power Generation Costs** reports are in the top five most downloaded publications of 2021, with 22,000 and 16,000 downloads respectively since publication.

Figure 19: IRENA's Social Media Presence, 2021

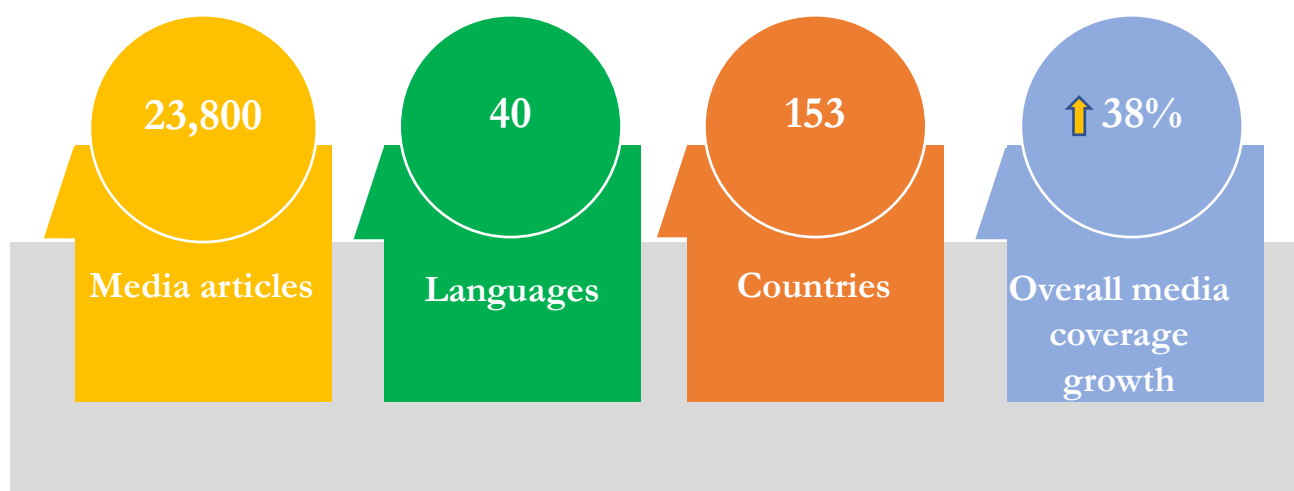
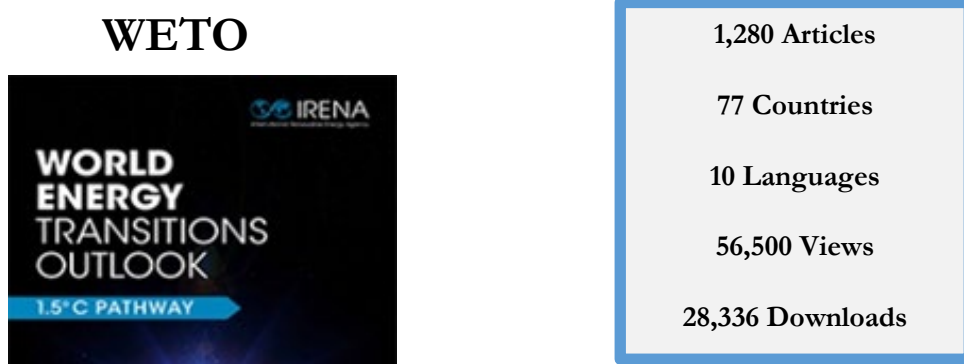


Figure 21: WETO's Social Media Presence



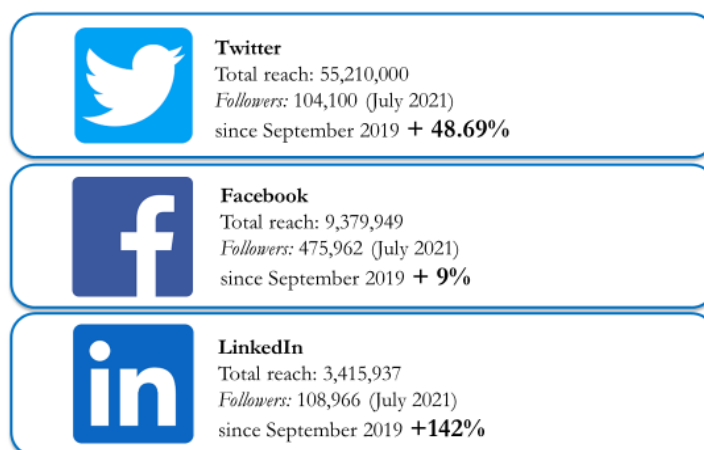
IRENA In the News



The number of visitors to the IRENA website grew significantly. Over 1.1 million users browsed over 4 million pages which represents a 49% increase in the number of users and a 52% increase in the number of pages browsed since the beginning of 2021 compared to the same period last year. New formats like digital stories encouraged user interaction, thus increasing the time spent on the site and return visitor rates to establish irena.org as a reliable knowledge hub for renewables.

IRENA has continued to implement its strategy to target and deploy social media for global events, reports, and news. Today, IRENA's Twitter account has over 107,000 followers, up from 94,000 as of January 2021 (plus 14%) and up from 89,500 compared to the same period in 2020, an increase of 19.5%, and 84,000 in the first semester of 2020 (Figure 21). In the third quarter of 2021, IRENA's Facebook has 475,962 followers. On LinkedIn, currently 111,951 people follow IRENA. Overall, the Agency's Twitter engagement on WETO alone generated a reach of 800,000, with approximately 500,000 through direct engagement with High-level partners and influencers.

Figure 22: Number of social media followers



Source: IRENA internal records

Dedicated mailing campaigns outside IRENA's daily Media Brief provide targeted information on IRENA press releases, publications and events to a pool of 77,145 stakeholder subscribers today, an increase of 25% from 61,623 in January 2021. Since the beginning of this year, IRENA distributed three flagship report press releases: full WETO, Renewable Capacity Statistics 2021 and Renewable Power Generation Costs in 2020. The Capacity 2021 newsletter generated the highest 'click rate' on the publication link, reaching 5.6% (benchmark 2.5%), followed by the link to the full WETO which was clicked at a rate of 4.5%. The Costs 2020 newsletter has the highest 'open rate' at 32.2% (benchmark 20-25%), followed by the release mail of the full WETO which was opened at a rate of 31.9%.

Looking ahead

In pursuit of realising its mission to accelerate energy transitions towards a decarbonised future, the Agency continues to plan and execute activities within the scope of its Work Programme for 2020-2021. The COVID-19 pandemic and the ensuing lockdowns and restrictions have led to an extension of some of the work taking place virtually. Selected highlights of IRENA's upcoming activities can be found below.

IRENA's upcoming **Regional Market Analysis: Africa** will provide an energy outlook to 2050 and its socio-economic implications in Africa; it will also identify emerging trends at the intersection of public policy, finance and market development.

The sixth edition of the **International Off-Grid Renewable Energy Conference and Exhibition** has been scheduled for December 2021. The meeting will be held virtually and gather High-level policy, intergovernmental, private sector and non-governmental participants from around the world to exchange ideas and insights on the future of standalone and mini-grid renewable energy solutions and identify ways to scale-up their adoption.

Under the implementation of the **Africa Clean Energy Corridor, Trainings on Auctions Design** for the countries of Eastern & Southern Africa are currently under preparation for November 2021. The objective is to train stakeholders from the public sector on IRENA's framework and insights regarding renewable energy auctions, and considerations, best practices, lessons learnt and specific case studies. Participants will go through the design elements and the trade-offs that need to be considered while making each choice.

During the Africa Climate Week, the Agency will host an event on **Renewable Energy in Nationally Determined Contributions (NDCs): Driving Climate Action towards Low Carbon and Inclusive Development in Africa** on 27 September 2021. Discussions will focus on the main achievements and challenges encountered in Africa's energy transitions, outlined current initiatives, and identifying key opportunities for incorporating development needs to achieve low-carbon climate safe energy systems.

COP26 is scheduled for 31 October 2021 through 12 November 2021 in Glasgow, Scotland. Among other things, energy transition will be in focus on 4 November. IRENA is at present leading the preparations for the Marrakech Partnership event on that day, and supporting the Presidency in several facets of their energy-related plans for the upcoming COP.



Upcoming IRENA events and publications

Table 1: Tentative list of IRENA Events, 2021

Date	Event name
28-Sept	Coalition for Action Mid-Year Strategy Meeting
29-Sept	2021 IRENA Policy Talks #7 on Socioeconomics
29-Sept	Regional Model Analysis & Planning Support Programme: Central Africa - Closing World Energy Transition Outlook: towards a net-zero future in Latin America and the Caribbean
29-Sept	
30-Sept	Collaborative Framework on the Geopolitics of Energy Transformation
11-15 Oct	Capacity Building on Long-Term Energy Planning in Republic of Cameroon
19-Oct	Programme and Strategy Committee
20-Oct	Administration and Finance Committee
20-Oct	Collaborative Framework on Enhancing Dialogue on High Shares of Renewables in Energy Systems
21-Oct	Collaborative Framework on Just and Inclusive Energy Transition
26-27 Oct	IRENA's 22 nd Council
27-Oct	2021 IRENA Policy Talks #8 on Finance
28-Oct	SADC Renewable Energy Entrepreneurship Facility
28-Oct	5 th Renewables Talk for IRENA Permanent Representatives
30-Nov	2021 IRENA Policy Talks #9 on Energy Access and Livelihoods
1-2 Nov	Capacity Building for Renewable Energy Auctions in Arab Countries
1-12 Nov	COP26
Nov	Africa Clean Energy Corridor, Trainings on Auctions Design

Table 2: Selected Upcoming Publications, 2021

Date	Provisional Report Title
September	Navigating the Way to a Renewable Future 2.0: Pathways to decarbonize the shipping sector by 2050
September	Report on bioenergy potential and strategies in South East Asia
September	Reaching Zero with Renewables: CCS
September	Urban Energy Transformation - Wuzhong
September	Urban Energy Transition for the Greater Metropolitan Area of the Central valley of Costa Rica
September	Reaching Zero with Renewables: Chemicals
September	Reaching Zero with Renewables: Steel
September	Renewables Readiness Assessment Paraguay
September	100% RE Power Systems to help policy makers better prepare for the challenges with 100% RE power system planning
September	European Commission Tracking Energy Innovation Impacts Framework (EC TEIIF) report
Q3	Renewable Energy Targets: Quantification and Design
Q3	Reaching Zero with Renewables: Cement
Q3	Africa Energy Transition Outlook
Q3	Energy System Integration Costs for High Shares of VRE
Sept/Oct	Assessment of sector coupling report opportunities in cities
October	Renewable Energy and Jobs – Annual Review 2021
October	Power System Structure for the Renewable Energy Era
Oct/Nov	Renewable Energy Market Analysis: Africa
November	Achieving Effective Linkages between Decentralised Renewable Energy Solutions and Livelihoods
November	Assessment of Decentralised Renewable Energy Solutions in Food Value-Chains in the Hindukush Himalayan Region
December	Green Hydrogen: Policies for Industry
Q4	Joint IRENA/FAO report on Renewable Energy and Agri-food Systems
Q4	Re-organising the power system for the transition
Q4	Remap Central America

Effective functioning of the organisation

To deliver on the Agency's mandate, IRENA relies on the contributions and support of its Members, cooperation 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 to date.

The Administration and Management Services Division supports efficient implementation of the Work Programme and facilitates effective use of the Agency's resources. IRENA continues to innovate in its business processes and practices to remain responsive to the dynamic nature of its programmatic work. In this regard, the continued enhancement of the ERP system will go a long way to facilitate timely and streamlined support to programme implementation.

Finance and Budget

The Agency's full compliance with its Financial Regulations and Procedures, in accordance with the International Public Sector Accounting Standards (IPSAS), underpins finance and budget activities. As such, financial and budgetary services are continuously provided to Members, staff, and other stakeholders, aligned with international accounting standards and budget practices. The services include preparation of the financial statements for IRENA, issuance of annual bills, allotments and administration of core funds and voluntary contributions. Finance and Budget follow up regularly with Members for the collection of outstanding assessed contributions, registering and allotting voluntary contributions, settlement of vendor, issuance of donor reports, supplier invoices, and regular internal support services including payroll, management of IRENA investments and Staff Provident Fund, budget utilisation updates, and general advice to support the sound financial management of the Agency. Additional activities include support for addressing internal and external audit recommendations and continuing efforts associated with ERP enhancement.

Information and Communication Technology (ICT)

ICT continues to serve as a strategic enabler and tool for the Agency in the implementation of its Work Programme by providing state-of-the-art IT services and solutions to IRENA business units. During the biennium, ICT has particularly contributed to ensure continuity of services in response to the COVID crisis by supporting the emergence of remote work, providing solutions to improve internal communication and health and safety, and reinforcing its virtual meetings/events tools. ICT is regularly maintaining and consolidating its IT capabilities through initiatives for infrastructure modernisation (both in Headquarters, Bonn and New York Offices, cloud and on premise), operational excellence (IT governance, cost optimisation, proactive maintenance, regular monitoring) and internal capacity building (trainings, technology workshops). As per the IT strategy 2018-2022, which is closely aligned with the IRENA MTS 2018-2022, ICT is strengthening its role as:

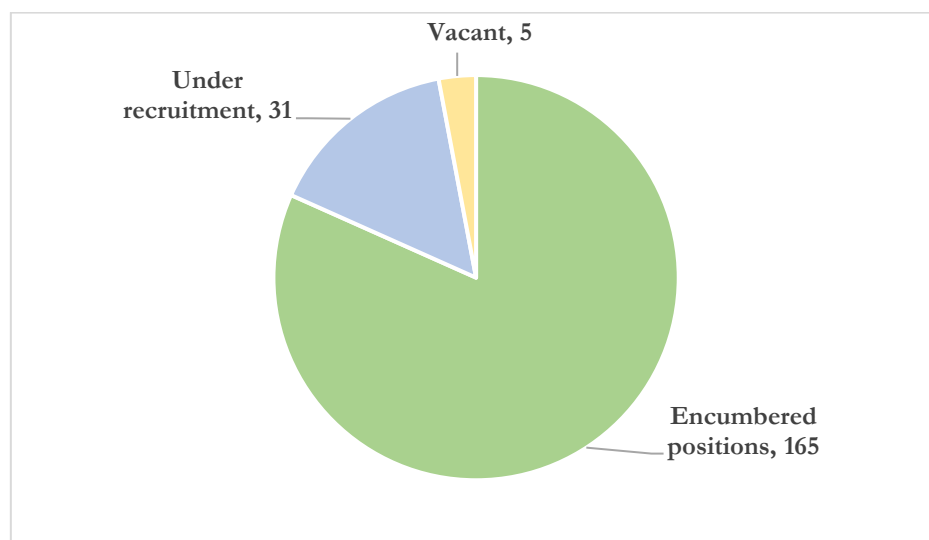
- ☐ a driver of digital transformation towards higher institutional effectiveness and efficiency, through the maintenance and enhancement of the ERP and collaboration and knowledge management tools as well as paperless office solutions;
- ☐ an enabler of the development of value-added business capabilities on renewable energy, through the maintenance and enhancement of IRENA Website and platforms on renewable energy; and
- ☐ a pillar of the organisational resilience and compliance, through the implementation of the cybersecurity management framework and the business continuity plan.

Human Resources

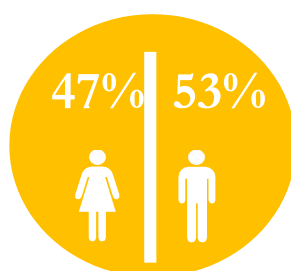
During the biennium, the work of Human Resources spanned administrative, operational, and strategic activities. Significant effort was placed on aligning human resource policies and processes more closely with the Agency's strategic and programmatic objectives, including additional personnel sourcing and building organisational capabilities that are 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 resources practices, rules, and procedures have continued to be refined and updated to ensure effective and efficient responsiveness to the emerging and evolving needs and challenges of the Agency while safeguarding its core values and principles. Attracting, developing and retaining highly qualified staff is key to the Agency's success.

In this respect, IRENA has stepped up its outreach efforts to attract talent from all over the world, including by 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 2021, 69 vacancies (core and project, including interns and consultants) were announced and over 9,500 applications received. Out of 93 core posts, 88 are filled or under recruitment (76 filled and 12 under active recruitment) and 5 are vacant. The 76 staff in core posts are from 44 nationalities out of which 49% are women and 51% are men. There are also 108 project posts that are currently filled or under recruitment (89 filled and 19 under active recruitment) (Figure 22). Combined core and project posts amount to a total of 165 staff, who come from 68 nationalities, with 47% women and 53% men. It should be noted that the Secretariat also initiated a programme for personnel from developing countries, which had to be put on hold due to the pandemic.

Figure 23: : Staff Status (as of 31 August 2021)



**Nationalities at
IRENA**



**Staff Gender
Balance**



**Senior Team
Gender Balance**

Table 3: Filled/under recruitment core and project posts by level, as of 31 August 2021

Level	Filled or Under Recruitment	Total
ASG	1	1
D-2	1	1
D-1	7	7
P-5	22	22
P-3/4	73	74
P-2/1	54	55
Sub-total Professional and above	158	160
General Services	38	42
Total	196	202

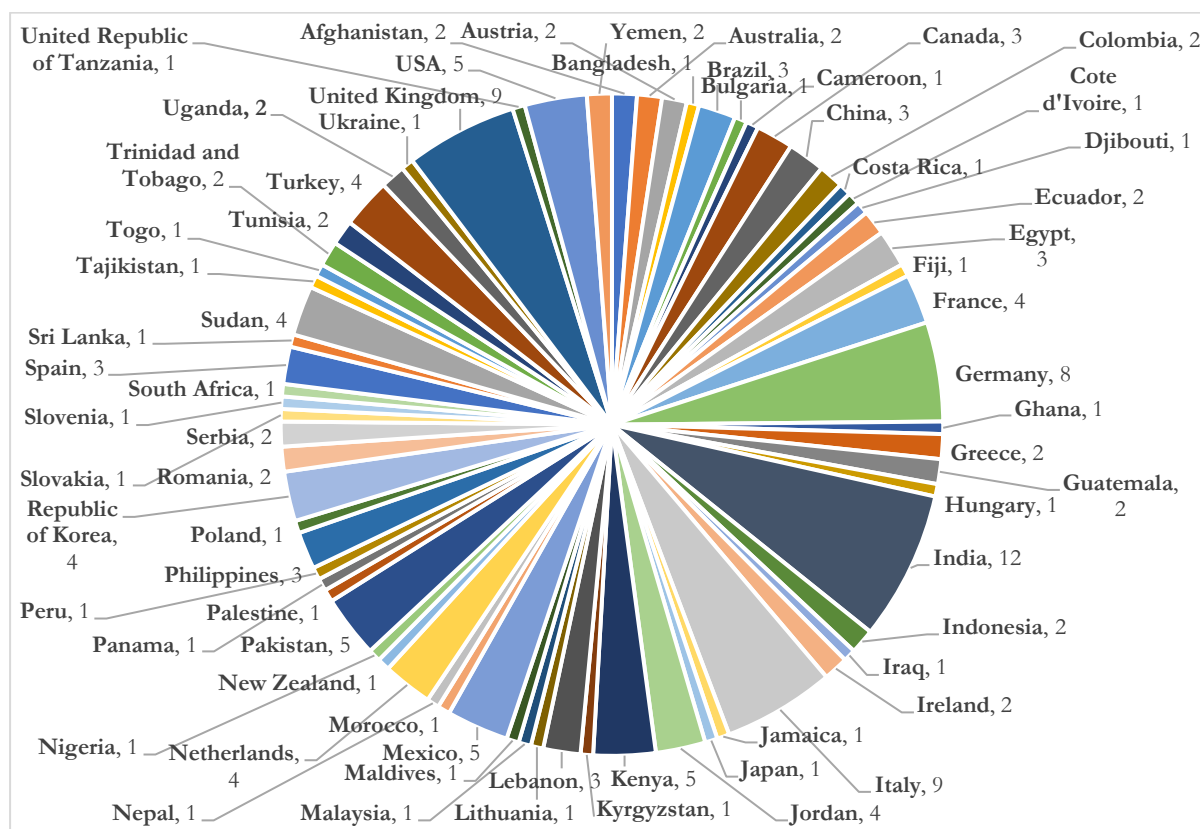
Table 4: Loaned Personnel, as of 31 August 2021

Division	Title	Loaned from
ODG	Liaison and Protocol Officer	United Arab Emirates
ODG	Loaned Officer, Planning and Programme Support	United Kingdom
IITC	Programme Officer, State Grid Corporation of China	China

Table 5: Seconded Officers as of 31 August 2021

Division	Title	Seconded from
CEP	Programme Officer	Republic of Korea
PFS	Associate Programme Officer, Climate Finance and NDC	Republic of Korea
ODG	Advisor to the Director-General	Italy
IITC	Analyst – Renewable Energy Scenarios and Roadmaps	Denmark

Figure 24: Geographical distribution (core and project posts), as of 31 August 2021



Procurement

The Agency has continued to implement its planning for cost-effective procurement process of goods and services. To ensure transparency, fairness, openness, and competitiveness, the procurement bidding opportunities are posted on IRENA's website and disseminated to the vendors registered with IRENA's vendors database. The vendors database was further expanded through continuous market research. The Quarterly Master Procurement Plan was updated in August 2021 to reflect the requirements until the end of the year. As of 30 August 2021, more than 300 procurement contracts for goods and services have taken place totalling USD 4 million. The Agency continued entering into Long Term Agreements (LTA) for various types of goods or services to maintain continuous support to the ongoing operation. As of 30 August 2021, Procurement entered into more than 22 LTAs, which were based on competitive bidding processes.

General Services and Travel

Travel support and services were provided to staff, delegates and participants in conferences and workshops. As of 31 August 2021, the Agency facilitated participation in 47 workshops and 300 travel services. The section continues to provide facility management services for IRENA Headquarters and staff. This is an important function which contributes to a healthy and productive work environment while delivering continuous day-to-day services for staff. As part of these ongoing services, General Services has instituted a Health and Safety programme and further enhancement of measures and procedures are in progress, or to be implemented in the future.

Implementation Progress Overview

In early 2021, the Agency's senior management prepared for the second time an internal Directive, setting 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. The Directive will continue to be updated annually to reflect progress on the implementation of the Work Programme and set out new and refined responsibilities.

There are a total of 54 Work Programme outputs for the 2020-2021 biennium, spreading 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, 56% are complete and 44% in progress, totalling 100% implementation of the Work Programme.

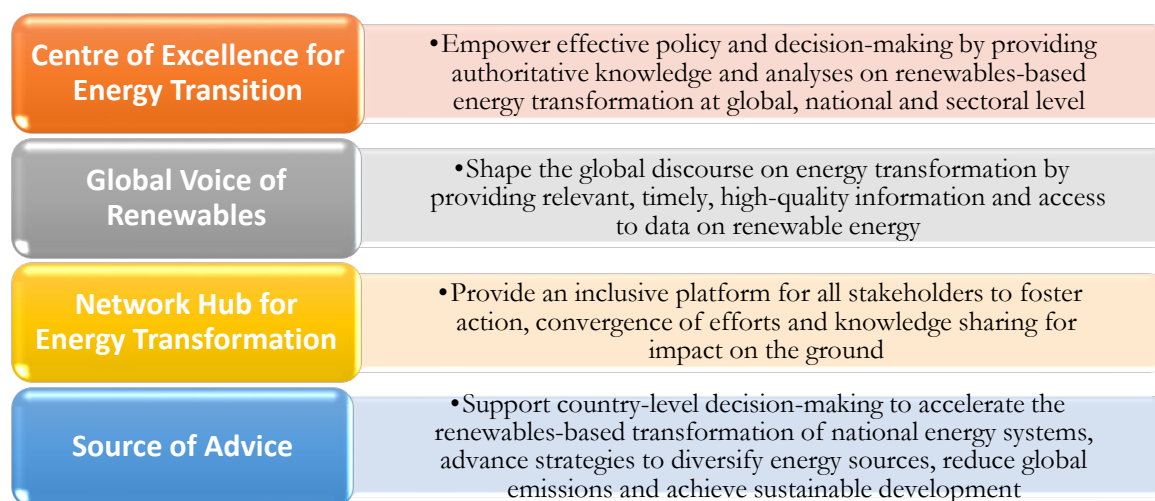
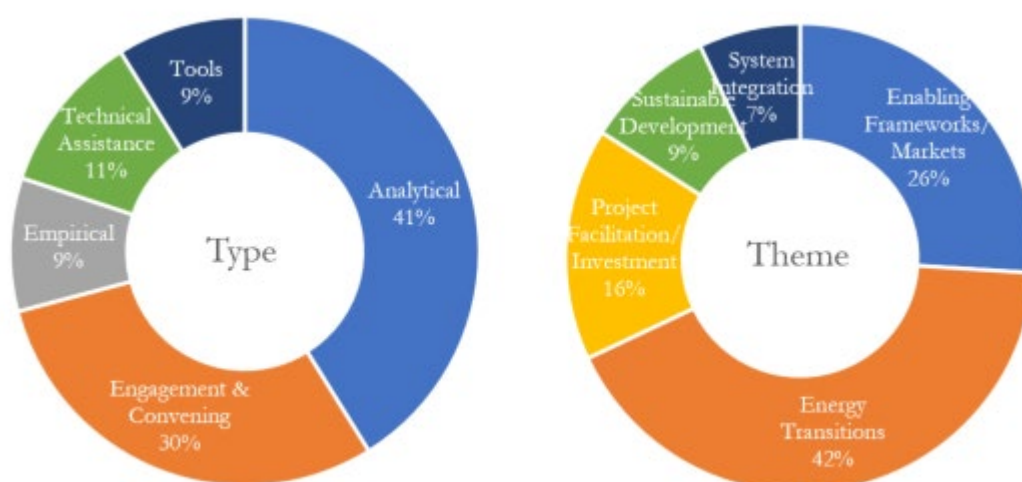


Figure 25: IRENA outward-facing activities by activity type and theme



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

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

Resource overview

This section presents details of the core budget and voluntary contributions applicable to the Work Programme 2020-2021.

Biennial budget overview

Table 6: 2020-2021 Biennium Budget Utilisation by funding source (in USD Thousands)

	2020-2021 Biennium Budget	Utilisation as of 31 Aug 2021	
		Commitment and Expenses	Proportion of 2020- 2021 Biennium Budget
Assessed Contributions (Core Budget)	44,461	41,455	93%
Core Non-Assessed UAE			
UAE Support	5,000	4,144	83%
Governing Body Meetings	3,200	1,321	41%
IT Infrastructure Support	920	673	73%
Subtotal	9,120	6,138	67%
Core Non-Assessed Germany			
Innovation and Technology Centre	10,890	9,705	89%
Subtotal	10,890	9,705	89%
Core Non-Assessed Other Contributions			
Core Non-Assessed Other	1,704	1,294	76%
Subtotal	1,704	1,294	76%
Total Core Non-Assessed	21,714	17,137	79%
Grand Total	66,175	58,592	89%

Core Non-Assessed Contributions*as of 31 August 2021, in USD***Budgeted Voluntary Contributions**

	2020-2021	
	Committed	Received
GERMANY		
IRENA Innovation and Technology Centre	10,890,000	10,890,000
United Arab Emirates (UAE)		
UAE Support	5,000,000	5,000,000
Governing Body Meetings	3,200,000	3,200,000
IT Infrastructure Support	920,000	920,000
Subtotal UAE Contributions	9,120,000	9,120,000
Total Budgeted Voluntary Contributions	20,010,000	20,010,000

Other Voluntary Contributions

Donor/Project	2020-2021	
	Committed	Received
European Commission, Horizon 2030	550,791	409,389
European Commission, Directorate-General for Energy	426,829	426,829
Germany ⁹⁸	3,321,868	1,675,860
Italy	567,634	567,634
Japan ⁹⁹	1,106,164	1,106,164
King Abdullah Petroleum Studies and Research Center (KAPSARC)	200,000	200,000
Korea Energy Economics Institute	82,892	82,892
NDC Partnership Climate Action Enhancement Package (CAEP)	1,364,684	1,113,945
Republic of Korea	182,258	182,258
United Nations Development Programme (UNDP)	2,200,000	1,309,985
World Bank (IBRD)	46,876	13,438
Subtotal	10,049,996	7,088,394

⁹⁸ This includes contributions from Federal Ministry for Economic Affairs and Energy, Federal Ministry for Economic Cooperation and Development, and the Federal Foreign Office.

⁹⁹ This includes contributions from Ministry of Economy, Trade and Industry and Ministry of Agriculture, Forestry and Fisheries.

Multi-Year Voluntary Contribution

Donor/Project	Multi-Year Commitments	Received prior to 2020	Received during 2020-21
Government of the Walloon Region, Belgium	2,384,363	-	2,384,363
Denmark*	13,738,852	6,355,549	3,607,885
Germany (International Climate Initiative)*	6,796,311	3,459,818	2,233,746
Norway	4,564,237	-	4,564,237
Total	27,483,764	9,815,367	12,790,231

*Contributions pledged and partially received prior to 2020

Fund for Developing Countries Representatives

Donor	2020-2021	
	Committed	Received
Flanders Region of Belgium	17,461	17,461
Walloon Region of Belgium	14,095	14,095
United Arab Emirates (UAE)	100,000	100,000
Subtotal	131,556	131,556

Total Other Voluntary Contributions	10,181,552	7,219,950
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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 the representatives of developing countries in IRENA Governing Body Meetings. Since its establishment, the FDCR has been instrumental in ensuring a high level of inclusiveness, ownership, and transparency in the decision-making process 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 Governing Body Meetings, including the Assembly, Council and Committees.

Figure 26: Received and outstanding assessed contributions for 2020 core budget (in USD millions, as of 18 September 2021)

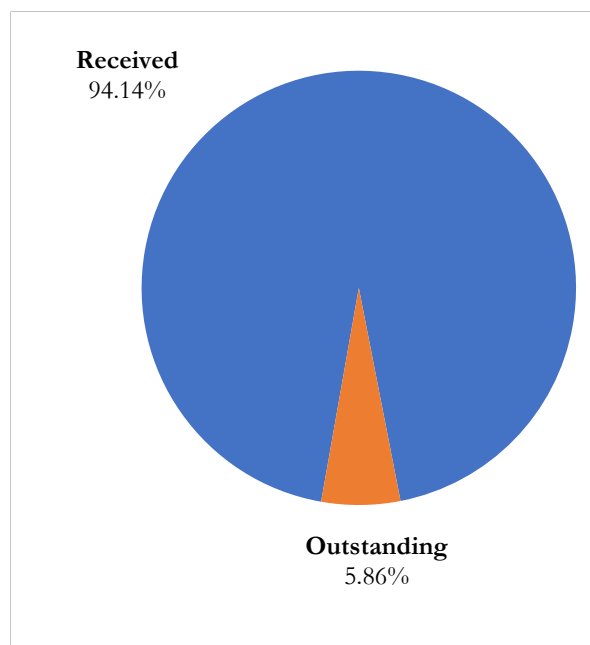
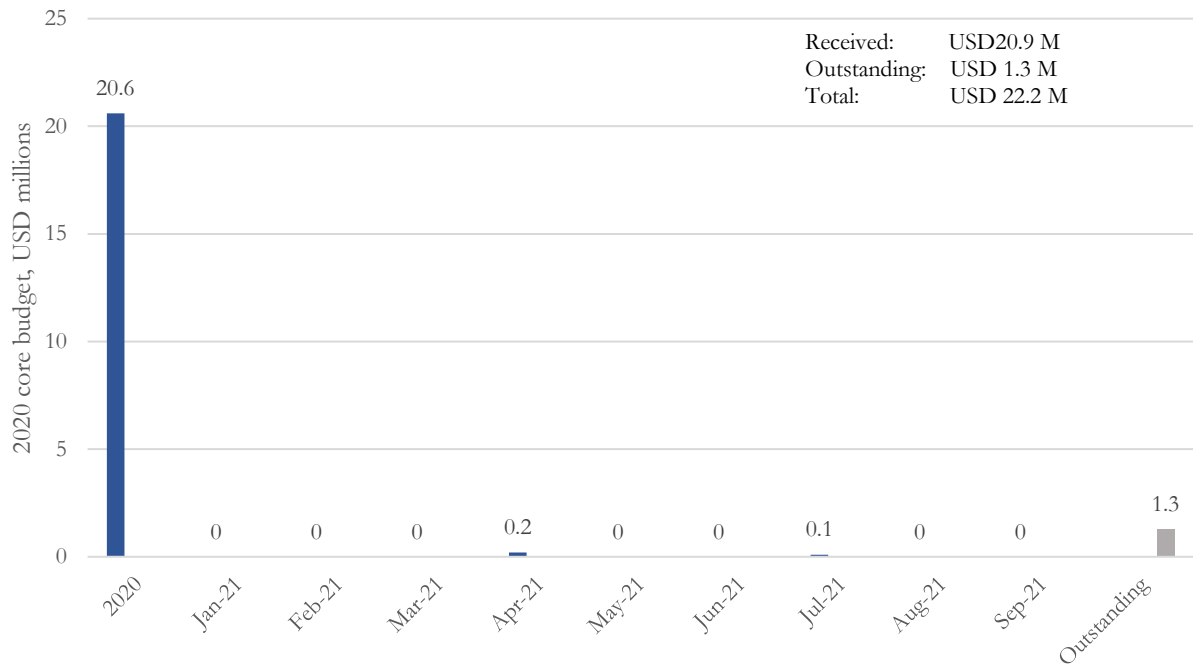


Figure 27: Received and outstanding assessed contributions for 2021 core budget (in USD millions, as of 18 September 2021)

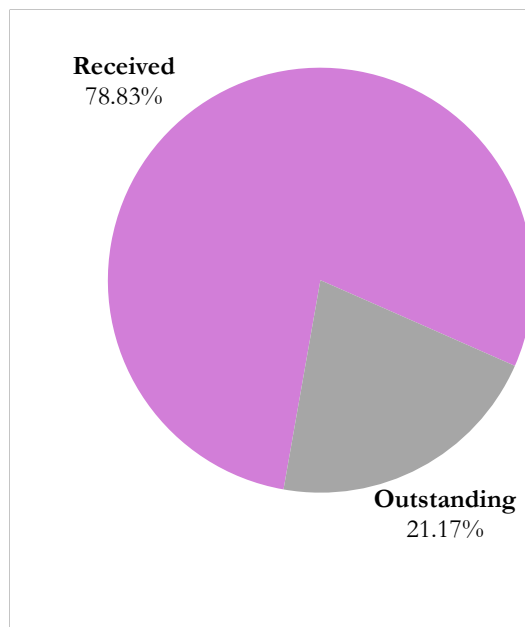
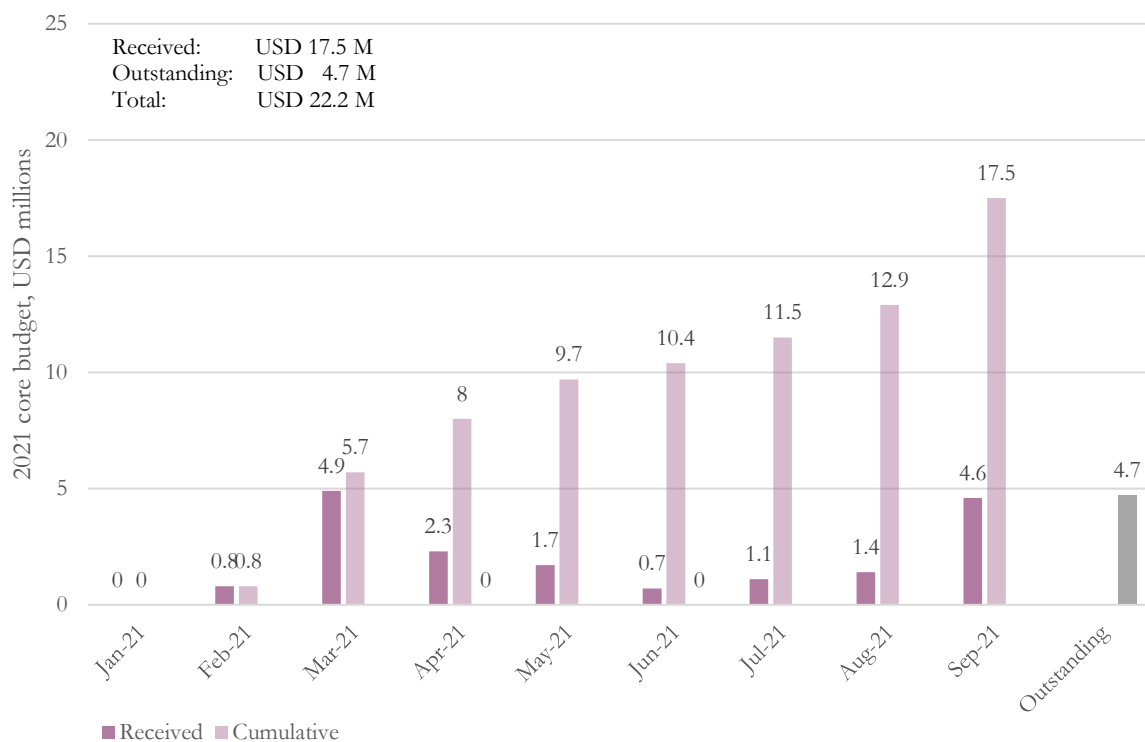


Figure 28: Number of Members with received and outstanding contributions to the 2020 core budget (18 September 2021)

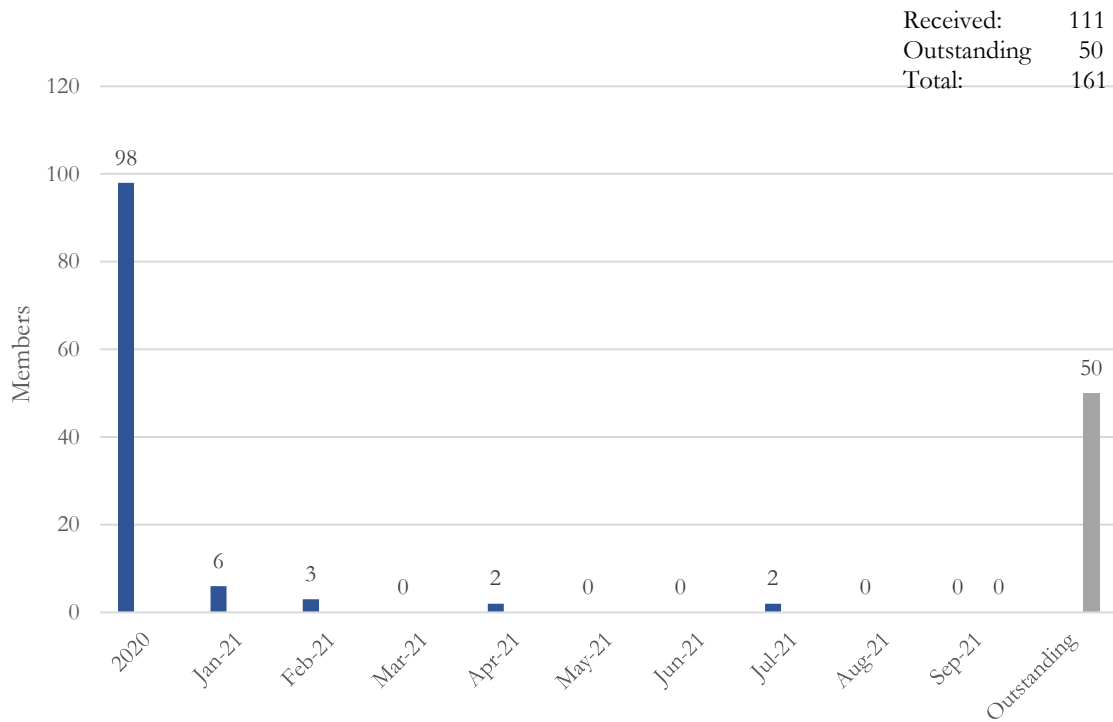
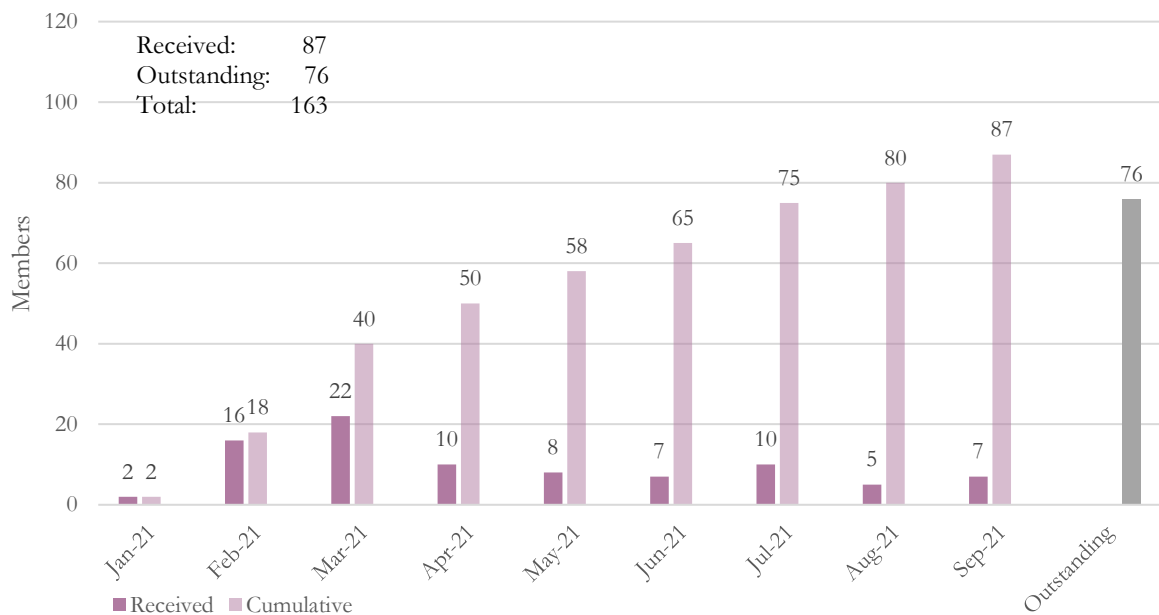


Figure 29: Number of Members with received and outstanding contributions to the 2021 core budget (18 September 2021)



IRENA donors (2020-2021)

**Government of the Walloon Region of Belgium**

Various Projects and Fund for Developing Country Representatives

**Government of the Flanders Region of Belgium**

Fund for Developing Country Representatives

**Denmark**

Ministry of Foreign Affairs: Long-term Planning / SIDS Lighthouse Initiative 2.0

**European Commission**

Directorate-General for Energy: Central and South-Eastern Europe (CESEC) Remap

Horizon 2030: Tracking Energy Innovation Impacts Framework

**Germany**

Federal Ministry of Economics and Technology (BMWi): World Energy Transitions Outlook and various projects

Federal Ministry for Economic Cooperation and Development (BMZ): Renewable Energy Transition Africa

Federal Foreign Office: Geopolitics of Hydrogen Economy

International Climate Initiative: SIDS Lighthouses / Energy Solutions for Cities of the Future



THE WORLD BANK
IBRD - IDA | WORLD BANK GROUP

International Bank for Reconstruction and Development (IBRD)

IRENA Contribution to SDG 7 Tracking Report

**Italy**

Ministry of Foreign Affairs and International Cooperation:

Desert to Power in Sahel and Climate Investment Platform / G20 analysis on Offshore Renewables and Ocean energy

**Japan**

Ministry of Agriculture, Forestry and Fisheries (MAFF): Biomass Strategy for Sustainable Bioenergy Production / Development of Circular Economy with Bioenergy and Co-products

Ministry of Economy, Trade and Industry (METI): Various Projects



King Abdullah Petroleum Studies and Research Centre (KAPSARC) G20 reports for the Circular Carbon Economy



Korea Energy Economics Institute (KEEI) Northeast Asia Power System Interconnections: Lessons from the Regional Initiatives for the Promotion of Renewable Power Deployment and Trade



NDC Partnership NDC Partnership Climate Action Enhancement Package (CAEP)



Norway Ministry of Foreign Affairs: Core non-assessed contribution to the Work Programme (includes dedicated funds for geopolitics)



United Arab Emirates IRENA/Abu Dhabi Fund for Development (ADFD) Project Facility / Fund for Developing Country Representatives

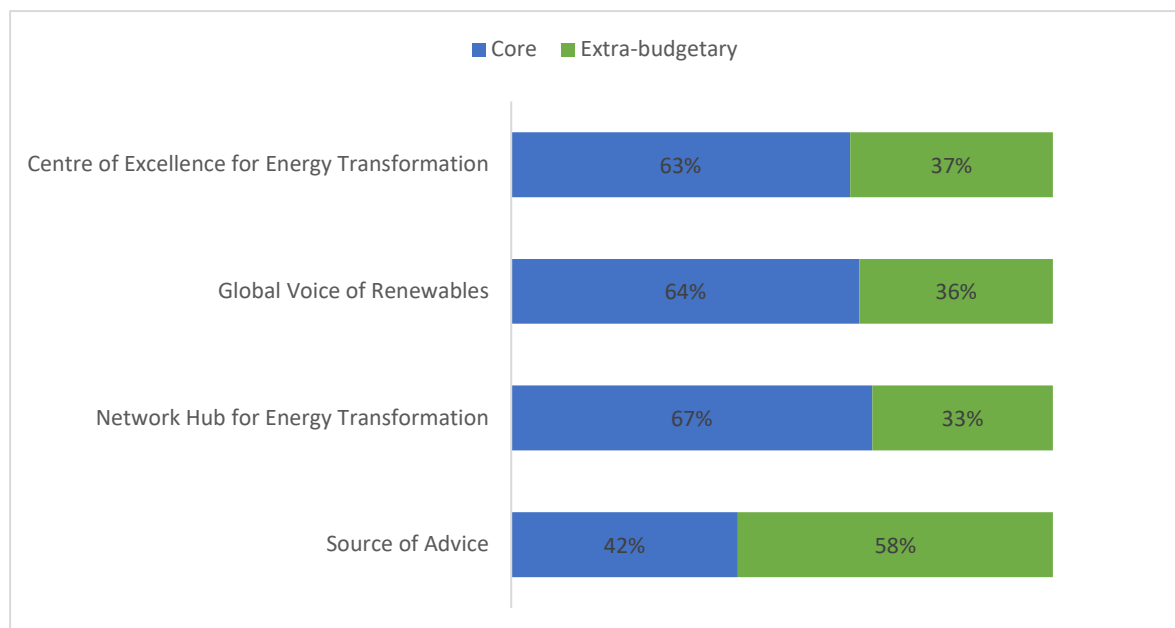


United Nations Development Programme (UNDP) UNDP Climate Promise

As directed at the start of the biennium by its Membership, IRENA has undertaken to diversify its resource base by seeking extra-budgetary support. In the 2020-21 biennium, IRENA received to date a total of USD 20,010,180 through voluntary contributions, with an additional 4,629,555¹⁰⁰ to be received before year end. Total for the biennium is thus USD 24,639,735. The below graph shows how extra-budgetary resources have been divided across the four substantive pillars of the Agency's work. Note, largest portion of voluntary contribution support went to activities under Source of Advice (Figure 29).

¹⁰⁰ Exchange rate dependent.

Figure 30: Distribution of core assessed and non-assessed and extra-budgetary resources (2020-2021 expenditures)



Below is a short review of what areas of activity have been supported by extra-budgetary resources, by pillar:

- I. Centre of Excellence for Energy Transformation:** Global analysis including WETO and energy transition outlooks represent approximately 15% of extra-budgetary resources with innovation following at 8%.
- II. Global Voice of Renewables:** Cities related work represents highest funded activity under VC at 33% of extra-budgetary resources. Planning related work following at 10%.
- III. Network Hub:** SIDS work represents highest funded activities at 18% of extra-budgetary resources, followed by off-grid related work at 15%.
- IV. Source of Advice:** Climate / NDC support leads here at 29% of extra-budgetary resources followed by IRENA/ADFD project facility related activities at 18%.

Work Programme 2020-2021 – Implementation Matrix

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.

Objective: Empower effective policy and decision-making by providing authoritative knowledge and analyses on renewables-based energy transformation at global, national and sectoral levels.

Outputs	Status	Description
Annual statistics: renewable capacity, renewable energy, off-grid	In progress (2020 editions completed)	<p>“Renewable Capacity Statistics” (March 2020) (Click here) / (March 2021) (Click here).</p> <p>“Renewable Energy Statistics” (July 2020) (Click here) / (July 2021) (Click here).</p> <p>“Off-grid renewable energy statistics” (December 2020) (Click here).</p> <p>“Energy Profiles” (2020 edition) (Click here).</p> <p>Offgrid Renewable Energy Statistics online conference (February 2021) (Click here).</p> <p>Supporting Ethiopia in improving woodfuel data reporting and energy statistics capacity building support</p>
Jobs Annual Review (annual)	Completed	<p>“Renewable energy and jobs – Annual Review 2020”(Sept. 2020). (Click here)</p> <p>“Renewable energy and jobs – Annual Review 2020”(Oct. 2021).</p>
Annual update on power generation costs	Completed	<p>“Renewable Power Generation Costs in 2019”(June 2020). (Click here)</p> <p>“Renewable Power Generation Costs in 2020”(June 2021). (Click here)</p>
Annual update on patents and standards	Completed	<p>Annual update of the International Standards and Patents in Renewable Energy. (Click here to access the INSPIRE platform)</p> <p>Joint report with World Trade Organization on Standards to facilitate global trade of PV goods, “Trading into a Bright Energy Future: The Case for Open, High-Quality Solar Photovoltaic Markets” (Click here)</p>
Global Atlas data updates on renewable potentials	Completed	<p>Revamped IRENA Global Atlas for Renewable Energy platform – 4.0 (Click here to access the platform) and the launch webinar (May 2021) (Click here to access the webinar).</p> <p>Annual update of the renewable energy resource datasets from dataproviders (member states, international institutions and private sectors) – 496 RE datasets and 13 supporting information have been integrated into the Global Atlas.</p>

IRENA/IEA Policies and Measures Database	Completed	Updated 80 countries from Africa, Asia, Europe, LatinAmerica and SIDS.
The Energy Progress Report: Tracking SDG7 ¹⁰¹ (annual, jointly with IEA, WB, WHO and UN)	Completed	<p>“Tracking SDG 7: Energy Progress Report 2020”(May 2020). (Click here)</p> <p>“Tracking SDG 7: Energy Progress Report 2020”(June 2021). (Click here)</p> <p>SDG 7 Policy Briefs:</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> “Advancing Implementation of SDG 7 in Support of the 2030 Agenda” (June 2020). (Clickhere) <input checked="" type="checkbox"/> “Advancing SDG 7 in Least DevelopedCountries”. (June 2020). (Click here)
Global Energy Transformation (annual editions) ¹⁰²	Completed	<p>“World Energy Transitions Outlook:1.5°C Pathway”(Preview) (March 2021) (Click here)</p> <p>“World Energy Transitions Outlook:1.5°C Pathway”Full report (June 2021) (Click here)</p> <p>Selected articles:</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> \$131 trillion needed to cap global warming at 1.5C(Video) (CNN) <input checked="" type="checkbox"/> Invest \$131 trillion in clean energy by 2050 to hitclimate goals (Reuters) <input checked="" type="checkbox"/> World Oil Demand May Have Peaked In 2019 AmidEnergy Transition: IRENA (S&P Global Platts) <p>Co-leading “Energy Transition” theme and contributingto other four themes of UN Secretary-General’s High- level Dialogue on Energy, to take place September 2021.</p> <p>“Global Renewables Outlook: Energy Transformation 2050” (April 2020). (Click here)</p> <p>“Post-COVID Recovery – an agenda for resilience, development and equality” (June 2020). (Click here)</p> <p>COVID Tracker developed: Track of energy related monetary, fiscal, and other measures since April 2020 for internal knowledge.</p>
Measuring the Socio-Economic Footprint report	In progress	See output ‘Socio-economic footprint at the country level (five case studies)’
Innovation Landscape: Renewable Electricity in End-use report	In progress	<p>Analysis is ongoing. Experts workshop to collect input conducted on 13 April 2021. Second workshop with experts on Power-to-Mobility conducted on June 10th, 2021.</p> <p>Ministerial meeting on Innovation for a Trans-European Electricity System (Click here)</p>
Global Landscape: Renewable Energy Finance report	Completed	“Global Landscape: Renewable Energy Finance 2020” (Nov. 2020) (Click here)

¹⁰¹ Supported by the International Bank for Reconstruction and Development.

¹⁰² Supported by the Government of Germany (BMW).

Third Innovation Week	Completed	IRENA Innovation Week (Oct 2020). (Click here for event listing and here for webpage) Innovation Week Summary Report (Click here for event summary)
ASEAN 2050 energy transition outlook ¹⁰³	In progress	<p>Data collection and analysis ongoing; initial country consultations for demand scenarios have taken place for Indonesia and Malaysia, with additional consultations planned.</p> <p>Engaging with ASEAN Centre for Energy to align with the Asian Energy Outlook (AEO). Name of report to be “2nd Renewable Energy Outlook for ASEAN: towards a regional energy transition”.</p> <p>Engagements in 2021:</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Presentation and discussion to ASEAN Renewable Energy Sub-sector network (RE-SSN) (May 2021) <input checked="" type="checkbox"/> Presentation and discussion to ASEAN Senior Officials of Energy (SOME) meeting (June 2021) <input checked="" type="checkbox"/> Presentation and update from DG to ASEAN Ministers of Energy Meeting (September 2021) <input checked="" type="checkbox"/> Consultative workshop on Indonesia Energy Transition Outlook (July 2021) (Click here) <input checked="" type="checkbox"/> Consultative workshops on Malaysia Energy Transition Outlook (September 2021) (Click here)
Central America 2050 energy transition outlook ¹⁰⁴	Completed	<p>FlexTool analysis completed for historical data and reference scenario.</p> <p>FlexTool training for Latin America conducted (May 2020). (Click here)</p> <p>Bilateral engagement and workshops with all countries.</p> <p>Regional support has included:</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Remap workshop for Centroamerica – UNFCCC <input checked="" type="checkbox"/> Power sector Central America regional analysis <input checked="" type="checkbox"/> Hosted Renewable Energy day at COREN21 – Congreso Regional de Energia – El Salvador <input checked="" type="checkbox"/> Sugarcane analysis <p>Specific country engagement has included:</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Belize: Reference case scenario completed; REmap scenarios analysis completed; and

¹⁰³ Supported by the Government of Denmark.

¹⁰⁴ Supported by the Government of Norway.

		<p>NDC assistance provided.</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Costa Rica: Reference case scenario and REmap scenarios analysis <input checked="" type="checkbox"/> Guatemala: Reference case scenario and REmap scenarios analysis <input checked="" type="checkbox"/> El Salvador: Reference case scenario and REmap scenarios analysis <input checked="" type="checkbox"/> Honduras: Reference case scenario and REmap scenarios analysis <input checked="" type="checkbox"/> Nicaragua: Reference case scenario and REmap scenarios analysis <input checked="" type="checkbox"/> Panama: Reference case scenario and REmap scenarios analysis
Impact of Innovation on Energy Transition ¹⁰⁵	In progress	<p>Interim findings available. Report being finalized. Policy makers briefing held at the MI-6 Ministerial in June 2021 (Click here). Experts consultative workshops held (Oct. 2020 and April 2021). (Click here)</p> <p>Innovations for a decentralised, renewable-powered system: Peer- to-peer electricity trading webinar (Aug 2020) (Click here)</p> <p>“Tracking the Impacts of Innovation: Offshore wind as a case study” (June 2021) (Click here)</p>
Human resources and workforce planning strategy	Completed ¹⁰⁶	<p>78 new staff appointments and internal movements and 13 new Associate Personnel.</p> <p>Reclassification of all jobs' Terms of Reference underway. AMS seeking support from ICSC and waiting for response.</p> <p>The Capacity Development Programme for SIDS and LDCs initiated January 2020 was placed on hold March 2020 due to the COVID-19 pandemic.</p>
Performance management	Completed	Online Performance Management System (e-PAR) launched with 97% compliance.
Refinement of Staff Rules and updated HR Manual	In progress	Admin Instructions/Directives in draft on Remote Work, Performance Management, Training, Roster Management.
System for engagement of academia, researchers and the private sector	Completed ¹⁰⁷	<p>Development of guidelines for private sector engagement released in July 2020. (Click here). (Click for associated news article: IRENA Develops Guidelines for Co-operation with the Private Sector).</p> <p>Academic review conducted. Results are helping IRENA to improve our presence with academia.</p> <p>Organisation of IRENA Insights. (Click here)</p>

¹⁰⁵ Supported by the European Commission, under Horizon 2020 programme and the Government of the UK.

¹⁰⁶ This is an ongoing function but has been marked as completed for the biennium.

¹⁰⁷ This is an ongoing function but has been marked as completed for the biennium.

Training and staff development strategy	Completed ¹⁰⁸	<p>Performance Management training held in Abu Dhabi. Performance Management and CBI training in Bonn postponed due to COVID-19.</p> <p>All staff have access to virtual learning through LinkedIn training platform.</p> <p>A training directive and calendar for staff-wide training activities will be finalised post-pandemic. Training requisition forms have been updated to enable staff to engage in external learning and development activities.</p>
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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.

Objective: Shape the global discourse on energy transformation by providing relevant, timely, high-quality information and access to data on renewable energy.

Outputs	Status	Description
Power Market Design for the Energy Transition report	In progress	Analysis and drafting are ongoing.
Market Analysis: Africa	Completed	“Renewable Energy Market Analysis: Africa and its sub-regions” (Nov. 2021)
Ecosystems for Sustainable Livelihoods report	Completed	Analysis completed. Final stages of design.
Policies at the Time of Transition: Transport (with IEA and REN21) report	In progress	Analysis and drafting are ongoing.
Leveraging Local Capabilities (selected technologies) report	Completed	<p>Solar Water Heaters (July 2021) (Click here).</p> <p>Small-scale hydropower: Data collection finalized. Analysis and drafting are ongoing.</p> <p>Concentrated Solar Power: Data collection ongoing.</p>
6th and 7th Global Policy Day	Completed	<p>6th Global Policy Day turned into online sessions under IRENA Policy Talks 2020, due to COVID-19:</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> 2020 IRENA Policy Talk #1: Renewable Energy Finance: Status, Trends and Recommendations (Nov. 2020) (Click here) <input checked="" type="checkbox"/> 2020 IRENA Policy Talk #2: Policies for Green Hydrogen (Nov. 2020) (Click here) <input checked="" type="checkbox"/> 2020 IRENA Policy Talk #3: Renewable Energy Policies in a Time of Transition (Nov. 2020) (Click here) <input checked="" type="checkbox"/> 2020 IRENA Policy Talk #4: Stimulating Investment in Community Energy (Dec.

¹⁰⁸ This is an ongoing function but has been marked as completed for the biennium.

		<p>2020) (Click here)</p> <p>7th Global Policy Day turned into online sessions under IRENA Policy Talks 2021:</p> <ul style="list-style-type: none"> ☒ 2021 IRENA Policy Talk #1 - Renewable Energy Policies for the Energy Transitions: Focus on Heating and Cooling (April 2021) (Click here) ☒ 2021 IRENA Policy Talk #2 - Green Hydrogen Supply: Policies and Practical Insights (May 2021) (Click here) ☒ 2021 IRENA Policy Talk #3: Renewable Energy Auctions (Sept. 2021) (Click here)
Toolbox for long-term planning: methodologies and best practice	Completed	<p>AVRIL spin-off brief on Geo-Spatial modelling (in development)</p> <p>Development of visualisation dashboard of long-term modelling results for Africa.¹⁰⁹</p> <p>“Power sector planning in Arab countries: Incorporating variable renewables”¹¹⁰ (Jan 2020). (Click here)</p> <p>Africa Hydropower Database (database disseminated through the Global Atlas platform, and a short technical note published) on high spatial temporal hydro power generation profile data. (Click here)</p>
Grid codes for variable renewable energy (VRE) report	In progress	Data collection underway.
Value of storage in national energy systems report and toolkit	Completed	<p>“Electricity Storage Valuation Framework” released (March 2020). (Click here)</p> <p>The Framework has been presented under the partnership with the World Bank in the context of the Energy Storage Partnership (May and June 2020).</p> <p>Methodology developed for valuing the role of storage in national power systems. The methodology will assist countries in exploring the role & value of storage for their system.</p>
Global assessment of geothermal energy	In progress	Concept and identification of partners finalized. Work underway.
Gender and Renewable Energy report	In progress	<p>Wind energy: A gender perspective (Click here)</p> <p>Solar PV: A gender perspective (upcoming 2021)</p>
NDCs and Renewable Energy Targets ¹¹¹	Completed	<p>NDC update for PA Anniversary completed (Dec 2020) (Click here).</p> <p>Database of Renewable Energy Targets completed. (Click here).</p> <p>NDC update for COP26 (upcoming)</p> <p>Report on NDCs and RE Targets (upcoming)</p>

¹⁰⁹ Supported by the Government of the Walloon Region of Belgium.

¹¹⁰ Supported by the Islamic Development Bank (IsDB).

¹¹¹ Supported by the Government of the Walloon Region of Belgium.

Geopolitics of the Energy Transformation ¹¹²	Completed	<p>Collaborative Framework on Geopolitics of Energy Transformation meeting (June 2020) (Click here). Collaborative Framework on Geopolitics of Energy Transformation meeting (Oct 2020) (Click here).</p> <p>Collaborative Framework on Geopolitics of Energy Transformation meeting (May 2021) (Click here).</p>
Analytical briefs, guidelines and working papers on topical issues (bioenergy, 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)	Completed	<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) ☒ “Green Hydrogen: A Guide to policy making” (Nov 2020) (Click here) ☒ “Oil Companies and the Energy Transition” (Feb. 2021). (Click here) ☒ “The Renewable Energy Transition in Africa” (March 2021) (Click here) ☒ “Renewable energy auctions in Japan: Context, design and results” (Jan 2021) (Click here) ☒ “Renewable energy auctions in Colombia: Context, design and results” (March 2021) (Click here) ☒ “Renewable Energy Policies for Cities: Power Sector” (May 2021) (Click here) ☒ “Renewable Energy Policies for Cities: Buildings” (May 2021) (Click here) ☒ “Renewable Energy Policies for Cities: Transport” (May 2021) (Click here) ☒ IRENA’s “Policy Framework for the Energy Transition” (PFET) - Cities (Click here) <p>Reports published:</p> <ul style="list-style-type: none"> ☒ A chapter in the Policy Briefs in Support of the High-Level Political Forum 2020 – “The

¹¹² Supported by the Government of Norway and the Government of Germany.

		<p>role of energy scenarios in guiding the energy transition” (June 2020) (Click here)</p> <ul style="list-style-type: none"> ☒ “Concentrating Solar Power: Clean power on demand 24/7” (Feb 2021) (Joint Publication with the World Bank) (Click here) ☒ “Reaching Zero with Renewables” (Sept. 2020). (Click here) ☒ “Innovative solutions for 100% renewable power in Sweden”¹¹³ (Jan. 2020). (Click here) ☒ “Power system organisational structures for the renewable energy era” (Jan. 2020). (Click here) ☒ “Mobilising institutional capital for renewable energy” (Nov 2020). (Click here) ☒ “Renewable Energy Policies in a Time of Transition: Heating and Cooling” (Nov. 2020). (Click here) ☒ Innovation Toolbox (Dec. 2020). (Click here) ☒ “Reaching Zero with Renewables: Biojet Fuels” (Click here) ☒ “Rise of Renewables in Cities” (May 2021) (Click here) ☒ “Renewable energy policies for cities: experiences in China, Uganda, and Costa Rica” (May 2021) (Click here) ☒ “Renewable energy policies for cities: experiences in China, Uganda, and Costa Rica. Summary for Policy Makers” (May 2021) (Click here) ☒ “Renewable energy policies for cities: experiences in China”; English version (May 2021) (Click here) ☒ “Renewable energy policies for cities: experiences in China”; Chinese version (May 2021) (Click here) ☒ “Renewable energy policies for cities: experiences in Uganda”; English version (May 2021) (Click here) ☒ “Renewable energy policies for cities: experiences in Costa Rica”; English version (May 2021) (Click here) ☒ “Políticas sobre energías renovables para las ciudades: experiencias en Costa Rica”; Spanish version (May 2021) (Click here) ☒ “Innovation Outlook: Thermal Energy Storage” (Nov. 2020). (Click here) ☒ “Innovation Outlook: Ocean Energy Technologies” (Dec. 2020). (Click here)
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¹¹³ Supported by the Government of Sweden.

		<p>here)</p> <ul style="list-style-type: none"> ☒ “Fostering a blue economy: offshore renewable energy” (Dec. 2020). (Click here) ☒ “Rise of Renewable Energy in Cities”¹¹⁴ (Oct. 2020). (Click here) ☒ “Quality Infrastructure for the renewable mini- grid of the future” (Dec. 2020). (Click here) ☒ “Innovation Outlook: Renewable Methanol” (Jan 2021) (Click here) ☒ “Green hydrogen cost reduction: Scaling up electrolysers to meet the 1.5°C climate goal” (Dec. 2020) (Click here) ☒ Reaching Zero with renewables brief: Biojet <p>Reports soon to be published:</p> <ul style="list-style-type: none"> ☒ “100% Renewable Energy” ☒ “Smart Electrification with Renewables” (In collaboration with State Grid China) ☒ “Sector coupling in facilitating integration of variable renewable energy in cities” ☒ “Sustainable Energy Planning for Wuzhong District, Suzhou, China” ☒ “Urban Energy Transition for the Greater Metropolitan Area of the Central Valley of Costa Rica” ☒ “Sustainable Bioenergy: A Guide to Policy Making” ☒ Joint IRENA-FAO study on “Renewable Energy and Agri-food Systems: Advancing Energy and Food Security towards Sustainable Development Goals” ☒ “Green hydrogen supply: a guide to policy making” ☒ IRENA/SELCO Foundation report “Ecosystems for Sustainable Livelihoods” ☒ Reaching Zero with renewables brief: capturing carbon <p>Online tools:</p> <p>“Revamped IRENA SolarCity simulator” (Click here to access the platform) and launch webinar of the new platform (Click here to access the webinar) with the recently developed simulators (Jun 2021)</p> <ul style="list-style-type: none"> ☒ Antigua and Barbuda, Coastlines area (Click
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¹¹⁴ Supported by the Government of Germany as part of the German Government International Climate Initiative.

		<p>here)</p> <ul style="list-style-type: none"> ☒ China, Chongli (Click here) ☒ Mongolia, Ulaanbaatar (Click here) ☒ Nepal, Burgunj (Click here) ☒ Nigeria, Jimeta (Click here) ☒ Nigeria, Kaduna (Click here) ☒ Nigeria, Sokoto (Click here) ☒ Saint Lucia, Castries (Click here) ☒ Seychelles, Victoria (Click here) ☒ United Arab Emirates, Abu Dhabi, (Click here) <p>Events:</p> <ul style="list-style-type: none"> ☒ Collaborative Framework on Ocean Energy/Offshore Renewables (Jun. 2021). (Click here). ☒ Collaborative Framework on Hydropower (June 2020). (Click here) ☒ Collaborative Framework on Hydropower (Sept. 2020). (Click here) ☒ Collaborative Framework on Hydropower (May 2021) (Click here). ☒ Consultation Meeting on the San José Declaration on Sustainable Hydropower (Collaborative Framework on Hydropower) (Aug. 2021). ☒ High-level Meeting of the Collaborative Framework on Hydropower (22 Sept. 2021). ☒ Collaborative Framework on Green Hydrogen (June 2020). (Click here) ☒ Collaborative Framework on Green Hydrogen (Sept. 2020). (Click here) ☒ Collaborative Framework on Green Hydrogen (May. 2021). (Click here) ☒ Collaborative Framework on Ocean Energy/Offshore Renewables (June 2020). (Click here) ☒ Collaborative Framework on Ocean Energy/Offshore Renewables (Oct. 2020). (Click here). ☒ Collaborative Framework on Enhancing Dialogue on High Shares of Renewables in Energy Systems (July 2020). (Click here) ☒ Collaborative Framework on Enhancing Dialogue on High Shares of Renewables in Energy Systems (Oct. 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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		<ul style="list-style-type: none"> ☒ The future for heavy-duty vehicles in the Pentilateral Region: Integrating electromobility in the energy transition (Oct. 2020). (Click here) ☒ Conference Potential of solar energy contribution in smart cities, ASEAN Sustainable Energy Week (Sep 2020). (Click here) ☒ Conference Energy transformation for cities of the future, UN-Habitat World Urban Forum 10 (Feb 2020). (Click here) <p>Capacity building</p> <ul style="list-style-type: none"> ☒ Video series for laymen on how to deploy rooftop solar PV systems is under development. ☒ Workshop for high-level representatives from the government (14 experts) on Rooftop solar PV potential in Nigeria – SolarCity simulators for Kaduna, Sokoto, Jimeta (Jul 2021) ☒ Workshop for high-level representatives from the government (15 experts) on Rooftop solar PV potential in Nepal – SolarCity simulators for Burgunj (Jul 2021) ☒ Workshop for high-level representatives from the government (13 experts) on Rooftop solar PV potential in Seychelles – SolarCity simulators for Victoria (Aug 2021) ☒ Workshop for high-level representatives from the government on Rooftop solar PV potential in Saint Lucia (6 experts) – SolarCity simulators for Castries (Aug 2021).
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III. Network Hub

Core assessed and core non-assessed resources (in USD thousands): 11,037. Outputs supported by additional voluntary contributions are footnoted.

Objective: Provide an inclusive platform for all stakeholders to foster action, convergence of efforts and knowledge sharing for impact on the ground.

Outputs	Status	Description
IRENA Forums in regions and sub-regions	In progress	Preparations in place, Forums delayed due to COVID-19. Provisional plans for early 2022.
SIDS Lighthouses Initiative ¹¹⁵	Completed	<p>Initiative coordination:</p> <ul style="list-style-type: none"> ☒ Four new partners joined the initiative: Singapore, CARILEC, Island Innovation, Islands and Small States Institute (ISSI), of the University of Malta. Total – 38 SIDS¹¹⁶ and 31 development partners.¹¹⁷ ☒ Country profiles updated and uploaded on the SIDS Lighthouse Initiative (LHI) website and shared with SIDS. The knowledge platform also includes energy transformation related documents for SIDS. ☒ Social media page created on LinkedIn to widen the outreach to all SIDS stakeholders. ☒ SIDS LHI Annual Progress Report(Click here) ☒ Development of SIDS digital interactive stories ongoing (Click here) ☒ Co-organised Implementation Lab: <i>Supporting the Energy Transition in Caribbean Small Island Developing States</i> at Latin America and Caribbean Regional Climate Week (May 2021) (Click here) ☒ Co-hosted <i>Net-zero Investment Lab: Public and Private Sector Collaboration on Accelerating Green Investment in SIDS</i> with High-level Climate Champions (March 2021) (Click here) ☒ In partnership with UK COP26 Presidency and the Regional NDC Pacific Hub hosted, <i>Pacific</i>

¹¹⁵ Supported by Governments of Denmark, Germany as part of the German Government International Climate Initiative, NDP Partnership and UNDP.

¹¹⁶ Antigua & Barbuda, Aruba, Bahamas, Barbados, Belize, British Virgin Islands, Cabo Verde, Comoros, Cook Islands, Cuba, Dominican Republic, Fiji, Grenada, Guyana, Kiribati, Maldives, Marshall Islands, Mauritius, Micronesia (Federated States of), Montserrat, Nauru, New Caledonia, Niue, Palau, Papua New Guinea, Saint Lucia, Saint Vincent and the Grenadines, Samoa, Sao Tome and Principe, Seychelles, Solomon Islands, Tonga, Trinidad and Tobago, Turks and Caicos, Tuvalu, Vanuatu.

¹¹⁷ Denmark, France, Germany, Italy, Japan, New Zealand, Norway, United Arab Emirates, United States of America, Association of the Overseas Countries and Territories of the European Union, Caribbean Electric Utility Services Corporation, CARILEC, Clean Energy Solutions Center, Clinton Climate Initiative, ENEL, European Union, Greening the Islands, Island Innovation, Indian Ocean Commission, International Renewable Energy Agency, Organisation of Eastern Caribbean States, Pacific Islands Development Forum, Pacific Community (SPC), Pacific Power Association, Rocky Mountain Institute - Carbon War Room, Solar Head of State, Sustainable Energy for All, Sur Futuro Foundation, United Nations Development Programme, United Nations Office of the High Representative for the Least Developed Countries, Landlocked Developing Countries and Small Island Developing States (UNOHRLLS), World Bank.

		<p>NDC Dialogue: Enhancing and Implementing the Pacific SIDS Commitments to the Paris Agreement through Energy Transformation (February 2021)(Click here)</p> <ul style="list-style-type: none"> ☒ Technical webinar series on <i>Transforming SIDS Power Systems through Variable Renewable Energy</i> completed for the Pacific (Sept. 2020) (Click here) and Caribbean region (Dec. 2020). (Click here) ☒ Co-hosted <i>Energy Transformation in Small Island Developing States: Towards sustainable and climate resilient post-pandemic recovery</i> with Denmark on the progress of the Ambitious SIDS Climate Package during the UN Climate Summit Week (Sept. 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) ☒ 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) ☒ Signed MOU with SIDS DOCK to collaborate on SIDS energy transformation to strengthen climate resilience and pandemic recovery efforts (Press release) ☒ Recruited a Pacific Focal Point based in the Secretariat of the Pacific Community (SPC) to coordinate IRENA's work in the Pacific Region and strengthen joint efforts to post-pandemic recovery through energy transition (April 2021) (Click here) ☒ Recruitment of a Caribbean Focal Point to coordinate IRENA's work in the Caribbean Region ongoing. <p>Country-level work:</p> <ul style="list-style-type: none"> ☒ Antigua and Barbuda: Renewable Energy Roadmap (Mar. 2021) (Click here) ☒ Joint mission with UNDP on Energy and Blue Economy to Sao Tome Principe (Mar. 2020) (Click here) ☒ Renewable energy project concept notes for Sao Tome and Principe is being considered on the Climate Investment Platform. Partial funding has been secured from GEF. ☒ Climate Promise energy-related activities in SIDS (Click here). ☒ With support of UNDP country offices, Climate Promise engagements established in Barbados, Dominica, Saint Kitts and Nevis, Saint Vincent and the Grenadines, and Sao Tome and Principe.
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		<ul style="list-style-type: none"> ☒ Supporting CAEP country-level activities in the AIS - Seychelles, Caribbean – Belize, Dominican Republic, Grenada and Pacific SIDS – Papua New Guinea and Tonga. ☒ Direct technical assistance on NDC enhancement and implementation provided to Fiji reviewing the energy data management methodology, Saint Lucia and Seychelles for solar rooftop simulation analysis ☒ Technical analysis to support implementation of Palau's NDC mitigation measures, including a review of the energy sector baseline and mitigation objectives and analysis of the readiness, efficiency, and affordability of emerging renewable energy technologies. ☒ Development of a 100 % renewable energy roadmap for Palau ongoing. ☒ Development of coconut biofuel strategy for Vanuatu ongoing. <p>Policy and Regulatory Advice:</p> <ul style="list-style-type: none"> ☒ Completed review of the Mauritius Bioenergy Strategy. ☒ Completed review of the Papua New Guinea NDC Regulation ☒ Completed review of Seychelles' enhanced NDC ☒ Completed review of Fiji's climate change policy ☒ Completed review of the Framework for Energy Security and Resilience in the Pacific
Global Geothermal Alliance	Completed	<p>New GGA partners: Australian Geothermal Association and Women in Geothermal. Total 46 Countries¹¹⁸ and 42 Partners¹¹⁹.</p> <p>GGA website is being developed into a knowledge sharing platform:</p> <ul style="list-style-type: none"> ☒ Updated geothermal profiles: Africa (Click here), Europe (Click here), Asia (Click here),

¹¹⁸ 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.

¹¹⁹ 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), Australian Geothermal Association, 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 Rising (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, Women in Geothermal, World Bank.

		<p>Latin America and Caribbean (Click here), North America (Click here).</p> <p><input checked="" type="checkbox"/> Updated geothermal country profiles (Click here).</p> <p><input checked="" type="checkbox"/> Themes on International Training Centres (Click here) and Geothermal Resource Assessment Methodologies. (Click here)</p> <p><input checked="" type="checkbox"/> Report: “Geothermal development in Eastern Africa” (Nov 2020) (Click here)¹²⁰</p> <p>Renewable Energy Applications for district heating and cooling:¹²¹</p> <p>Report: “Integrating low-temperature renewables in district energy systems: Guidelines for policy makers” (March 2021) (Click here).</p> <p>Events:</p> <p><input checked="" type="checkbox"/> Three webinars organised on Integration of low-temperature renewable energy source in district heating and cooling networks (Click here).</p> <p><input checked="" type="checkbox"/> Scaling up geothermal direct use for industrial applications in Latin America (August 2021) (Click here).</p> <p><input checked="" type="checkbox"/> Enabling policies and regulatory frames for geothermal in East Africa (July 2021)(Click here).</p> <p><input checked="" type="checkbox"/> Global Geothermal Alliance Annual Meeting (June 2021)(Click here).</p> <p><input checked="" type="checkbox"/> Workshop on the integration of low- temperature renewable energy sources in district energy systems: Focus on Belarus (February 2021)(Click here).</p> <p><input checked="" type="checkbox"/> Workshop on the integration of renewables in district heating and cooling in China (March 2021) (Click here)</p>
5th International Off-grid Renewable Energy Conference	In progress	<p>5th IOREC planned to be virtually held in November 2021.</p> <p>4th edition of the annual ECOWAS Sustainable Energy Forum (ESEF) in partnership with ARE, ECREEE, and GIZ (Nov. 2020) (Click here)</p>
Implementation of regional action agendas and clean energy corridors ¹²² in Central Asia, Latin America, Middle East and North Africa, South Asia, South East Asia Southeast Europe and Sub-Saharan Africa	In progress	<p>Africa</p> <p><input checked="" type="checkbox"/> 9-month programme “Regional Capacity-Building Programme on Long-Term Planning for Central Africa” in partnership with the Central Africa Power Pool to be concluded at the end of September.¹²³</p> <p><input checked="" type="checkbox"/> Validation of the Renewable Energy Roadmap for Central Africa at Economic Community of Central African States (ECCAS) Ministerial</p>

¹²⁰ Supported by the Government of Japan.

¹²¹ Supported by the Government of Germany as part of the German Government International Climate Initiative.

¹²² Supported by the Islamic Development Bank (IsDB) and the Government of Norway.

¹²³ Supported by the Government of the Walloon Region of Belgium.

		<p>Meeting (June 2021) (Click here).</p> <ul style="list-style-type: none"> ☒ Implementation initiated for Regional trainings on the Economics of Power Systems Planning and Operation in West Africa (May 2020). ☒ Co-organisation of High-Level Dialogue with the Africa Union on the COVID-19 pandemic response and Africa's energy transformation (May 2020). (Click here). ☒ Implementation initiated for Trainings on Actions Design for the countries of Eastern & Southern Africa as part of the implementation of the Africa Clean Energy Corridor. ☒ Implementation initiated for regional trainings on the financial modeling of renewable energy Power Purchase Agreements for the ECOWAS countries as part of the implementation of the West Africa Clean Energy Corridor. ☒ Development of a regional parliamentary strategy in the ECOWAS region, including a regional parliamentary meeting. ☒ Africa Hydropower Database (Database disseminated through the Global Atlas platform, and a short technical note published) on high spatial-temporal hydro power generation profile data under preparation <p>Asia</p> <ul style="list-style-type: none"> ☒ Organised 5th ASEAN Ministers on Energy Meeting (AMEM) – IRENA with representatives from ASEAN Secretariat, ACE and Energy Ministers from 10 ASEAN Member States on the sidelines of the 39th AMEM (September 2021) ☒ Malaysia Energy Transition Outlook: Expert Consultation Workshop (September 2021) (Click here). ☒ Indonesia Energy Transition Outlook: Expert Consultation Workshop (July 2021) (Click here). ☒ Regional Webinar on Advancing the Energy Transition in Central Asia through NDC's and Long-Term Strategies (LTS) (July 2021) (Click here). ☒ Organised 3rd SOME-IRENA Dialogue with representatives from ASEAN Secretariat and Energy Ministries held on the sidelines of the 39th ASEAN Senior Officials Meeting on Energy (SOME). Dialogue discussed the progress of the MoU and Action Plan Implementation (June 2021) ☒ Implementation initiated for Regional Capacity Workshop on Project Development in South Asia: Enhancing Decentralised Renewable Energy in the Hindukush Himalayas ☒ Organised workshop with ASEAN Centre for Energy (ACE) and representatives from ASEAN Member States on sidelines of 28th Annual Meeting of the Renewable Energy Sub-
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		<p>sector Network (RE-SSN) to discuss the IRENA-ASEAN MoU activity priorities for 2021-2022 (May 2021)</p> <ul style="list-style-type: none"> ☒ Webinar Accelerating the Southeast Asian Energy Transformation (Aug. 2020). (Click here). ☒ 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) (August 2020) ☒ Co-organised ASEAN - COP 26 Climate Dialogue with UK COP 26 Presidency and ASEAN Secretariat (September 2020). (Click here). ☒ Organised 4th ASEAN Ministers on Energy Meeting (AMEM) - IRENA meeting with representatives from ASEAN Secretariat, ACE and Energy Ministers from 10 ASEAN Member States on the sidelines of the 38th AMEM (November 2020) ☒ Organised workshop with ACE and representatives from ASEAN Member States 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 (June 2020). (Click here). <p>Latin America and Caribbean</p> <ul style="list-style-type: none"> ☒ Hosting of Renewable Energy Day at the Regional Energy Congress of Central America (COREN 2021)(August 2021) (Click here) ☒ Virtual seminar Integrating Energy Transition into El Salvador's Nationally Determined Contribution (NDC) (August 2021) (Click here) ☒ Webinar Regional Dialogue on Energy and Gender (July 2021) (Click here) ☒ Webinar Advancing the Energy Transition in Latin America and the Caribbean through Nationally Determined Contributions (NDCs) in collaboration with UK COP26 Presidency, (Dec 2020) (Click here) ☒ NDCs and the energy transition in Central America, COREN 2020, (Oct 2020) (Click here) ☒ CECCA workshop 2020: Integration of variable renewable energy sources (Oct 2020). (Click here) ☒ Webinar Accelerating Latin America's Energy Transformation RE and Economic Recovery
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		<p>(Aug. 2020). (Click here)</p> <ul style="list-style-type: none"> ☒ Webinar: IRENA FlexTool Training for Latin America (May 2020) (Click here) <p>Middle East and North Africa:</p> <ul style="list-style-type: none"> ☒ Webinar COP26 Climate-Energy Dialogue in the Middle East and North Africa region in collaboration with UNFCCC and UK COP26 Presidency, (April 2021) (Click here) ☒ Interim reports produced including outcomes of the first stage of the zoning project.¹²⁴ ☒ IRENA FlexTool Training for MENA hosted in partnership with RCREEE and League of Arab States (LAS). (Click here) <p>Southeast Europe:</p> <ul style="list-style-type: none"> ☒ IRENA <i>FlexTool Training</i> for Eastern Europe and Central Asia hosted in partnership with the International Atomic Energy Agency (IAEA)(July 2021) (Click here) ☒ Energy-Climate Dialogue Event: <i>Advancing Energy Transition in Western Balkans and Eastern Europe countries through Enhanced Nationally Determined Contributions</i> (May 2021) (Click here) ☒ Workshop on the integration of low- temperature renewable energy sources in districtenergy systems: Focus on Belarus (February 2021)(Click here). <p>Global:</p> <ul style="list-style-type: none"> ☒ Organised roundtable discussion on Global Renewables Outlook - key technologies and trends for the energy transformation at Singapore International Energy Week (SIEW) (Oct 2020). (Click here and here)
Partnerships to promote deployment of decentralized renewable energy solutions ¹²⁵	In progress	<p>WHO-led Global Health and Energy Platform for Action (HEPA) operational.</p> <p>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.</p>
Assessment of renewable energy in agri-food chains ⁷⁰	In progress	<p>Partnering with ICIMOD to conduct Viability Assessment of Decentralised Renewable Energy for Food Value Chains in the Hindukush and Himalaya Regions. Viability assessment primary and secondary data collected.</p> <p>Techno-commercial analysis is completed for four selected food value chains (buckwheat, potato, yak milk, other vegetables).</p>

¹²⁴ Supported by the Government of Norway.

¹²⁵ Supported by the Government of the Walloon Region of Belgium.⁷⁰ Supported by the Government of the Walloon Region of Belgium.⁷¹ Supported by the Government of the Walloon Region of Belgium.

Country-specific assessments for electrification of rural health centres ⁷¹	In progress	Partnered with the Government of Burkina Faso (Ministries of Energy and Health) and SELCO Foundation currently conducting a sectoral assessment for electrification of rural health facilities. Assessment work in Cameroon, Mali, Mozambique and Sao Tome and Principe are in planning phases.
Collaborative engagement with international organisations, multilateral institutions and initiatives	Completed	MoUs signed as of September 2021 with: <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Abu Dhabi Global Market <input checked="" type="checkbox"/> CARICOM Development Fund <input checked="" type="checkbox"/> Cassa Depositi e Prestiti S.P.A <input checked="" type="checkbox"/> Climate Policy Initiative <input checked="" type="checkbox"/> Department of Energy of Abu Dhabi <input checked="" type="checkbox"/> East African Centre of Excellence for Renewable Energy and Energy Efficiency <input checked="" type="checkbox"/> Electric Power Research Institute <input checked="" type="checkbox"/> European Bank for Reconstruction and Development <input checked="" type="checkbox"/> European Patent Office <input checked="" type="checkbox"/> European Space Agency <input checked="" type="checkbox"/> Food and Agriculture Organization of the United Nations <input checked="" type="checkbox"/> Fondazione Eni Enrico Mattei <input checked="" type="checkbox"/> Global Wind Energy Council <input checked="" type="checkbox"/> Inter-American Development Bank (IDB) <input checked="" type="checkbox"/> International Energy Forum <input checked="" type="checkbox"/> International Hydropower Association <input checked="" type="checkbox"/> The Rockefeller Foundation <input checked="" type="checkbox"/> National Energy Administration of the People's Republic of China <input checked="" type="checkbox"/> New Energy and Industrial Technology Development Organisation of Japan <input checked="" type="checkbox"/> People's Republic of China Ministry of Ecology and Environment <input checked="" type="checkbox"/> Small Island Developing States Sustainable Energy and Climate Resilience Organisation <input checked="" type="checkbox"/> Southern African Development Community's Centre for Renewable Energy and Energy Efficiency <input checked="" type="checkbox"/> State Grid Corporation of China <input checked="" type="checkbox"/> UAE Ministry of Energy and Industry <input checked="" type="checkbox"/> United Nations Department of Operational Support and United Nations Peacekeeping <input checked="" type="checkbox"/> United Nations Department of Operational Support <input checked="" type="checkbox"/> United Nations Economic and Social Commission for Asia and the Pacific <input checked="" type="checkbox"/> United Nations Human Settlements Programme <input checked="" type="checkbox"/> USAID <input checked="" type="checkbox"/> World Economic Forum

		<ul style="list-style-type: none"> <input checked="" type="checkbox"/> Ocean Energy Europe <p>Partnership Agreements signed:</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> ENEL Foundation <input checked="" type="checkbox"/> Siemens Energy <input checked="" type="checkbox"/> Ministry of Energy, Mines and Environment of the Government of the Kingdom of Morocco <p>Other cooperative arrangements include:</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Input to quality on “Offshore Renewables: An Action Agenda for Deployment” (Click here), integrated in the Joint G20 Communiqué on Energy and Climate 2021 (Click here) <input checked="" type="checkbox"/> Input to G20 (Reduce and Recycle reports finalized; presentation during G20 working groups) in cooperation with King Abdullah Petroleum Studies and Research Center (KAPSARC), Saudi Arabia under the G20 Presidency¹²⁶ <input checked="" type="checkbox"/> Co-organisation of a High-Level Dialogue with the Africa Union on the pandemic response and Africa’s energy transformation. (May 2020). (Click here) <input checked="" type="checkbox"/> Collaboration with Africa Centre for Sustainable Development at the Africa Energy Indaba 2020, Cape Town, South Africa (Mar. 2020).¹²⁷ (Click here) <input checked="" type="checkbox"/> Government of Denmark and IRENA signed a Strategic Partnership in September 2020. <input checked="" type="checkbox"/> Letter of Agreement signed with UNDP for the implementation of the Global Project “Strategic Accelerator Partnership for Climate Change and Sustainable Development”. <input checked="" type="checkbox"/> Agreement concluded with the Pacific Community for the implementation of activities envisaged in the MoU entered into by the parties in April 2019. <input checked="" type="checkbox"/> Agreement signed with EBRD for the preparation of a report on tracking the SDG7. <input checked="" type="checkbox"/> Declaration of Intent concluded with the African Development Bank regarding an Institutional Partnership for accelerating the deployment of renewable energy in Africa. <input checked="" type="checkbox"/> Data Sharing Agreement signed with ECOWAS Centre for Renewable Energy and Energy Efficiency, for the provision of access to their data resources through IRENA’s Global Atlas for Renewable Energy. <input checked="" type="checkbox"/> Data Sharing Agreement signed with Delft University of Technology (TU-Delft) for the provision of access to their data resources
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¹²⁶ Supported by the Government of Saudi Arabia, KAPSARC.

¹²⁷ Supported by UNDP.

		<p>through IRENA's Global Atlas for Renewable Energy.</p> <ul style="list-style-type: none"> ☒ Data Sharing Agreement signed with Transvalor S.A, for the provision of access to their data resources through IRENA's Global Atlas for Renewable Energy. ☒ Data Sharing Agreement signed with the Australian National University (ANU) for the provision of access to their global <i>hydropower</i> datasets through IRENA's Global Atlas for Renewable Energy. ☒ G20 Italia 2021 – Collateral Event: Energy Subsidy levels and policy reform: Setting to ensure finance flows to the green recovery and the energy transition ☒ Reaching zero with renewables: what we need to accelerate and how MI's Missions can help ☒ Data Sharing Agreement signed with Hot Dry Rocks Pty Ltd, for the provision of access to their data resources through IRENA's Global Atlas for Renewable Energy. ☒ License Agreement with the Bureau of Meteorology of Australia (BOM) to provide solar resource dataset. ☒ License Agreement with the European Space Agency (ESA) to provide the Climate Change Initiative global land cover dataset. ☒ License Agreement with the General Bathymetric Chart of the Oceans (GEBCO) to provide global bathymetry dataset. ☒ License Agreement with the Consultative Group on International Agriculture Research - Consortium for Spatial Information (CGIAR-CSI) to provide Shuttle Radar Topography Mission digital elevation model. ☒ License agreement with UNEP-WCMC (United Nations Environment Programme - World Conservation Monitoring Centre) to provide the world database on protected areas. <p>Support for climate efforts¹²⁸:</p> <ul style="list-style-type: none"> ☒ Focal point for Energy within the UNFCCC Marrakesh Partnership for Global Climate Action. Leading the development of Climate Action Pathway 2021 for energy. ☒ Hosted <i>Race to Zero Dialogues on Energy</i> (16 November 2020). (Click here). ☒ Hosted <i>Net-zero Investment Lab: Public and Private Collaboration on Accelerating Green Investment in SIDS</i> event (30 March 2021) (Click here). ☒ IRENA/UNFCCC op-ed on COVID recovery. ☒ Institutional Partnership with World Climate Foundation (2020).
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¹²⁸ Supported by the Government of Denmark and Government of the Walloon Region of Belgium.

		<ul style="list-style-type: none"> <input checked="" type="checkbox"/> Member of NDC Partnership. <input checked="" type="checkbox"/> Participation in the UK-led COP26 preparation activities, including as a member of the COP26 Energy Transitions Council. <input checked="" type="checkbox"/> Author-led technical report “Adaptation via energy transition: Renewables to address the impact of climate change” (August 2021) (Click here) <input checked="" type="checkbox"/> Participation in climate initiatives: <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Accelerating energy transition in SIDS initiative, for which the SIDS LHI serves as an implementing framework <input checked="" type="checkbox"/> The Climate Investment Platform (CIP)¹²⁹ <input checked="" type="checkbox"/> The Coalition for Sustainable Energy Access <input checked="" type="checkbox"/> The Cool Coalition <input checked="" type="checkbox"/> The Decarbonizing Shipping – Getting to Zero Coalition <input checked="" type="checkbox"/> The Three Percent Club for Energy Efficiency, and <input checked="" type="checkbox"/> The initiative towards Cleaner Electricity in Latin America and the Caribbean <p>IRENA Insights Webinars:</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Renewables and energy efficiency addressing the rising energy usage of cryptocurrency mining <input checked="" type="checkbox"/> Smart Mini Grid <input checked="" type="checkbox"/> Skill Building for the Energy Transition (see also under Long-Term Energy scenarios campaign and network output) <input checked="" type="checkbox"/> Green Hydrogen a Guide to Policy Making <input checked="" type="checkbox"/> Green Hydrogen Cost Reduction <input checked="" type="checkbox"/> Scaling up Electrolysers to Meet the 1.5C Climate Goal <input checked="" type="checkbox"/> Renewable Power Generation Costs in 2020: Cost Declines and Record Capacity Additions <input checked="" type="checkbox"/> Supporting Climate Action Ahead of COP26 <input checked="" type="checkbox"/> Planning and prospects for renewable power: Eastern and Southern Africa is indeed part of the IRENA insights. <input checked="" type="checkbox"/> Tracking Clean Energy Innovation Progress: Increasing the Efficiency of R&D Policies through Data and Analyses <p>Other Events:</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Urban Energy Transition for Achieving China's
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¹²⁹ 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) supports this initiative based on a decision adopted by the German Bundestag; and UNDP.

		<p>Carbon Neutrality</p> <ul style="list-style-type: none"> ☒ UN High Level Dialogue - Ministerial Thematic Forum and side event <p>Innovative strategies to deliver the deep decarbonisation of industrial processes</p>
Coalition for Action	In progress	<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 (Apr. 2020). (Click here) ☒ IRENA Coalition for Action Members mid-year strategy meeting (Oct. 2020). (Click here) ☒ IRENA Coalition for Action Members Call to Action in Response to COVID-19: Renewable Energy is Key Part of the Solution (Apr. 2020). (Click here). ☒ IRENA Coalition for Action Members Renewed Call to Action in Response to COVID-19: Governments must act now to correct course for a green recovery and accelerate progress towards Paris Agreement (Dec. 2020). (Click here) ☒ IRENA Coalition for Action country papers of the Coalition Business and Investors Group (Algeria, Colombia, Jordan, Mexico, Tunisia and Viet Nam). (Click here). ☒ Coalition for Action white paper “Stimulating Investment in Community Energy” and launch webinar (Click here) ☒ Public-Private Dialogue at the 11th IRENA pre- Assembly. (Click here) ☒ Coalition for Action white paper on “Companies in Transition Towards 100% Renewables: Focus on Heating and Cooling” and launch webinar. (Click here) ☒ Coalition for Action white paper on “Hydrogen Best Practices: Lessons Learned” (Click here) <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 (Click here), Philippines, South Africa) ☒ Coalition for Action white paper on “Best Practices in Community Energy” ☒ Coalition for Action brief on “Origination/certification for green hydrogen” ☒ Coalition for Action white paper on “Towards 100% renewable energy: Opportunities and challenges to sector coupling”

		<ul style="list-style-type: none"> <input checked="" type="checkbox"/> IRENA Coalition for Action Members Joint Statement: Renewable Energy in Agriculture <input checked="" type="checkbox"/> IRENA Coalition for Action Members Joint Call to Action: Sustainable Jobs (working title) <input checked="" type="checkbox"/> Coalition mid-year Strategy meeting (to be held on 28 September)
Long-Term Energy scenarios campaign and network ¹³⁰	In progress	<p>LTES Campaign now upgraded to LTES initiative under the Clean Energy Ministerial.</p> <p>Membership of the LTES Network increased from initial 11 countries to 26 countries and 11 technical partners.</p> <p>Reports/Briefs published, and events held:</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> 3rd International LTES Forum (6-8 June 2021) and proceedings <input checked="" type="checkbox"/> CEM12 Side-event, co-organized with Agora Energiewende (June 2021) <input checked="" type="checkbox"/> Report on “Benchmarking long-term scenario comparison studies for the clean energy transition” (September 2021) <input checked="" type="checkbox"/> International Dialogue on Global Best Practices for Strategic Long-Term Energy Planning (Jan 2020). (Click here for event information, and here for proceedings). <input checked="" type="checkbox"/> 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) <input checked="" type="checkbox"/> 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). <input checked="" type="checkbox"/> Joint IRENA – JRC Expert Workshop on Benchmarking long-term scenario comparison studies for the clean energy transition (Sept. 2020) (Click here) <input checked="" type="checkbox"/> Campaign synthesis report “Long-term scenarios for the clean energy transition - Best practices and global experiences” (Sept. 2020) (Click here) <input checked="" type="checkbox"/> High-level open event at the 11th Clean Energy Ministerial programme on Raising global climate ambition in uncertain times with long-term energy scenario’ (Sept. 2020). (Click here). <input checked="" type="checkbox"/> IRENA Insights webinar: Scenarios for the Energy Transition: Global Experience and Best Practices (Dec. 2020) (Click here) <input checked="" type="checkbox"/> LTES Network Information Sessions (Dec. 2020) (Click here) <input checked="" type="checkbox"/> High level webinar: Planning with Net-Zero Scenarios: Moving from Political Ambition to Country- Level Pathways (Dec. 2020) (Click here)

¹³⁰ Supported by the Government of Denmark.

		<ul style="list-style-type: none">☒ Long-Term Energy Scenarios (LTES) for Developing National Clean Energy Transition Plans in Latin America (Feb. - Apr. 2021) - presentations by 12 countries in 6 sessions, in cooperation with UNECLAC and GIZ (Click here)☒ “Scenario for the Energy Transition: Global experience and best practices” (Sept. 2020) (Click here). <p>Reports and events under preparation:</p> <ul style="list-style-type: none">☒ Dashboard on planning and clean energy transition scenarios (September 2021)☒ Proceedings from the LAC LTES series under preparation☒ Webinar series: Long-Term Energy Scenarios (LTES) for Developing National Clean Energy Transition Plans in Africa (Q3 2021)
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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.

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.

Outputs	Status	Description
CIP implementation ¹³¹ : 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>Partners:</p> <ul style="list-style-type: none"> ☒ 289 partners registered on the CIP, of which 52 can provide significant support including development partners and investors. Of these, 7 financial institutions agreements signed with from the private sector, which include: Acre Impact Capital, AIIM, Brawn Capital, GAIA, Hausch, IFU, Intesa Sanpaolo. ☒ New registrations include: 5 bilateral financial organisations; 11 multilaterals; 14 international development organisations. <p>Projects and project support:</p> <ul style="list-style-type: none"> ☒ 265 projects on the CIP sourced to date through the platform. ☒ 51 projects currently actively supported. ☒ 15 new projects in preparation. ☒ 23 Project Information Documents (PIDs) are in the final stages of preparation and will be introduced to CIP partners. 14 PIDs introduced to financial partners with a 50% match rate. ☒ Over 14 projects under the Climate Promise programme assessed for further consideration under the CIP. ☒ Transfer of IRENA's Sustainable Marketplace projects to the CIP is underway. <p>Technical Assistance and Capacity Building:</p> <ul style="list-style-type: none"> ☒ Capacity building has been provided to Sao Tome and Principe and the region of Southern Africa on preparation of Project Information Documents (PIDs) to facilitate access to climate finance as well as training of project developers and local financial institutions. (November 2020 – May 2021) (Click here) ☒ Technical assistance and capacity building for Ecuador to support access to climate finance is completed. (May 2021) ☒ In Eswatini, capacity building on solar PV for the beneficiaries of a solar PV refurbishment project in support of a regional UNDP-led project has been concluded. (April 2021)

¹³¹ 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; Norway and NDCP CAEP and UNDP.

		<ul style="list-style-type: none"> ☒ Open Solar Contracts was launched at the WFES (Jan. 2020). (Click here). Two capacity building events in 2020 in cooperation with the International Solar Alliance. ☒ Capacity building for Sudan to support the preparation of renewable energy projects with Open Solar Contracts is completed (June 2021). ☒ Risk Assessment and Mitigation Platform (RAMP) is operational (click here) and released at World Futures Energy Summit (Jan. 2020). ☒ Capacity building workshop for Sudan on the design of renewable energy auctions (June 2021) <p>Webinars:</p> <ul style="list-style-type: none"> ☒ UNDP Community of Practice on Energy Meeting on Raising Renewable Energy Ambitions in NDCs. (Sept. 2020) (Click here) ☒ Energy Transformation in Small Island Developing States: Towards sustainable and climate resilient post-pandemic recovery. (Sept. 2020) (Click here) ☒ Introduction to CIP organised for Trade Commissioners of the Government of Canada (Jul. 2020). (Click here) ☒ Open Solar Contracts – preparation, finalisation and capacity building delivered in English and French. (Click here). ☒ At the request of the Coalition for Action, a podcast on CIP was delivered to Mainstream.
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Project site assessments and feasibility assessments ¹³²	In progress	<p>Project site assessment</p> <ul style="list-style-type: none"> ☒ 39 solar PV and wind site assessments conducted for Burkina Faso (18), Ecuador (7), Mozambique (12), and Sierra Leone (02). ☒ 32 solar and wind generation profiles to support grid integration and stability studies for Mozambique. ☒ Over 100 solar and wind generation profiles to support generation and transmission expansion studies for Morocco and Mali. ☒ Calculation of the capacity factor for over 400 existing onshore wind power plants to support IRENA costing analysis. <p>RE potential assessment</p> <ul style="list-style-type: none"> ☒ A suitability assessment conducted for Mauritania (Click here), Burkina Faso (Click here), and Africa. The assessment is ongoing for Colombia. ☒ A zoning assessment conducted for Kyrgyzstan. (report sent to country) ☒ Interim reports on zoning assessment for Arab countries. ☒ United Nations Framework Classification for Geothermal Energy: Pilot applications in the Caribbean, Ethiopia and Indonesia (Click here). <p>Capacity building</p> <ul style="list-style-type: none"> ☒ Capacity building is being provided to Mali, Niger February 2021 (Click here), and Gabon on RE resource potential assessment under NDCs support activities. ☒ Capacity building conducted for Indonesia on sharing the best practices for resource potential assessment. (81 participants) (August 2021)
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¹³² Supported by the Government of the Walloon Region of Belgium.

IRENA/ADFD Project Facility implementation ¹³³	Completed	<p>Facilitated soft loans of USD 104.54 million from ADFD for 8 projects in 7th cycle (Jan. 2020). (Click here)</p> <p>“IRENA/ADFD Project Facility: Lessons from the selection process” (Oct. 2020) (Click here)</p> <p>Progress monitoring for the 26 projects in the IRENA/ADFD Facility is on-going.</p> <p>Project appraisals and due diligence is underway for six of the eight projects selected in the seventh cycle (Jan 2020), underway.</p> <p>Further facilitation of access to finance (USD 3.16 million) for the Burkina Faso project funded from the 7th cycle by introducing the project for further funding by COFIDES.</p> <p>Inauguration of Togolese Blitta Solar PV project (50MW) (July 2021). Two additional grid-connected solar PV projects (Seychelles 5MW and Sierra Leone 6 MW) started operations, yet to be inaugurated.</p>
Renewable readiness assessments (RRA) and REmap	Completed	<p>Completed:</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Albania (RRA) (March 2021) (Click here) <input checked="" type="checkbox"/> Belarus (RRA) (July 2021) (Click here) <input checked="" type="checkbox"/> “Central and South Eastern Europe/South East Europe REmap” summary report (Oct. 2020). (Click here)¹³⁴ <input checked="" type="checkbox"/> Belize (RRA) (presented and awaiting country feedback). <input checked="" type="checkbox"/> Botswana (RRA) (August 2021) (Click here) <input checked="" type="checkbox"/> El Salvador (RRA) (Dec. 2020) (Click here) <input checked="" type="checkbox"/> Jordan (RRA) (February 2021) (Click here) <input checked="" type="checkbox"/> Lebanon (Outlook – RRA REmap) (June 2020). (Click here) <input checked="" type="checkbox"/> Tunisia (RRA) (June 2021) (Click here) <p>In progress:</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Burkina Faso (RRA) <input checked="" type="checkbox"/> Indonesia (RRA+REmap) <input checked="" type="checkbox"/> Kyrgyzstan (RRA) <input checked="" type="checkbox"/> Malaysia (RRA+REmap) <input checked="" type="checkbox"/> Nigeria (REmap) <input checked="" type="checkbox"/> Paraguay (RRA) <p>New requests received from the following countries:</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Bosnia and Herzegovina (RRA) <input checked="" type="checkbox"/> Iraq (RRA) <input checked="" type="checkbox"/> Sudan (RRA)

¹³³ Supported by the Government of the United Arab Emirates.

¹³⁴ Supported by the European Commission.

<p>Long-term planning for energy transition¹³⁵</p>	<p>In progress</p>	<p>Report on the prospects of the power system in Eastern and Southern Africa (analysed with SPLAT) published (April 2021) (Click here)</p> <p>Update of the North African Power Pool SPLAT model, consisting of electricity generation scenarios (in progress).</p> <p>National energy masterplan development support programme established and in progress 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>Completion of the SPLAT Model Results Dashboard.</p> <p>Engagement and knowledge dissemination:</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Hosted fifth Roundtable Discussion on Strategic Energy Planning (Abu Dhabi, Jan. 2020) (Click here). <input checked="" type="checkbox"/> “Energy planning brochure” (2020) (Click here)
		<p>Training provided to African Development Bank staff on planning with renewable energy (September 2021)</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Training sessions on long-term energy planning in the NDC context provided to Mali <input checked="" type="checkbox"/> Training sessions on long-term energy planning in the NDC context provided to Gabon <input checked="" type="checkbox"/> Training sessions on long-term energy planning in the NDC context provided to Niger <input checked="" type="checkbox"/> Training sessions on long-term energy planning in the NDC context provided to Ecuador

¹³⁵ Supported by the Governments of Denmark and the Walloon Region of Belgium.

FlexTool and grid integration support ¹³⁶	Completed	<p>IRENA FlexTool training for Latin America: Power systems operators from 13 countries gathered for online training on (May 2020) (Click here).</p> <p>IRENA FlexTool Training for MENA hosted in partnership with RCREEE and League of Arab States (June 2020). (Click here)</p> <p>IRENA FlexTool training for ASEAN conducted (June 2020). (Click here)</p> <p>FlexTool analysis of the impact of electromobility and hydrogen production in Uruguay's power system</p> <p>Regional Virtual Workshop on Grid Integration of Variable Renewable Energy (VRE) in Latin America under the aegis of CECCA and in collaboration with GIZ and EOR (Ente Operador Regional) (Oct. 2020) (Click here).</p> <p>IRENA FlexTool Training for Eastern Europe and Central Asia hosted in partnership with the International Atomic Energy Agency (IAEA) for 50 participants from 22 different countries (13-14 July 2021) (Click here)</p> <p>IRENA Insights webinar on “Grid Stability with High Share of Renewables - Transforming Small Island Power Systems” (Feb 2020)-(Click here)</p> <p>Finalization Workshop- Grid Assessment Study for Dominican Republic-Day 1 (Dec 2020)</p> <p>Finalization Workshop- Grid Assessment Study for Dominican Republic-Day 2 (May 2021) As follow up of the Grid integration assessment study for the Dominican Republic.</p>
Socio-economic footprint at the country level (five case studies)	In progress	<p>Reports on Japan and the Republic of Korea¹³⁷, and Indonesia¹³⁸ in review stage. Ongoing analysis and drafting for the ASEAN regional case study. South Africa and Egypt in initial stage.</p>

¹³⁶ Supported by the Governments of Norway and NDC Partnership.

¹³⁷ Supported by the Government of Japan.

¹³⁸ Supported by the Government of Denmark.

<p>Energy transition in NDCs: development and implementation¹³⁹</p>	<p>In progress</p>	<p>IRENA is engaging with 68 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"> <input checked="" type="checkbox"/> Scoping (17)¹⁴⁰ <input checked="" type="checkbox"/> Work plan development (10)¹⁴¹ <input checked="" type="checkbox"/> Implementation of Support (33)¹⁴² <input checked="" type="checkbox"/> Input to NDC already provided (8)¹⁴³ <p>Climate action support provided to Albania, Antigua and Barbuda, Belize, Dominican Republic, Cameroon, Cuba, El Salvador, Eswatini, Gambia, Grenada, Kazakhstan, Nepal, Nicaragua, Niger, Palau, Saint Kitts and Nevis, St. Lucia, South Africa, Uzbekistan, Vanuatu, Zimbabwe, and Uruguay in reviewing mitigation and adaptation targets set by countries towards the enhancement of their Nationally Determined Contributions (NDC).</p> <p>Climate action support on-going to Antigua and Barbuda, Dominican Republic, Grenada, Kazakhstan, Palau, Sao Tome and Principe, Saint Kitts and Nevis, Uzbekistan, Vanuatu, and Uruguay towards the implementation of their Nationally Determined Contributions (NDC).</p> <p>Climate action support under preparations for Lao DPR, Bosnia and Herzegovina, Cambodia, Belarus, Georgia, Guyana, Mongolia, Philippines, Trinidad and Tobago and Morocco towards the implementation of their Nationally Determined Contributions (NDC).</p> <p>Technical analysis and toolkits developed under NDC support:</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Climate action support analysis - Brief on the analysis of the cost-effectiveness of renewable energy technology options in the climate action planning process with country case studies in the Gambia, Grenada, Saint Kitts and Nevis and Palau (in progress) <input checked="" type="checkbox"/> Climate action support analysis - Development of renewable energy technology toolkits for mitigation aspects of climate action plans to be used as part of the mitigation section of climate action implementation plans in countries that have submitted an updated NDC in 2020 and 2021. (in progress) <input checked="" type="checkbox"/> Climate action support analysis - Technical paper on building climate resilience with renewables to be used as part of the adaptation section of climate action implementation plans in countries that have
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¹³⁹ Supported by Government of the Walloon Region of Belgium, NDC Partnership and UNDP.

¹⁴⁰ Bahamas, Barbados, Belarus, Cambodia, Chad, Cuba, Guyana, Indonesia, Laos, Mongolia, Myanmar, Panama, Pakistan, Rwanda, Thailand, Trinidad and Tobago, and Uzbekistan.

¹⁴¹ Botswana, Egypt, Georgia, Kazakhstan, Nauru, Palau, Saint Kitts and Nevis, Turkey, Uzbekistan, and Vanuatu.

¹⁴² Albania, Antigua and Barbuda, Belize, Benin, Burkina Faso, Cameroon, Colombia, Dominica, Ecuador, Eswatini, El Salvador, Gambia, Jordan, Kyrgyzstan, Liberia, Mali, Mauritius, Mozambique, Nicaragua, Nigeria, North Macedonia, Paraguay, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, Seychelles, Sudan, South Africa, Tonga, Uganda, Uruguay, Zambia, and Zimbabwe.

¹⁴³ Bhutan, Dominican Republic, Fiji, Gabon, Grenada, Lebanon, Nepal, and Papua New Guinea.

		<p>submitted an updated NDC in 2020 and 2021. (in progress)</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Climate action support analysis - Analysis of the cost-effectiveness of renewable energy technology options in the climate action planning processes in The Gambia (finalized) <input checked="" type="checkbox"/> Climate action support analysis - Assessment of cost-effectiveness mitigation options to inform Saint Kitts and Nevis' update of the NDC (finalized) <input checked="" type="checkbox"/> Climate action support analysis - Renewable energy technology needs for climate action implementation in Antigua and Barbuda (finalized) <input checked="" type="checkbox"/> Climate action support analysis - Comparative analysis of IRENA's SPLAT analysis and the LEAP analysis conducted to inform the update of Zimbabwe's NDC (finalized) <input checked="" type="checkbox"/> Climate action support analysis - Renewable energy for climate action implementation in Nicaragua (finalized) <input checked="" type="checkbox"/> Climate action support analysis - Mitigation analysis in the agro-industry subsector in El Salvador (in progress) <input checked="" type="checkbox"/> Climate action support analysis - Development of technical tools and briefs supporting the revision of mitigation aspects of climate action plans based on an ongoing collaboration between the European Commission and IRENA implemented through the EU Technical Assistance Facility (TAF) for Sustainable Energy funded by the EU. (in progress) <input checked="" type="checkbox"/> Energy statistics support under CAEP NDC enhancement activities included: energy data analyses, Measuring, Reporting and Verification (MRV) system development for energy data management, energy emission analyses, energy targets review, construction of energy balances and capacity building workshops. <p>The following activities were completed by country:</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Grenada: NDC review support. IRENA support acknowledged in the new NDC (Click here), Data gap analysis report, MRV report, capacity building workshop (March 2021) <input checked="" type="checkbox"/> Nigeria: 'Enhancing energy statistics in Nigeria' report, Nigeria energy balance, MRV report, Capacity building workshop (May 2021) <input checked="" type="checkbox"/> Belize: Energy data audit report, Energy emissions and MRV report <input checked="" type="checkbox"/> Benin: Analysis of GHG emissions report <input checked="" type="checkbox"/> Dominican Republic: NDC target review, GHG inventory review <input checked="" type="checkbox"/> Ecuador: 'Grid emission factor methodology' report, Implementation of emissions automation module, 'Mitigation action methodology review' report, Review of emission factors and related
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		<p>energy data templates</p> <ul style="list-style-type: none"> ☒ El Salvador: Energy data gaps report ☒ Mozambique: Energy data report and energy balance, 10-week training on energy statistics ☒ Niger: ‘Development of mini-GHG inventories’ report, 10-week online training on energy statistics conducted ☒ Papua New Guinea: Support provided in drafting NDC, IRENA support was acknowledged in the new NDC (Click here), data gaps analysis report ☒ St. Kitts and Nevis: NDC targets structure assessment, Energy data gaps analysis ☒ St Vincent and Grenadines: first draft of the data gaps analysis report shared ☒ Sudan: Needs assessment and data gaps analysis report, Construction of a national energy balance, 1st stakeholder engagement workshop (March 2021) (Click here), 2nd Stakeholder engagement workshop ‘MRV discussion’ (August 2021), Off grid solar installers survey conducted in Khartoum ☒ Tonga: MRV report, Data gaps assessment ☒ Uganda: Data audit report ☒ Zambia: Construction of 2016-2019 energy balances and related report, Fossil fuel emissions report, Data quality and verification trainings conducted <p>COP 26 Regional climate week events:</p> <ul style="list-style-type: none"> ☒ COP 26 - Asia-Pacific Climate Week Side event – Nationally Determined Contributions in the Asia Pacific Region as the main driver of decarbonisation, July 2021 (Click here) ☒ COP 26 - Africa Climate Week Side event – Nationally Determined Contributions in Africa as the main driver of decarbonization (Click here)
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Entrepreneurship Facility ¹⁴⁴	Completed	<p>First technical committee meeting of SADC Entrepreneurship Facility held in March 2020 to select entrepreneurs for the first cohort of training and mentorship.</p> <p>Introductory meeting held in July 2020 to introduce the 32 selected entrepreneurs to the Facility in preparation for training, mentorship and networking.</p> <p>Commercial workshop conducted for the first cohort of entrepreneurs (Nov 2020) (Click here)</p> <p>Technical training for the first cohort of entrepreneurs conducted in February 2021</p> <p>SADC Entrepreneurship Support Facility (ESF) technical committee approved the selection of the 2nd cohort of entrepreneurs</p> <p>First advisory board meeting of SADC ESF. (May 2021)</p> <p>Technical training conducted for selected 47 entrepreneurs with more than one individual from the selected 33 SME companies (2nd cohort) in July 2021 and commercial training in September 2021.</p> <p>Mentorship programme currently underway for 1st cohort of entrepreneurs and 2nd cohort will commence in October 2021</p>
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¹⁴⁴ Supported by Government of the Walloon Region of Belgium.

ADDITIONAL OUTPUTS		
Strategic Management		
Outputs	Status	Description
Comprehensive communication and outreach strategy	Completed	<p>106 publications released in the biennium. 26 publications were translated to nine different languages (Arabic, Chinese, French, Spanish, Russian and also to German, Japanese and Portuguese).</p> <p>Since 2020, IRENA publications were downloaded 3.3 million times.¹⁴⁵</p> <p>Publications 2020 strategy developed, and communications and outreach strategies aligned.</p> <p>Communication supports provided to publication releases, webinars, press releases, website updated etc.</p> <p>IRENA referenced in over 47,600 media articles in 45 languages across 172 countries.</p> <p>IRENA Director-General gave 50 interviews and placed 9 op-eds.</p> <p>72,000 e-mail subscribers.</p> <p>IRENA's annual Outlooks generated 3,283 media articles, 12 million impressions on twitter, 241,000 website visitors.</p> <p>9 million pages viewed.</p> <p>104,100 Twitter followers.</p> <p>108,966 LinkedIn followers.</p> <p>475,962 Facebook followers</p> <p>Financial Times Partnership Launch Covid-19 Report with 1,335 registrations, generated 141 live event downloads.</p>
Governance Support Office	In progress	<p>Coordinated over 20 high-level Members' visits to the IRENA HQ (Heads of States, Ministers of Foreign Affairs, Special Envoys for Climate Change, etc.).</p> <p>Engagement and outreach to States in accession and non-Members to expedite ratification and accession process.</p> <p>Governing Body meetings:</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Organisation and conduct of the 10th session of the IRENA Assembly and publication of the Summary Report (Click here). <input checked="" type="checkbox"/> Organisation and conduct of the 19th and 20th Council meetings in virtual format and publication of the Summary Reports (Click here).

¹⁴⁵ The download data is obtained via Webtrends Analytics and includes additional data sources compared to the previous biennium report.

		<ul style="list-style-type: none"> ☒ Organisation and conduct of the 11th session of the IRENA Assembly in virtual format and publication of the Summary Report (Click here). ☒ Organisation and conduct of the 21st Council meeting in virtual format and publication of the Summary Report (Click here). ☒ Preparation underway for the 22nd Council meeting in hybrid format, including the meetings of the Administrative and Finance Committee (AFC) and the Programme and Strategy Committee (PSC). ☒ Preparation underway for the 12th session of the IRENA Assembly and related meetings. <p>High-Level Meetings:</p> <ul style="list-style-type: none"> ☒ Organisation and conduct of the first edition of the Global High-Level Forum on Energy Transition: Science and raising ambition towards COP 26 (Click here) <p>Legislators:</p> <ul style="list-style-type: none"> ☒ Organisation of the fifth IRENA LegislatorsForum (Click here) ☒ Organisation of the sixth IRENA LegislatorsForum (Click here) ☒ Organisation of the first edition of the IRENA Legislators Dialogue (July 2020) (Click here) ☒ Publication of issues n.11 - "Insights from the Fifth Legislators Forum" (May 2020) (Click here) and n.12 - "The Post-COVID Recovery: An Agenda for Resilience, Development and Equality" (March 2021) (Click here) of REviewfor Parliamentarians. ☒ Preparation underway for the publication of issue n.13 of REview for Parliamentarians. <p>Permanent Representatives</p> <ul style="list-style-type: none"> ☒ Four editions of the Renewables Talk for Permanent Representatives (May 2020) (Click here) (Dec. 2020) (Click here) (March 2021) (Click here) (June 2021) ☒ Preparation underway for the fifth edition of the Renewables Talk for Permanent Representatives to be held at EXPO 2020
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		<p>Dubai in October 2021.</p> <ul style="list-style-type: none"> ☒ Planned and organised over 20 ceremonies for the Presentation of Credential Letters resulting in an increased number (63) of accredited Permanent Representatives. <p>Youth</p> <ul style="list-style-type: none"> ☒ Organisation of the first IRENA Youth Forum during the 10th Assembly (Jan 2020) (Click here). ☒ Organisation of three thematic working group meetings in preparation for the 2020 IRENA Youth Forum (Jan 2020) (Click here). ☒ Launch of the first IRENA Youth Video Contest focused on the theme ‘Renewable Energy in the Time of COVID-19: Youth Actions for Recovery’ (June 2020) (Click here). ☒ Partnership with the Youth Sustainable Energy Hub, the SDG 7 Youth Constituency project that catalyses youth action on sustainable energy(Feb. 2021) (Click here). ☒ Organisation of the second IRENA Youth Forum (Click here)during the Stakeholder Week at the 11th Assembly. ☒ Five editions of the IRENA Youth Talk (June2020) (Click here) (Oct. 2020) (Click here) (June 2021) (Click here) (July 2021) (Click here) (Sept 2021) (Click here). ☒ Organisation of three thematic virtual meetings in preparation for the 2021 IRENA Youth Forum (Jan 2021) (Click here). ☒ Launch of the first IRENA Youth Mood Board contest focused on the theme ‘Create Your Transition’ (Sept 2021). <p>Organisation underway for additional meetings to be held in 2021 targeted to Permanent Representatives (Renewables Talk series), Parliamentarians (IRENA Legislators Dialogue series)and Youth (IRENA Youth Talk series).</p>
New York Liaison Office	Completed	<p>Provision of inputs to the 2020 and 2021 High-level Political Forum on Sustainable Development (HLFP), including theme reports and side-events <i>Inputs provided:</i></p> <ul style="list-style-type: none"> ☒ 2020 input on the theme “<i>Accelerated action</i>

		<p><i>and transformative pathways: realizing the decade of action and delivery for sustainable development”</i> (Click here)</p> <p>☒ 2021 input on the theme “<i>“Sustainable and resilient recovery from the COVID-19 pandemic that promotes the economic, social and environmental dimensions of sustainable development: building an inclusive and effective path for the achievement of the 2030 Agenda in the context of the decade of action and delivery for sustainable development”</i>” (Click here)</p> <p>Organisation of the following side-events:</p> <p>☒ 2020 UN HLPF “<i>Harnessing energy transformation for a sustainable recovery</i>” (Click here)</p> <p>☒ 2021 UN HLPF “<i>Renewable Energy as a key element of post-COVID recovery in Sub-Saharan Africa</i>” (Click here)</p> <p>☒ 2021 UN Second Committee “<i>Energy transition for sustainable development and climate action</i>”</p> <p>Provision of inputs to the preparation and organisation of the 2021 High-Level Meeting hosted by the UN PGA on the theme “<i>Delivering Climate Action – for People, for Planet and for Prosperity</i>”</p> <p>Provision of inputs to the UN General Assembly Second Committee Resolution “<i>Ensuring access to affordable, reliable, sustainable and modern energy for all</i>” (75th session in 2020 and 76th session in 2021)</p> <p>Support to implementation of selected MoUs:</p> <ul style="list-style-type: none"> - UNOHRRLLS: UN-OHRRLLS joined SIDS Lighthouse Initiative and agreement developed on joint activities to support energy transition in LDCs and LLDCs. - UNDOS - UNDESA <p>Initiation of a MoU with UNICEF</p> <p>Participation in UN-Energy meetings, including provision of updates and statement delivery</p> <p>Participation in UN Interagency Coordination Group (IACG) Meetings on SIDS, LLDCs, LDCs including provision of updates and statement delivery.</p> <p>Provision of updates to the Climate Action Summit Initiatives of the UN Secretary-General where IRENA is involved.</p> <p>Dissemination of information about key IRENA activities and publications among Permanent Missions, the UN Secretariat and other relevant stakeholders, including:</p>
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		<input checked="" type="checkbox"/> Update provided to New York Community on CIP progress during 13 May 2020 briefing. <input checked="" type="checkbox"/> Updates provided on implementation of SIDS Energy Transition as part of SIDS Climate Action Summit Package (April 2020, March 2021)
Legal Office	Completed ¹	<p>Guidelines on designation of IRENA Emissaries have been finalised. The Emissaries will facilitate and promote the Agency work at national, regional and international level.</p> <p>The Guiding Principles for Engaging in Cooperation Activities with the Private Sector have been finalised. (Click here for news article)</p> <p>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, publications etc.</p>
Events Unit	Completed ¹	<p>Events and Missions database for internal and external communication maintained.</p> <p>Organised 248 events (since January 2020), of which 198 were virtual events and 12 hybrid.</p> <p>Growth @ IRENA programme (online): Over 60 students (2020).</p> <p>Student Leaders Programme (online-virtual hybrid): 50 students to date (2021).</p> <p>Ongoing Outreach activities with the UAE including EXPO 2020, World Government Summit, Abu Dhabi Sustainability Week (ADSW) / The World Future Energy Summit (WFES), Abu Dhabi Global Markets (ADGM), Abu Dhabi Youth Hub (ADYH), Dubai Electricity & Water Authority (DEWA)'s Innovation Centre.</p> <p>FDCR Fund coordination: FDCR supported the attendance of 81 delegates from 46 delegations during its 10th session of the Assembly.</p>
Diversification of resource base	In progress	<p>New contributions concluded in 2020/2021:</p> <input checked="" type="checkbox"/> European Commission (Innovation) <input checked="" type="checkbox"/> Flemish Region of Belgium (FDCR) <input checked="" type="checkbox"/> Germany, International Climate Initiative (SIDS Lighthouses)

		<ul style="list-style-type: none"> ☒ Germany, Federal Ministry of Economics and Technology (BMWi) (Various projects including WETO) ☒ Germany, Federal Foreign Office (Geopolitics of Hydrogen) ☒ Germany, Federal Ministry for Economic Cooperation and Development (BMZ) (Renewable Energy Transition Africa) ☒ International Bank for Reconstruction and Development (SDG7 Tracking Report) ☒ Italy, Ministry of Foreign Affairs and International Cooperation (Desert to Power in Sahel and Climate Investment Platform) ☒ Italy, Ministry of Foreign Affairs and International Cooperation (Offshore renewables and Ocean energy) ☒ Japan, MAFF (Various projects) ☒ Japan, METI (Annual, 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 and FDCR)
Monitoring and evaluation system	In progress	<p>External evaluation process concluded. Report transmitted to the 11th session of the Assembly.</p> <p>Work Programme implementation database developed to monitor progress in the implementation of the DG's Directives (2020 and 2021) and Work Programme.</p> <p>Self-assessment submitted to IRENA 22nd Council.</p>
Programmatic reports to the Council and Assembly	In progress	<p>Progress report on implementation of the Work Programme and Budget, in a revitalised format, sent to Membership (Jun. 2020 and Oct. 2020).</p> <p>Annual report sent to Membership (Dec. 2020, Sept. 2021)</p>

Strategic outreach	In progress	<p>Since January 2021, IRENA's Director-General held bilateral discussions with 113 representatives from different entities (including regional bodies, non-governmental organisations and the private sector as well as 25 governments.)</p> <p>Active outreach by IRENA Deputy Director-General and Directors to Members, IOs, multilateral and regional entities and other stakeholders.</p>
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Enabling IRENA delivery		
Outputs	Status	Description
Upgrades and enhancements to the IRENA website, platforms, and projects.	Completed ¹	<p>CIP¹⁴⁶ website launched. (Click here).</p> <p>Quickscan (SIDS) tool website launched. (Click here)</p> <p>Website upgrade in progress</p> <p>ERP quarterly upgrade.</p> <p>Enhanced ERP reporting / dashboard.</p> <p>Performance Management System implemented.</p> <p>Virtual events platforms consolidated.</p>
Efficient budget services	Completed ¹	<p>Internal monthly reporting and administration of core and voluntary contributions:</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> 32 donor reports <input checked="" type="checkbox"/> 20 monthly internal core budget reports <input checked="" type="checkbox"/> 20 monthly internal VC reports <p>Ongoing support to the Agency in administration of core funds and voluntary contributions.</p>
Delivery of efficient financial services	Completed ¹	<p>Audited IRENA and IRENA SPF 2020 Annual Financial Statements completed.</p> <p>Ongoing provision of full financial services to the Agency.</p>
Support to the Provident Fund operations	Completed ¹	<p>Annual meetings of members conducted on 22 Jan 2020 and 22 Mar 2021.</p> <p>PF Management Board met quarterly to review PF performance on 9 Mar, 12 May, 30 Sep and 28 Jan for the year 2020, and on 31 May, 30 August for the year 2021.</p>

¹⁴⁶ 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.

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Efficient procurement services	Completed ¹	To maintain open, fair, transparent and competitive bidding process, 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 (www.irena.org/procurement). Annual and quarterly procurement plan continues to be maintained and updated throughout the year.
Effective general and travel services	Completed ¹	Administration support, enhancement of Facility Management, and other services. Health and Safety program enhanced to address COVID-19 pandemic measures. Travel logistic services management for 47 Workshops and 300 Travel requests. Introduction and preparation for online travel tool.