

Twelfth session of the Assembly  
Abu Dhabi, 15-16 January 2022

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

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## Foreword

by **Francesco La Camera, Director-General of IRENA**



As I write this, COP 26 has come to an end, and two things are simultaneously true: that the global energy transition is accelerating and this is reflected in increased ambition and commitments; and that this ambition is not yet sufficient to stave off a climate crisis.

And, as the world enters its third year of a global pandemic, it is increasingly evident that these two global crises, the pandemic and the climate change, which are changing society in irreversible and fundamental ways, demand ambitious and innovative solutions and unprecedented levels of international cooperation. The two crises must be addressed in tandem and holistically. IRENA is rising to this challenge, through its cutting-edge analyses, technical support to governments, and convening of stakeholders towards greater collaboration.

IRENA worked during this biennium to be innovative, inclusive and pragmatic. We established a series of “Collaborative Frameworks” to respond to the call of Members to have regular dialogue, peer-to-peer collaboration and the critical exchange of knowledge, including with the private sectors, to help accelerate the transition. So far, these include Hydropower, Green Hydrogen, Geopolitics, Offshore Renewables/Oceans, High Shares of Renewables in Energy Systems, and Just and Inclusive Energy Transitions.

As for analytical endeavours, IRENA launched its first World Energy Transitions Outlook earlier this year. WETO shows how emissions can rapidly be reduced in the coming critical decade while simultaneously ensuring that the transition is just and leaves no one behind. The report represents a major contribution to global discussions about how to limit global temperature rise to 1.5°C. It also shows how efforts can and must be intensified further to effectively manage this complex transition and reap the benefits to the maximum. The latest jobs report published by IRENA and the International Labour Organization in October showed that even despite the pandemic, the total number of people employed in the renewable energy sector rose by 500,000 to 12 million.

We also made concerted efforts to forge partnerships with a wide range of actors who can contribute to our essential mission. We developed the guidelines for the work with the private sector to work transparently and effectively with this community so critical for the achievement of the global development and climate goals. IRENA’s commitment to collaboration was also on full display at the UN’s High-level Dialogue on Energy in New York in September, which aimed to catalyse multi-stakeholder voluntary commitments – or compacts – on energy. IRENA was proud to partner with Members and others in more than 10 Energy Compacts.

As COP 26 approached, all eyes were focused on Parties' updated Nationally Determined Contributions (NDCs), mandated under the Paris Agreement. IRENA has worked with over 70 countries over the last two years, supporting their efforts towards enhancement and implementation. And we continue to support our Members, including through intensified work on investment and project facilitation. The Climate Investment Platform – CIP - is now a collective endeavour with more than 320 partners. And we are entering a new stage in our partnership with the Abu Dhabi Fund for Development with the launch of the Energy Transition Accelerator Financing (ETAf) Platform, with anchor funding of USD 400 million from the United Arab Emirates, will raise around one billion funding, leveraging up to 3 billion dollars investments.

Looking back, it is evident that none of us could have predicted how this biennium would unfold. Nevertheless, under the extreme conditions of the past two years, we did our best to meet your expectations. I hope this report gives you a good overview not only of our efforts, but also a glimpse of passion, perseverance and professionalism of IRENA's exceptional staff.



## Contents

Progress to Date .....	11
Investments for a sustainable future.....	29
International cooperation and partnerships.....	30
Collaborative Frameworks.....	32
Targeted climate action.....	38
Communications and Outreach – Amplifying Impact.....	44
Looking ahead .....	47
Save the Date.....	47
Effective functioning of the organisation .....	48
Finance and Budget.....	48
Information and Communication Technology (ICT).....	48
Human Resources .....	49
Procurement .....	51
General Services and Travel .....	51
Implementation Progress Overview.....	52
Resource overview .....	54
Biennial budget overview.....	<b>54</b>
IRENA donors (2020-2021) .....	60
Work Programme 2020-2021 – Implementation Matrix.....	63

## FIGURES

Figure 1: Guiding framework of WETO theory of change .....	12
Figure 2: Main components of the energy transition strategy .....	12
Figure 3: Renewable Share of Annual Power Capacity Expansion .....	14
Figure 4: Additions in renewable energy generation capacity from 2018 to 2019 .....	14
Figure 5: Cumulative renewable electricity generation .....	14
Figure 6: Decline of solar and wind power generation costs .....	15
Figure 7: Cost effectiveness of powering past coal .....	15
Figure 8: Global renewable energy employment by technology, 2012-2020 .....	16
Figure 9: Key findings of the Tracking SDG 7: Energy Progress Report 2021 .....	17
Figure 10: Advancing energy and food security to meet the SDGs.....	18
Figure 11: Contributions of offshore renewables to the blue economy and the energy transition.	19
Figure 12: Human resources required along the value chain for water heater systems .....	21
Figure 13: Key emission reducing measures .....	22
Figure 14: Barriers and policy options for the supply of green hydrogen.....	23
Figure 15: Policy measures to accelerate green hydrogen production .....	23
Figure 16: Roles of municipal governments in the energy transition .....	27
Figure 17: Climate Investment Platform.....	29
Figure 18: List of Collaborative Frameworks and their respective Co-facilitators.....	33
Figure 19: Thematic Reports for the High-level Dialogue on Energy .....	35
Figure 20: IRENA Energy Compacts and partners .....	35
Figure 21: IRENA's NDC Engagement.....	39
Figure 22: Distribution of IRENA work packages (%) .....	39
Figure 23: IRENA's Social Media Presence, 2021.....	44
Figure 24: WETO's Social Media Presence, 2021 .....	45
Figure 25: Number of social media followers.....	46
Figure 26: Staff Status (as of 28 November 2021).....	49
Figure 27: Geographical distribution (core and project posts), as of 28 November 2021.....	51
Figure 28: IRENA's Strategic Objectives .....	52
Figure 29: IRENA outward-facing activities by activity type and theme .....	53
Figure 30: Received and outstanding assessed contributions for 2020 core budget (in USD millions, as of 28 November 2021).....	57
Figure 31: Received and outstanding assessed contributions for 2021 core budget (in USD millions, as of 28 November 2021).....	58
Figure 32: Number of Members with received and outstanding contributions to the 2020 core budget (28 November 2021) .....	59
Figure 33: Number of Members with received and outstanding contributions to the 2021 core budget (28 November 2021) .....	59
Figure 34: Distribution of core assessed and non-assessed and extra-budgetary resources (2020- 2021 expenditures) .....	62

## TABLES

Table 1: Filled/under recruitment core and project posts by level, as of 28 November 2021 .....	50
Table 2: Loaned Personnel as of 28 November 2021.....	50
Table 3: Seconded Officers (Voluntary Contributions) as of 28 November 2021 .....	50
Table 4: 2020-2021 Biennium Budget Utilisation by funding source (in USD Thousands) .....	54

## 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

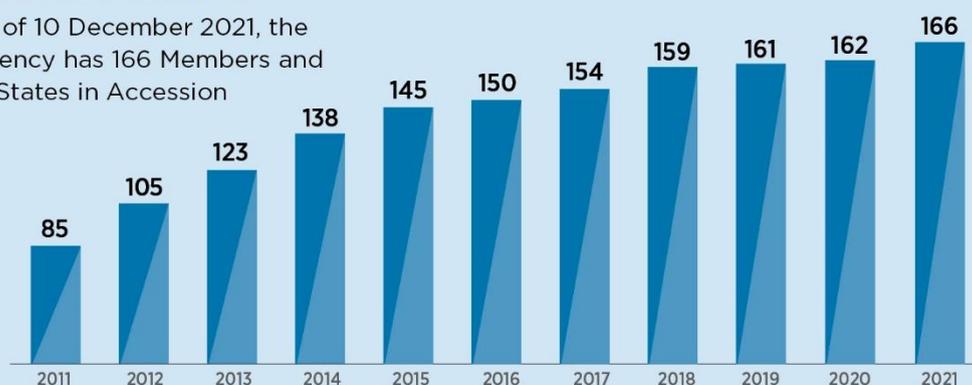
**OFFICES**



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 10 December 2021, the Agency has 166 Members and 18 States in Accession



## 12<sup>TH</sup> ASSEMBLY BUREAU



President: El Salvador

Vice-Presidents:



Antigua & Barbuda



Bangladesh



Egypt



Greece

## COUNCIL

21 Members

### 23<sup>rd</sup> Council

Chair: Uruguay

Vice-Chair: Norway

### 24<sup>th</sup> Council

Chair: TBC

Vice-Chair: TBC

### 2 Committees

#### Administration & Finance

Chair: Maldives

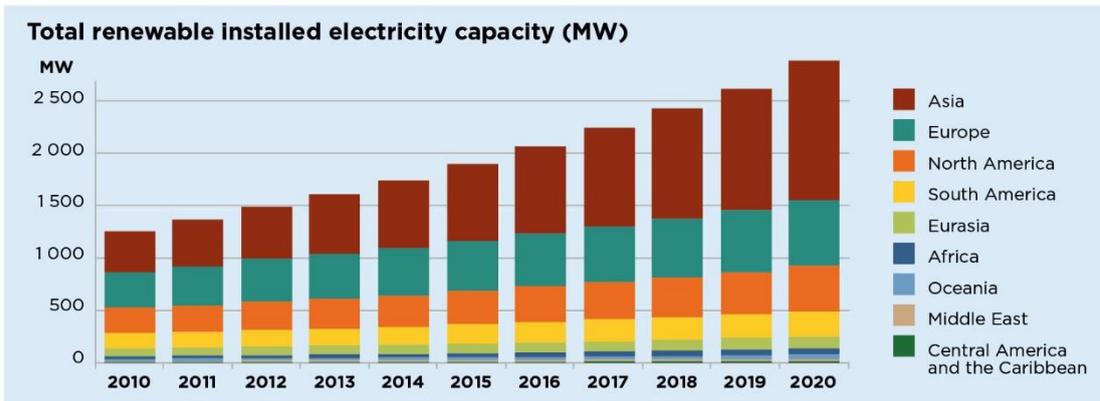
Vice-Chair: Germany

#### Programme & Strategy

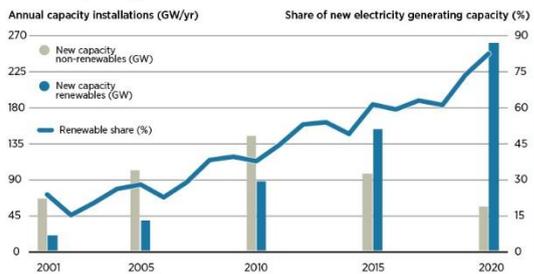
Chair: USA

Vice-Chair: Algeria

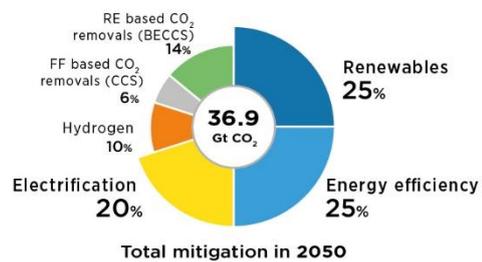
# ENERGY TRANSITION AT A GLANCE



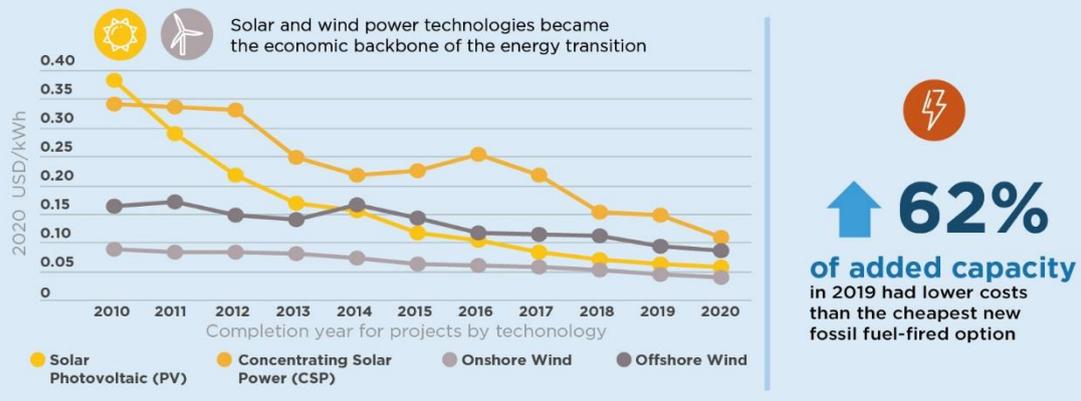
### Share of capacity, 2021-2020



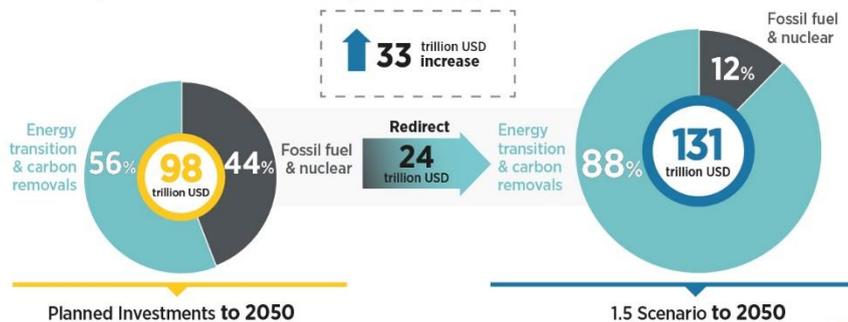
### Six components of the energy transition strategy



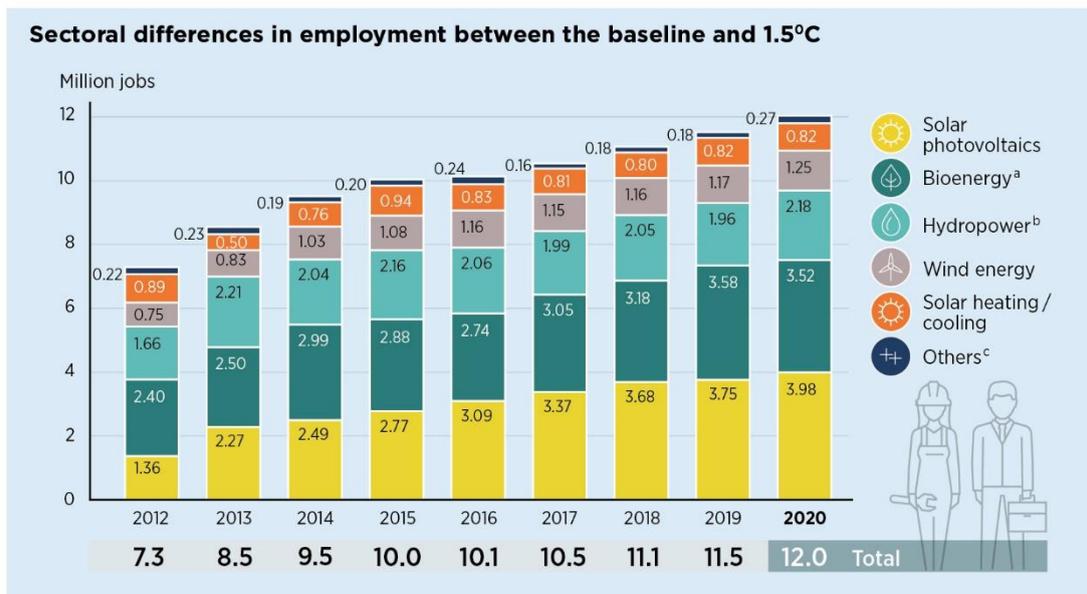
### Decline in solar and wind power generation costs



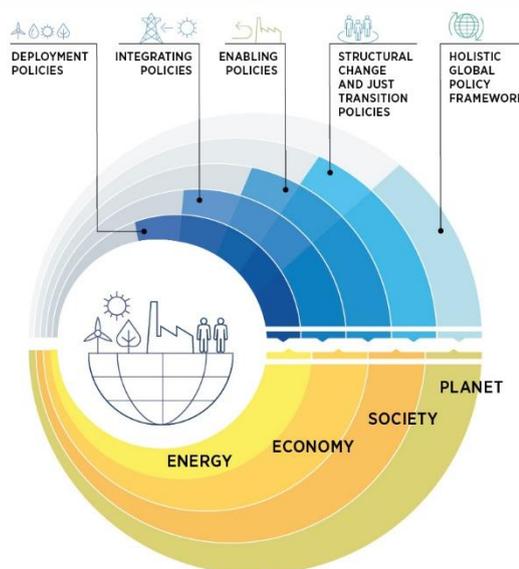
### New investment priorities: renewables, efficiency, electrification and infrastructure



# ENERGY TRANSITION AT A GLANCE



### Enabling policy framework for a just energy transition

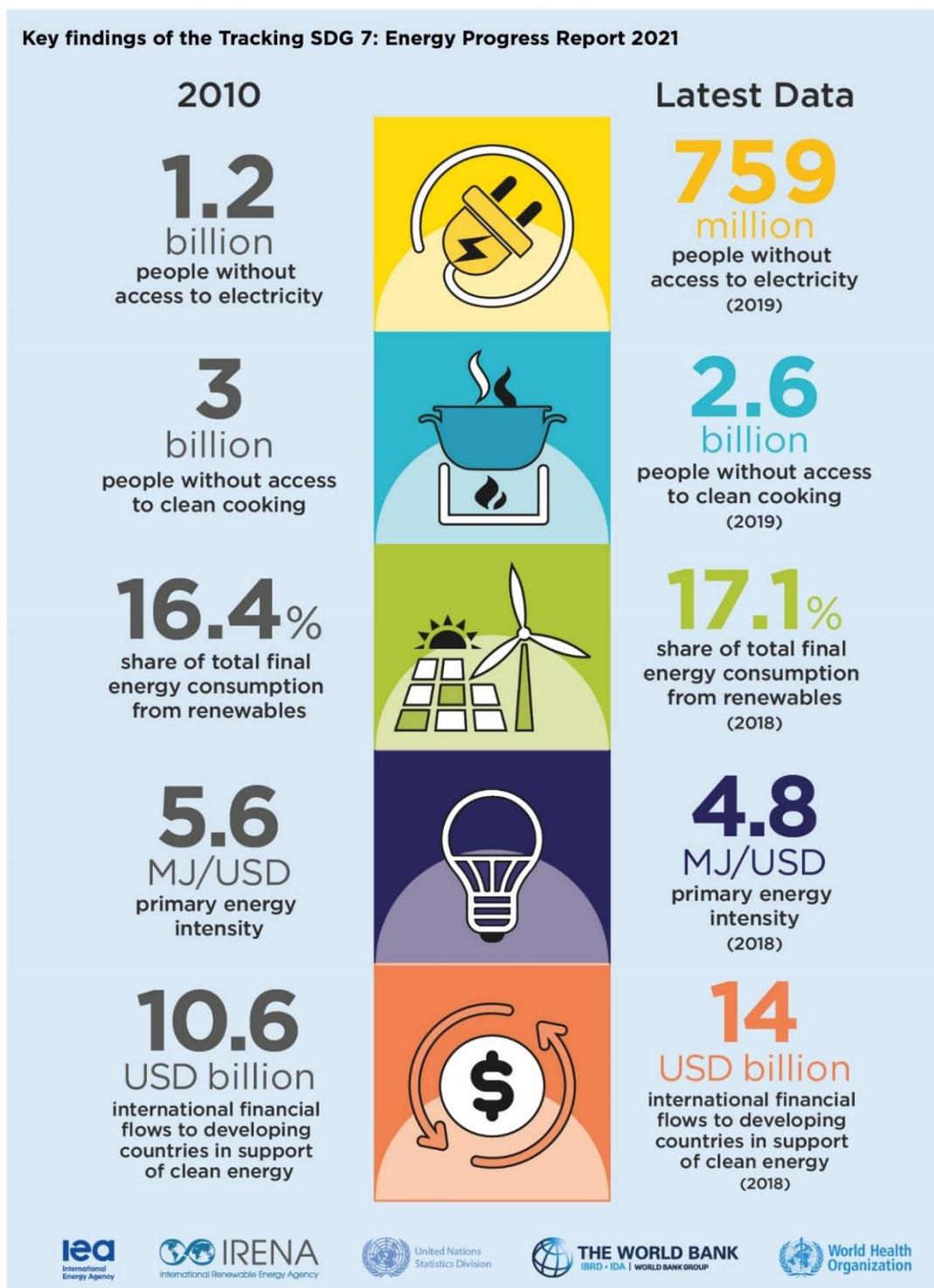


### Policy measures to accelerate green hydrogen production

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



**160** posts filled

**69** nationalities

stationed in Abu Dhabi, Bonn and New York

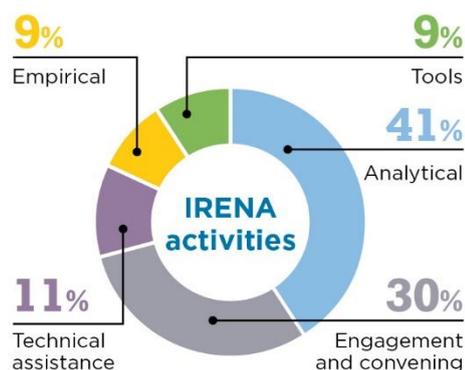
**47%**  and **53%** 

**50/50** Senior Team Gender Balance

**7** loaned or seconded officers

Work Programme  
2020-2021 outputs:

**89%** completed **11%** in progress



 **12 300** applications received for 69 vacancies



**316** events organised/co-organised by IRENA

**278** virtual events + **38** hybrid events



**121** publications



**29** publications

were translated into:



IRENA publications were downloaded

**3.3** million times



Media coverage:

**36 200** media articles

in

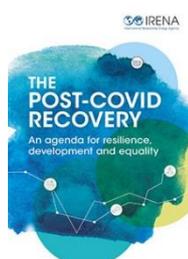
**44** languages

across

**173** 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.

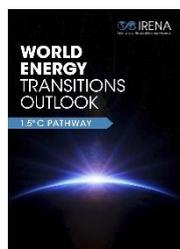


IRENA's **Post-COVID Recovery: An Agenda for Resilience, Development and Equality**<sup>1</sup> report delivered an in-depth analysis of the pandemic's impact on the global economy, energy sector, and renewable energy, with a focus on employment, and presented a short-term perspective to 2023 and a medium-term 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 (CO<sub>2</sub>) 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 CO<sub>2</sub> emissions.<sup>2</sup>



IRENA's **World Energy Transitions Outlook (WETO)**<sup>3</sup> 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.



WETO

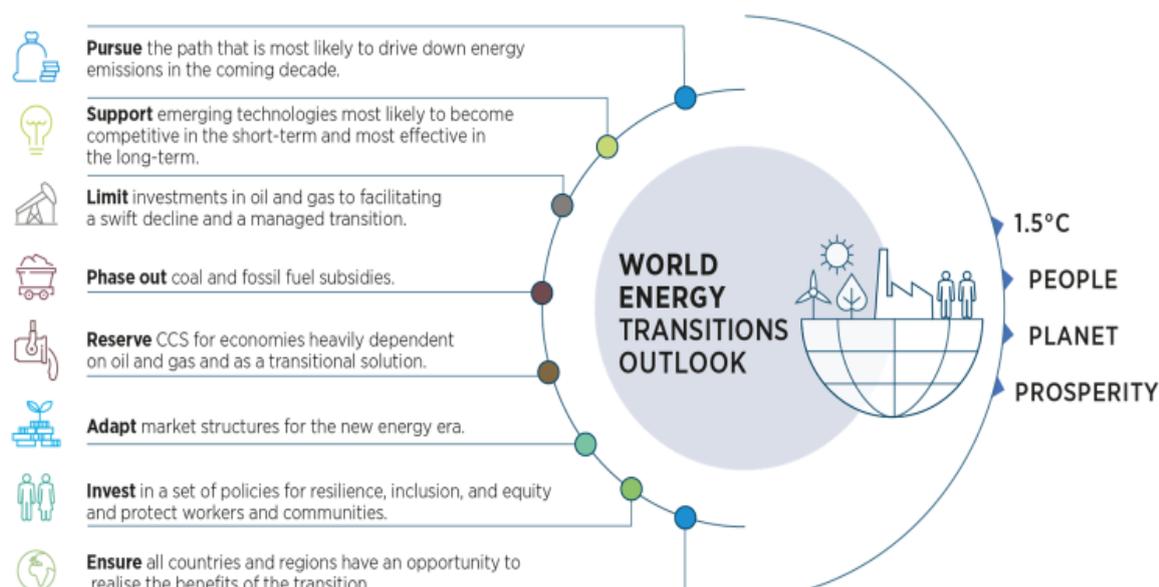
Recent developments in the energy field reveal that IRENA's renewables-centred approach has now become mainstream and widely accepted as the only realistic option for a climate-safe world. IRENA's WETO encapsulates IRENA's theory of change and presents a guiding framework (Figure 1) with investment and 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.

<sup>1</sup> Available [here](#).

<sup>2</sup> Available [here](#).

<sup>3</sup> Available [here](#).

Figure 1: Guiding framework of WETO's theory of change

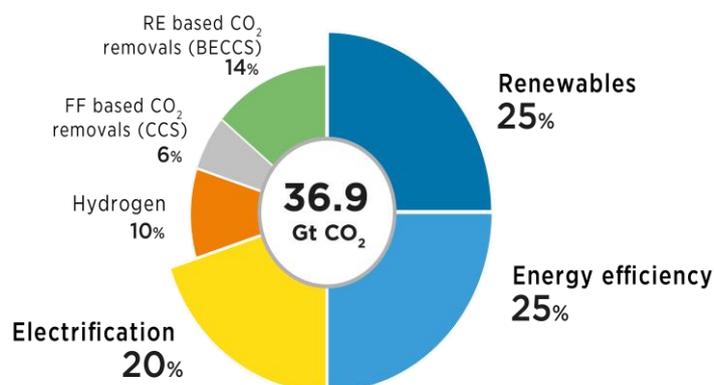


Source: IRENA, *World Energy Transitions Outlook*, 2021

Critically, WETO identifies the six main components of the CO<sub>2</sub> 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**<sup>4</sup> 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**<sup>5</sup> 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**<sup>6</sup> 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 billion<sup>7</sup> compared to USD 22 billion and USD 34 billion in 2018 and 2017 respectively.

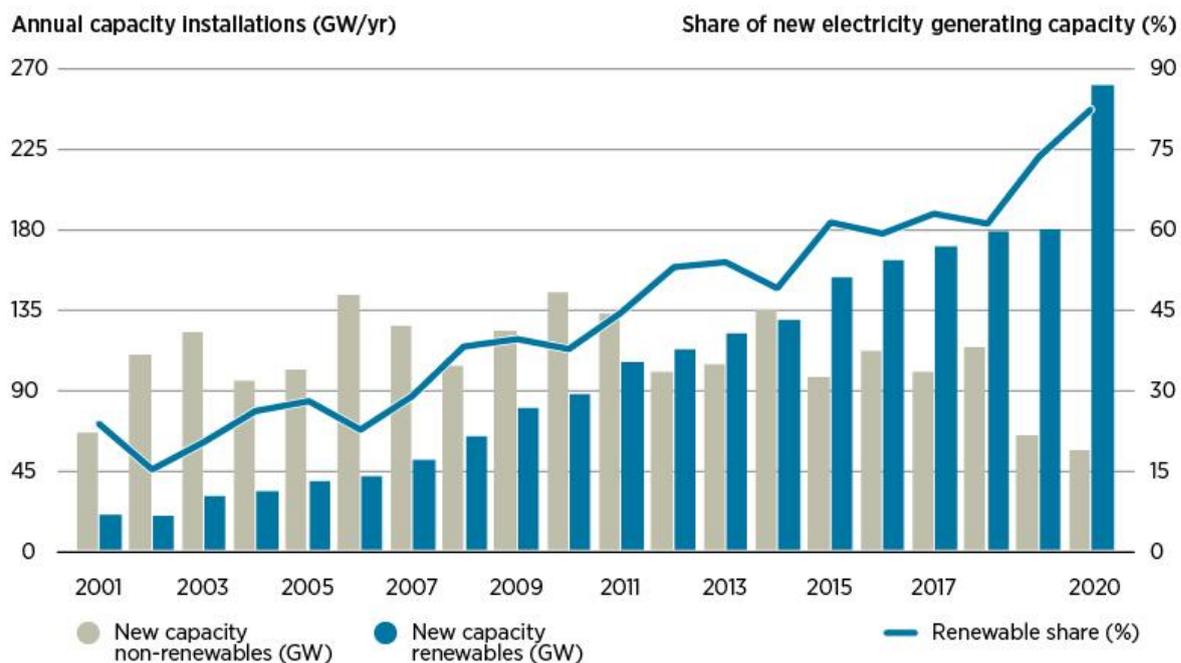
<sup>4</sup> More information available [here](#).

<sup>5</sup> Available [here](#).

<sup>6</sup> 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.

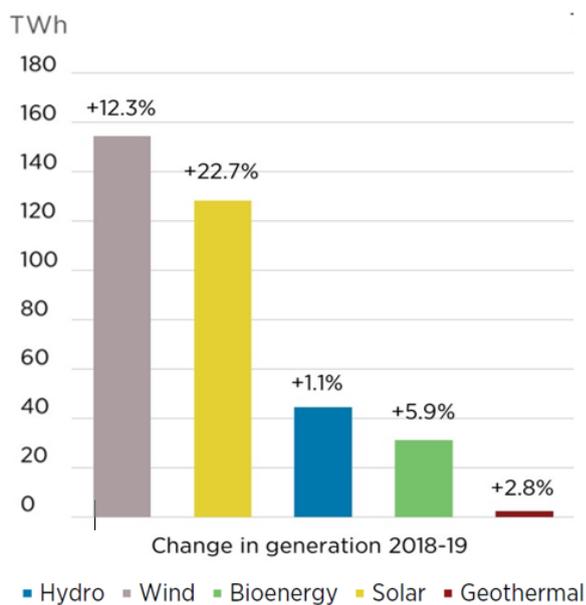
<sup>7</sup> Calculated at 2019 prices and exchange rates.

Figure 3: Renewable Share of Annual Power Capacity Expansion



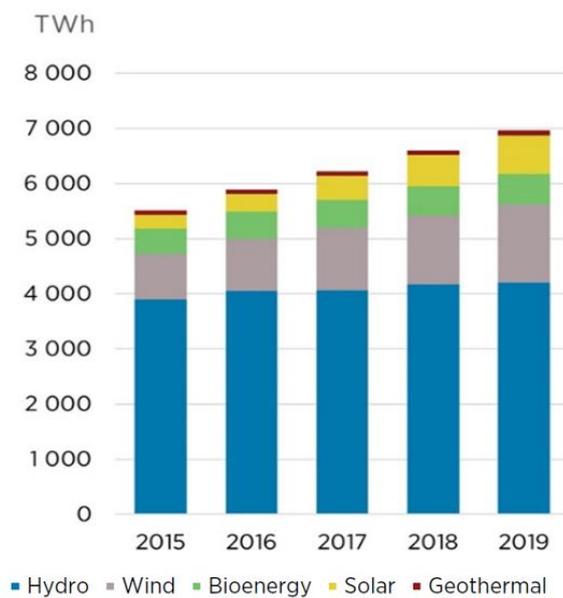
Source: IRENA, *Renewable Capacity Statistics*, 2021

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



Source: IRENA, *Renewable Energy Statistics*, 2021

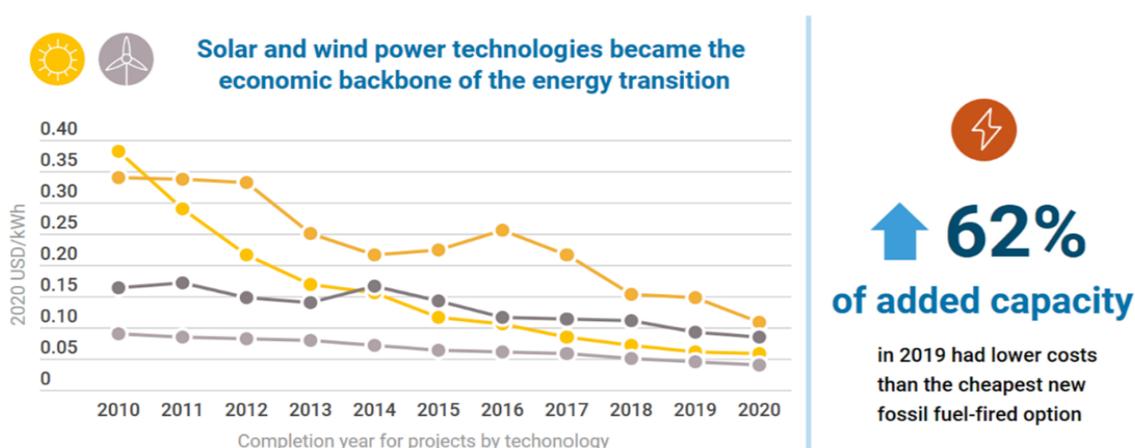
Figure 5: Cumulative renewable electricity generation



Source: IRENA, *Renewable Energy Statistics*, 2021

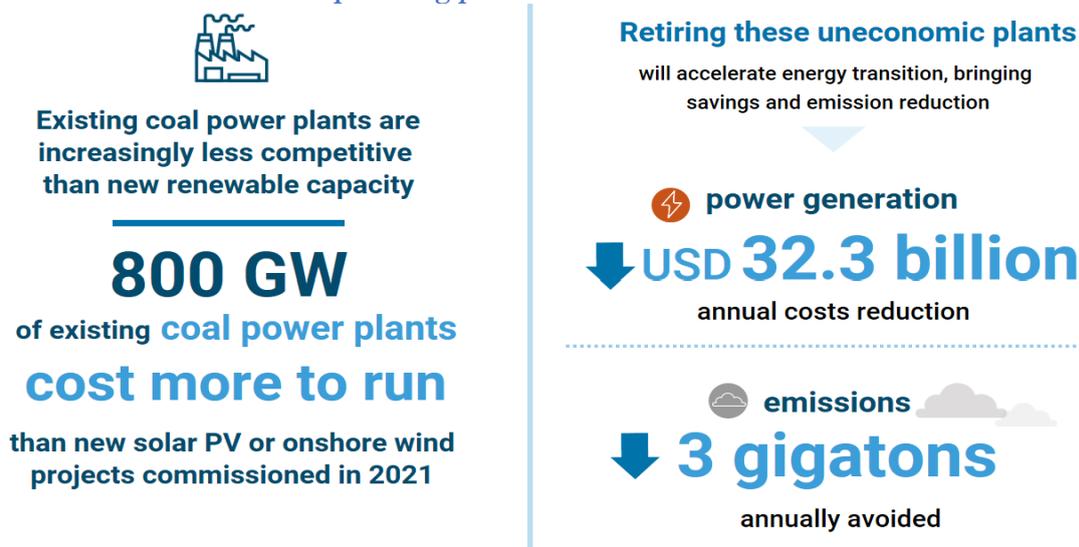
Drawing from IRENA’s Renewable Cost Database and Auctions and power purchase agreement (PPAs) databases, IRENA’s **Renewable Power Generation Costs in 2020**<sup>8</sup> report highlights that cost for solar and wind power continued declining in 2020, despite the pandemic. Between 2000 and 2020, renewable 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 CO<sub>2</sub> emissions could be reduced by around 3 Gigatonnes per annum, by replacing these coal-fired plants (Figure 7).

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

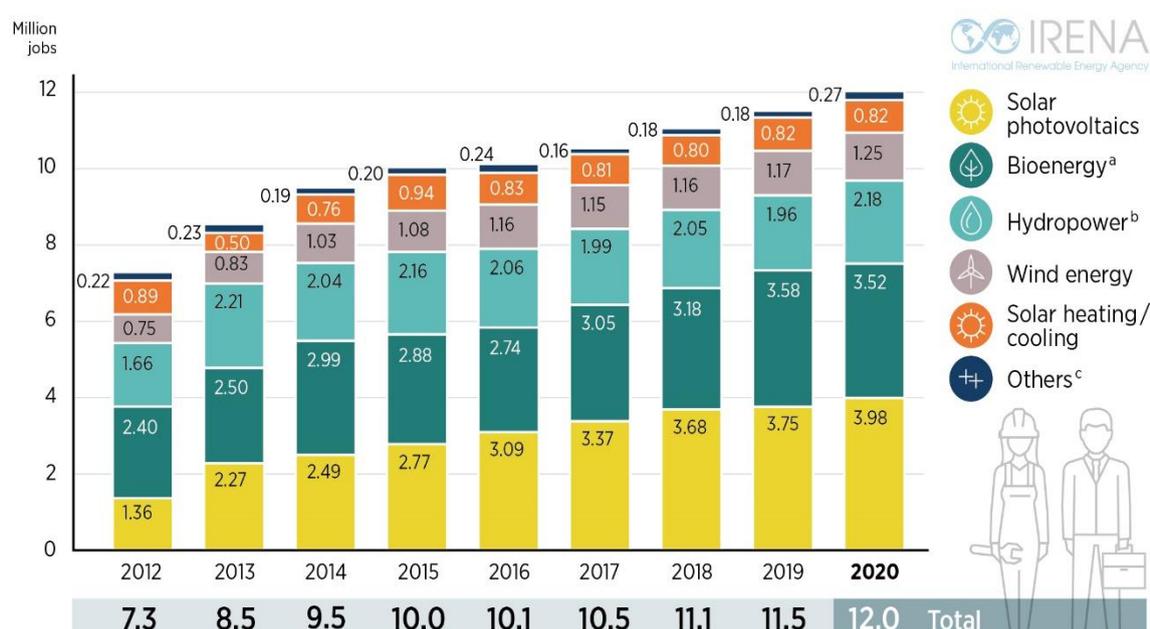


Source: IRENA, *Renewable Power Generation Costs in 2020, 2021*

<sup>8</sup> Available [here](#).

IRENA's **2021 Renewable Energy and Jobs - Annual Review**<sup>9</sup> - a special edition prepared in collaboration with the International Labour Organization (ILO) - presents jobs findings for 2020 and highlights IRENA's work modeling the employment implications of the Agency's energy transition scenarios to 2050. According to the report, about 12 million people were employed in the sector, directly and indirectly, last year (Figure 8). This is a continuation of the upward trend in renewable energy employment worldwide since 2012, when IRENA initiated its annual review and estimated that 7.3 million work in the sector. Solar PV leads the field and accounts today for some 4 million jobs, providing power from large scale installations feeding into the grid as well as from small, off-grid applications which enable much-needed access to electricity to previously remote and energy-poor communities. Although off-grid sales took a hit from COVID-19 in 2020, they will be key to powering farming, food processing and healthcare. Wind energy now employs 1.25 million people, with an increasing number of people in operations and maintenance and in offshore wind energy sector.

**Figure 8: Global renewable energy employment by technology, 2012-2020**



Source: IRENA, *Renewable Energy and Jobs - Annual Review*, 2021

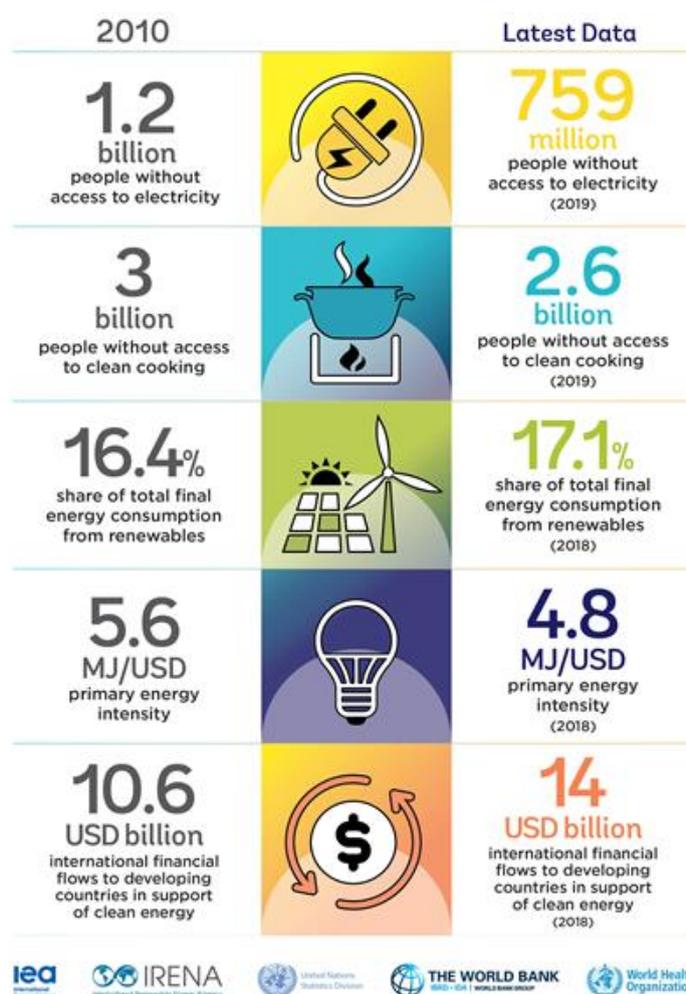
The world has significant renewables potential that remains untapped. To assist countries in addressing this challenge, in May 2021, IRENA unveiled the **Global Atlas for Renewable Energy 4.0 (Platform)**<sup>10</sup> that incorporates more than 1000 revised renewable energy resource maps, complemented 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.

<sup>9</sup> Available [here](#).

<sup>10</sup> Available [here](#).

Yet, the 2021 edition of the **Tracking SDG 7: Energy Progress Report**<sup>11</sup>, published annually by the custodian agencies<sup>12</sup> of SDG 7 indicators, shows that despite progress (Figure 9) 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 9: Key findings of the Tracking SDG 7: Energy Progress Report 2021**



<sup>11</sup> Available [here](#).

<sup>12</sup> IRENA, International Energy Agency (IEA), United Nations Statistics Division (UNSD), World Bank, and World Health Organization (WHO).

Energy and agri-food systems are deeply connected. Agri-food systems consume about 30% of the world's energy, while, energy is responsible for a third of agri-food systems' emissions of greenhouse gases.

IRENA's **Renewable Energy for Agri-food Systems**<sup>13</sup> report, jointly developed with the Food and Agricultural Organization of the United Nations (FAO), analyses the role of renewable energy in agri-food systems, fisheries and forestry chains, and bioenergy and how they can advance energy and food security objectives. The joint report also outlines an 8-point action agenda (Figure 10) to scale up renewable energy use in the agriculture sector.

**Figure 10: Advancing energy and food security to meet the SDGs**



Source: IRENA, *Renewable Energy for Agri-food Systems*, 2021

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**<sup>14</sup> 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 sixth edition of the **International Off-Grid Renewable Energy Conference and Exhibition**<sup>15</sup> took place on 7-9 December 2021. Held virtually, the meeting explored the ways off-grid renewable energy

<sup>13</sup> Available [here](#).

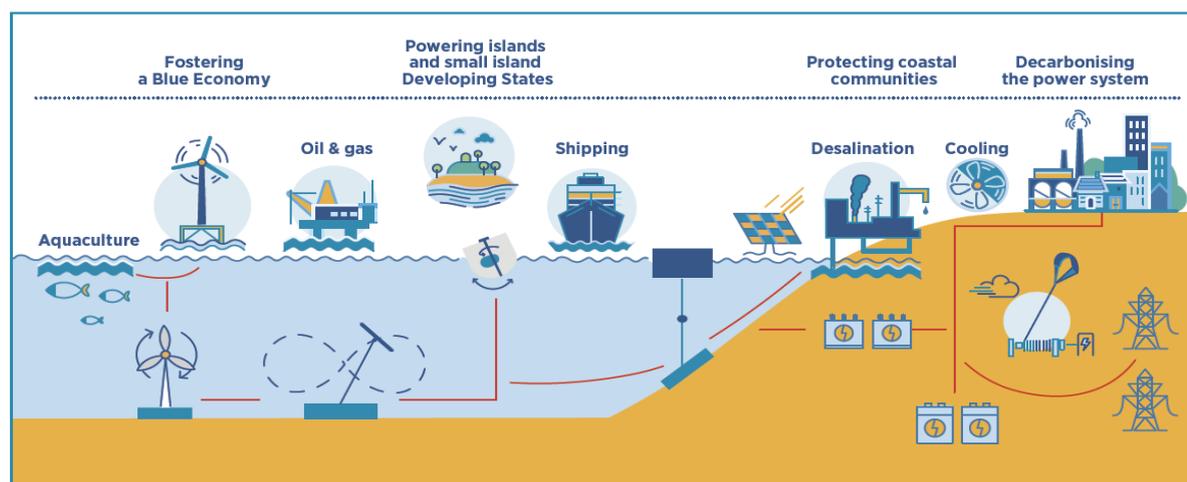
<sup>14</sup> Available [here](#).

<sup>15</sup> More information available [here](#).

solutions can contribute to improving livelihoods and access to electricity to enhance the provision of critical services and social infrastructure pertaining to agri-foods, water sourcing, education, clean cooking and even in achieving Nationally Determined Contributions.

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 11). 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**<sup>16</sup> report. 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 Communiqué<sup>17</sup> itself. Discussions at the **Energy from the sea: an action agenda for deploying offshore renewables worldwide**<sup>18</sup> 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 11: Contributions of offshore renewables to the blue economy and the energy transition**



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

IRENA's **Tracking the Impacts of Innovation: Offshore wind as a case study**<sup>19</sup> report provides an initial output of two interlinked projects focused on tracking innovation impacts: Innovation Impacts Dashboard (IID)<sup>20</sup> and Tracking Energy Innovation Impacts Framework (TEIIF) project<sup>21</sup>. 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.

<sup>16</sup> Available [here](#).

<sup>17</sup> Available [here](#).

<sup>18</sup> More information available [here](#).

<sup>19</sup> Available [here](#).

<sup>20</sup> Funded by the Government of the United Kingdom of Great Britain and Northern Ireland.

<sup>21</sup> Funded by the Horizon 2020 Programme of the European Union (EU).

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**<sup>22</sup> report highlights key attributes of TES technologies and highlights priorities for ongoing research and development in this field.



## GLOBAL GEOHERMAL ALLIANCE

At the **Annual Thematic meeting of the Global Geothermal Alliance (GGA)**,<sup>23</sup> 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**<sup>24</sup> report<sup>25</sup> 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**<sup>26</sup>. 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**<sup>27</sup>, 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.

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 SICA<sup>28</sup> member countries (GEO II), IRENA co-organised a webinar on **Scaling-up Geothermal Direct Use for Industrial Applications in Latin America**<sup>29</sup> 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-

<sup>22</sup> Available [here](#).

<sup>23</sup> Available [here](#).

<sup>24</sup> Available [here](#).

<sup>25</sup> 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).

<sup>26</sup> Available [here](#).

<sup>27</sup> More information available [here](#).

<sup>28</sup> Sistema de la Integración Centroamericana

<sup>29</sup> More information available [here](#).

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**<sup>30</sup> 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 12).

**Figure 12: 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**<sup>31</sup>, IRENA, UNEP and Sustainable Energy for All organised the **Hot Climate for Renewable Cooling**<sup>32</sup> 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.

IRENA is also exploring areas to deepen knowledge on the process of decarbonisation, especially in the energy sectors that remain a challenge. International shipping is a key sector of global economy, as much as 90% of worldwide trade is transacted via ocean going vessels, but the sector is also one of the most challenging to decarbonise. IRENA's **A Pathway to Decarbonise the Shipping Sector by 2050**<sup>33</sup> report analyses the technology readiness of the renewable fuels suitable for international shipping. The report also explores the options and actions needed to progress towards a decarbonised maritime shipping sector by 2050, and seeks to identify a realistic mitigation pathway to reach the climate goal of limiting global temperature rise to 1.5°C and bringing CO<sub>2</sub> emissions closer to net zero by mid-century.

IRENA's **Reaching Zero with Renewables: Eliminating CO<sub>2</sub> emissions in Industry and Transport**<sup>34</sup> 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 CO<sub>2</sub> emission reductions required

<sup>30</sup> Available [here](#).

<sup>31</sup> More information available [here](#).

<sup>32</sup> Available [here](#).

<sup>33</sup> Available [here](#).

<sup>34</sup> Available [here](#).

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 13).

**Figure 13: Key emission reducing measures**



**Source:** IRENA, *Reaching Zero with Renewables: Eliminating CO<sub>2</sub> 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**<sup>35</sup> 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.

IRENA has produced two policy making guides on the topics. The 2020 **Green Hydrogen: A Guide to Policy Making**<sup>36</sup> 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**<sup>37</sup> report analyses the challenges and solutions (Figure 14), 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.

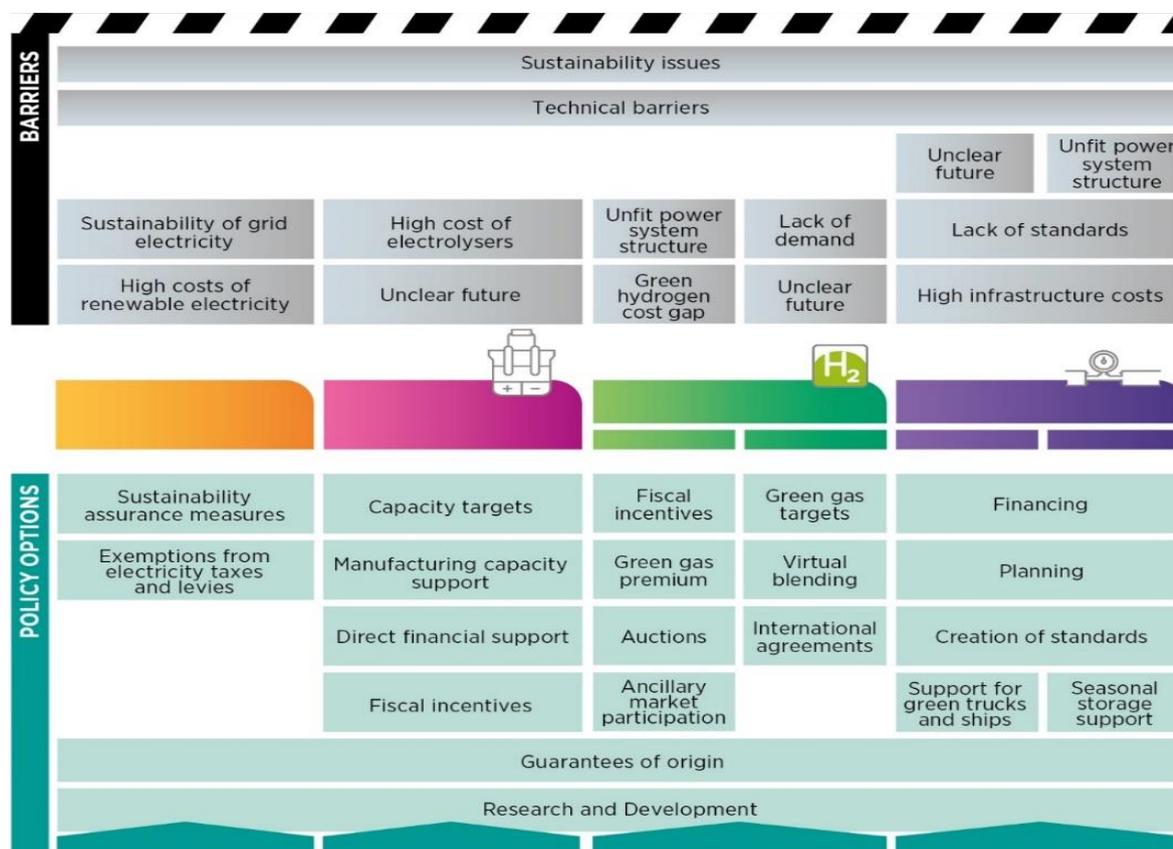
<sup>35</sup> Available [here](#).

<sup>36</sup> Available [here](#).

<sup>37</sup> Available [here](#).

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**<sup>38</sup> event to discuss key opportunities and challenges in scaling up green hydrogen, focusing on policies for the supply side of green hydrogen.

Figure 14: Barriers and policy options for the supply of green hydrogen



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

IRENA’s Coalition for Action has prepared a report entitled **Decarbonising end-use sectors: Practical insights on green hydrogen**<sup>39</sup> 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 15).

Figure 15: Policy measures to accelerate green hydrogen production

<sup>38</sup> Available [here](#).

<sup>39</sup> Available [here](#).



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

On 13 October 2021, IRENA and the European Union organized the **Dialogue Between EU and North African States on a Regulatory Framework to Develop Green Hydrogen Supply, Demand and Trade**<sup>40</sup> - the first event in a series of workshops to enhance the dialogue over the challenges and policy measures needed to develop green hydrogen in the MENA region. The first workshop covered the North African context, while a second one will cover the Gulf Cooperation Council (GCC) countries. The workshops are part of the Strategic Partnership for the Implementation of the Paris Agreement (SPIPA) that facilitates exchange on climate policy option and good practice between the EU and non-European major economies and supports the European Union's efforts on climate diplomacy. The workshops fit within the scope of the IRENA Collaborative Framework on Green Hydrogen (CFGH), co-chaired by the European Commission and Morocco.

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**<sup>41</sup> 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-December, fifteen webinars had taken place fortnightly, with the participation of more than 3,200 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**<sup>42</sup> to present the challenges and barriers, the lessons learnt,

<sup>40</sup> More information available [here](#).

<sup>41</sup> Available [here](#).

<sup>42</sup> Available [here](#).

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**<sup>43</sup> that will be an important input to the upcoming **Solar PV Energy: A Gender Perspective** report.

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**<sup>44</sup> 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.

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**<sup>45</sup> 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**<sup>46</sup> conference gathered experts from various backgrounds, political leaders, industry and civil society organisations to discuss the future of the EU energy infrastructure.

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<sup>43</sup> The Survey is now closed.

<sup>44</sup> More information available [here](#).

<sup>45</sup> Available [here](#).

<sup>46</sup> More information available [here](#).

Under the implementation of the **Africa Clean Energy Corridor, Trainings on Auctions Design for Eastern & South African countries** took place on 22-23 November 2021. The objective was 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 went through the design elements and the trade-offs that need to be considered while making each choice. 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**<sup>47</sup> will continue to be coordinated 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**<sup>48</sup> 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**.<sup>49</sup> This regional series ran from February to June 2021 and featured presentations from

### 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 know

Simultaneously, IRENA  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.

governmental energy planning experts from planning agencies and offices from 14 countries.

Energy scenarios produced are varied, leading to an abundance of insights and technology combinations. Comparison studies have emerged to help understand the convergences and divergences between various scenarios, providing trade-offs for decision makers and identifying key insights for policy makers. In

<sup>47</sup> Available [here](#).

<sup>48</sup> More information available [here](#).

<sup>49</sup> Available [here](#).

cooperation with the European Commission's Joint Research Centre (JRC), IRENA produced the **Benchmarking Scenario Comparisons: Key Indicators for the Clean Energy Transition**<sup>50</sup> report that synthesises experts' views on how to improve scenario comparison studies to gain insights for the clean energy transition.

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**<sup>51</sup> 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.

IRENA's **Sector Coupling in Facilitating Integration of Variable Renewable Energy in Cities**<sup>52</sup> report highlights the importance of sector coupling as a key source of flexibility that cities can explore to stabilise power grid operations, when integrating high shares of variable renewable energy sources, and presents a range of sector coupling opportunities. The report also introduces a modelling tool to provide quantitative evaluation of sector coupling opportunities in a given context, with a focus on the buildings sector. The tool was applied in two pilot studies for districts in China and Costa Rica.

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**<sup>53</sup> 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 16). To accelerate the energy transition, the **Renewable Energy Policies for Cities: Power Sector**<sup>54</sup> 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.

Moreover, the operation of buildings accounted for 30% of world energy demand in 2019, while emissions from building operations ran to 10 Gt of CO<sub>2</sub>, the highest ever, and were equal to 28% of total global energy-related CO<sub>2</sub> 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**<sup>55</sup> 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 CO<sub>2</sub> emissions increased by 29% between 2000 and 2016, action to decarbonise it should be a priority. The **Renewable Energy Policies for Cities: Transport**<sup>56</sup> brief highlights best practices in sustainable urban transport and showcases city actions that accelerate the creation of sustainable transport systems.

**Figure 16: Roles of municipal governments in the energy transition**

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<sup>50</sup> Available [here](#).

<sup>51</sup> Available [here](#).

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<sup>55</sup> Available [here](#).

<sup>56</sup> 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**<sup>57</sup> 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**<sup>58</sup>, 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.



<sup>57</sup> Available [here](#).

<sup>58</sup> Available [here](#).

### 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 supports the acceleration of renewable energy deployment through the **Climate Investment Platform (CIP)**<sup>59</sup> with a unique service offering available to Members. The Platform acts as a bridge between renewable energy projects and actors seeking to contribute to renewable energy project development through finance, technical assistance, and research, amongst others. 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 financing. Projects are then introduced to financial partners by presenting relevant PIDs. A project and a financier are considered matched once IRENA's introduction leads to both parties agreeing to exploring the option of providing funding to the project.

The first batch of CIP projects are at the critical stage, and IRENA will be informed of the outcome of its matchmaking activities once the direct discussions are concluded between the parties, or when either party requests additional facilitation support from IRENA. As of December 2021, CIP has around 320<sup>60</sup> registered partners, of which 68 are willing to provide financial support to projects and 74 are willing to provide technical assistance). Partners include multilateral organisations, and international development organisations, international financing institutes etc. Currently, 286 projects have been sourced on the CIP (Figure 17), while 120 projects are eligible for support. In addition, 26 PIDs are in the final stages of preparation, and 15 PIDs have been introduced to financial partners with a 53% match rate.

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 PIDs that verify, summarise, and detail all the relevant information necessary to attract the interest of financiers to the project in question.

#### Figure 17: Climate Investment Platform

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<sup>59</sup> 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).

<sup>60</sup> A reclassification of the partner database impacted the previously reported numbers.



During the Singapore International Energy Week (SIEW), IRENA and Singapore co-hosted the **High-Level Forum**<sup>61</sup> on 26 October 2021, with the theme “Investing in an Inclusive and Just Clean Energy Transition”. The forum brought together international energy leaders to discuss and exchange views on mobilising investments to support and shape an inclusive energy transition. The forum focused on these key areas: Mobilising Investment to Support the Energy Transition; Shaping an Inclusive and Just Energy Transition; and the Role of Technology in Driving the Energy Transition.

Cost-competitive decentralised renewable energy solutions, with their modularity and adaptability, provide a unique opportunity to reconcile energy, socio-economic development and climate objectives in the Hindu Kush Himalayas region. To this end, IRENA and the International Centre for Integrated Mountain Development (ICIMOD) have been collaborating over the years to assess selected economic value chains in the region from an energy perspective, to identify the gaps and potential actions for advancing renewable energy solutions and understand their techno-economic feasibility. A key priority identified through past assessments is to strengthen the capacity of value chain actors and enterprises to evaluate investment opportunities in renewables, prepare bankable project proposals, and access available financing products. To this end, IRENA and ICIMOD jointly organised a workshop on **Enhancing Decentralised Renewable Energy in the Hindukush and Himalaya Regions**<sup>62</sup> on 24-25 November 2021.

### International cooperation and partnerships

<sup>61</sup> More information available [here](#).

<sup>62</sup> More information available [here](#).

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**<sup>63</sup> 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.



IRENA  
11  
Assembly

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**<sup>64</sup> 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**<sup>65</sup> 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**.<sup>66</sup> Lastly, the **Ministerial Plenary Meeting on Driving the Agenda for Energising Healthcare**<sup>67</sup> 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**<sup>68</sup> 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**<sup>69</sup> 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**<sup>70</sup>, 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.

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<sup>63</sup> Available [here](#).

<sup>64</sup> Available [here](#).

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<sup>68</sup> Available [here](#).

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<sup>70</sup> Available [here](#).

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## Collaborative Frameworks

IRENA's **Collaborative Frameworks**<sup>71</sup> (Figure 18) 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.

The **Collaborative Framework on Green Hydrogen** held a meeting on 21 October 2021<sup>72</sup> to present the **Enabling Measures Roadmap for Green Hydrogen**<sup>73</sup>, produced in partnership with the World Economic Forum under their "Accelerating Green Hydrogen Initiative". Developed with private industry, the Roadmap presents the top ten enabling measures necessary to scale up green hydrogen production and infrastructure, develop common global principles for standardisation and certification, stimulate demand from the hard-to-abate sectors and maintain industrial competitiveness, whilst creating export opportunities. The Roadmap was officially released during the Energy Day on 4 November, in the margins of COP26.

The second meeting of the **Collaborative Framework on Just and Inclusive Energy Transition** took place on 21 October 2021<sup>74</sup>. The meeting was kicked-off by the high-level launch of a special edition of the IRENA **Renewable Energy and Jobs – Annual Review**, developed in cooperation with ILO and that set the scene for discussions. Following the launch, IRENA Members discussed the proposed focus areas and next steps for the Framework and agreed to focus on the issues of jobs and skills for a just energy transitions and livelihoods for developing countries.

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. As a part of the pilot phase of implementation of the framework, a second technical meeting of the Collaborative Framework was organised on 20 October 2021<sup>75</sup>. The meeting focused on the work stream on Energy System Operation, analysing innovative ways of operating the electricity systems as well as solutions and strategies, allowing the integration of higher shares of variable renewable power generation.

At the **Collaborative Framework on the Geopolitics of Energy Transformation (CF-GET)** on 30 September 2021<sup>76</sup>, Members discussed the preliminary findings of the report and reflected on the ongoing work on energy-climate-security nexus, agreeing that this remains a high-priority topic for the coming years. Members also proposed other topics of focus such as clean energy supply chains, critical minerals, and interdependencies of electricity interconnections and grids. At the next meeting, scheduled for spring 2022, the Co-facilitators will present a proposal for the 2022 work plan. has focused work on the geopolitics of hydrogen economy and the climate and security nexus. IRENA's report on Geopolitics of Hydrogen Economy, delving into the geopolitical consequences of hydrogen deployment, the rise of hydrogen economies and presenting policy options, will be officially presented at the twelfth session of the IRENA Assembly.

The third meeting of the **Collaborative Framework on Hydropower** took place on 22 September 2021, IRENA organised its first High-Level Meeting of the Framework,<sup>77</sup> 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

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<sup>71</sup> More information available [here](#).

<sup>72</sup> More information available [here](#).

<sup>73</sup> More information available [here](#).

<sup>74</sup> More information available [here](#).

<sup>75</sup> More information available [here](#).

<sup>76</sup> More information available [here](#).

<sup>77</sup> More information available [here](#).

to engage in deliberations on the San José Declaration as well as other matters under discussion at the Congress.

Figure 18: List of Collaborative Frameworks and their respective Co-facilitators

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

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

# 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 2 0 2 1



In the margins of the United Nations (UN) General Assembly, the UN Secretary-General convened the **High-level Dialogue on Energy**<sup>78</sup> at summit level on 24 September 2021. The Dialogue focused on the energy-related goals and targets of the 2030 Agenda for Sustainable Development. The Dialogue resulted in two main outcomes First, a **Global Roadmap**<sup>79</sup> - a non-negotiated summary, with policy recommendations and milestones to accelerate SDG 7. Second, **Energy Compacts**<sup>80</sup>, i.e. voluntary commitments from Member States and other stakeholders, with key outcomes, milestones and implementation timelines with clear tracking frameworks towards attaining the Goal. Multi-stakeholder action-focused events also took place on 22-23 September, to highlight Energy Compacts and partnerships by all stakeholders.



HLD on  
Energy

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**,<sup>81</sup> containing recommendations on the issue. IRENA also provided substantive input to the other four reports<sup>82</sup> (Figure 19). The report's policy recommendations fed into the Global Roadmap.

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**<sup>83</sup>. 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's Energy Compacts, with several countries and partners, can be found in Figure 20.

<sup>78</sup> United Nations General Assembly resolution 74/225. More information on the Dialogue available [here](#).

<sup>79</sup> Available [here](#).

<sup>80</sup> Available [here](#).

<sup>81</sup> Available [here](#).

<sup>82</sup> Available [here](#).

<sup>83</sup> More information available [here](#).

Figure 19: Thematic Reports for the High-level Dialogue on Energy



Figure 20: IRENA Energy Compacts 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**<sup>84</sup> 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.



**Ministerial-level Thematic Forums**<sup>85</sup>, 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**<sup>86</sup> on 21 June 2021, on **Innovative Strategies to Deliver the Deep Decarbonisation of Industrial Processes**<sup>87</sup> on 22 June

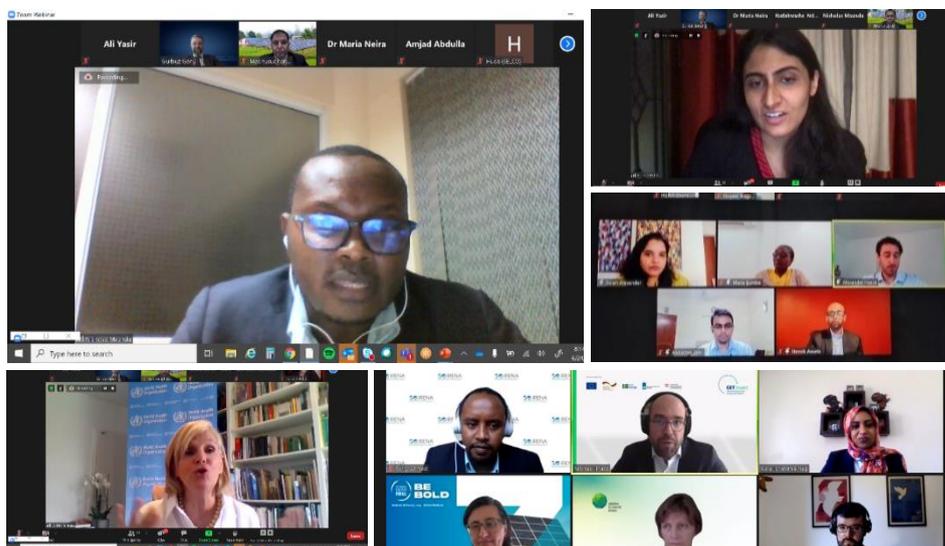
<sup>84</sup> More information available [here](#).

<sup>85</sup> More information available [here](#).

<sup>86</sup> In collaboration with UNDP and the SDG Geneva Summit 2021. More information available [here](#).

<sup>87</sup> More information available [here](#).

2021, on **Renewable Energy Transition in Africa**<sup>88</sup> on 23 June 2021, on **Climate Action Pathway for Energy**<sup>89</sup> and on **Decentralized Renewable Energy Solutions for Sustainable Livelihoods**<sup>90</sup> on 24 June 2021, as well as on **Unlocking Renewable Energy Investments through Project Facilitation**<sup>91</sup> on 25 June 2021.



IRENA co-led the preparation and contributed to several **SDG7 Policy Briefs**<sup>92</sup> 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.

On the sidelines of the 2021 HLPF, IRENA organised an event on **Renewable Energy as a Key Element of Post-COVID Recovery**<sup>93</sup> 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 39<sup>th</sup> ASEAN Senior Officials Meeting on Energy (SOME) on 14-17 June 2021 and participated in the **3<sup>rd</sup> 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 4<sup>th</sup> ASEAN Ministers on Energy Meeting (AMEM) – IRENA Dialogue.

In the margins of the **Regional Energy Congress of Central America (COREN 2021)**<sup>94</sup>, 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.

<sup>88</sup> 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](#).

<sup>89</sup> In collaboration with REN21. More information available [here](#).

<sup>90</sup> In collaboration with SELCO Foundation. More information available [here](#).

<sup>91</sup> In collaboration with CIP partners. More information available [here](#).

<sup>92</sup> Available [here](#).

<sup>93</sup> More information available [here](#).

<sup>94</sup> More information available [here](#).

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**<sup>95</sup> 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 about 72 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 3.2 billion tonnes of carbon dioxide equivalent per year (Figure 21). 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.<sup>96</sup>

<sup>95</sup> Available [here](#).

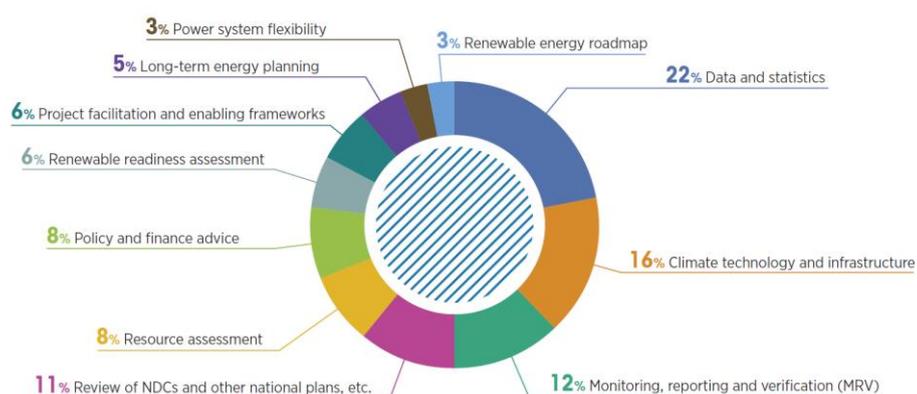
<sup>96</sup> This list spans submissions made from November 2020 to 1 September 2021.

Figure 21: IRENA's NDC Engagement



IRENA's **Energy Transition Support to Strengthen Climate Action**<sup>97</sup> report highlights the work done by the Agency during the NDCs review process, the support offered through its different work packages as well as facilitating Parties and countries with project developments, financing and investment (Figure 22). The report provides an analysis of the work provided by regions, while it also includes an Annex that lists support and NDC commitments for individual countries.

Figure 22: Distribution of IRENA work packages (%)



Source: IRENA, *Energy Transition Support to Strengthen Climate Action*, 2021

<sup>97</sup> Available [here](#).

In the framework of the Africa Climate Week, IRENA organised a side event on **Renewable Energy in Nationally Determined Contributions (NDCs) Driving Climate Action towards Low Carbon and Inclusive Development in Africa**<sup>98</sup>. The event discussed how NDCs are driving energy transformation and inclusive development as well as showcase the existing renewable energy technology and innovation options that African governments have to help implement mitigation and adaptation measures.

After a two-year hiatus due to the COVID-19 pandemic, **COP26** yielded important results, while at the same time ensuring that even more ambitious action will be needed to hold global average temperatures at 1.5°C. COP is an ecosystem made up of formal negotiations amongst Parties, thematic events hosted by the COP Presidency and the High-Level Climate Champions, official side events organized under the auspices of the UNFCCC, and events held in the pavilions of governments, business and civil society. As a result, the success of a COP can be measured not only in the outcome of the official negotiations, but as the sum of raised ambitions amongst participants.

As energy was a key focus of the UK COP26 Presidency, IRENA's presence was significant; in addition to a full schedule of bilateral meetings with the Agency's Members and other partners, the Agency organised and participated in many events on energy transitions. IRENA's objective at COP was to showcase evidence of how the global energy transition is progressing and where momentum is increasing, but also where more work urgently needs to be done.

During the COP Energy Day on 4 November, the Agency was involved in many events that focused on the need to accelerate energy transitions around the world to meet climate and development goals. As focal point for the energy thematic group within the Marrakech Partnership, IRENA was the lead agency responsible convening this year's Energy Action Event: **Disrupting the Status Quo: Accelerating the Global Energy Transition for a 1.5°C Future**<sup>99</sup>. During the event, IRENA, together with the World Economic Forum also launched the **Enabling Measures Roadmap for Green Hydrogen**<sup>100</sup>, which aims to empower policymakers to prioritise policies for green hydrogen and accelerate its deployment at the international level in pursuit of a net zero energy system aligned with a climate-safe 1.5°C scenario.



<sup>98</sup> More information available [here](#).

<sup>99</sup> More information available [here](#).

<sup>100</sup> More information available [here](#).

The Agency also showcased how its work contributes to accelerated energy transitions as well as the achievement of climate and development goals, particularly through NDCs. During the high-level event **Driving NDC Implementation Through Collaborative Action**<sup>101</sup>, organised by the NDC Partnership on 9 November 2021, IRENA highlighted its work in supporting the enhancement and implementation of energy components of countries' NDCs. In the event, **Raising Climate Ambition in The Gambia – Best Practices and Lessons Learned**<sup>102</sup>, organised by IRENA, partners showcased the work and collaborative efforts undertaken to enhance The Gambia's NDC, which was deemed "1.5° compatible."

Further, IRENA, together with the United Arab Emirates announced the **Energy Transition Accelerator Financing (ETAF) Platform**<sup>103</sup> on 3 November 2021. The ETAF Platform will mobilise financing towards 1.5 gigawatts of renewable energy projects in developing countries, with the Abu Dhabi Fund for Development (ADFD) joining as the Platform's first partner and providing an anchor contribution of 400 million USD. The partnership builds on the long-standing cooperation between IRENA and ADFD, whose previous joint facility provided 350 million USD towards funding 26 renewable energy projects in developing countries.



In the lead up to **COP26**, IRENA engaged with partners in the climate space to highlight the importance and urgent need of energy transitions. IRENA had supported ongoing climate efforts by working closely with the UK as the COP26 Presidency and Italy as the COP26 co-host. As such, the Agency was a member of the **COP26 Energy Transition Council**<sup>104</sup>, 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 supported the Council's target countries in accelerating their respective energy transitions. Under the Council's umbrella, the Agency also participated in other initiatives, such as the Green Grids Initiative.

<sup>101</sup> More information available [here](#).

<sup>102</sup> More information available [here](#).

<sup>103</sup> More information available [here](#).

<sup>104</sup> More information available [here](#).

IRENA, in cooperation with the UK COP 26 Presidency and other partners, 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**<sup>105</sup> 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**<sup>106</sup> 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**<sup>107</sup> on 27 April 2021, while on 6 April 2021, they organised a webinar on **Advancing the Energy Transition in Africa through Nationally Determined Contributions**<sup>108</sup> 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**<sup>109</sup> on 23 February 2021.

The Energy Segment of the **Latin America and Caribbean (LAC) Implementation Lab**<sup>110</sup>, 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**<sup>111</sup>, 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**<sup>112</sup> 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 energy<sup>113</sup> within the **Marrakech Partnership for Global Climate Action**<sup>114</sup>. The Partnership supports implementation of the Paris Agreement by enabling

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<sup>105</sup> More information available [here](#).

<sup>106</sup> More information available [here](#).

<sup>107</sup> More information available [here](#).

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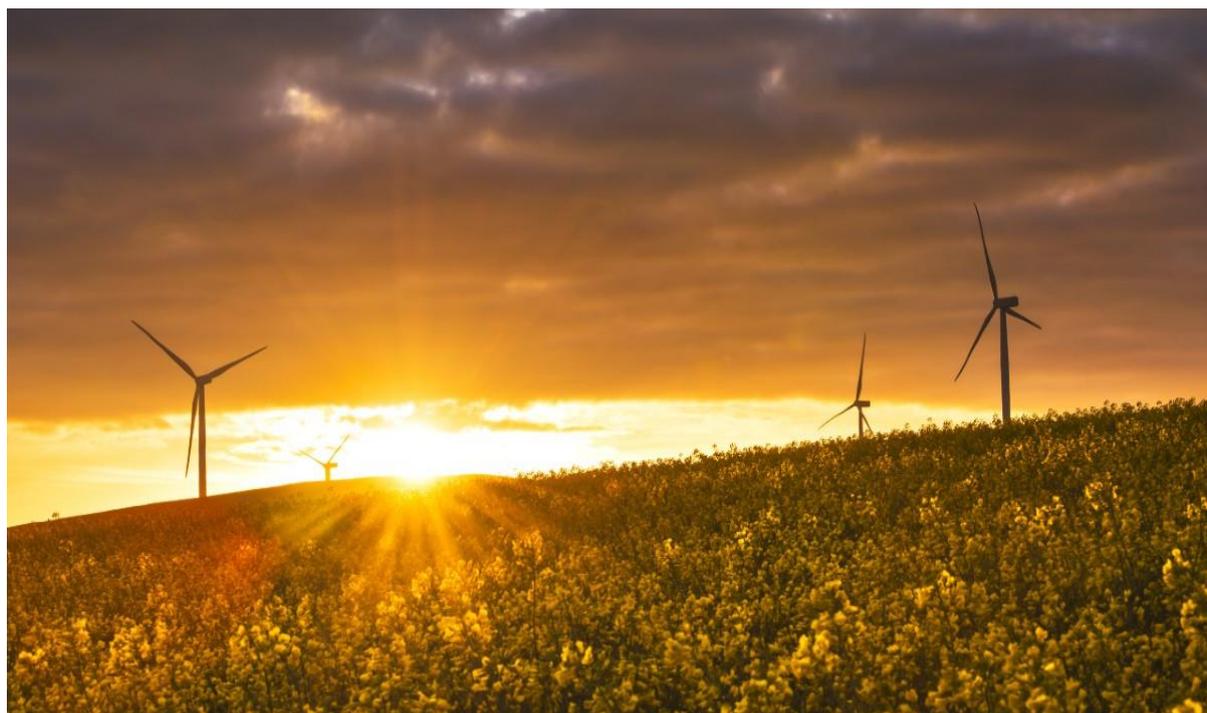
<sup>112</sup> More information available [here](#).

<sup>113</sup> Other members of the energy group include: The Climate Group, International Chamber of Commerce, International Energy Agency, REN21, SEforAll, UNEP, and WBCSD.

<sup>114</sup> Other thematic groups include: Human Settlements; Industry; Land Use; Oceans and Coastal Zones; Transport; Water; Finance; and Resilience.

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**.<sup>115</sup> 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 held in 2021 showcases 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**<sup>116</sup> 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**<sup>117</sup> on 13 July 2021 to showcase a combination of technologies and innovative solutions to decarbonise the energy system, achieve a 1.5°C Pathway and positively impact the living standards of young people. The latest meeting of the series took place on 7 December under the theme **Energy Transition to Boost the Fight Against Climate Change: Setting the Future Agenda**<sup>118</sup> with the goal to elaborate on the lessons learned from Pre-COP and COP26 and the role of youth in global climate actions.



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<sup>115</sup> Available [here](#).

<sup>116</sup> More information available [here](#).

<sup>117</sup> More information available [here](#).

<sup>118</sup> More information available [here](#).

## Communications and Outreach – Amplifying Impact

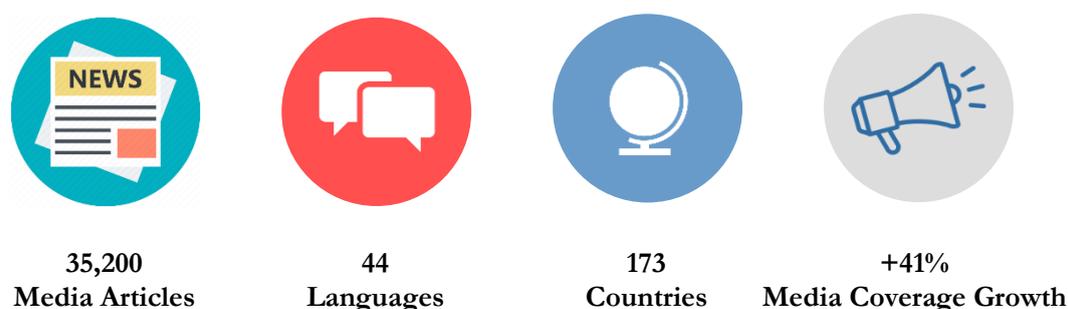
IRENA continues to strengthen its communication and outreach activities. Since the beginning of 2021, IRENA has been referenced in over 36,200 media articles in 44 languages across 173 countries. Overall, the Agency’s global media coverage continues to grow with an increase of more than 41.4% in comparison to the same period last year (Figure 23). Particularly, IRENA mentions in top-tier outlets grew by more than 16.7% while ultra-top-tier media (Reuters, Financial Times, WSJ, CNN, etc.) grew by 39% 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 2,107 articles in 90 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 106,000 views and led to 35,000 report downloads, preview and full report combined (Figure 24). 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 666 articles in 52 countries since its launch. Similar global outreach for the launch of the Agency’s *Renewable Capacity Statistics 2021* report resulted in 644 articles in 65 countries since its launch. Renewable Capacity Statistics 2021 and Renewable Power Generation Costs

reports press releases attracted the highest number of readers, with 76,000 and over 67,000 views respectively. In addition, both the Capacity Statistics 2021 and Power Generation Costs 2020 reports are in the top five most downloaded publications of 2021, with 27,000 and 17,000 downloads respectively since publication.

**Figure 23: IRENA’s Social Media Presence, 2021**



The 11<sup>th</sup> Assembly Blog hosting the event’s live streaming remained in top 5 most read articles with over 22,000 views. The number of visitors to the IRENA website grew significantly. Over 1.6 million users browsed over 7 million pages which represents a 44% increase in the number of users and a 50% 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 111,800 followers, up from 94,000 as of January 2021 (plus 18.9%). Today, IRENA has 473,602 followers on Facebook up from 471,759 (plus 0.4%) and 120,134 followers on LinkedIn up from 86,911 as of January 2021 (plus 38%).

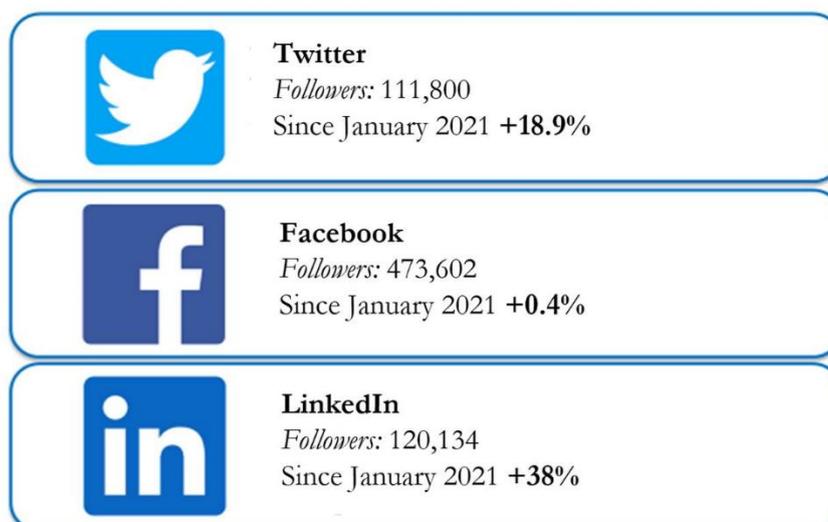
Figure 24: WETO's Social Media Presence, 2021



IRENA In the News



Figure 25: Number of social media followers



Source: IRENA internal records

## 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.

IRENA's **Renewable Energy Roadmaps - Central America** report will provide strategies for the region's energy transition, based on individual country analysis (Belize, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua and Panama) and scenario analysis for 2030 and 2050. The report will demonstrate the region's potential to further advance in its energy transition by 2050, mainly in four areas: renewable electricity generation, electricity grid integration, electrification of transport and modern cooking technologies.

IRENA's **Innovation** flagship report will provide guidance to policy makers to formulate smart electrification strategies for end-use sectors. The analysis is based on emerging innovations, initiatives and pilot projects that enable smart electrification, and it is conducted with external expert engagement. In 2021, IRENA hosted four workshops, with experts and stakeholders, to discuss innovations that will feed into IRENA's analysis. IRENA also conducted bilateral interviews and established a network of more than 100 experts to support the work.

IRENA is also developing **Guidelines for Policy Makers on Geothermal Heating utilisation in the Agri-food Sector** on the options to foster the adoption and scale-up of geothermal direct use applications. The Guidelines are being developed with the support of over 30 practitioners on geothermal direct use, drawn from the constituency of the Global Geothermal Alliance and other organisations working in the energy-food nexus.

## Save the Date



## 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)

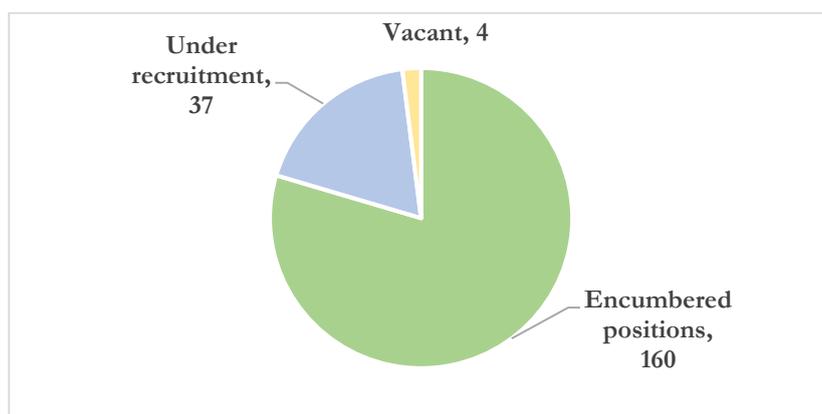
ICT continues to serve as a strategic enabler and tool for the Agency in the implementation of its Work Programme by providing state-of-the-art IT services and solutions to IRENA business units. During the biennium, ICT has particularly contributed to ensure continuity of services in response to the 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 energy transition, through the maintenance and enhancement of IRENA Website, platforms and tools; and
- a pillar of the organisational resilience and compliance, through the implementation of the cybersecurity management framework and the business continuity plan.

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, 87 vacancies (core and project, including interns and consultants) were announced and over 12,300 applications received. Out of 93 core posts, 89 are filled or under recruitment (74 filled and 15 under active recruitment) and 4 are vacant. The 74 staff in core posts are from 44 nationalities out of which 46% are women and 54% are men. There are also 108 project posts that are currently filled or under recruitment (86 filled and 22 under active recruitment) (Figure 26). Combined core and project posts amount to a total of 160 staff, who come from 69 nationalities (Figure 26), 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 26: Staff Status (as of 28 November 2021)



Nationalities at  
IRENA



Staff Gender  
Balance



Senior Team  
Gender Balance

Table 1: Filled/under recruitment core and project posts by level, as of 28 November 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	55	55
Sub-total Professional and above	159	160
General Services	38	41
Total	197	201

Table 2: Loaned Personnel as of 28 November 2021

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

Table 3: Seconded Officers (Voluntary Contributions) as of 28 November 2021

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

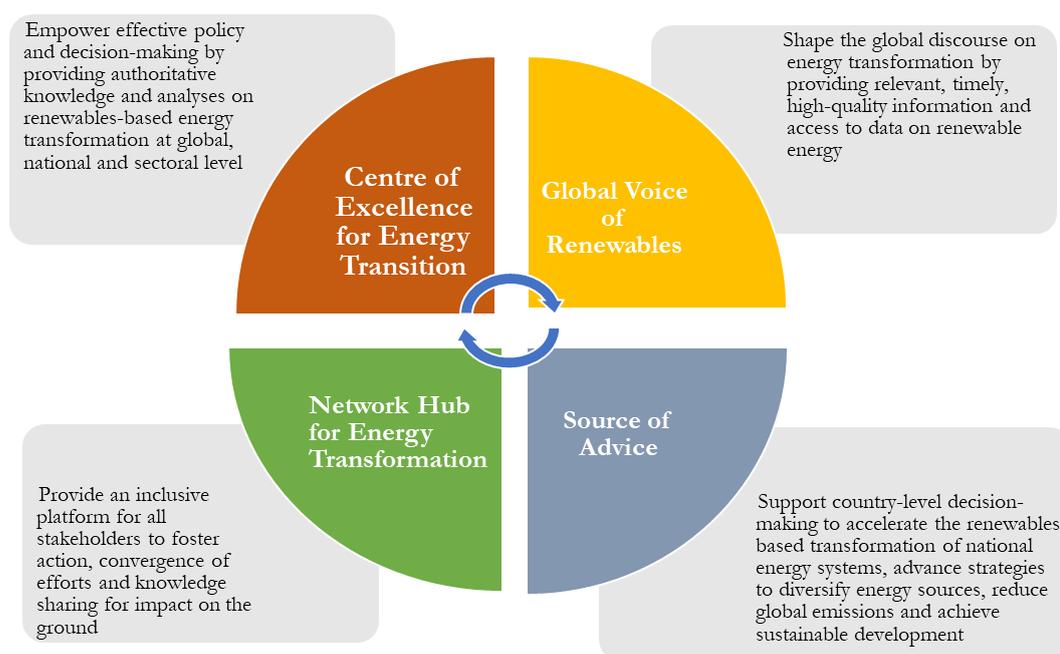


## Implementation Progress Overview

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 (Figure 28). Of these total outputs, 89% are complete and 11% in progress, totalling 100% implementation of the Work Programme.

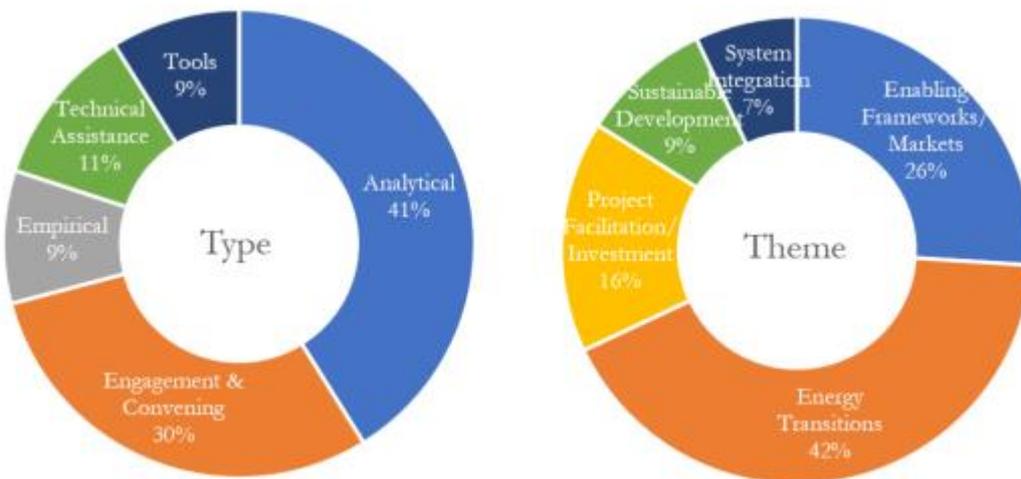
**Figure 28: IRENA's Strategic Objectives**



For the purpose of this analysis, IRENA’s outward-facing activities have been grouped according to the following themes (Figure 29):

- 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.

Figure 29: IRENA outward-facing activities by activity type and theme



## Resource overview

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

## Biennial budget overview

**Table 4: 2020-2021 Biennium Budget Utilisation by funding source (in USD Thousands)**

	2020-2021 Biennium Budget	Utilisation as of 28 Nov 2021	
		Commitment and Expenses	Proportion of 2020- 2021 Biennium Budget
<b>Assessed Contributions (Core Budget)</b>	<b>44,461</b>	<b>41,997</b>	<b>94%</b>
<b>Core Non-Assessed UAE</b>			
UAE Support	5,000	4,623	92%
Governing Body Meetings	3,200	2,528	79%
IT Infrastructure Support	920	580	63%
<i>Subtotal</i>	<b>9,120</b>	<b>7,731</b>	<b>85%</b>
<b>Core Non-Assessed Germany</b>			
Innovation and Technology Centre	10,890	9,491	87%
<i>Subtotal</i>	<b>10,890</b>	<b>9,491</b>	<b>87%</b>
<b>Core Non-Assessed Other Contributions</b>			
Core Non-Assessed Other	1,704	1,272	75%
<i>Subtotal</i>	<b>1,704</b>	<b>1,272</b>	<b>75%</b>
<b>Total Core Non-Assessed</b>	<b>21,714</b>	<b>18,494</b>	<b>85%</b>
<b>Grand Total</b>	<b>66,175</b>	<b>60,491</b>	<b>91%</b>

**Core Non-Assessed Contributions***as of 28 November 2021, in USD***Budgeted Voluntary Contributions**

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

**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	3,309,647	2,957,911
Italy *	567,634	567,634
Japan	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
Luxembourg	17,202	-
NDC Partnership Climate Action Enhancement Package (CAEP)	1,364,684	1,113,945
Republic of Korea	182,258	182,258
World Bank (IBRD)	46,876	46,876
<b>Total</b>	<b>7,854,977</b>	<b>7,093,898</b>

\*Note: Italy provided additional contribution of EUR 91,800, agreement for which was concluded after 28 November 2021.

***Multi-Year Voluntary Contribution***

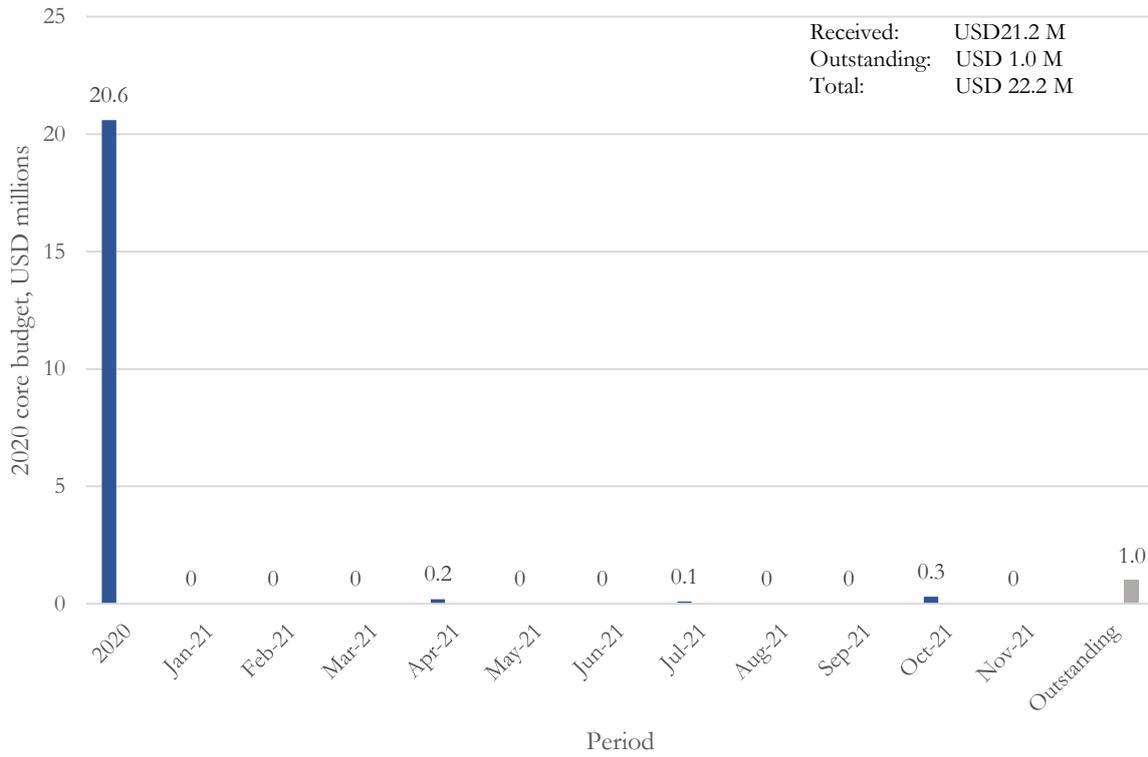
<b>Donor/Project</b>	<b>Multi-Year Commitments</b>	<b>Received prior to 2020</b>	<b>Received during 2020-21</b>
Government of the Walloon Region, Belgium	2,384,363	-	2,384,363
Denmark*	13,738,852	6,355,549	3,607,885
Germany (International Climate Initiative)*	6,796,311	3,459,818	2,233,746
Norway	4,564,237	-	4,564,237
Canada	393,082	-	-
United Nations Development Programme (UNDP)	2,200,000	-	1,309,985
<b>Total</b>	<b>30,076,846</b>	<b>9,815,367</b>	<b>14,100,216</b>

***Fund for Developing Countries Representatives***

<b>Donor</b>	<b>2020-2021</b>	
	<b>Committed</b>	<b>Received</b>
Flanders Region of Belgium	46,131	17,461
Walloon Region of Belgium	14,095	14,095
United Arab Emirates (UAE)	100,000	100,000
<b>Total</b>	<b>160,225</b>	<b>131,556</b>

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 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's governing body meetings, including: Assembly, Council and Committees.

Figure 30: Received and outstanding assessed contributions for 2020 core budget (in USD millions, as of 28 November 2021)



Received: USD 21.2 M  
 Outstanding: USD 1.0 M  
 Total: USD 22.2 M

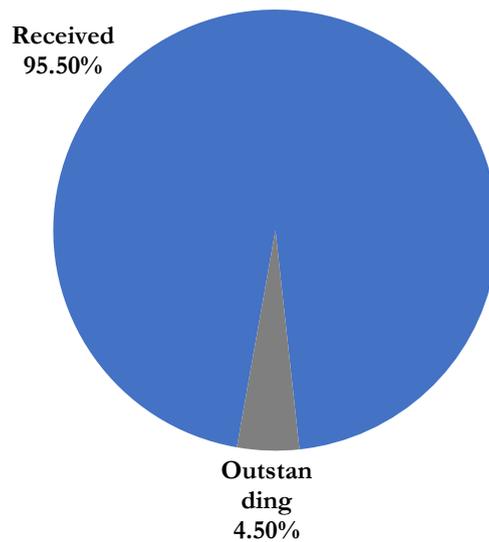


Figure 31: Received and outstanding assessed contributions for 2021 core budget (in USD millions, as of 28 November 2021)

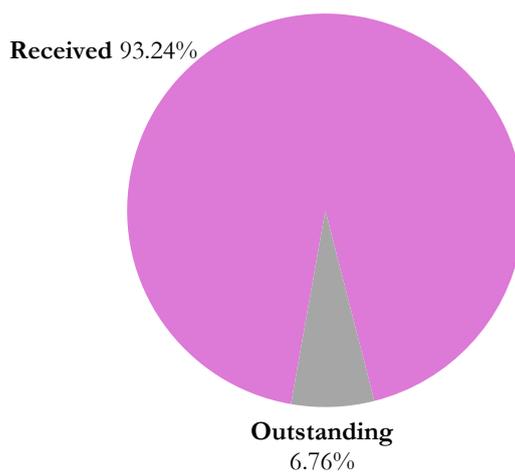
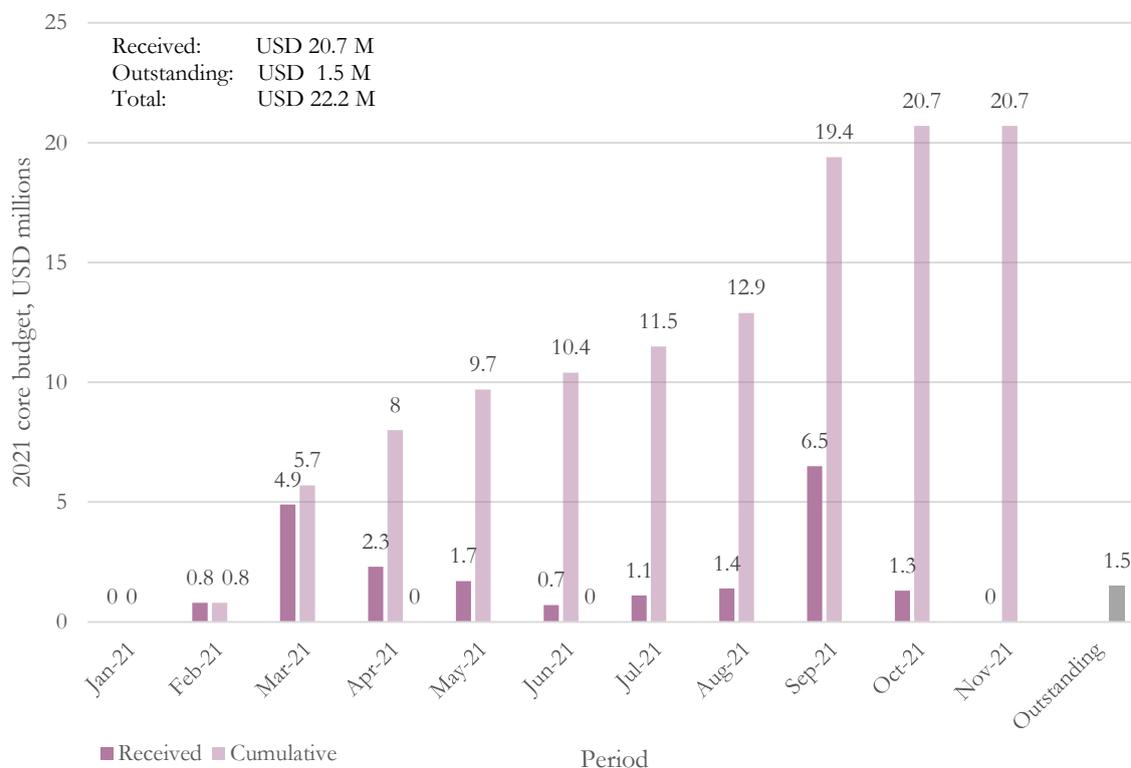


Figure 32: Number of Members with received and outstanding contributions to the 2020 core budget (28 November 2021)

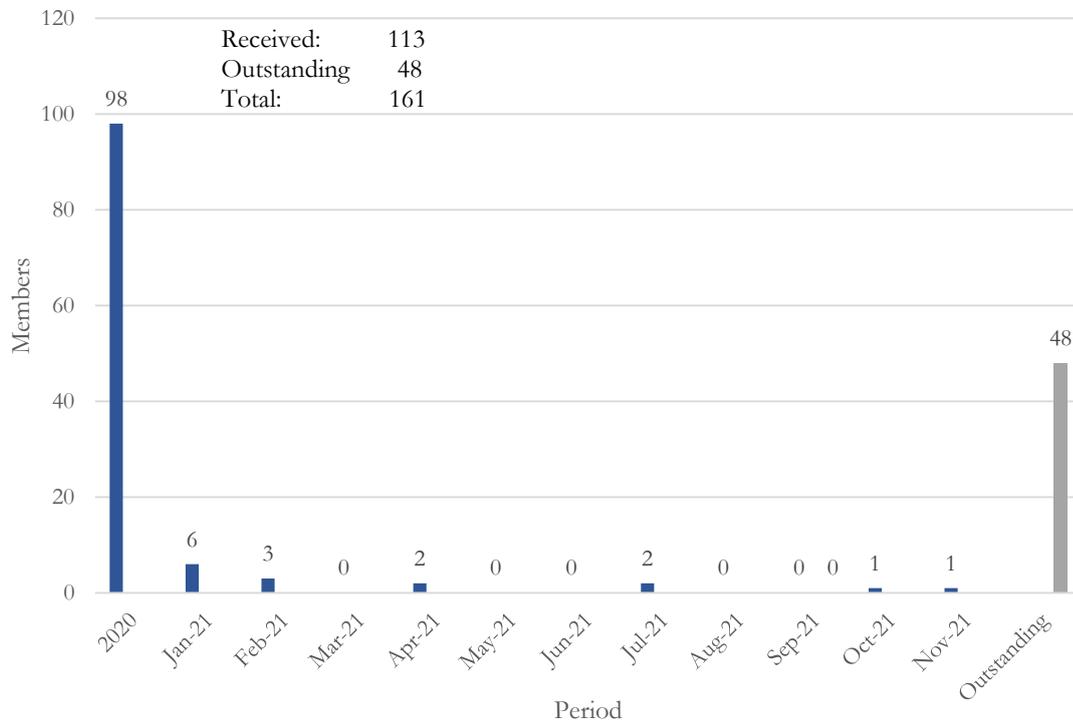


Figure 33: Number of Members with received and outstanding contributions to the 2021 core budget (28 November 2021)



## 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

**Canada**

**Ministry of Natural Resources:** Global Initiative for Transitioning Remote Communities to Renewable Energy

**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

**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 /

Educational Programme for Youth Climate Leaders

**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



### Luxembourg

**Ministry of Energy and Spatial Planning:** Support for IRENA



### 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

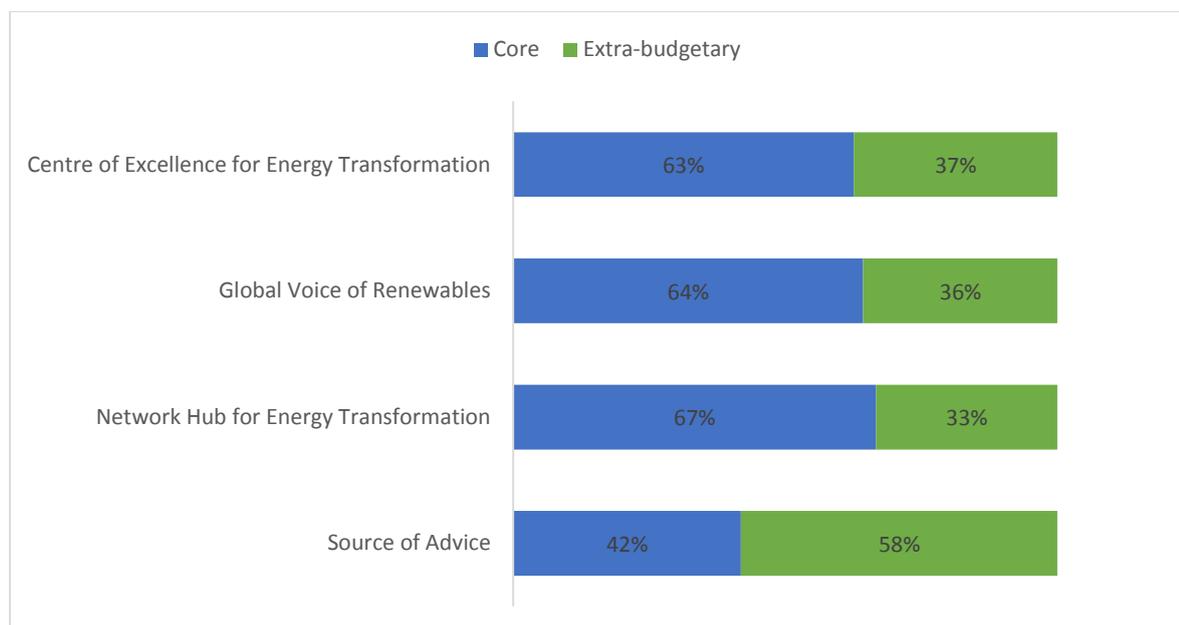


### United Nations Development Programme (UNDP)

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 21,325,669 through voluntary contributions, with an additional 3,678,833[1] to be received before year end. Total for the biennium is thus USD 25,004,532. 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 30).

Figure 34: 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	Completed	<p>“Renewable Capacity Statistics” (March 2020) (<a href="#">Click here</a>) / (March 2021) (<a href="#">Click here</a>).</p> <p>“Renewable Energy Statistics” (July 2020) (<a href="#">Click here</a>) / (August 2021) (<a href="#">Click here</a>)</p> <p>IRENASTAT online RE statistics database (Oct. 2021) (<a href="#">Click here</a>)</p> <p>“Off-grid renewable energy statistics” (December 2020) (<a href="#">Click here</a>)</p> <p>“Energy Profiles” (2020, 2021 editions) (<a href="#">Click here</a>)</p> <p>Offgrid Renewable Energy Statistics online conference (February 2021) (<a href="#">Click here</a>)</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). (<a href="#">Click here</a>)</p> <p>“Renewable energy and jobs – Annual Review 2021”(Oct. 2021) (<a href="#">Click here</a>).</p>
Annual update on power generation costs	Completed	<p>“Renewable Power Generation Costs in 2019”(June 2020). (<a href="#">Click here</a>)</p> <p>“Renewable Power Generation Costs in 2020” (June 2021). (<a href="#">Click here</a>)</p>
Annual update on patents and standards	Completed	<p>Annual update of the International Standards and Patents in Renewable Energy. (<a href="#">Click here to access the INSPIRE platform</a>)</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” (<a href="#">Click here</a>)</p>
Global Atlas data updates on renewable potentials	Completed	<p>Revamped IRENA Global Atlas for Renewable Energy platform – 4.0 (<a href="#">Click here to access the platform</a>) and the launch webinar (May 2021) (<a href="#">Click here to access the webinar</a>).</p> <p>Annual update of the renewable energy resource datasets from dataproviders (member states, international institutions and private sectors) – 709 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, Latin America and SIDS.

The Energy Progress Report: Tracking SDG7 <sup>119</sup> (annual, jointly with IEA, WB, WHO and UN)	Completed	<p>“Tracking SDG 7: Energy Progress Report 2020”(May 2020). (<a href="#">Click here</a>)</p> <p>“Tracking SDG 7: Energy Progress Report 2021”(June 2021). (<a href="#">Click here</a>)</p> <p>SDG 7 Policy Briefs:</p> <ul style="list-style-type: none"> <li>• “Advancing Implementation of SDG 7 in Support of the 2030 Agenda” (June 2020). (<a href="#">Clickhere</a>)</li> <li>• “Advancing SDG 7 in Least DevelopedCountries”. (June 2020). (<a href="#">Click here</a>)</li> </ul>
Global Energy Transformation (annual editions) <sup>120</sup>	Completed	<p>“World Energy Transitions Outlook:1.5°C Pathway”(Preview) (March 2021) (<a href="#">Click here</a>)</p> <p>“World Energy Transitions Outlook:1.5°C Pathway”Full report (June 2021) (<a href="#">Click here</a>)</p> <p>Selected articles:</p> <ul style="list-style-type: none"> <li>• <a href="#">\$131 trillion needed to cap global warming at 1.5C(Video) (CNN)</a></li> <li>• <a href="#">Invest \$131 trillion in clean energy by 2050 to hitclimate goals (Reuters)</a></li> <li>• <a href="#">World Oil Demand May Have Peaked In 2019 AmidEnergy Transition: IRENA (S&amp;P Global Platts)</a></li> </ul> <p>Co-lead “Energy Transition” theme and contributing to other four themes of UN Secretary-General’s High- level Dialogue on Energy, took place in September 2021.</p> <p>“Global Renewables Outlook: Energy Transformation 2050” (April 2020). (<a href="#">Click here</a>)</p> <p>“Post-COVID Recovery – an agenda for resilience, development and equality” (June 2020). (<a href="#">Click here</a>)</p> <p>COVID Tracker developed: Track of energy related monetary, fiscal, and other measures since April 2020 for internal knowledge.</p> <p>Global power system flexibility and power-to-hydrogen model developed, in support to WETO, with focus on the potential trade of hydrogen and derivatives</p>
Measuring the Socio-Economic Footprint report	Complete	See output ‘Socio-economic footprint at the country level (five case studies)’
Innovation Landscape: Renewable Electricity in End-use report	Completed	<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 (<a href="#">Click here</a>)</p>
Global Landscape: Renewable	Completed	“Global Landscape: Renewable Energy Finance

<sup>119</sup> Supported by the International Bank for Reconstruction and Development.

<sup>120</sup> Supported by the Government of Germany (BMW).

Energy Finance report		2020” (Nov. 2020) ( <a href="#">Click here</a> )
Third Innovation Week	Completed	IRENA Innovation Week (Oct 2020). ( <a href="#">Click here</a> for event listing and <a href="#">here for webpage</a> ) Innovation Week Summary Report ( <a href="#">Click here for event summary</a> )
ASEAN 2050 energy transition outlook <sup>121</sup>	In progress	Data collection and analysis ongoing; country consultations for demand scenarios have taken place. Power sector analysis is ongoing with country consultations planned. Results for the in-depth Indonesia analysis ready.  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”.  Engagements in 2021: <ul style="list-style-type: none"> <li>• Presentation and discussion to ASEAN Renewable Energy Sub-sector network (RE-SSN) (May 2021)</li> <li>• Presentation and discussion to ASEAN Senior Officials of Energy (SOME) meeting (June 2021)</li> <li>• Presentation and update from DG to ASEAN Ministers of Energy Meeting (September 2021)</li> <li>• Consultative workshop on Indonesia Energy Transition Outlook (July 2021) (<a href="#">Click here</a>)</li> <li>• Consultative workshops on Malaysia Energy Transition Outlook (September 2021) (<a href="#">Click here</a>)</li> <li>• Consultation workshops with other ASEAN Member States (October 2021 – Ongoing)</li> </ul>
Central America 2050 energy transition outlook <sup>122</sup>	Completed	FlexTool analysis completed FlexTool training for Latin America conducted (May 2020). ( <a href="#">Click here</a> ) Bilateral engagement and workshops with all countries. Draft report has been completed; internal, technical and editorial reviews of the draft report have been completed. Regional support has included: <ul style="list-style-type: none"> <li>• Remap workshop for Centroamerica – UNFCCC</li> <li>• Power sector Central America regional analysis</li> <li>• Hosted Renewable Energy day at COREN21 – Congreso Regional de Energia – El</li> </ul>

<sup>121</sup> Supported by the Government of Denmark.

<sup>122</sup> Supported by the Government of Norway.

		<p>Salvador</p> <ul style="list-style-type: none"> <li>• IDB/IRENA webinar – World Energy Transition Outlook: towards a net-zero future in Latin America and the Caribbean.</li> <li>• Sugarcane analysis</li> <li>• OLADE Energy Week 2021 – project results were shared with participants</li> <li>• Virtual workshop with Central American countries – results were presented and feedback collected</li> <li>• Virtual workshop with Central America countries and multilateral organisations – project results and draft report were presented and feedback collected</li> </ul> <p>Specific country engagement has included:</p> <ul style="list-style-type: none"> <li>• Belize: Reference case scenario completed; REmap scenarios analysis completed; workshops to discuss energy transition scenario implications for end-use sector and power sector and NDC assistance provided.</li> <li>• Costa Rica: Reference case scenario and; REmap scenarios analysis; workshops to discuss energy transition scenario implications for end-use sector and power sector</li> <li>• Guatemala: Reference case scenario and REmap scenarios analysis; workshops to discuss energy transition scenario implications for end-use sector and power sector</li> <li>• El Salvador: Reference case scenario and REmap scenarios analysis; workshops to discuss energy transition scenario implications for end-use sector and power sector and NDC assistance.</li> <li>• Honduras: Reference case scenario and REmap scenarios analysis; workshops to discuss energy transition scenario implications for end-use sector and power sector.</li> <li>• Nicaragua: Reference case scenario and REmap scenarios analysis; workshops to discuss energy transition scenario implications for end-use sector and power sector.</li> <li>• Panama: Reference case scenario and REmap scenarios analysis; workshops to discuss energy transition scenario implications for end-use sector and power sector.</li> </ul>
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Impact of Innovation on Energy Transition <sup>123</sup>	Completed	<p>Interim and final findings available in the form of dashboard (pending website). Final project report submitted to the EC.</p> <p>Q1/2022 an additional report on final datasets to complement dashboard.</p> <p>Policy makers briefing held at the MI-6 Ministerial in June 2021 (<a href="#">Click here</a>). Experts consultative workshops held (Oct. 2020 and April 2021). (<a href="#">Click here</a>)</p> <p>Innovations for a decentralised, renewable-powered system: Peer- to-peer electricity trading webinar (Aug 2020) (<a href="#">Click here</a>)</p> <p>“Tracking the Impacts of Innovation: Offshore wind as a case study” (June 2021) (<a href="#">Click here</a>)</p>
Human resources and workforce planning strategy	Completed <sup>124</sup>	<p>77 new staff appointments and internal movements and 13 new Associate Professional. Reclassification and comprehensive review of all Terms of Reference underway.</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	Completed	Admin Instructions/Directives in draft on Remote Work, Performance Management, Recruitment and Roster Management.
System for engagement of academia, researchers and the private sector	Completed <sup>125</sup>	<p>Development of guidelines for private sector engagement released in July 2020. (<a href="#">Click here</a>). (Click for associated news article: <a href="#">IRENA Develops Guidelines for Co-operation with the Private Sector</a>).</p> <p>Academic review conducted. Results are helping IRENA to improve our presence with academia.</p> <p>Organisation of IRENA Insights. (<a href="#">Click here</a>)</p> <p>Development of a new type of publication ‘technical papers’ as a contribution to technical discussions and to disseminate new findings on relevant topics.</p> <p>Publication of a new webpage ‘Education’ targeted at the academic audience, gathering technical papers, presentations, tools and infographics.</p>

<sup>123</sup> Supported by the European Commission, under Horizon 2020 programme and the Government of the UK.

<sup>124</sup> This is an ongoing function but has been marked as completed for the biennium.

<sup>125</sup> This is an ongoing function but has been marked as completed for the biennium.

Training and staff development strategy	Completed <sup>126</sup>	<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 is ongoing.
Market Analysis: Africa	Completed	“Renewable Energy Market Analysis: Africa and its sub-regions” (Jan 2022)
Ecosystems for Sustainable Livelihoods report	Completed	Analysis completed. Final stages of design. To be published during IOREC Dec 21
Policies at the Time of Transition: Transport report	In progress	Analysis is ongoing.
Leveraging Local Capabilities (selected technologies) report	Completed	<p>Solar Water Heaters (July 2021) (<a href="#">Click here</a>).</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"> <li>• 2020 IRENA Policy Talk #1: Renewable Energy Finance: Status, Trends and Recommendations (Nov. 2020) (<a href="#">Click here</a>)</li> <li>• 2020 IRENA Policy Talk #2: Policies for Green Hydrogen (Nov. 2020) (<a href="#">Click here</a>)</li> <li>• 2020 IRENA Policy Talk #3: Renewable Energy Policies in a Time of Transition (Nov. 2020) (<a href="#">Click here</a>)</li> </ul>

<sup>126</sup> This is an ongoing function but has been marked as completed for the biennium.

		<ul style="list-style-type: none"> <li>• 2020 IRENA Policy Talk #4: Stimulating Investment in Community Energy (Dec. 2020) (<a href="#">Click here</a>)</li> </ul> <p>7th Global Policy Day turned into online sessions under IRENA Policy Talks 2021:</p> <ul style="list-style-type: none"> <li>• 2021 IRENA Policy Talk #1 - Renewable Energy Policies for the Energy Transitions: Focus on Heating and Cooling (April 2021) (<a href="#">Click here</a>)</li> <li>• 2021 IRENA Policy Talk #2 - Green Hydrogen Supply: Policies and Practical Insights (May 2021) (<a href="#">Click here</a>)</li> </ul>
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.<sup>127</sup></p> <p>“Power sector planning in Arab countries: Incorporating variable renewables”<sup>128</sup> (Jan 2020). (<a href="#">Click here</a>)</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. (<a href="#">Click here</a>)</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). (<a href="#">Click here</a>)</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 &amp; value of storage for their system.</p> <p>Discussions ongoing on the application of the Framework by Member countries using the IRENA FlexTool (e.g. Cyprus, Malaysia).</p>
Global assessment of geothermal energy	In progress	Concept and identification of partners finalized. Work underway.
Gender and Renewable Energy report	Completed	<p>Wind energy: A gender perspective (<a href="#">Click here</a>)</p> <p>Solar PV: Survey (closing on 31<sup>st</sup> December 2021)</p>

<sup>127</sup> Supported by the Government of the Walloon Region of Belgium.

<sup>128</sup> Supported by the Islamic Development Bank (IsDB).

NDCs and Renewable Energy Targets <sup>129</sup>	Completed	NDC update for PA Anniversary completed (Dec 2020) ( <a href="#">Click here</a> ). Database of Renewable Energy Targets completed. ( <a href="#">Click here</a> ). NDC update for COP26 (upcoming) Report on NDCs and RE Targets (upcoming)
Geopolitics of the Energy Transformation <sup>130</sup>	Completed	Collaborative Framework on Geopolitics of Energy Transformation meeting (June 2020) ( <a href="#">Click here</a> ). Collaborative Framework on Geopolitics of Energy Transformation meeting (Oct 2020) ( <a href="#">Click here</a> ). Collaborative Framework on Geopolitics of Energy Transformation meeting (May 2021) ( <a href="#">Click here</a> ). Collaborative Framework on Geopolitics of Energy Transformation meeting (September 2021)
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	Briefs published: <ul style="list-style-type: none"> <li>• “Renewable energy finance: Sovereign guarantees” (Jan. 2020). (<a href="#">Click here</a>)</li> <li>• “Renewable energy finance: Institutional capital” (Jan. 2020). (<a href="#">Click here</a>)</li> <li>• “Renewable energy finance: Green bonds” (Jan. 2020). (<a href="#">Click here</a>)</li> <li>• “Energy subsidies: Evolution in the global energy transformation to 2050” (Apr. 2020) (<a href="#">Click here</a>)</li> <li>• “Business Models Innovation Landscape” (Jul. 2020) (<a href="#">Click here</a>)</li> <li>• “System Operation Innovation Landscape” (Jul. 2020) (<a href="#">Click here</a>)</li> <li>• “Green Hydrogen: A Guide to policy making” (Nov 2020) (<a href="#">Click here</a>)</li> <li>• “Oil Companies and the Energy Transition” (Feb. 2021). (<a href="#">Click here</a>)</li> <li>• “The Renewable Energy Transition in Africa” (March 2021) (<a href="#">Click here</a>)</li> <li>• “Renewable energy auctions in Japan: Context, design and results” (Jan 2021) (<a href="#">Click here</a>)</li> <li>• “Renewable energy auctions in Colombia: Context, design and results” (March 2021) (<a href="#">Click here</a>)</li> <li>• “Renewable Energy Policies for Cities: Power Sector” (May 2021) (<a href="#">Click here</a>)</li> </ul>

<sup>129</sup> Supported by the Government of the Walloon Region of Belgium.

<sup>130</sup> Supported by the Government of Norway and the Government of Germany.

		<ul style="list-style-type: none"> <li>• “Renewable Energy Policies for Cities: Buildings” (May 2021) (<a href="#">Click here</a>)</li> <li>• “Renewable Energy Policies for Cities: Transport” (May 2021) (<a href="#">Click here</a>)</li> <li>• IRENA’s “Policy Framework for the Energy Transition” (PFET) - Cities (<a href="#">Click here</a>)</li> </ul> <p>Reports published:</p> <ul style="list-style-type: none"> <li>• A chapter in the Policy Briefs in Support of the High-Level Political Forum 2020 – “The role of energy scenarios in guiding the energy transition” (June 2020) (<a href="#">Click here</a>)</li> <li>• “Concentrating Solar Power: Clean power on demand 24/7” (Feb 2021) (Joint Publication with the World Bank) (<a href="#">Click here</a>)</li> <li>• “Reaching Zero with Renewables” (Sept. 2020). (<a href="#">Click here</a>)</li> <li>• “Innovative solutions for 100% renewable power in Sweden”<sup>131</sup> (Jan. 2020). (<a href="#">Click here</a>)</li> <li>• “Power system organisational structures for the renewable energy era” (Jan. 2020). (<a href="#">Click here</a>)</li> <li>• “Mobilising institutional capital for renewable energy” (Nov 2020). (<a href="#">Click here</a>)</li> <li>• “Renewable Energy Policies in a Time of Transition: Heating and Cooling” (Nov. 2020). (<a href="#">Click here</a>)</li> <li>• Innovation Toolbox (Dec. 2020). (<a href="#">Click here</a>)</li> <li>• “Reaching Zero with Renewables: Biojet Fuels” (<a href="#">Click here</a>)</li> <li>• Reaching Zero with Renewables: Capturing Carbon (<a href="#">Click here</a>)</li> <li>• Sector Coupling in Facilitating Integration of Variable Renewable Energy in Cities”<sup>132</sup> (OctoberMay 2021) (<a href="#">Click here</a>)</li> <li>• “Renewable energy policies for cities: experiences in China, Uganda, and Costa Rica” (May 2021) (<a href="#">Click here</a>)</li> <li>• “Renewable energy policies for cities: experiences in China, Uganda, and Costa Rica. Summary for Policy Makers” (May 2021) (<a href="#">Click here</a>)</li> <li>• “Renewable energy policies for cities: experiences in China”; English version (May 2021) (<a href="#">Click here</a>)</li> <li>• “Renewable energy policies for cities: experiences in China”; Chinese version (May</li> </ul>
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<sup>131</sup> Supported by the Government of Sweden.

<sup>132</sup> Supported by the Government of Germany as part of the German Government International Climate Initiative

		<p>2021) (<a href="#">Click here</a>)</p> <ul style="list-style-type: none"> <li>• “Renewable energy policies for cities: experiences in Uganda”; English version (May 2021) (<a href="#">Click here</a>)</li> <li>• “Renewable energy policies for cities: experiences in Costa Rica”; English version (May 2021) (<a href="#">Click here</a>)</li> <li>• “Políticas sobre energías renovables para las ciudades: experiencias en Costa Rica”; Spanish version (May 2021) (<a href="#">Click here</a>)</li> <li>• “Innovation Outlook: Thermal Energy Storage” (Nov. 2020). (<a href="#">Click here</a>)<sup>133</sup></li> <li>• “Innovation Outlook: Ocean Energy Technologies” (Dec. 2020). (<a href="#">Click here</a>)</li> <li>• “Fostering a blue economy: offshore renewable energy” (Dec. 2020). (<a href="#">Click here</a>)</li> <li>• “Rise of Renewable Energy in Cities”<sup>134</sup> (Oct. 2020). (<a href="#">Click here</a>)</li> <li>• “Quality Infrastructure for the renewable mini- grid of the future” (Dec. 2020). (<a href="#">Click here</a>)</li> <li>• “Green hydrogen cost reduction: Scaling up electrolysers to meet the 1.5°C climate goal” (Dec. 2020) (<a href="#">Click here</a>)</li> <li>• “Innovation Outlook: Renewable Methanol” (Jan 2021) (<a href="#">Click here</a>)</li> <li>• “Green hydrogen supply: a guide to policy making” (May 21) (<a href="#">Click here</a>)</li> <li>• “A Pathway to Decarbonise the Shipping Sector by 2050” (October 2021) (<a href="#">Click here</a>)</li> <li>• Joint IREA-FAO report “Renewable Energy for Agri-food Systems: Towards the Sustainable Development Goals and the Paris Agreement” (Nov 21) (<a href="#">Click here</a>)</li> </ul> <p>Reports soon to be published:</p> <ul style="list-style-type: none"> <li>• “100% Renewable Energy”</li> <li>• “Smart Electrification with Renewables” (In collaboration with State Grid China)</li> <li>• “Perspectives on China’s route to full decarbonisation and the role of renewables” (in cooperation with China National Renewable Energy Center)</li> </ul>
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<sup>133</sup> Supported by the Government of Germany as part of the German Government International Climate Initiative.

<sup>134</sup> Supported by the Government of Germany as part of the German Government International Climate Initiative.

		<ul style="list-style-type: none"> <li>• “Sustainable Energy Planning for Wuzhong District, Suzhou, China”</li> <li>• “Urban Energy Transition for the Greater Metropolitan Area of the Central Valley of Costa Rica”</li> <li>• “Sustainable Bioenergy: A Guide to Policy Making”</li> <li>• “Costs and performance of heat-pumps”<sup>135</sup></li> <li>• “Biannual hydrogen electrolyser cost tracking bulletin” (with ENEL Foundation)</li> <li>• “Financing Costs: A survey and review of Project Level WACC”<sup>136</sup></li> <li>• “Beyond integration cost”</li> <li>• Reaching Zero with renewables brief: capturing carbon</li> <li>• A chapter in RES4Africa’s “building forward better: maximising the potential socio-economic gains of Africa’s sustainable energy transformation</li> <li>• A chapter in UNECA “Harnessing renewable energy for industrialization”, focus on Central Africa</li> </ul> <p>Online tools:</p> <p>“Revamped IRENA SolarCity simulator” (<a href="#">Click here to access the platform</a>) and launch webinar of the new platform (<a href="#">Click here to access the webinar</a>) with the recently developed simulators (Jun 2021)</p> <ul style="list-style-type: none"> <li>• Antigua and Barbuda, Coastlines area (<a href="#">Click here</a>)</li> <li>• China, Chongli (<a href="#">Click here</a>)</li> <li>• Mongolia, Ulaanbaatar (<a href="#">Click here</a>)</li> <li>• Nepal, Burgunj (<a href="#">Click here</a>)</li> <li>• Nigeria, Jimeta (<a href="#">Click here</a>)</li> <li>• Nigeria, Kaduna (<a href="#">Click here</a>)</li> <li>• Nigeria, Sokoto (<a href="#">Click here</a>)</li> <li>• Saint Lucia, Castries (<a href="#">Click here</a>)</li> <li>• Seychelles, Victoria (<a href="#">Click here</a>)</li> <li>• United Arab Emirates, Abu Dhabi, (<a href="#">Click here</a>)</li> <li>• Port Louis, Mauritius (<a href="#">Click here</a>)</li> </ul> <p>Events:</p> <ul style="list-style-type: none"> <li>• Collaborative Framework on Ocean Energy/Offshore Renewables (Jun.</li> </ul>
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<sup>135</sup> Supported by the Government of Germany.

<sup>136</sup> Supported by the Government of Germany.

		<p>2021). (<a href="#">Click here</a>).</p> <ul style="list-style-type: none"> <li>• Collaborative Framework on Hydropower (June 2020). (<a href="#">Click here</a>)</li> <li>• Collaborative Framework on Hydropower (Sept. 2020). (<a href="#">Click here</a>)</li> <li>• Collaborative Framework on Hydropower (May 2021) (<a href="#">Click here</a>).</li> <li>• Consultation Meeting on the San José Declaration on Sustainable Hydropower (Collaborative Framework on Hydropower) (Aug. 2021).</li> <li>• High-level Meeting of the Collaborative Framework on Hydropower (22 Sept. 2021).</li> <li>• Collaborative Framework on Green Hydrogen (June 2020). (<a href="#">Click here</a>)</li> <li>• Collaborative Framework on Green Hydrogen (Sept. 2020). (<a href="#">Click here</a>)</li> <li>• Collaborative Framework on Green Hydrogen (May. 2021). (<a href="#">Click here</a>)</li> <li>• Collaborative Framework on Green Hydrogen (Oct. 2021). (<a href="#">Click here</a>)</li> <li>• Collaborative Framework on Ocean Energy/Offshore Renewables (June 2020). (<a href="#">Click here</a>)</li> <li>• Collaborative Framework on Ocean Energy/Offshore Renewables (Oct. 2020). (<a href="#">Click here</a>).</li> <li>• Collaborative Framework on Enhancing Dialogue on High Shares of Renewables in Energy Systems (July 2020). (<a href="#">Click here</a>)</li> <li>• Collaborative Framework on Enhancing Dialogue on High Shares of Renewables in Energy Systems (Oct. 2020). (<a href="#">Click here</a>)</li> <li>• Side event on Energy Transition for the Cities of the Future at the 10th World Urban Forum (Feb 2020) (<a href="#">Click here</a> for press release)</li> <li>• Tackling Hard-to-Decarbonise-Sectors: Applications and Production of Powerfuels. Joint event between IRENA and German Energy Agency (dena) (March 2020) (<a href="#">Click here</a>)</li> <li>• The future for heavy-duty vehicles in the Pentalateral Region: Integrating electromobility in the energy transition (Oct. 2020). (<a href="#">Click here</a>)</li> <li>• Conference Potential of solar energy contribution in smart cities, ASEAN Sustainable Energy Week (Sep 2020). (<a href="#">Click</a></li> </ul>
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		<p><a href="#">here</a>)</p> <ul style="list-style-type: none"> <li>• Solar supporting the blue economy; nexus between solar and shipping decarbonization at the International Solar Alliance 3rd Assembly (October 2020) (<a href="#">Click here</a>)</li> <li>• Opportunities to decarbonise the Paraguay- Parana Waterway; close collaboration with the Inter-American Development Bank and OLADE (November 2020) (<a href="#">Click here</a>).</li> <li>• Conference Energy transformation for cities of the future, UN-Habitat World Urban Forum 10 (Feb 2020). (<a href="#">Click here</a>)</li> <li>• Conference Energy transformation for cities of the future, Global Observance World Habitat Day (Oct 2021). (<a href="#">Click here</a>)</li> <li>• The 4th Propulsion Revolution – Commitment and Challenge, joint event with International Chamber of Shipping featuring IRENA report - A Pathway to Decarbonise the Shipping Sector by 2050 (October 2021) (<a href="#">Click here</a>)</li> </ul> <p>Capacity building</p> <ul style="list-style-type: none"> <li>• Video series for laymen on how to deploy rooftop solar PV systems (<a href="#">Click here</a>).</li> <li>• 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)</li> <li>• Workshop for high-level representatives from the government (15 experts) on Rooftop solar PV potential in Nepal – SolarCity simulators for Burgunj (Jul 2021)</li> <li>• Workshop for high-level representatives from the government (13 experts) on Rooftop solar PV potential in Seychelles – SolarCity simulators for Victoria (Aug 2021)</li> <li>• Workshop for high-level representatives from the government on Rooftop solar PV potential in Saint Lucia (6 experts) – SolarCity simulators for Castries (Aug 2021).</li> <li>• Workshops for high-level representatives from the government on Rooftop solar PV potential in Antigua and Barbuda (56 experts) – SolarCity simulators for Castries (Aug 2021).</li> <li>• Training workshop for Hong Kong governmental officials (50 participants) on Role of Renewables for Cities in support of implementation of Hong Kong's Climate Action Plan 2050 and Carbon Neutrality Taskforce (6 December, 2021)</li> <li>• Workshop for Asian Development Bank</li> </ul>
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		<p>(ADB) staff (30 participants) on Role of Cities in Energy Transition (December 2020)</p> <ul style="list-style-type: none"> <li>• Workshop for Asian Infrastructure Investment Bank (AIIB) staff (15 participants) on Opportunities for Urban Renewables in Asia. (January 2021)</li> <li>• Workshop for the European Bank for Reconstruction and Development (EBRD) staff (10 participants) on Role of Cities in Energy Transition. (September 2020)</li> <li>• Training workshop for Technical University of Berlin on Building Sustainability - Energy Efficient Societies Module - Bridging the gap between building sustainability and energy transformation (December 2020)</li> <li>• Training workshop for Technical University of Berlin on Energy Efficient Society (October 2021)</li> <li>• Workshop for the energy revolution working group under the National Energy Administration of China (50 participants) on Global Urban Energy Transition: Potentials of Renewable Energy Technology Applications. (July 2020)</li> <li>• Workshop for members of New-Energy Chamber of The All-China Federation of Industry and Commerce on Role of Renewable Energy in Global Urban Energy Transition. (July 2020)</li> </ul>
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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	Completed	Preparations in place, Forums delayed due to COVID-19. Provisional plans for early 2022.
SIDS Lighthouses Initiative <sup>137</sup>	Completed	<p>Initiative coordination:</p> <ul style="list-style-type: none"> <li>• Four new partners joined the initiative: Singapore, CARILEC, Island Innovation, Islands and Small States Institute (ISSI), of the University of Malta. Total – 38 SIDS<sup>138</sup> and 31 development partners.<sup>139</sup></li> <li>• Country profiles updated and uploaded on the SIDS Lighthouse Initiative (LHI) <a href="#">website</a> and shared with SIDS. The knowledge platform also includes energy transformation related documents for SIDS.</li> <li>• Social media page created on <a href="#">LinkedIn</a> to widen the outreach to all SIDS stakeholders.</li> <li>• SIDS LHI Annual Progress Report(<a href="#">Click here</a>)</li> <li>• Development of SIDS digital interactive stories ongoing (<a href="#">Click here</a>)</li> <li>• Co-organised <i>Climate Emergency Finance for SIDS Energy Transformation</i> at COP26 (November 2021) (<a href="#">Click here</a>)</li> <li>• Co-organised <i>Pacific Regional Training on the Assessment of GHG Mitigation Policies and Projects</i> with The Pacific Community (November 2021) (<a href="#">Click here</a>)</li> <li>• Co-organised <i>Transforming Energy: Spotlight on Small Island Developing States</i> at EXPO 2020 (October 2021) (<a href="#">Click here</a>)</li> </ul>

<sup>137</sup> Supported by Governments of Denmark, Germany as part of the German Government International Climate Initiative, NDP Partnership and UNDP.

<sup>138</sup> 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.

<sup>139</sup> 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.

		<ul style="list-style-type: none"> <li>• 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) (<a href="#">Click here</a>)</li> <li>• 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) (<a href="#">Click here</a>)</li> <li>• In partnership with UK COP26 Presidency and the Regional NDC Pacific Hub hosted, <i>Pacific NDC Dialogue: Enhancing and Implementing the Pacific SIDS Commitments to the Paris Agreement through Energy Transformation</i> (February 2021)(<a href="#">Click here</a>)</li> <li>• Technical webinar series on <i>Transforming SIDS Power Systems through Variable Renewable Energy</i> completed for the Pacific (Sept. 2020) (<a href="#">Click here</a>) and Caribbean region (Dec. 2020). (<a href="#">Click here</a>)</li> <li>• 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). (<a href="#">Click here</a>)</li> <li>• Development IRENA Quicksan 2.0. an automated tool to pursue robust-rapid quantitative and qualitative analysis of enabling conditions for RE deployment in SIDS (January 2021) (<a href="#">Click here</a>).</li> <li>• 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). (<a href="#">Click here</a>)</li> <li>• Progress of SIDS LHI and the Enhanced SIDS Climate Package presented at the Alliance of Small Island States (AOSIS) Placencia Forum. (Apr. 2020) (<a href="#">Click here</a>)</li> <li>• Signed MOU with SIDS DOCK to collaborate on SIDS energy transformation to strengthen climate resilience and pandemic recovery efforts (<a href="#">Press release</a>)</li> <li>• 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) (<a href="#">Click here</a>)</li> <li>• Recruitment of a Caribbean Focal Point to coordinate IRENA's work in the Caribbean Region ongoing.</li> </ul>
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		<p>Country-level work:</p> <ul style="list-style-type: none"> <li>• Antigua and Barbuda: 100% Renewable Energy Roadmap (Mar. 2021) (<a href="#">Click here</a>)</li> <li>• Palau: 100% Renewable Energy for power and transport</li> <li>• Joint mission with UNDP on Energy and Blue Economy to Sao Tome Principe (Mar. 2020) (<a href="#">Click here</a>)</li> <li>• 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.</li> <li>• Climate Promise energy-related activities in SIDS (<a href="#">Click here</a>).</li> <li>• 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.</li> <li>• Supporting CAEP country-level activities in the AIS - Seychelles, Caribbean – Belize, Dominican Republic, Grenada and Pacific SIDS – Papua New Guinea and Tonga.</li> <li>• Direct technical assistance on NDC enhancement and implementation provided to Fiji reviewing the energy data management methodology, Saint Lucia and Seychelles for <a href="#">solar rooftop simulation</a> analysis</li> <li>• 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.</li> <li>• Development of a 100 % renewable energy roadmap for Palau ongoing.</li> <li>• Development of coconut biofuel strategy for Vanuatu ongoing.</li> </ul> <p>Policy and Regulatory Advice:</p> <ul style="list-style-type: none"> <li>• Completed review of the Mauritius Bioenergy Strategy.</li> <li>• Completed review of the Papua New Guinea NDC Regulation</li> <li>• Completed review of Seychelles' enhanced NDC</li> <li>• Completed review of Fiji's climate change policy</li> <li>• Completed review of the Framework for Energy Security and Resilience in the Pacific</li> </ul>
Global Geothermal Alliance	Completed	New GGA partners: Australian Geothermal Association and Women in Geothermal. Total 46

		<p>Countries<sup>140</sup> and 42 Partners<sup>141</sup>.</p> <p>GGA website is being developed into a knowledge sharing platform:</p> <ul style="list-style-type: none"> <li>• Updated geothermal profiles: Africa (<a href="#">Click here</a>), Europe (<a href="#">Click here</a>), Asia (<a href="#">Click here</a>), Latin America and Caribbean (<a href="#">Click here</a>), North America (<a href="#">Click here</a>).</li> <li>• Updated geothermal country profiles (<a href="#">Click here</a>).</li> <li>• Themes on International Training Centres (<a href="#">Click here</a>) and Geothermal Resource Assessment Methodologies. (<a href="#">Click here</a>)</li> <li>• Report: “Geothermal development in Eastern Africa” (Nov 2020) (<a href="#">Click here</a>)<sup>142</sup></li> </ul> <p>Renewable Energy Applications for district heating and cooling:<sup>143</sup></p> <p>Report: “Integrating low-temperature renewables in district energy systems: Guidelines for policy makers” (March 2021) (<a href="#">Click here</a>).</p> <p>Brochure: “Geothermal: The Solution Underneath” (October 2021)(<a href="#">Click here</a>)</p> <p>Events:</p> <ul style="list-style-type: none"> <li>• Side event “Geothermal: The Solution Underneath”at the World Geothermal Congress 2021 (October 2021)</li> <li>• Three webinars organised on Integration of low-temperature renewable energy source in district heating and cooling networks (<a href="#">Click here</a>).</li> <li>• Scaling up geothermal direct use for industrial applications in Latin America (August 2021) (<a href="#">Click here</a>).</li> <li>• Enabling policies and regulatory frames for geothermal in East Africa (July 2021)(<a href="#">Click here</a>)</li> </ul>
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<sup>140</sup> 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.

<sup>141</sup> 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.

<sup>142</sup> Supported by the Government of Japan.

<sup>143</sup> Supported by the Government of Germany as part of the German Government International Climate Initiative.

		<p><a href="#">here</a>).</p> <ul style="list-style-type: none"> <li>• Global Geothermal Alliance Annual Meeting (June 2021)(<a href="#">Click here</a>).</li> <li>• Workshop on the integration of low- temperature renewable energy sources in district energy systems: Focus on Belarus (February 2021)(<a href="#">Click here</a>).</li> <li>• Workshop on the integration of renewables in district heating and cooling in China (March 2021) (<a href="#">Click here</a>)</li> </ul>
5th International Off-grid Renewable Energy Conference	Completed	5th IOREC (December 2021) ( <a href="#">Click here</a> ) 4th edition of the annual ECOWAS Sustainable Energy Forum (ESEF) in partnership with ARE, ECREEE, and GIZ (Nov. 2020) ( <a href="#">Click here</a> )
Implementation of regional action agendas and clean energy corridors <sup>144</sup> in Central Asia, Latin America, Middle East and North Africa, South Asia, South East Asia Southeast Europe and Sub-Saharan Africa	Completed	<p>Africa</p> <ul style="list-style-type: none"> <li>• Capacity Building on Long-Term Energy Planning in the Republic of Cameroon: Third training course (December 2021) (<a href="#">Click here</a>)</li> <li>• Burkina Faso RRA Validation Workshop (November 2021) (<a href="#">Click here</a>)</li> <li>• Capacity Building Workshop for Renewable Energy Auctions in Eastern &amp; Southern Africa (November 2021) (<a href="#">Click here</a>)</li> <li>• Botswana RRA Launch (August 2021) (<a href="#">Click here</a>)</li> <li>• Africa Climate Week: Renewable Energy in NDCs: Driving Climate Action towards Low Carbon and Inclusive Development in Africa (September 2021) (<a href="#">Click here</a>)</li> <li>• 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.<sup>145</sup></li> <li>• Validation of the Renewable Energy Roadmap for Central Africa at Economic Community of Central African States (ECCAS) Ministerial Meeting (June 2021) (<a href="#">Click here</a>).</li> <li>• Implementation initiated for Regional trainings on the Economics of Power Systems Planning and Operation in West Africa (May 2020).</li> <li>• Co-organisation of High-Level Dialogue with the Africa Union on the COVID-19 pandemic response and Africa’s energy transformation (May 2020). (<a href="#">Click here</a>).</li> <li>• Implementation initiated for Trainings on Actions Design for the countries of Eastern &amp;</li> </ul>

<sup>144</sup> Supported by the Islamic Development Bank (IsDB) and the Government of Norway.

<sup>145</sup> Supported by the Government of the Walloon Region of Belgium.

		<p>Southern Africa as part of the implementation of the Africa Clean Energy Corridor.</p> <ul style="list-style-type: none"> <li>• 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.</li> <li>• Development of a regional parliamentary strategy in the ECOWAS region, including a regional parliamentary meeting.</li> <li>• 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</li> </ul> <p>Asia</p> <ul style="list-style-type: none"> <li>• Jointly organised workshop with ICIMOD on Enhancing Decentralised Renewable Energy in the Hindukush and Himalaya Regions (November 2021) (<a href="#">Click here</a>)</li> <li>• Co-hosted the Singapore-IRENA High-Level Forum at the Singapore International Energy Week (October 2021) (<a href="#">Click here</a>)</li> <li>• 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)</li> <li>• Malaysia Energy Transition Outlook: Expert Consultation Workshop (September 2021) (<a href="#">Click here</a>).</li> <li>• Asia-Pacific Climate Week: <i>Nationally Determined Contributions in the Asia Pacific Region as the main driver of decarbonisation</i> (July 2021) (<a href="#">Click here</a>).</li> <li>• Indonesia Energy Transition Outlook: Expert Consultation Workshop (July 2021) (<a href="#">Click here</a>).</li> <li>• Regional Webinar on Advancing the Energy Transition in Central Asia through NDC's and Long-Term Strategies (LTS) (July 2021) (<a href="#">Click here</a>).</li> <li>• 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)</li> <li>• Implementation initiated for Regional Capacity Workshop on Project Development in South Asia: Enhancing Decentralised Renewable Energy in the Hindukush Himalayas</li> <li>• 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-</li> </ul>
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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"> <li>• Webinar Accelerating the Southeast Asian Energy Transformation (Aug. 2020). (<a href="#">Click here</a>).</li> <li>• 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)</li> <li>• Co-organised ASEAN - COP 26 Climate Dialogue with UK COP 26 Presidency and ASEAN Secretariat (September 2020). (<a href="#">Click here</a>).</li> <li>• 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)</li> <li>• 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). (<a href="#">Click here</a>).</li> </ul> <p>Latin America and Caribbean</p> <ul style="list-style-type: none"> <li>• OLADE Energy Week (November 2021) (<a href="#">Click here</a>)</li> <li>• RRA Paraguay Launch (September 2021) (<a href="#">Click here</a>)</li> <li>• Webinar, <i>WETO towards a net-zero future in Latin America</i> (September 2021) (<a href="#">Click here</a>)</li> <li>• Co-organised webinar with GIZ, <i>Scaling-up Geothermal Direct Use for Industrial Applications in Latin America</i> (August 2021) (<a href="#">Click here</a>)</li> <li>• Hosting of Renewable Energy Day at the Regional Energy Congress of Central America (COREN 2021)(August 2021) (<a href="#">Click here</a>)</li> <li>• Virtual seminar Integrating Energy Transition into El Salvador's Nationally Determined Contribution (NDC) (August 2021) (<a href="#">Click here</a>)</li> <li>• Webinar Regional Dialogue on Energy and Gender (July 2021) (<a href="#">Click here</a>)</li> <li>• Webinar Advancing the Energy Transition in Latin America and the Caribbean through Nationally Determined Contributions (NDCs)</li> </ul>
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		<p>in collaboration with UK COP26 Presidency, (Dec 2020) (<a href="#">Click here</a>)</p> <ul style="list-style-type: none"> <li>• NDCs and the energy transition in Central America, COREN 2020, (Oct 2020) (<a href="#">Click here</a>)</li> <li>• CECCA workshop 2020: Integration of variable renewable energy sources (Oct 2020). (<a href="#">Click here</a>)</li> <li>• Webinar Accelerating Latin America's Energy Transformation RE and Economic Recovery (Aug. 2020). (<a href="#">Click here</a>)</li> <li>• Webinar: IRENA FlexTool Training for Latin America (May 2020) (<a href="#">Click here</a>)</li> </ul> <p>Middle East and North Africa:</p> <ul style="list-style-type: none"> <li>• Capacity Building for Open Solar Contracts in Arab Countries (December 2021) (<a href="#">Click here</a>)</li> <li>• Capacity Building for Renewable Energy Auctions in Arab Countries (November 2021) (<a href="#">Click here</a>)</li> <li>• Follow-up workshop: <i>Addressing Variable Renewable Energy in Long-term Planning in Arab Countries</i> (November 2021) (<a href="#">Click here</a>)</li> <li>• Co-organised with the European Union, <i>A Dialogue Between EU and North African States on a Regulatory Framework to Develop Green Hydrogen Supply, Demand and Trade</i> (October 2021) (<a href="#">Click here</a>)</li> <li>• RRA Tunisia Launch, (June 2021) (<a href="#">Click here</a>)</li> <li>• Webinar COP26 Climate-Energy Dialogue in the Middle East and North Africa region in collaboration with UNFCCC and UK COP26 Presidency, (April 2021) (<a href="#">Click here</a>)</li> <li>• RRA Jordan Launch, (February 2021) (<a href="#">Click here</a>)</li> <li>• Interim reports produced including outcomes of the first stage of the zoning project.<sup>146</sup></li> <li>• IRENA FlexTool Training for MENA hosted in partnership with RCREEE and League of Arab States (LAS). (<a href="#">Click here</a>)</li> </ul> <p>Southeast Europe:</p> <ul style="list-style-type: none"> <li>• Capacity Building RE Auction Design for Belarus (October 2021) (<a href="#">Click here</a>)</li> <li>• RRA Belarus Launch (July 2021) (<a href="#">Click here</a>)</li> <li>• IRENA <i>FlexTool Training</i> for Eastern Europe</li> </ul>
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<sup>146</sup> Supported by the Government of Norway.

		<p>and Central Asia hosted in partnership with the International Atomic Energy Agency (IAEA)(July 2021) (<a href="#">Click here</a>)</p> <ul style="list-style-type: none"> <li>• Energy-Climate Dialogue Event: <i>Advancing Energy Transition in Western Balkans and Eastern Europe countries through Enhanced Nationally Determined Contributions</i> (May 2021) (<a href="#">Click here</a>)</li> <li>• RRA Albania Launch (March 2021) (<a href="#">Click here</a>)</li> <li>• Workshop on the integration of low- temperature renewable energy sources in districtenergy systems: Focus on Belarus (February 2021)(<a href="#">Click here</a>).</li> </ul> <p>Global:</p> <ul style="list-style-type: none"> <li>• Organised roundtable discussion on Global Renewables Outlook - key technologies and trends for the energy transformation at Singapore International Energy Week (SIEW) (Oct 2020). (<a href="#">Click here</a> and <a href="#">here</a>)</li> <li>• Collaborative Framework on Enhancing Dialogue on High Shares of Renewables in Energy Systems (May &amp; October 2021) (<a href="#">Click here</a>)</li> <li>• Energy Transition for Climate Action at COP26 (November 2021) (<a href="#">Click here</a>)</li> </ul>
Partnerships to promote deployment of decentralized renewable energy solutions <sup>147</sup>	Completed	<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 <sup>70</sup>	Completed	<p>Jointly organised workshop with ICIMOD on Enhancing Decentralised Renewable Energy in the Hindukush and Himalaya Regions (November 2021) (<a href="#">Click here</a>)</p> <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>
Country-specific assessments for electrification of rural health centres <sup>71</sup>	Completed	<p>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.</p> <p>Assessment work in Cameroon, Mali, Mozambique and Sao Tome and Principe are in planning phases.</p>

<sup>147</sup> Supported by the Government of the Walloon Region of Belgium.<sup>70</sup> Supported by the Government of the Walloon Region of Belgium.<sup>71</sup> Supported by the Government of the Walloon Region of Belgium.

<p>Collaborative engagement with international organisations, multilateral institutions and initiatives</p>	<p>Completed</p>	<p>MoUs signed as of November 2021 with:</p> <ul style="list-style-type: none"> <li>• Abu Dhabi Global Market</li> <li>• Alliance of Small Island States (AOSIS)</li> <li>• CARICOM Development Fund</li> <li>• Cassa Depositi e Prestiti S.P.A</li> <li>• Climate Policy Initiative</li> <li>• Department of Energy of Abu Dhabi</li> <li>• East African Centre of Excellence for Renewable Energy and Energy Efficiency</li> <li>• Electric Power Research Institute</li> <li>• European Bank for Reconstruction and Development</li> <li>• European Patent Office</li> <li>• European Space Agency</li> <li>• Food and Agriculture Organization of the United Nations</li> <li>• Fondazione Eni Enrico Mattei</li> <li>• Global Wind Energy Council</li> <li>• Inter-American Development Bank (IDB)</li> <li>• International Energy Forum</li> <li>• International Hydropower Association</li> <li>• International Labour Organization</li> <li>• The Rockefeller Foundation</li> <li>• National Energy Administration of the People's Republic of China</li> <li>• New Energy and Industrial Technology Development Organisation of Japan</li> <li>• Latin American Energy Organization (OLADE)</li> <li>• People's Republic of China Ministry of Ecology and Environment Small Island Developing States Sustainable Energy and Climate Resilience Organisation</li> <li>• Southern African Development Community's Centre for Renewable Energy and Energy Efficiency</li> <li>• State Grid Corporation of China</li> <li>• UAE Ministry of Energy and Industry</li> <li>• United Nations Department of Operational Support and United Nations Peacekeeping</li> <li>• United Nations Department of Operational Support</li> <li>• United Nations Economic and Social Commission for Asia and the Pacific</li> <li>• United Nations Human Settlements Programme</li> <li>• USAID</li> <li>• World Economic Forum</li> <li>• Ocean Energy Europe</li> </ul> <p>Partnership Agreements signed:</p>
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		<ul style="list-style-type: none"> <li>• China National Energy Administration</li> <li>• ENEL Foundation</li> <li>• Eni</li> <li>• Siemens Energy</li> <li>• SNAM S.p.A</li> <li>• Ministry of Energy and Mineral Resources of the Republic of Indonesia</li> <li>• Ministry of Energy, Mines and Environment of the Government of the Kingdom of Morocco</li> <li>• SolarPower Europe</li> </ul> <p>Other cooperative arrangements include:</p> <ul style="list-style-type: none"> <li>• Input to quality on “Offshore Renewables: An Action Agenda for Deployment” (<a href="#">Click here</a>), integrated in the Joint G20 Communiqué on Energy and Climate 2021 (<a href="#">Click here</a>)</li> <li>• 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 Presidency<sup>148</sup></li> <li>• Co-organisation of a High-Level Dialogue with the Africa Union on the pandemic response and Africa’s energy transformation. (May 2020). (<a href="#">Click here</a>)</li> <li>• Collaboration with Africa Centre for Sustainable Development at the Africa Energy Indaba 2020, Cape Town, South Africa (Mar. 2020).<sup>149</sup> (<a href="#">Click here</a>)</li> <li>• Government of Denmark and IRENA signed a Strategic Partnership in September 2020.</li> <li>• Letter of Agreement signed with UNDP for the implementation of the Global Project “Strategic Accelerator Partnership for Climate Change and Sustainable Development”.</li> <li>• Agreement concluded with the Pacific Community for the implementation of activities envisaged in the MoU entered into by the parties in April 2019.</li> <li>• Agreement signed with EBRD for the preparation of a report on tracking the SDG7.</li> <li>• Declaration of Intent concluded with the African Development Bank regarding an Institutional Partnership for accelerating the deployment of renewable energy in Africa.</li> </ul>
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<sup>148</sup> Supported by the Government of Saudi Arabia, KAPSARC.

<sup>149</sup> Supported by UNDP.

		<ul style="list-style-type: none"> <li>• 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.</li> <li>• Data Sharing Agreement signed with Delft University of Technology (TU-Delft) for the provision of access to their data resources through IRENA’s Global Atlas for Renewable Energy.</li> <li>• 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.</li> <li>• 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.</li> <li>• G20 Italia 2021 – Collateral Event: Energy Subsidy levels and policy reform: Setting to ensure finance flows to the green recovery and the energy transition</li> <li>• Reaching zero with renewables: what we need to accelerate and how MI’s Missions can help</li> <li>• 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.</li> <li>• License Agreement with the Bureau of Meteorology of Australia (BOM) to provide solar resource dataset.</li> <li>• License Agreement with the European Space Agency (ESA) to provide the Climate Change Initiative global land cover dataset.</li> <li>• License Agreement with the General Bathymetric Chart of the Oceans (GEBCO) to provide global bathymetry dataset.</li> <li>• 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.</li> <li>• License agreement with UNEP-WCMC (United Nations Environment Programme - World Conservation Monitoring Centre) to provide the world database on protected areas.</li> </ul> <p>Support for climate efforts<sup>150</sup>:</p> <ul style="list-style-type: none"> <li>• Focal point for Energy within the UNFCCC Marrakesh Partnership for Global Climate Action. Leading the development of Climate Action Pathway 2021 for energy.</li> </ul>
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<sup>150</sup> Supported by the Government of Denmark and Government of the Walloon Region of Belgium.

		<ul style="list-style-type: none"> <li>• Hosted <i>Race to Zero Dialogues on Energy</i> (16 November 2020). (<a href="#">Click here</a>).</li> <li>• Hosted <i>Net-zero Investment Lab: Public and Private Collaboration on Accelerating Green Investment in SIDS</i> event (30 March 2021) (<a href="#">Click here</a>).</li> <li>• IRENA/UNFCCC op-ed on COVID recovery.</li> <li>• Institutional Partnership with World Climate Foundation (2020).</li> <li>• Member of NDC Partnership.</li> <li>• Participation in the UK-led COP26 preparation activities, including as a member of the COP26 Energy Transitions Council.</li> <li>• Author-led technical report “Adaptation via energy transition: Renewables to address the impact of climate change” (August 2021) (<a href="#">Click here</a>)</li> <li>• Participation in climate initiatives:             <ul style="list-style-type: none"> <li>• Accelerating energy transition in SIDS initiative, for which the SIDS LHI serves as an implementing framework</li> <li>• The Climate Investment Platform (CIP)<sup>151</sup></li> <li>• The Coalition for Sustainable Energy Access</li> <li>• The Cool Coalition</li> <li>• The Decarbonizing Shipping – Getting to Zero Coalition</li> <li>• Signatories to the Call to Action for Shipping Decarbonization by the Global Maritime Forum (<a href="#">Click here</a>)</li> <li>• The Three Percent Club for Energy Efficiency, and</li> <li>• The initiative towards Cleaner Electricity in Latin America and the Caribbean</li> </ul> </li> </ul> <p>IRENA Insights Webinar series (<a href="#">Click here</a>):</p> <ul style="list-style-type: none"> <li>• Renewables and energy efficiency addressing the rising energy usage of cryptocurrency mining</li> <li>• Mini Grids of the future: Renewables, innovation and resilience</li> <li>• Skill Building for the Energy Transition (see also under Long-Term Energy scenarios campaign and network output)</li> <li>• Green Hydrogen a Guide to Policy Making</li> <li>• Green Hydrogen Cost Reduction</li> <li>• Scaling up Electrolysers to Meet the 1.5C Climate Goal</li> </ul>
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<sup>151</sup> 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.

		<ul style="list-style-type: none"> <li>• Renewable Power Generation Costs in 2020: Cost Declines and Record Capacity Additions</li> <li>• Supporting Climate Action Ahead of COP26</li> <li>• Planning and prospects for renewable power: Eastern and Southern Africa is indeed part of the IRENA insights.</li> <li>• Renewable Methanol; An Enabler for Carbon Neutrality in the Chemical and Liquid Fuel Sectors</li> <li>• Climate-safe 1.5°C pathway by 2050: Technology solutions and investment needs</li> <li>• INSPIRE: IRENA’s interactive tool for patent trends and international standards in RE</li> <li>• Thermal energy storage: a key enabler of increased renewables penetration in energy systems</li> <li>• Net-zero iron and steel production: challenges, options and what needs to happen now</li> </ul> <p>Other Events:</p> <ul style="list-style-type: none"> <li>• Urban Energy Transition for Achieving China's Carbon Neutrality</li> <li>• UN High Level Dialogue - Ministerial Thematic Forum and side event</li> <li>• MI-5: Tracking progress and demonstrating impacts of clean energy innovation (Sept. 2020)</li> <li>• Tracking Clean Energy Innovation Progress: Increasing the Efficiency of R&amp;D Policies through Data and Analyses (May 2021)</li> <li>• MI-6: Tracking Clean Energy Innovation Progress: Increasing the Efficiency of R&amp;D Policies through Data and Analysis (June 2021)</li> </ul> <p>Innovative strategies to deliver the deep decarbonisation of industrial processes</p>
Coalition for Action	Completed	<p>Reports/Briefs published, and events held:</p> <ul style="list-style-type: none"> <li>• 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). (<a href="#">Click here</a>)</li> <li>• IRENA Coalition for Action Members Webinar: COVID-19 and Beyond (Apr. 2020). (<a href="#">Click here</a>)</li> <li>• IRENA Coalition for Action Members mid-year strategy meeting (Oct. 2020). (<a href="#">Click here</a>)</li> </ul>

		<ul style="list-style-type: none"> <li>• IRENA Coalition for Action Members Call to Action in Response to COVID-19: Renewable Energy is Key Part of the Solution (Apr. 2020). (<a href="#">Click here</a>).</li> <li>• 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) (<a href="#">Click here</a>)</li> <li>• IRENA Coalition for Action country papers of the Coalition Business and Investors Group (Algeria, Colombia, Jordan, Mexico, Tunisia and Viet Nam) (<a href="#">Click here</a>).</li> <li>• Coalition for Action white paper “Stimulating Investment in Community Energy” and launch webinar (<a href="#">Click here</a>)</li> <li>• Public-Private Dialogue at the 11th IRENA pre- Assembly (<a href="#">Click here</a>)</li> <li>• Coalition for Action white paper on “Companies in Transition Towards 100% Renewables: Focus on Heating and Cooling” and launch webinar. (<a href="#">Click here</a>)</li> <li>• Coalition for Action white paper on “Hydrogen Best Practices: Lessons Learned” (<a href="#">Click here</a>)</li> <li>• IRENA Coalition for Action Members Joint Statement: Advancing Renewables in Agriculture to Meet SDGs and Climate Objectives (<a href="#">Click here</a>)</li> <li>• IRENA Coalition for Action mid-year strategy meeting (Sept 2021) (<a href="#">Click here</a>)</li> <li>• IRENA Coalition for Action Members Joint Call to Action: Renewable Energy Jobs for a Just and Inclusive Energy Transition (<a href="#">Click here</a>)</li> </ul> <p>Reports/briefs and events under preparation:</p> <ul style="list-style-type: none"> <li>• Coalition for Action country papers of the Coalition Business and Investors Group (India (<a href="#">Click here</a>), Philippines, South Africa)</li> <li>• Coalition for Action white paper on “Best Practices in Community Energy”</li> <li>• Coalition for Action brief on “Origination/certification for green hydrogen”</li> <li>• Coalition for Action white paper on “Towards 100% renewable energy: Opportunities and challenges to sector coupling”</li> <li>• New Coalition Working Group:</li> <li>• Sustainable Energy Jobs (formerly SEJP, a stand-alone partnership platform)</li> </ul>
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<p>Long-Term Energy scenarios campaign and network<sup>152</sup></p>	<p>Completed</p>	<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"> <li>• 3rd International LTES Forum (6-8 June 2021) ad proceedings</li> <li>• CEM12 Side-event, co-organized with Agora Energiewende (June 2021)</li> <li>• Report on “Benchmarking long-term scenario comparison studies for the clean energy transition” (September 2021)</li> <li>• International Dialogue on Global Best Practices for Strategic Long-Term Energy Planning (Jan 2020). (<a href="#">Click here</a> for event information, and <a href="#">here</a> for proceedings).</li> <li>• Second International Forum on Long-term Energy Scenarios (LTES) for the Clean Energy Transition (March 2020) (<a href="#">Click here</a> for event information, and <a href="#">here</a> for live videos of event)</li> <li>• Campaign outputs contributed to the Policy Briefs in Support of the High-Level Political Forum 2020. (<a href="#">Click here</a> for policy briefs and <a href="#">here</a> for side event link).</li> <li>• Joint IRENA – JRC Expert Workshop on Benchmarking long-term scenario comparison studies for the clean energy transition (Sept. 2020) (<a href="#">Click here</a>)</li> <li>• Campaign synthesis report “Long-term scenarios for the clean energy transition - Best practices and global experiences” (Sept. 2020) (<a href="#">Click here</a>)</li> <li>• 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). (<a href="#">Click here</a>).</li> <li>• IRENA Insights webinar: Scenarios for the Energy Transition: Global Experience and Best Practices (Dec. 2020) (<a href="#">Click here</a>)</li> <li>• LTES Network Information Sessions (Dec. 2020) (<a href="#">Click here</a>)</li> <li>• High level webinar: Planning with Net-Zero Scenarios: Moving from Political Ambition to Country- Level Pathways (Dec. 2020) (<a href="#">Click here</a>)</li> <li>• 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 (<a href="#">Click here</a>)</li> </ul>
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<sup>152</sup> Supported by the Government of Denmark.

## A/12/3

		<ul style="list-style-type: none"><li>• “Scenario for the Energy Transition: Global experience and best practices” (Sept. 2020) (<a href="#">Click here</a>).</li></ul> Reports and events under preparation: <ul style="list-style-type: none"><li>• Dashboard on planning and clean energy transition scenarios (September 2021)</li><li>• Proceedings from the LAC LTES series under preparation</li><li>• Webinar series: Long-Term Energy Scenarios (LTES) for Developing National Clean Energy Transition Plans in Africa (<a href="#">Click here</a>)</li></ul>
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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 <sup>153</sup> : Project Navigator and Sustainable Energy Marketplace	Completed	<p>Climate Investment Platform launched at 10<sup>th</sup> IRENA Assembly (Jan. 2020). (<a href="#">Click here</a> for webpage).</p> <p>Partners:</p> <ul style="list-style-type: none"> <li>• 320 partners registered on the CIP, of which 68 can provide significant financial support and 74 are willing to provide technical assistance to projects.</li> <li>• Registrations of financial partners that can provide significant financial support include: 12 Multilateral Financial Institutions, 3 Local Financial Institutions, 14 International Development Organisations, 5 Bilateral Financial Institutions, 11 Private Investors and 23 Private Companies.</li> </ul> <p>Projects and project support:</p> <ul style="list-style-type: none"> <li>• 286 projects on the CIP sourced to date through the platform with 120 being eligible for support.</li> <li>• 26 Project Information Documents (PIDs) are in the final stages of preparation and will be introduced to CIP partners. 15 PIDs introduced to financial partners with a 53% match rate.</li> <li>• Over 14 projects under the Climate Promise programme assessed for further consideration under the CIP. Technical Assistance and Capacity Building:</li> <li>• 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, second cohort August – September 2021) (<a href="#">Click here</a>)</li> <li>• Technical assistance and capacity building for Ecuador to support access to climate finance is completed. (May 2021)</li> <li>• 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)</li> </ul>

<sup>153</sup> 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"> <li>• Open Solar Contracts was launched at the WFES (Jan. 2020). (<a href="#">Click here</a>). Two capacity building events in 2020 in cooperation with the International Solar Alliance.</li> <li>• Capacity building for Sudan to support the preparation of renewable energy projects with Open Solar Contracts is completed (June 2021).</li> <li>• Open Solar Contracts capacity building for MENA region under preparation (planned for December 2021).</li> <li>• Capacity building of the Hindu Kush Himalayas (HKH) region in RE finance and business plan development in cooperation with International Centre for Integrated Mountain Development (ICIMOD) in preparation to be delivered on November 24-25, 2021.</li> <li>• Risk Assessment and Mitigation Platform (RAMP) is operational (<a href="#">click here</a>) and released at World Futures Energy Summit (Jan. 2020).</li> <li>• Capacity building workshop for Sudan on the design of renewable energy auctions (June 2021)</li> </ul> <p>Webinars:</p> <ul style="list-style-type: none"> <li>• UNDP Community of Practice on Energy Meeting on Raising Renewable Energy Ambitions in NDCs. (Sept. 2020) (<a href="#">Click here</a>)</li> <li>• Energy Transformation in Small Island Developing States: Towards sustainable and climate resilient post-pandemic recovery. (Sept. 2020) (<a href="#">Click here</a>)</li> <li>• Introduction to CIP organised for Trade Commissioners of the Government of Canada (Jul. 2020). (<a href="#">Click here</a>)</li> <li>• Open Solar Contracts – preparation, finalisation and capacity building delivered in English and French. (<a href="#">Click here</a>).</li> <li>• At the request of the Coalition for Action, a podcast on CIP was delivered to Mainstream.</li> </ul>
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Project site assessments and feasibility assessments <sup>154</sup>	Completed	<p>Project site assessment</p> <ul style="list-style-type: none"> <li>• 39 solar PV and wind site assessments conducted for Burkina Faso (18), Ecuador (7), Mozambique (12), and Sierra Leone (02).</li> <li>• 32 solar and wind generation profiles to support grid integration and stability studies for Mozambique.</li> <li>• Over 100 solar and wind generation profiles to support generation and transmission expansion studies for Morocco and Mali.</li> <li>• Calculation of the capacity factor for over 400 existing onshore wind power plants to support IRENA costing analysis.</li> </ul> <p>RE potential assessment</p> <ul style="list-style-type: none"> <li>• A suitability assessment conducted for Mauritania (<a href="#">Click here</a>), Burkina Faso (<a href="#">Click here</a>), and Africa. The assessment is ongoing for Colombia.</li> <li>• A zoning assessment conducted for Kyrgyzstan. (report sent to country)</li> <li>• Interim reports on zoning assessment for Arab countries.</li> <li>• United Nations Framework Classification for Geothermal Energy: Pilot applications in the Caribbean, Ethiopia and Indonesia (<a href="#">Click here</a>).</li> </ul> <p>Capacity building</p> <ul style="list-style-type: none"> <li>• Capacity building is being provided to Mali, Niger February 2021 (<a href="#">Click here</a>), and Gabon on RE resource potential assessment under NDCs support activities.</li> <li>• Capacity building conducted for Indonesia on sharing the best practices for resource potential assessment. (81 participants) (August 2021)</li> <li>• Capacity building for Arab states on resource potential assessment and zoning analysis (December 2021).</li> </ul>
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<sup>154</sup> Supported by the Government of the Walloon Region of Belgium.

## A/12/3

IRENA/ADFD Project Facility implementation <sup>155</sup>	Completed	<ul style="list-style-type: none"> <li>• Facilitated soft loans of USD 104.54 million from ADFD for 8 projects in 7th cycle (Jan. 2020). (<a href="#">Click here</a>)</li> <li>• “IRENA/ADFD Project Facility: Lessons from the selection process” (Oct. 2020) (<a href="#">Click here</a>)</li> <li>• Progress monitoring for the 26 projects in the IRENA/ADFD Facility is on-going.</li> <li>• Project appraisals and due diligence is underway for six of the eight projects selected in the seventh cycle (Jan 2020), underway.</li> <li>• 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.</li> <li>• 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.</li> <li>• Announcement of UAE anchor funding of the Energy Transition Accelerator Finance (ETAF) platform at COP26.</li> <li>• Publication of ETAF website, including guidelines on the project eligibility and selection criteria expected in December 2021.</li> <li>• Initiation of negotiations with IFIs to join or collaborate with ETAF: IFC, AIIB and others.</li> </ul>
Renewable readiness assessments (RRA) and REmap	Completed	<p>Completed:</p> <ul style="list-style-type: none"> <li>• Albania (RRA) (March 2021) (<a href="#">Click here</a>)</li> <li>• Belarus (RRA) (July 2021) (<a href="#">Click here</a>)</li> <li>• “Central and South Eastern Europe/South East Europe REmap” summary report (Oct. 2020). (<a href="#">Click here</a>)<sup>156</sup></li> <li>• Belize (RRA) (presented and awaiting country feedback).</li> <li>• Botswana (RRA) (August 2021) (<a href="#">Click here</a>)</li> <li>• El Salvador (RRA) (Dec. 2020) (<a href="#">Click here</a>)</li> <li>• Jordan (RRA) (February 2021) (<a href="#">Click here</a>)</li> <li>• Lebanon (Outlook – RRA REmap) (June 2020). (<a href="#">Click here</a>)</li> <li>• Paraguay (RRA) (<a href="#">Click here</a>)</li> <li>• Tunisia (RRA) (June 2021) (<a href="#">Click here</a>)</li> </ul> <p>In progress:</p> <ul style="list-style-type: none"> <li>• Burkina Faso (RRA), together with the new Financing Energy Transition Chapter (to be finalised in December 2021)</li> <li>• Indonesia (RRA+Remap+ FlexTool)</li> </ul>

<sup>155</sup> Supported by the Government of the United Arab Emirates.

<sup>156</sup> Supported by the European Commission.

		<ul style="list-style-type: none"> <li>• Kyrgyzstan (RRA)</li> <li>• Malaysia (RRA+Remap+FlexTool)</li> <li>• Nigeria (REmap)</li> <li>• Bosnia and Herzegovina (RRA), together with the new Financing Energy Transition chapter (to be finalised in March 2022)</li> </ul> <p>New requests received from the following countries:</p> <ul style="list-style-type: none"> <li>• Iraq (RRA)</li> <li>• Sudan (RRA)</li> </ul>
Long-term planning for energy transition <sup>157</sup>	Completed	<ul style="list-style-type: none"> <li>• Report on the prospects of the power system in Eastern and Southern Africa (analysed with SPLAT) published (April 2021) (<a href="#">Click here</a>)</li> <li>• Update of the North African Power Pool SPLAT model, consisting of electricity generation scenarios (in progress).</li> <li>• National energy masterplan development support programme established and in progress with the Cameroon government.</li> <li>• Support being provided to African Union Development Agency (AUDA-NEPAD) with the development of a Continental Power System Masterplan (CMP)</li> <li>• Completion of the SPLAT Model Results Dashboard.</li> </ul> <p>Engagement and knowledge dissemination:</p> <ul style="list-style-type: none"> <li>• Hosted fifth Roundtable Discussion on Strategic Energy Planning (Abu Dhabi, Jan. 2020) (<a href="#">Click here</a>).</li> <li>• “Energy planning brochure” (2020) (<a href="#">Click here</a>)</li> </ul>
		<ul style="list-style-type: none"> <li>• Training provided to African Development Bank staff on planning with renewable energy (September 2021)</li> <li>• Training sessions on long-term energy planning in the NDC context provided to Mali</li> <li>• Training sessions on long-term energy planning in the NDC context provided to Gabon</li> <li>• Training sessions on long-term energy planning in the NDC context provided to Niger</li> <li>• Training sessions on long-term energy planning in the NDC context provided to Ecuador</li> </ul>

<sup>157</sup> Supported by the Governments of Denmark and the Walloon Region of Belgium.

## A/12/3

FlexTool and grid integration support <sup>158</sup>	Completed	<ul style="list-style-type: none"> <li>• IRENA FlexTool training for Latin America: Power systems operators from 13 countries gathered for online training on (May 2020) (<a href="#">Click here</a>).</li> <li>• IRENA FlexTool Training for MENA hosted in partnership with RCREEE and League of Arab States (June 2020). (<a href="#">Click here</a>)</li> <li>• IRENA FlexTool training for ASEAN conducted (June 2020). (<a href="#">Click here</a>)</li> <li>• 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) (<a href="#">Click here</a>)</li> <li>• FlexTool analysis of the impact of electromobility and hydrogen production in Uruguay’s power system input to NDC revision</li> <li>• 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) (<a href="#">Click here</a>).</li> <li>• IRENA Insights webinar on “Grid Stability with High Share of Renewables - Transforming Small Island Power Systems” (Feb 2020)-(Click here)</li> <li>• Finalization Workshop- Grid Assessment Study for Dominican Republic-Day 1 (Dec 2020) (closed workshop)</li> <li>• 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 (closed workshop)</li> <li>• Report on the Grid integration assessment for The Dominican Republic (in progress)</li> <li>• Interim workshop on the Grid Integration study for Republic of Mozambique (closed workshop)</li> <li>• Grid Integration assessment for The Republic of Mozambique-Completed/Norway VC</li> <li>• Report on grid Integration assessment for the Republic of Mozambique-In progress/Norway VC</li> <li>• Report “Synthesis of past IRENA grid assessment studies” (in progress)</li> <li>• Grid Integration assessment for the Kingdom of Tonga (in progress)</li> </ul>
Socio-economic footprint at the country level (five case studies)	In progress	<ul style="list-style-type: none"> <li>• Reports on Japan launch in January 2022</li> <li>• Report on Indonesia, ASEAN<sup>159</sup> in review stage. Ongoing analysis for Egypt, and South Africa.</li> </ul>

<sup>158</sup> Supported by the Governments of Norway and NDC Partnership.

<sup>159</sup> Supported by the Government of Denmark.

<p>Energy transition in NDCs: development and implementation<sup>160</sup></p>	<p>Completed</p>	<p>IRENA is engaging with 73 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 (<a href="#">Click here</a> for related article):</p> <ul style="list-style-type: none"> <li>• Scoping (16)<sup>161</sup></li> <li>• Work plan development (9)<sup>162</sup></li> <li>• Implementation of Support (30)<sup>163</sup></li> <li>• Input to NDC already provided (18)<sup>164</sup></li> </ul> <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"> <li>• 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. (finalised)</li> <li>• 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 submitted an updated NDC in 2020 and 2021. (finalised)</li> <li>• Climate action support analysis - Analysis of the cost-effectiveness of renewable energy technology options in the climate action planning processes in The Gambia (finalized)</li> </ul>
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<sup>160</sup> Supported by Government of the Walloon Region of Belgium, NDC Partnership and UNDP.

<sup>161</sup> Afghanistan, Bahamas, Barbados, Cambodia, Cuba, Guyana, Indonesia, Lao PDR, Myanmar, Nauru, Panama, Peru, South Africa, Thailand, UAE, Vanuatu.

<sup>162</sup> Belarus, Chad, Egypt, Georgia, Morocco, Pakistan, Palau, Rwanda, Trinidad and Tobago.

<sup>163</sup> Albania, Benin, Bosnia and Herzegovina, Botswana, Burkina Faso, Cameroon, Colombia, Dominica, Ecuador, El Salvador, Fiji, Gabon, Kazakhstan, Mali, Mauritius, Mongolia, Mozambique, Nicaragua, Niger, North Macedonia, Saint Lucia, Saint Vincent and the Grenadines, Sao Tome and Principe, Sudan, Tonga, Turkey, Uganda, Uruguay, Uzbekistan, and Zambia.

<sup>164</sup> Antigua and Barbuda, Belize, Bhutan, Dominican Republic, Eswatini, Gambia, Grenada, Jordan, Kyrgyzstan, Lebanon, Liberia, Nepal, Nigeria, Papua New Guinea, Paraguay, Saint Kitts and Nevis, Seuchelles and Zimbabwe.

		<ul style="list-style-type: none"> <li>• Climate action support analysis - Assessment of cost-effectiveness mitigation options to inform Saint Kitts and Nevis' update of the NDC (finalized)</li> <li>• Climate action support analysis - Renewable energy technology needs for climate action implementation in Antigua and Barbuda (finalized)</li> <li>• 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)</li> <li>• Climate action support analysis - Renewable energy for climate action implementation in Nicaragua (finalized)</li> <li>• Climate action support analysis - Mitigation analysis in the agro-industry subsector in El Salvador (finalised)</li> <li>• 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. (finalised)</li> <li>• 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.</li> </ul> <p>The following activities were completed by country:</p> <ul style="list-style-type: none"> <li>• Antigua and Barbuda: Renewable energy technology needs report (acknowledged in the NDC, <a href="#">Click here</a>)</li> <li>• Grenada: NDC review support. IRENA support acknowledged in the new NDC (<a href="#">Click here</a>), Data gap analysis report, MRV report, capacity building workshop (March 2021)</li> <li>• Nigeria: 'Enhancing energy statistics in Nigeria' report, Nigeria energy balance, MRV report, Capacity building workshop (May 2021)</li> <li>• Belize: Energy data audit report, Energy emissions and MRV report</li> <li>• Benin: Analysis of GHG emissions report</li> <li>• Dominican Republic: NDC target review, GHG inventory review, capacity building on RE technologies</li> <li>• Ecuador: 'Grid emission factor methodology' report, Implementation of emissions automation module, 'Mitigation action methodology review' report, Review of emission factors and related energy data templates.</li> </ul>
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		<ul style="list-style-type: none"> <li>• El Salvador: IRENA mitigation analysis in the end-use sector, Energy data gaps report</li> <li>• Mozambique: Energy data report and energy balance, 10-week training on energy statistics</li> <li>• Niger: ‘Development of mini-GHG inventories’ report, 10-week online training on energy statistics conducted</li> <li>• Papua New Guinea: Support provided in drafting NDC, IRENA support was acknowledged in the new NDC (<a href="#">Click here</a>), data gaps analysis report</li> <li>• St. Kitts and Nevis: IRENA mitigation analysis which led to the adoption of a 100 percent renewable energy target in the updated NDC (acknowledgment, <a href="#">Click here</a>)</li> <li>• St Vincent and Grenadines: first draft of the data gaps analysis report shared</li> <li>• Sudan: Needs assessment and data gaps analysis report, Construction of a national energy balance, 1st stakeholder engagement workshop (March 2021) (<a href="#">Click here</a>), 2nd Stakeholder engagement workshop ‘MRV discussion’ (August 2021), Off grid solar installers survey conducted in Khartoum</li> <li>• The Gambia: Mitigation analysis which led an enhanced ambition in the updated NDC (acknowledged, <a href="#">Click here</a>).</li> <li>• Tonga: MRV report, Data gaps assessment</li> <li>• Uganda: Data audit report</li> <li>• Zambia: Construction of 2016-2019 energy balances and related report, Fossil fuel emissions report, Data quality and verification trainings conducted</li> <li>• Zimbabwe: Mitigation analysis acknowledged in the updated NDC (<a href="#">Click here</a>)</li> </ul> <p>COP 26 Regional climate week events:</p> <ul style="list-style-type: none"> <li>• COP 26 - Asia-Pacific Climate Week Side event – Nationally Determined Contributions in the Asia Pacific Region as the main driver of decarbonisation, July 2021 (<a href="#">Click here</a>)</li> <li>• COP 26 - Africa Climate Week Side event – Nationally Determined Contributions in Africa as the main driver of decarbonization (<a href="#">Click here</a>)</li> <li>• COP 26 event - Raising climate ambition in The Gambia - best practices and lessons learned (<a href="#">Click here</a>)</li> </ul>
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## A/12/3

Entrepreneurship Facility <sup>165</sup>	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) (<a href="#">Click here</a>)</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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<sup>165</sup> Supported by Government of the Walloon Region of Belgium.

ADDITIONAL OUTPUTS		
Strategic Management		
Outputs	Status	Description
Comprehensive communication and outreach strategy	Completed	<p>Supported and co-ordinated the release of 121 publications in the biennium.</p> <p>29 publications were translated to nine different languages (Arabic, Chinese, French, Spanish, Russian and also to German, Japanese, Italian and Portuguese).</p> <p>Since 2020, IRENA publications were downloaded 3.3 million times.<sup>166</sup></p> <p>IRENA publications featured in knowledge sharing platforms and electronic libraries/stores, including Apple store, Scribd, Refinitiv, Amazon and others.</p> <p>Publications 2020 strategy developed, and communications and outreach strategies aligned. Limited printing and further digitalization.</p> <p>Ongoing review of publications management processes with the aim to improve and stream.</p> <p>Publications 2020 strategy developed, and communications and outreach strategies aligned.</p> <p>Communication supports provided to publication releases, webinars, press releases, digital stories, short videos, website updates etc.</p> <p>New Expert Insights section provides a space for IRENA experts to reflect on renewable energy issues and trends to raise awareness on emerging issues in the renewable energy sector. Since inception in December 2020, 12 Expert Insight articles have been published.</p> <p>Expansion of IRENA's digital products, including 8 digital articles, 16 mini-videos and the first interactive version of an IRENA report.</p> <p>The World Energy Transitions Outlook (WETO) was recreated in an interactive format enhancing browsing experience, discoverability by online search tools and providing interactive figures and charts.</p> <p>WETO generated 2,107 media articles, 35,000 downloads, and 106,000 views.</p> <p>IRENA referenced in over 36,200 media articles in 44 languages across 173 countries.</p> <p>IRENA Director-General gave 40 interviews.</p> <p>76,614 e-mail subscribers.</p>

<sup>166</sup> The download data is obtained via Webtrends Analytics and includes additional data sources compared to the previous biennium report.

		<p>2.3 million people, browsed 9 million pages on <a href="http://www.IRENA.org">www.IRENA.org</a></p> <p>111,800 Twitter followers.</p> <p>120,134 LinkedIn followers.</p> <p>473,602 Facebook followers</p> <p>CNN partnership to boost awareness of IRENA's mission and role during key moments such as G20, COP26 and the 12th IRENA Assembly. This includes a vignette series, TV commercial, digital article and additional editorial support. Within the first 2 weeks, the "5 choices article" alone generated 1.4K page views and 1.5k unique visits.</p>
Governance Support Office	Completed	<p>Coordinated over 30 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"> <li>• Organisation and conduct of the 10<sup>th</sup> session of the IRENA Assembly and publication of the Summary Report (<a href="#">Click here</a>).</li> <li>• Organisation and conduct of the 19<sup>th</sup> and 20<sup>th</sup> Council meetings in virtual format and publication of the Summary Reports (<a href="#">Click here</a>).</li> </ul>

		<ul style="list-style-type: none"> <li>• Organisation and conduct of the 11<sup>th</sup> session of the IRENA Assembly in virtual format and publication of the Summary Report (<a href="#">Click here</a>).</li> <li>• Organisation and conduct of the 21<sup>st</sup> Council meeting in virtual format and publication of the Summary Report (<a href="#">Click here</a>).</li> <li>• Organisation and conduct of the 22<sup>nd</sup> Council meeting in hybrid format, including the meetings of the Administrative and Finance Committee (AFC) and the Programme and Strategy Committee (PSC), and publication of the Summary Report (<a href="#">Click here</a>).</li> <li>• Preparation underway for the 12<sup>th</sup> session of the IRENA Assembly and related meetings.</li> </ul> <p>High-Level Meetings:</p> <ul style="list-style-type: none"> <li>• Organisation and conduct of the first edition of the Global High-Level Forum on Energy Transition: Science and raising ambition towards COP 26 (<a href="#">Click here</a>)</li> </ul> <p>Legislators:</p> <ul style="list-style-type: none"> <li>• Organisation of the fifth IRENA Legislators Forum (<a href="#">Click here</a>)</li> <li>• Organisation of the sixth IRENA Legislators Forum (<a href="#">Click here</a>)</li> <li>• Organisation of the first edition of the IRENA Legislators Dialogue (July 2020) (<a href="#">Click here</a>)</li> <li>• Publication of issues n.11 - "Insights from the Fifth Legislators Forum" (May 2020) (<a href="#">Click here</a>), issue n.12 - "The Post-COVID Recovery: An Agenda for Resilience, Development and Equality" (March 2021) (<a href="#">Click here</a>), and issue n.13 – “Cities of the future – the rise of renewables”(December 2021) (forthcoming) of REview for Parliamentarians.</li> <li>• Preparation underway for the seventh IRENA Legislators Forum at the margins of 12 Assembly.</li> </ul> <p>Permanent Representatives</p> <ul style="list-style-type: none"> <li>• Six editions of the Renewables Talk for Permanent Representatives (May 2020) (<a href="#">Click here</a>) (Dec. 2020) (<a href="#">Click here</a>) (March 2021) (<a href="#">Click here</a>) (June 2021) (Oct 2021) (<a href="#">Click here</a>) (Dec 2021)</li> </ul>
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		<ul style="list-style-type: none"> <li>• Planned and organised over 25 ceremonies for the Presentation of Credential Letters resulting in an increased number (64) of accredited Permanent Representatives.</li> </ul> <p>Youth</p> <ul style="list-style-type: none"> <li>• Organisation of the first IRENA Youth Forum during the 10<sup>th</sup> Assembly (Jan 2020) (<a href="#">Click here</a>).</li> <li>• Organisation of three thematic working group meetings in preparation for the 2020 IRENA Youth Forum (Jan 2020) (<a href="#">Click here</a>).</li> <li>• 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) (<a href="#">Click here</a>).</li> <li>• Partnership with the Youth Sustainable Energy Hub, the SDG 7 Youth Constituency project that catalyses youth action on sustainable energy (Feb. 2021) (<a href="#">Click here</a>).</li> <li>• Organisation of the second IRENA Youth Forum (<a href="#">Click here</a>) during the Stakeholder Week at the 11<sup>th</sup> Assembly.</li> <li>• Six editions of the IRENA Youth Talk (June 2020) (<a href="#">Click here</a>) (Oct. 2020) (<a href="#">Click here</a>) (June 2021) (<a href="#">Click here</a>) (July 2021) (<a href="#">Click here</a>) (Sept 2021) (<a href="#">Click here</a>) (Dec 2021) (<a href="#">Click here</a>).</li> <li>• Organisation of three thematic virtual meetings in preparation for the 2021 IRENA Youth Forum (Jan 2021) (<a href="#">Click here</a>).</li> <li>• Preparation underway for the third IRENA Youth Forum at the margins of 12 Assembly.</li> </ul>
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"> <li>• 2020 input on the theme “<i>Accelerated action and transformative pathways: realizing the decade of action and delivery for sustainable development</i>” (<a href="#">Click here</a>)</li> <li>• 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</i></li> </ul>

		<p><i>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> (<a href="#">Click here</a>)</p> <p>Organisation of the following side-events:</p> <ul style="list-style-type: none"> <li>• 2020 UN HLPF “<i>Harnessing energy transformation for a sustainable recovery</i>” (<a href="#">Click here</a>)</li> <li>• 2021 UN HLPF “<i>Renewable Energy as a key element of post-COVID recovery in Sub-Saharan Africa</i>” (<a href="#">Click here</a>)</li> <li>• 2021 UN Second Committee “<i>Energy transition for sustainable development and climate action</i>”</li> </ul> <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>” (75<sup>th</sup> session in 2020 and 76<sup>th</sup> session in 2021)</p> <p>Support to implementation of selected MoUs:</p> <ul style="list-style-type: none"> <li>- UNOHRLLS: UN-OHRLLS joined SIDS Lighthouse Initiative and agreement developed on joint activities to support energy transition in LDCs and LLDCs.</li> <li>- UNDOS</li> <li>- UNDESA</li> </ul> <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> <ul style="list-style-type: none"> <li>• Update provided to New York Community on CIP progress during 13 May 2020 briefing.</li> <li>• Updates provided on implementation of SIDS Energy Transition as part of SIDS Climate Action Summit Package (April 2020, March 2021)</li> </ul>
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## A/12/3

<p>Legal Office</p>	<p>Completed<sup>1</sup></p>	<p>The Legal Office has provided legal advice and guidance in relation to all the areas of activity of the organization. More than 700 requests for assistance have been processed covering, among others, institutional and governance matters; preparation of and advising on the preparation of internal issuances, guidelines and directives; administrative and HR matters; commercial contracts; collaborative arrangements, agreements and strategic partnerships; communications; and publications matters.</p> <p>The Legal Office has provided legal support for: (i) the conduct of the 10th, 11th and the forthcoming 12th session of the Assembly. This included facilitating the work of the Credentials Committee and review from a legal perspective of the relevant documentation submitted to the 10th and 11th sessions of the Assembly and to be submitted to the 12th Assembly; and, (ii) the conduct of the 19th; 20th 21st and 22nd Council including by facilitating review of the credential letters submitted by the Members and review from the legal perspective of the documentation submitted to the Council.</p> <p>Ongoing support has been provided for the review of the credentials of the Permanent Representatives designated by the Members.</p> <p>The Legal Office led the initiative for the clarification of the Rules of Procedure of the Assembly and of the Council concerning interpretation of the “competent authority” for the issuance of the letter of credentials for the Members’ participation in the meetings of the governing bodies. The matter was considered and approved by the Assembly at its 11th session.</p> <p>The Legal Office led the action for the appointment of the arbitrators mandated to consider requests submitted by staff for the review of the eligible administrative decisions in accordance with the staff regulations and rules. The matter was considered and approved by the Council at its 21st session.</p> <p>More than 250 requests have been processed concerning conclusion of cooperation arrangements, including MoUs, partnership agreements, cooperation agreements, voluntary contributions, etc. More than 65 commercial agreements and contracts have been reviewed in addition to the legal support provided to the Contract Review Committee and in relation to other requests for assistance submitted by the Procurement office.</p> <p>Terms of Use have been prepared for various IRENA platforms, notably in relation to the Climate Investment Platform and the recently</p>
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		<p>launched Energy Transition Accelerator Financing Platformom.</p> <p>Ongoing legal support on the integration of various third party data into the Global Atlas for Renewable Energy has been provided throughout the year.</p> <p>Existing templates (such as on the Project Agreements and General Terms and Conditions of Contract) have been reviewed and a number of new templates have been prepared to streamline the processes, such as the partnership agreement to facilitate cooperation with the private sector; undertaking for the conduct of hybrid events, nondisclosure/confidentiality agreements, various templates for publications on the use of IRENA's intellectual property, use of IRENA's name and logo, disclaimers, etc.</p> <p>The Legal Office led preparation of the (i) Guidelines on designation of IRENA Emissaries. The Emissaries will facilitate and promote the Agency work at national, regional and international level; and, (ii) Guiding Principles for Engaging in Cooperation Activities with the Private Sector (<a href="#">Click here</a> for news article). Support has been provided concerning legal review of directives, guidelines and issuances prepared by other Divisions and offices.</p>
Events Unit	Completed <sup>1</sup>	<p>Events and Missions database for internal and external communication maintained.</p> <p>Organised 316 events (since January 2020), of which 278 were virtual events and 38 hybrid.</p> <p>Growth @ IRENA programme (online): Over 60 students (2020).</p> <p>Student Leaders Programme, part of Growth@ IRENA programme (online): 50 students during its Spring cohort (2021) and 100 students during its Autumn cohort (2021) being extended to international participation.</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 Cares, Dubai Electricity &amp; 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 &amp; supported the attendance of 3 delegates from 3 delegations during its 22nd Council &amp; Committee meetings.</p>

## A/12/3

Diversification of resource base	Completed	<p>New contributions concluded in 2020/2021:</p> <ul style="list-style-type: none"> <li>• European Commission (Innovation)</li> <li>• Flemish Region of Belgium (FDCR)</li> <li>• Germany, International Climate Initiative (SIDSLighthouses)</li> <li>• Germany, Federal Ministry of Economics and Technology (BMWi) (Various projects includingWETO)</li> <li>• Germany, Federal Foreign Office (Geopolitics ofHydrogen)</li> <li>• Germany, Federal Ministry for EconomicCooperation and Development (BMZ) (Renewable Energy Transition Africa)</li> <li>• International Bank for Reconstruction andDevelopment (SDG7 Tracking Report)</li> <li>• Italy, Ministry of Foreign Affairs and International Cooperation (Desert to Power inSahel and Climate Investment Platform)</li> <li>• Italy, Ministry of Foreign Affairs and International Cooperation (Offshore renewablesand Ocean energy)</li> <li>• Japan, MAFF (Various projects)</li> <li>• Japan, METI (Annual, Various projects)</li> <li>• Korea Energy Economics Institute (Report "Northeast Asia Power System Interconnections:Lessons from the Regional Initiatives for the Promotion of Renewable Power Deployment and Trade")</li> <li>• NDP Partnership (CAEP)</li> <li>• Saudi Arabia, KAPSARC (G20)</li> <li>• UNDP (Climate Promise)</li> <li>• Walloon region of Belgium (Various projects and FDCR)</li> </ul>
Monitoring and evaluation system	Completed	<p>External evaluation process concluded. Report transmitted to the 11<sup>th</sup> session of the Assembly.</p> <p>Work Programme implementation database developed to monitor progress in the implementationof the DG's Directives (2020 and 2021) and Work Programme.</p> <p>Self-assessment submitted to IRENA 22<sup>nd</sup> Council.</p>

Programmatic reports to the Council and Assembly	Completed	<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, Dec. 2021)</p>
Strategic outreach	Completed	<p>Since January 2021, IRENA's Director-General held bilateral discussions with 200 representatives from different entities (including regional bodies, non-governmental organisations and the private sector as well as 25 governments.) and had 165 external engagements.</p> <p>Active outreach by IRENA Deputy Director-General and Directors to Members, IOs, multilateral and regional entities and other stakeholders.</p>

Enabling IRENA delivery		
Outputs	Status	Description
Upgrades and enhancements to the IRENA website, platforms, and projects.	Completed <sup>1</sup>	<p>CIP<sup>167</sup> website launched. (<a href="#">Click here</a>).</p> <p>ETAF platform launched (<a href="https://etafplatform.org">https://etafplatform.org</a>).</p> <p>Country Engagement Platform in progress.</p> <p>Quickscan (SIDS) tool website launched. (<a href="#">Click here</a>).</p> <p>Website upgrade in progress.</p> <p>ERP quarterly upgrade.</p> <p>Enhanced ERP reporting / Executive dashboard implemented.</p> <p>Performance Management System implemented.</p> <p>Virtual events platforms consolidated. Provided support to collaborative framework meetings.</p>
Efficient budget services	Completed <sup>1</sup>	<p>Internal monthly reporting and administration of core and voluntary contributions:</p> <ul style="list-style-type: none"> <li>• 34 donor reports</li> <li>• 22 monthly internal core budget reports</li> <li>• 22 monthly internal VC reports</li> </ul> <p>Ongoing support to the Agency in administration of core funds and voluntary contributions.</p>
Delivery of efficient financial services	Completed <sup>1</sup>	<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 <sup>1</sup>	<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>

<sup>167</sup> 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.

Efficient procurement services	Completed <sup>1</sup>	<p>To maintain open, fair, transparent and competitive bidding process, Procurement opportunities continue to be posted on IRENA's website (<a href="http://www.irena.org">www.irena.org</a>) and on United Nations Global Market (<a href="http://www.ungm.org">www.ungm.org</a>) as well as and disseminated to the vendors registered with IRENA database (<a href="http://www.irena.org/procurement">http://www.irena.org/procurement</a>).</p> <p>Annual and quarterly procurement plan continues to be maintained and updated throughout the year.</p>
Effective general and travel services	Completed <sup>1</sup>	<p>Administration support, enhancement of Facility Management, and other services.</p> <p>Health and Safety program enhanced to address COVID-19 pandemic measures.</p> <p>Travel logistic services management for 47 Workshops and 300 Travel requests.</p> <p>Introduction and preparation for online travel tool.</p>