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INTERNATIONAL RENEWABLE ENERGY AGENCY

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**Progress Report of the Director-General
on the Implementation of the Work Programme and Budget for 2018-2019**

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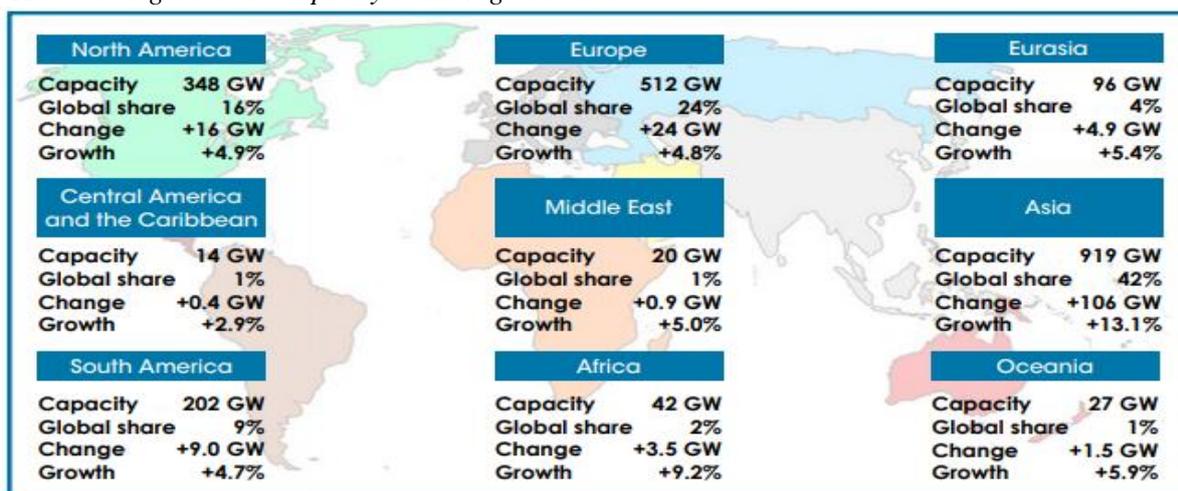
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INTRODUCTION

1. This report provides an account of the progress the Agency has made since the Assembly adopted IRENA's Work Programme and Budget for 2018-2019. Aligned with the vision and direction of the Medium-term Strategy 2018-2022, IRENA's programmatic activities are helping to navigate the rapidly changing energy system. Countries are actively pursuing pathways that effectively channel the ongoing energy transition to deliver a future system that is secure, sustainable, affordable and inclusive.

2. Significant progress has been made worldwide. IRENA's latest global renewable generation capacity statistics show that 167 gigawatts (GW) of new renewables was added in 2017, increasing the renewable generation by 8.3 percent. Capacity expansion continued to be driven by solar and wind, which together accounted for 85 percent of new capacity installed in 2017. Renewables made up a record 61 percent of capacity added worldwide in 2017, coupled with the largest yet USD 333 billion investment¹. This is a strong signal to policy makers and investors that renewable energy is now the preferred option for new power generation capacity around the world. IRENA's Global Landscape of Renewable Energy Finance 2018 also shows the growing confidence of private investors, as the share of private finance globally reached 90 percent in 2016, with 40 percent coming from developers. The report also highlighted the central role of public policy as a key enabler of investment.

Renewable generation capacity at the regional level



For the complete dataset see: IRENA (2018), Renewable capacity statistics 2018, available at: www.irena.org/publications.

3. These developments are significant, but they are now expected given the trends in the past five years. New headlines are emerging indicating that the speed of the global energy transformation is accelerating. For example, Saudi Arabia recently announced plans to invest some USD 200 billion to build 200 GW of solar power by 2030, an amount which would vastly dwarf current projects. In Portugal, renewable energy accounted for 103.6 percent of Portugal's mainland electricity consumption March 2018², noting that the cost-effective renewable electricity will be able to guarantee the total annual electricity consumption by 2040. Such headlines are also found in corporate energy strategies - in the United States, Microsoft has announced the biggest solar power deal in US corporate history, with the agreement to buy 315 megawatts (MW) from the newly built solar plants. It is evident that falling costs, together with enabling frameworks and technology improvements, are placing renewables at the centre of the emerging energy system.

¹ BNEF, January 16, 2018

² <https://www.reuters.com/article/portugal-energy-renewables/portugal-looks-to-renewables-as-march-output-tops-mainland-power-demand-idUSL5N1RG35T>

4. Encouraging trends are also noted in off-grid electricity. IRENA estimates that 6.6 GW of renewable generation serve some 115 million people who use solar lights, as well as 33 million with solar home systems or connected to renewable mini-grids. In addition to residential use, the analysis shows how renewables are providing energy services that support other development goals in health, education, water supply and food security. These trends, while promising, are still lagging on the objective of the Sustainable Development Goal on Energy – SDG7 - which calls for universal access to modern services by 2030. IRENA, as a co-custodian of SDG7, is actively participating in the preparation for review of progress by the United Nations High-level Political Forum on Sustainable Development (HLPF) in July 2018.

5. Examples of change can be found among almost all of IRENA Members, now accounting for 156, as well as in 25 prospective Members in the process of joining the Agency. Countries recognise significant opportunities that energy transformation presents. Policy decisions made today will determine whether the energy system of the future can deliver across three key imperatives: economic growth and development; energy security and universal access; and environmental sustainability. Countries have different starting points based on the maturity of their energy infrastructure, and different economic and social priorities. This calls for a tailored approach to their strategies that acknowledges the implications, and targets improvements. IRENA continues to provide such advice and support to countries, underpinned by its range of analytical knowledge products, growing catalogue of data and tested methodologies and tools.

6. This progress report details the programmatic activities, with the aim to inform on the Agency's performance but also to share information on key analytical findings and regional and country experiences. It provides an overview of its human and financial resources, as at the end of March 2018. The report includes the matrix of deliverables, which has been refined to reflect the new programmatic structure and orientation. The adjusted format aims to provide user-friendly and accessible overview of the status of implementation and will be further refined based on the feedback received in preparation for the next Council, to ensure that the Agency's reporting meets Members' needs.

Thematic Programme Areas

I. Centre of excellence for energy transformation

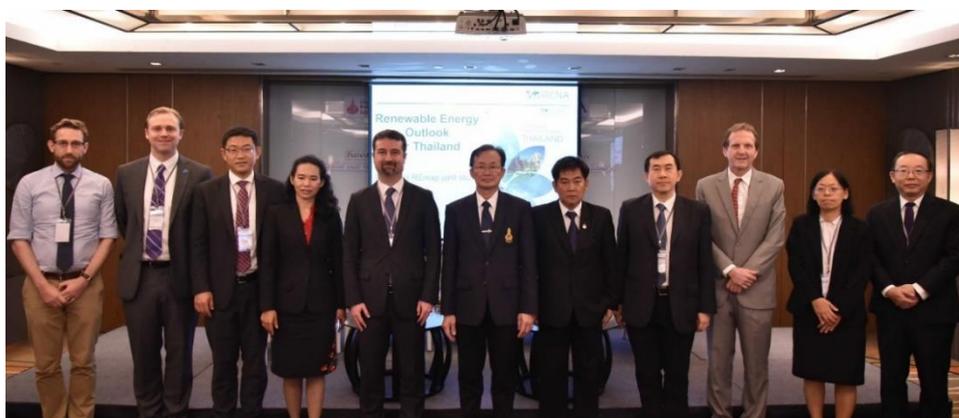
7. The energy transformation, with renewable energy and energy efficiency at its centre, is arguably one of the most important process being undertaken globally today. It is transforming the way we live and grow as a society. Sound analyses and advice on the pathways to create a renewables-based global energy system is central to the ability to achieve transformational goals set out in the Agenda 2030 and the Paris Agreement on climate change. Through its analytical work and global network, IRENA is addressing these needs and capturing lessons learned and best practice to accelerate the common learning curve.

Transformation pathways

8. The transformation of the energy sector is an undertaking which demands informed decision-making across all sectors. IRENA's roadmap for renewable energy, **REmap**, has to date provided an outlook of what is possible to 2030. To stay abreast of country and global needs, REmap is now integrating longer-term perspective to 2050, in its new report on *Energy Transformation: a Roadmap to 2050* (see box in Realising socio-economic benefits). New parameters and functionality, such as integration of end-use considerations and energy efficiency, are being incorporated, as well as options to make its underlying data and information more accessible to country experts. Building on its established capabilities, IRENA will be an operating agent and coordinator of the Clean Energy Ministerial campaign on *long-term energy scenarios for the clean energy transition*.

9. To provide a holistic view of possible pathways to a sustainable energy transformation, IRENA is developing an **Energy Transformation Framework**. This framework incorporates REmap, and flexibility and grid assessment models, among others, with the view to provide comprehensive support to countries as they transform their energy systems. To this end, IRENA has developed a flexibility assessment model called the FlexTool. Using REmap results for the power generation mix, the FlexTool provides a first assessment of the technical feasibility of the integration of variable renewable energy in national power grids. To date, IRENA has conducted flexibility assessments using the tool for Colombia, Uruguay, Thailand and Panama in direct consultation with the respective governments. Follow-up requests for more detailed assessments have been received, and has been completed for Colombia and is ongoing for Thailand.

10. IRENA continued to conduct country level REmap analyses. In January 2018, the Agency launched the *Renewable Energy Outlook: Thailand* in an event in Bangkok, Thailand. The study combined the Renewables Readiness Assessment (RRA) - based on country-led stakeholder consultations - and REmap analysis - a roadmap to double renewables in the energy mix. The report provides detailed outlooks for renewable energy options in Thailand and recommendations on how the country can pursue its renewable energy goals. Results indicate that Thailand could reach 37%



Launch of the report Renewable Energy Outlook: Thailand, in Bangkok, Thailand

renewables while reducing energy costs – saving some USD 8 billion per year when accounting for environmental and health-related costs of fossil fuels. Recommendations are in five areas: (i) Intensifying the role of solar photovoltaic (PV) and wind power; (ii) Scaling up the use of solar thermal technologies in water heating and end-use sectors; (iii) Developing mechanisms to ensure effective thermal use based on renewable energy sources; (iv) Ensuring reliable, high-quality, affordable supply of biomass fuels while diversifying incomes for local farms; and (v) Devising a long-term transportation development plan focusing on electric or renewable-based vehicles and fuel types. The findings of the report will feed into Power Development Plan (PDP) / Alternative Energy Development Plan (AEDP) revisions. Development of the joint RRA-REmap report for Egypt is also underway as well as REmap country reports for Kazakhstan and South Africa.

11. In a side-event on the margins of the eighth Assembly, IRENA presented REmap work at the regional level and promoted exchange of experiences among participants. Participants explored opportunities for the continued application of the REmap approach and discussed how IRENA's renewable energy roadmaps can best contribute to regional processes.

12. This was complemented by a discussion on combined RRA and REmap analysis. Countries commented on their experience with RRA and REmap engagement, and indicated how these specialised country reports have contributed to advance dialogue about renewable energy in their country. Many countries listed examples of how the reports supported action on the ground, either through implementation of recommendations or influencing plans on renewables deployment. Several countries also indicated that the outcomes of the RRA process has helped leverage support (including financial support) from other development partners.

13. IRENA continues to work to support the development of **bioenergy** potential through analyses and outreach. A side event was held during the eighth IRENA Assembly, discussing the brief on Bioenergy and Sustainable Development, developed in cooperation with the IEA Bioenergy Agreement and the UN Food and Agriculture Organization (FAO). The role of bioenergy was noted in supporting a number of UN Sustainable Development Goals (SDGs) such as combatting climate change and providing sustainable energy for all. To address the growing need for a more thorough understanding of farm and forest residues and land-use for energy crops, IRENA developed a report on *Bioenergy Potential from Degraded Land in Africa*. IRENA is also extending analysis on bioenergy supply potential to South East Europe in association with the REmap work in the region. Efforts are being made to widely disseminate these products for a greater impact. For instance, a working paper on Energy and Land Use has been incorporated in the United Nations Convention to Combat Desertification (UNCCD) Global Land Outlook. IRENA's chapter on Renewable Energy in the Energy

Argentina G20 Presidency, 2018

As part of its work to engage international fora, to increase knowledge of benefits of renewable energy and support the global uptake of renewable energy, and at the request of Member States, IRENA continues to engage bodies such as the G20 through its analysis and programmes.

As part of the 2018 G20 Energy Ministers meeting under the Argentinian presidency, IRENA prepared the report *Renewable Energy: a key enabler of the global energy transformation*. The report incorporates 2017 estimates on jobs and other socio-economic variables, REmap results, latest developments in innovative policies in G20 countries and innovative approaches to scaling up renewable energy finance in developing countries, and findings from IRENA's study on *Adapting Market Design to high shares of Variable Renewable Energy*. IRENA is also carrying out an in-depth analysis of policies, regulations and market instruments to support specific flexibility options, such as advanced power plant flexibility, demand-side management, storage and inter-regional connectivity, interaction with energy efficiency and sector coupling.

Future is included in a book by CGIAR on Global Agri-Food Systems to 2050: Threats and Opportunities. Cost data from IRENA's Technology Outlook: Advanced Liquid Biofuels is forming the basis of an article for BE Sustainable magazine (May 2018) on how liquid biofuels can help decarbonize heavy freight, marine and air transport. A significant part of IRENA's work on biomass is supported by the Government of Japan.

European Union REmap analysis

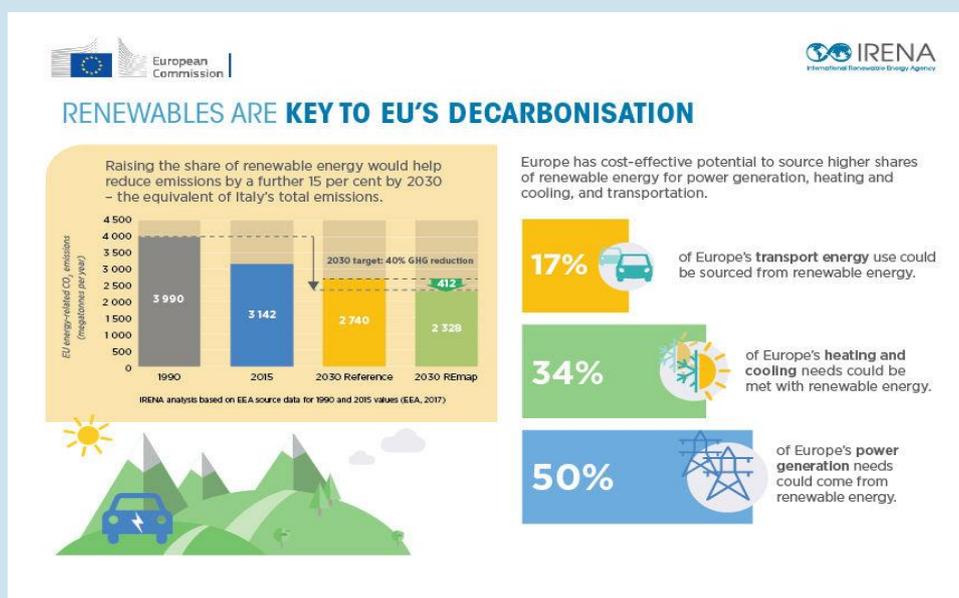
At the request of the European Commission (EC), IRENA developed a regional analysis, *Renewable Energy Prospects for the European Union*. IRENA presented the results of the analysis to a high-level group of stakeholders, including the EU Commissioner for Climate Action and Energy, Miguel Arias Cañete; Member of European Parliament Jose Blanco Lopez; Deputy Minister for Energy of Bulgaria, Zhecho Stankov; and multiple representatives of EU Member States and industry associations. The report provided a timely input in a discussion on the EU legislative framework for renewables for the 2020-2030 period. Main findings include:



Commissioner Cañete tweets link to REmap

legislative framework for renewables for the 2020-2030 period. Main findings include:

- The European Union can increase the share of renewable energy in its energy mix to 34 per cent by 2030 – double the share in 2016 – with a net positive economic impact.
- Raising the share of renewable energy would help reduce emissions by a further 15 per cent by 2030 – an amount equivalent to Italy's total emissions.
- The increase in renewables would result in savings of between EUR 44 billion and EUR 113 billion per year by 2030, when accounting for savings related to the cost of energy, and avoided environmental and health costs.
- Reaching a 34% renewable share by 2030 would require an estimated average investment in renewable energy of around EUR 62 billion per year.



Access solutions

14. Increased access to energy services requires an approach that considers both on- and off-grid solutions. To close the knowledge gap in **off-grid solutions**, IRENA is developing a policy brief, integrating new analysis, based on the 2016 report *Policies and regulations for private sector renewable energy mini-grids*. By adopting the same four analytical lenses - licensing, tariff regulation, risks related to main-grid arrival and access to finance - the report will capture the effectiveness of policies, highlight adaptations since announcements, underline continuing (or new) barriers and derive recommendations for the way forward. Country cases will include those with focus on off-grid solutions, such as Kenya, Tanzania, Nepal, Senegal, Mali, and Rwanda. Off-grid statistics collected will contribute to new analysis on showcasing rapid and innovative developments and enabling factors for the growth of off-grid renewable energy deployment. Analysis will determine what lessons can be drawn for similar contexts globally.

Sustainable Development Goals (SDGs)

Tracking progress towards the SDGs is key to informing policy-making and national implementation agendas. IRENA, together with the UN Statistics Division, the World Bank, IEA and WHO, is a global custodian of SDG7 indicators. Contributing to the national, regional and global SDG7 tracking, IRENA provides up-to-date data and analytical policy work on the different issues addressed in the reporting. Progress towards SDG7 will be reviewed in-depth at the UN High Level Political Forum (HLPF) in July 2018.

In preparation for this Forum, IRENA has been leading and co-leading the development of policy briefs that analyse progress towards SDG7 indicators and linkages with other SDGs. Topics include universal access to electricity; increasing the share of renewables in the global energy mix; sustainable energy technology and innovation; linkages to employment; linkages to climate; and energy sector transformation. IRENA is also a collaborating organisation for briefs on financing of SDG7; interlinkages among food, water and energy; and on briefs with specific regional-focus including Africa, Asia and Pacific, Europe, Latin America and Caribbean, Arab region, and LDCs, LLDCs and SIDS.



Accelerating innovation

15. Experience to date has underlined the importance of engagement for the Agency. This is particularly relevant in the field of innovation where dialogue and information sharing is enabling accelerated energy transformation. IRENA has leveraged access to international fora to both share best practice and learn from global stakeholders, across policy, finance and technology. IRENA is continuing its extensive work on analysing renewable energy **policies**. In April 2018, the joint IRENA-IEA-REN21 report on *Renewable Energy Policies in a Time of Transition* was launched at the Berlin Energy Transition Dialogue. The report provides policy makers with an understanding of policy options that can support the development of renewables in a manner that is sensitive to technology, country context and the state of energy markets. Beginning with recent trends in renewables and the status of policies and targets globally, it takes an in depth look at policies for heating and cooling, transport and power, with an additional chapter on integrating variable renewables into the power system.

16. To support innovation in the area of **finance**, IRENA convened an expert workshop in Nairobi, Kenya, on 29-30 January, 2018. Working in collaboration with Renewable Energy Performance Platform (REPP) and the Climate Investment Funds (CIFs), the workshop brought together representatives of African governments, risk mitigation providers, investors and developers. The following areas for improvement were identified: improve access to existing risk mitigation instruments (e.g. via Sustainable Energy Marketplace), streamline and standardise processes (such as permitting, due diligence, project documentation), and ensure a greater cooperation and coordination, particularly between the public and private sector and among different issuers. Building on the findings from the workshop and previous work, IRENA has developed a concept for an insurance and guarantee platform. Related work focuses on institutional investors and the main barriers that they face, with the view to proposing solutions from policy, regulatory and capital markets perspective.

17. In January 2018, IRENA published the *Global Landscape of Renewable Energy Finance 2018*, prepared in collaboration with the Climate Policy Initiative. The report presents analysis of investment data for recent years highlighting developments in sources of finance, financial instruments, regional split and across different technologies. Highlighted findings include the growth of the share of private finance globally to 90% in 2016, with a very high share in private finance of 40% coming from developers. As a technology, off-shore wind has shown very strong growth recently. The role of public policy as a key enabler of investment, and public spending for policy implementation is also highlighted.

18. Since January the Agency has held two global discussions on **technology** innovation. The first was a Ministerial Roundtable on Innovation for the Energy Transformation: E-Mobility during IRENA's eighth Assembly (see box below for more information). The second was an expert dialogue at the World Future Energy Summit 2018 on innovation for thermal storage technologies. Discussion on thermal storage technologies focused on the role of heat pumps in coupling the electricity and heating sectors for buildings. A highlight was the potential to use heat pumps to increase demand side flexibility to integrate more renewables in power systems. This workshop findings are being incorporated into the *Innovation Outlook for Thermal Energy Storage Technologies*. Upcoming events such as the Clean Energy Ministerial and Mission Innovation Ministerial meetings in May, will be an opportunity to share this information. The second IRENA Innovation Week, to be held in September 2018 in Bonn, Germany, will allow for further discussion and debate on all innovation aspects for energy transformation.

Knowledge hub

19. To provide access to the most up-to-date information on policy developments, IRENA collaborates with the IEA to expand and enrich the **IEA/IRENA Policies and Measures Database**. In previous years, both Latin America and Southeast Asia regions were thoroughly updated, and the database served for the development of the *Regional Market Analysis* reports for both regions. In 2017, the database received more than 150 000 visits. In 2018, IRENA continues to work with IEA in

Ministerial Roundtable “Innovation for the Energy Transformation: E-Mobility”

With the transformation of the power system underway, the challenge faced by countries is now focused on ensuring integration of renewable energy in their power systems and leveraging this progress to increase the share of renewables in end-use sectors. This need was echoed at the IRENA Eighth Assembly *Ministerial Roundtable “Innovation for the Energy Transformation: E-Mobility”*.



H.E. Tarō Kōno, Minister for Foreign Affairs, Japan

The Roundtable highlighted emerging innovation in electro-mobility (e-mobility) and its role in integrating high shares of renewable energy sources. Participants agreed that electric vehicles represent a paradigm shift for the transport and power sectors, with the potential to accelerate the decarbonisation of both sectors through sector-coupling. It will now be important to understand the synergies between sectors as well as the benefits of coupling. Policy makers – both at national, local and city level where pollution is high - need to set up regulatory frameworks and policies to enable this transformation. Key elements include: (1) renewable energy and emission reduction targets for the transport sector, (2) support for infrastructure development, (3) electricity market design that values flexibility, (4) enabling new business models and digitalisation, (5) innovation policies, and (6) communication to and empowering of consumers.



While both developed and emerging economies, rural areas and cities are looking at e-mobility as an option to decarbonise the transport sector, other solutions exist that should not be ignored. For example, solutions such as hydrogen and renewable fuels remain in some country contexts viable options.

maintaining the database through Member country inputs and rigorous research, with a special focus on countries that do not have entries, such as islands in the Caribbean and countries in the Sub-Saharan Africa.

20. Accessibility of this information is of key importance. IRENA’s web platform **REsource** has been integrated into the Agency’s new corporate website. It now includes the latest statistics on: renewable energy auctions; renewables in Nationally Determined Contributions (NDCs); renewable energy balances; REmap options; finance; costing; technology innovations; patents; and socio-economic benefits. The current number of visitors to REsource webpages is around 5,000/month. Some of this work was supported through voluntary contributions from Norway.

II. Global voice of renewables

21. Rigorous empirical and analytical work, underpinned by the strong support of Members, has enabled IRENA to be the voice of renewables at the global, regional and local levels, among diverse audiences. The Agency’s work has influenced the debate in such settings as the UN, G7 and G20, while its data and analyses have gained global recognition and widespread use. IRENA has been also prominent in promoting the role of renewables as a key contributor to climate efforts. Backed by this

body of work, IRENA is engaging with its widening global network to communicate the benefits of renewables and amplify impact.

Realising socio-economic benefits

22. Complementing its global analysis on **socio-economic impacts** of renewable energy, IRENA has begun analysing the project-level impacts of large-scale projects, in particular solar and wind. Looking at the impacts on communities at the different stages of project development provides valuable insights on measures that can maximise benefits and highlight socio-economic considerations that deserve greater attention. In this regard, IRENA is developing a study *Maximising community benefits of large-scale renewable energy deployment: Insights from sub-Saharan Africa* that examines key lessons and best practices that can be drawn from utility-scale solar project development across the region. It is based on the empirical analysis of several case studies utilising the frames of employment, community engagement, skills and gender. This analysis fills an important knowledge gap and supports policy-making towards a just, fair and inclusive energy transition.

Global Energy Transformation: a roadmap to 2050

On 17 April 2018 at the occasion of the Berlin Energy Transition Dialogue hosted by the Germany government, IRENA released the *Global Energy Transformation: a roadmap to 2050*. Updating *Perspectives for the Global Energy Transition* released in 2017, the report measures the socioeconomic footprint of the 2018 REmap, both at global and regional level, and provides insights on the structural drivers of the transition's socioeconomic benefits. It also includes analysis on recent market developments, system integration costs, and future evolution of subsidies from power generation and the transport sector.

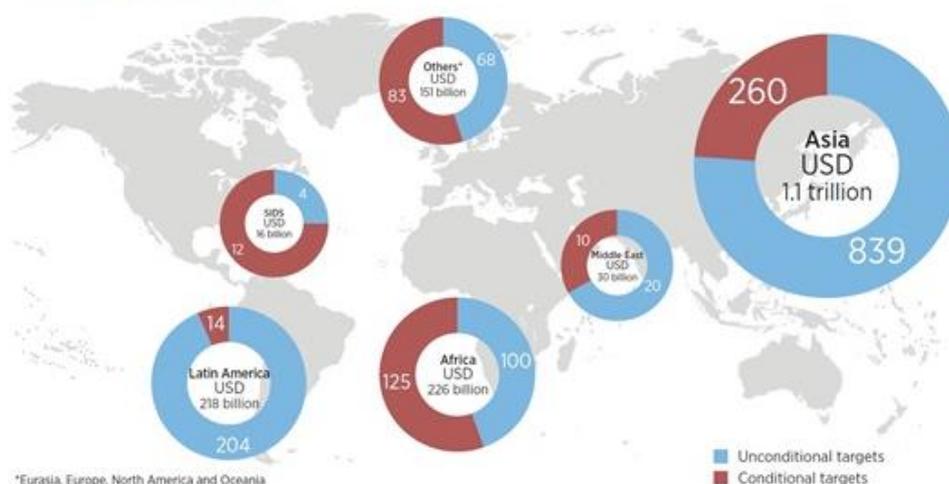
The main findings of the study were:

- The REmap pathway is technically feasible and economically viable. It shows that while the world is making steps in the right direction, action is however far too slow to meet global climate objectives.
- Renewable energy and energy efficiency can provide over 90% of the emission reductions needed to set the world on a path to limiting temperature rise to 2 degrees °C or below.
- The global share of renewable electricity generation would need to increase to 85%, and two-thirds of total energy would need to come from renewable sources by 2050.
- Cumulative investment in the energy system until 2050 would have to total USD 120 trillion, 26 USD trillion more than under current and planned policies.
- GDP would be 1% larger in 2050 compared to reference case and 6.5 million additional jobs would be created worldwide.

23. As part of its series on *Renewable Energy Benefits: Leveraging Local Capacity*, IRENA is publishing an edition on offshore wind at the fifteenth Council meeting to illustrate the potential for value creation along the different segments of the value chain, including established industries. The report also shows synergies between offshore and onshore wind and oil and gas industries. The 2018 edition of the *Renewable Energy and Jobs – Annual Review* will also be released at the fifteenth Council meeting.

24. IRENA found that renewable energy features prominently in most **Nationally Determined Contributions** (NDCs) worldwide. 145 UNFCCC Parties refer to renewable energy measures to mitigate and adapt to climate change, and 109 include quantified renewable energy targets. A report summarising the results of the analysis was discussed at the IRENA eighth Assembly, where Member States provided input on how IRENA can assist countries in NDC efforts, including through its NDC Support Facility. The Support Facility will form a framework of IRENA's support for the NDC

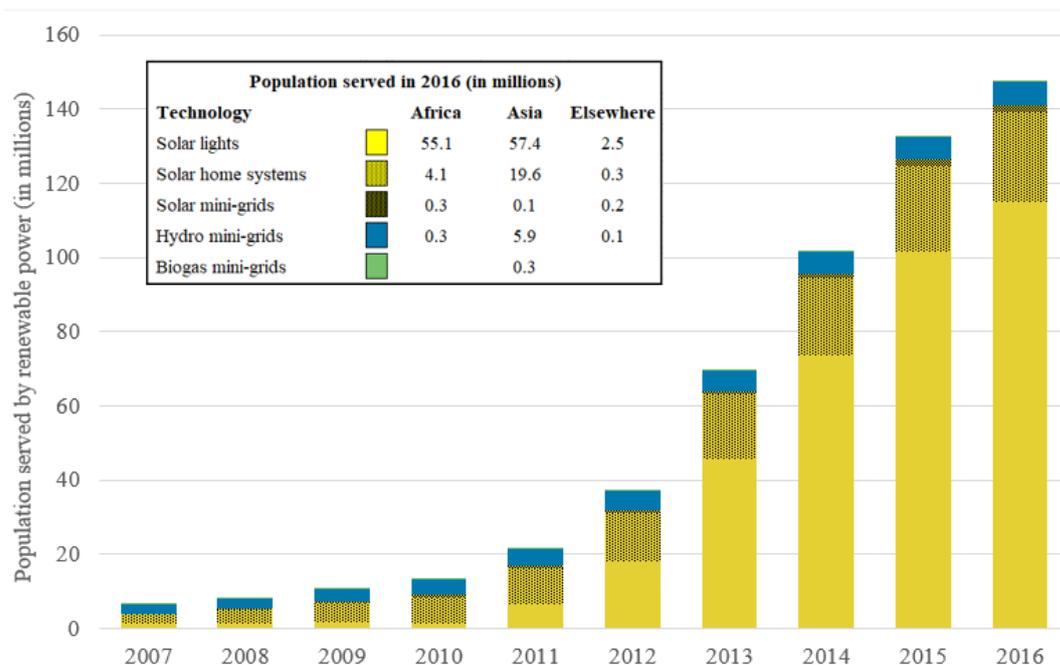
Total investment needed by 2030 for the implementation of renewable energy targets in current NDCs (USD billion)



implementation and development and leverage past and ongoing work of the Agency as well as the work of partners and institutions active in the field. In April 2018, IRENA also submitted its input to the UNFCCC in preparation to the Talanoa Dialogue starting in May 2018. The input illustrates how renewables contribute to the climate objectives set out in the Paris Agreement and how the contribution needs to be translated into the next round of NDCs. The work on NDCs is supported by voluntary contributions of the Government of Japan and the Walloon Region of Belgium.

Informing markets

25. IRENA **data and statistics** have become a trusted reference for decision-makers as they take steps towards a clean energy transition. The fourth edition of IRENA’s *Renewable Capacity Statistics* was published in March 2018. Statistics show that renewable generating capacity increased by 167 GW in 2017 to reach 2,179 GW by the year-end. As in previous years, most new capacity was installed in Asia in 2017, with the highest growth rates in capacity recorded for solar and wind power.



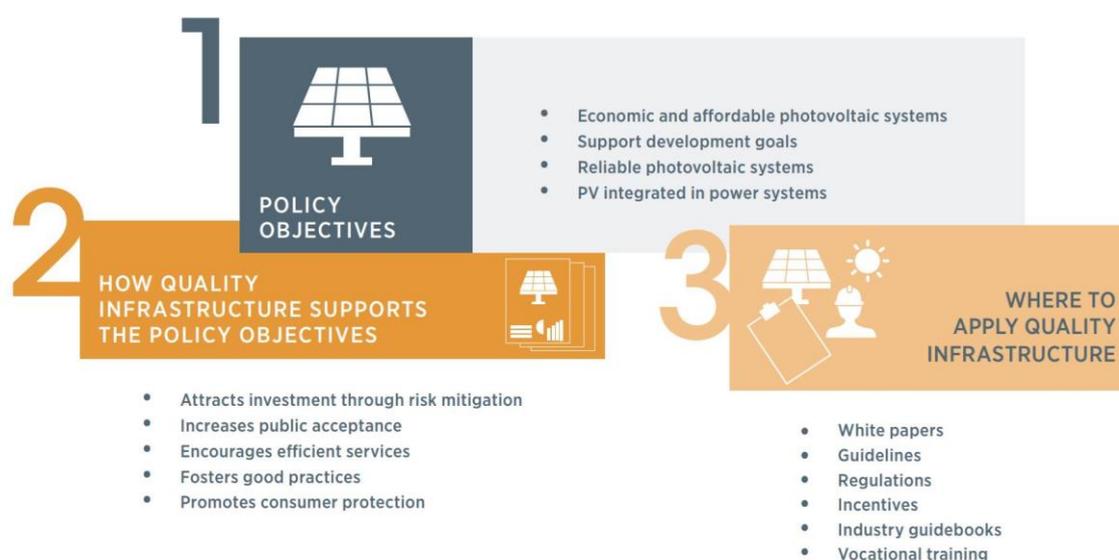
Off-grid renewable energy users, 2007-2016

26. An in-depth analysis of off-grid renewable data is also in final stages of preparation. Results show that some 115 million people use solar lights and 33 million use solar home systems or are connected to mini-grids powered by renewable energy. While solar lights provide a very minimal level of energy services, the latter group can be counted as receiving a basic level of modern energy access. In addition to residential use, the analysis shows how renewables are providing energy services that support development goals in health, education, water supply and food security. It also shows that there has been progress towards reducing dependence on wood fuel for cooking, with about 125 million people using biogas for cooking in 2016 and particularly strong growth in the number of households adopting biogas in Africa.

27. During the eighth Assembly, IRENA released its latest analysis of power generation costs at the eighth Assembly, “*Renewable Power Generation Costs in 2017*”. As part of its work to provide transparent data on the cost and performance of renewable energy technologies, and with the support of the Government of Germany, IRENA has compiled a database of fossil fuel-fired power plant investment costs, efficiency and fuel costs to support an updated analysis of the **cost reduction potential** for renewable power generation in the G20 countries to 2030, including for the first time a detailed analysis of the competitiveness by country. IRENA is also working with the Deutsches Zentrum für Luft- und Raumfahrt (German Aerospace Centre) (DLR) to update its analysis of CSP cost reduction potential to 2030.

28. With the support of the Government of Japan, IRENA has also completed a draft of a comparison of solar PV costs in Japan and cost reduction opportunities and priorities. Initial analysis suggests that although there are some structural reasons for higher costs in Japan, policy makers have the potential to drive down costs further.

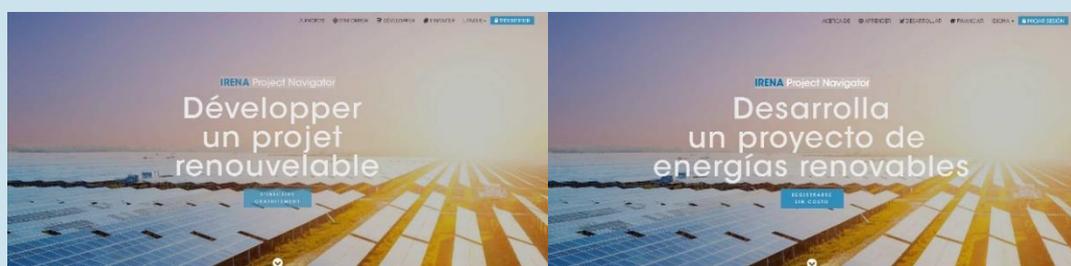
29. The falling **costs of renewable technologies** underlines their improving competitiveness. It is now essential to assure stakeholders that newly deployed technologies will deliver the anticipated services with the expected performance during their lifetime. This was the subject of the side-event at the eighth Assembly of IRENA “*Scaling up solar PV deployment: Implementing projects with assured quality*”, where experts shared experiences on how to develop PV projects based on assured quality. Approaches that support the development of bankable renewable energy projects and quality infrastructure for different types of PV markets were showcased, from nascent to mature markets, and the needs and priorities of stakeholders in these fields were identified. It was emphasised that robust quality assurance protects and accelerates future investments in PV projects, lowers capital costs, improves overall performance, extends module lifespans and can contribute to lower long-term electricity costs. IRENA will continue to work with Member States to implement these quality assurance structures.



Reaching a Diverse Audience

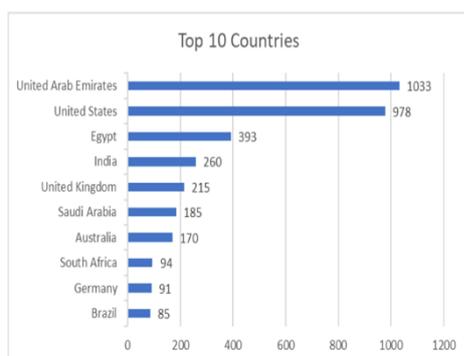


As part of its efforts to amplify impact, IRENA continues to translate key publications. For example, IRENA is translating several renewable project development guidelines from Project Navigator in French and Spanish to support local project developers. IRENA work is also being translated by partners to increase reach. For use and dissemination in Japan, the Ministry of Environment of Japan translated IRENA's report *Planning for the Renewable Future: Long-Term Modelling and Tools to Expand Variable Renewable Power in Emerging Economies* into Japanese. The report, originally launched in January 2017, provides an overview of methodologies for long-term energy planning with a high share of renewable energy, targeting policy makers and planning practitioners.



Amplifying impact

30. IRENA continued to strengthen its position as the global voice of renewables during the first quarter of 2018 by expanding its engagement with a broad public audience while developing a new strategy of targeted communications so its work reaches Members and other stakeholders in a timely and effective manner.



IRENA has been featured in nearly 4,300 articles globally

31. To highlight renewables around the eighth session of the Assembly, IRENA was featured in a special series of the CNN Eco Solutions show called “Renewables on the Rise” with segments airing globally. Concurrently, IRENA ran a campaign across select CNN TV and online platforms, reaching millions. IRENA’s “Assembly hosted media programme” cultivated key relationships with reporters from different countries. In the first quarter, IRENA reached over eight million people on its social media channels, and its revamped website attracted 154,000 users viewing 480,000 pages on IRENA.org.

32. Regarding publications, one of the website’s new functionalities is to display content attractively and accessibly, with prominent positioning for the latest releases and topical “featured” publications. Other sections highlight series like Rethinking Energy, REmap studies, Renewables Readiness Assessments, Technology Briefs and Innovation Outlooks, and invite viewers to explore them further. Between January and March, more than 42,000 publication downloads were recorded. For example, the *Renewable Power Generation Costs in 2017*, which was widely publicised through press releases (picked up by the Guardian, Reuters, and Valor Econômico, among others), social media posts and the IRENA website, has been downloaded over 9,000 times. The report *Renewable Energy Prospects for the European Union*, prepared in co-operation with the

European Commission, was downloaded over 3,000 times (see box under ‘Transformation Pathways’ for more information). A new email format for sharing targeted IRENA publications was piloted with this report launch, resulting in an increase of email open rates from 27% to over 60%.

33. In the context of its efforts to raise awareness about renewables, the Visions of Sustainability event was held during the eighth session of the IRENA Assembly, attracting hundreds of visitors to the exhibition throughout the days of the Abu Dhabi Sustainability Week. The exhibition merged sight and sound to convey to the public the promise, potential and symbiotic nature of renewable energy through the works of world-renowned and local artists.

34. The Agency further contributed to the 2018 edition of the World Future Energy Summit (WFES), organizing eight side-events covering topics relevant to the global energy transition. Furthermore, a new format called “Stories of Success: Achievements and Potential in Renewable Energy” gave Members an opportunity to showcase achievements in renewable energy to audiences at the IRENA booth.

III. Network hub

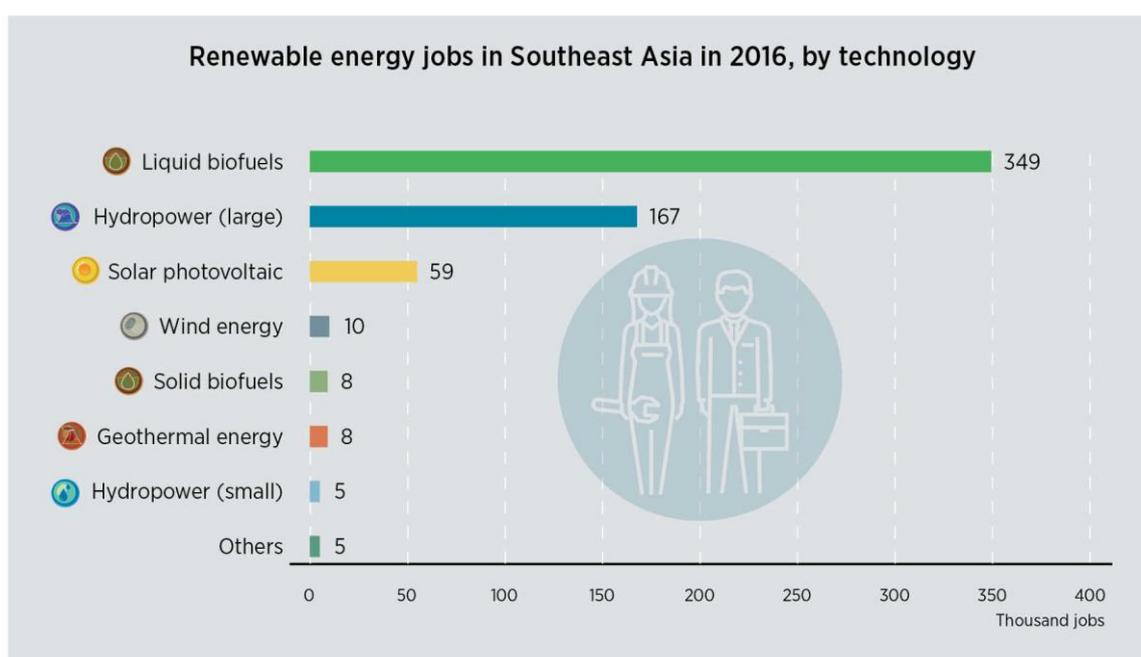
35. Transformation of the global energy system requires increased connectivity at national, regional, and global scales. This ranges from regional and national policy considerations, through cross-border trade and grid interconnections, to city and community engagement. IRENA is building on its collaborative frameworks such as the Clean Energy Corridors, SIDS Lighthouses, and Global Geothermal Alliance (GGA) to conduct needed analyses and to support peer-to-peer exchange, transfer of knowledge, and provision of targeted advice.

Regional action agenda

36. IRENA is working to increase awareness and contribute to regional development through regional programmes, tailored advice and market analysis. **Renewable Energy Market Analysis** series captures the wealth of knowledge and experience embedded in a region and identifies emerging trends and themes at the intersection of public policy and market development. It brings together outcomes



RENEWABLE ENERGY MARKET ANALYSIS SOUTHEAST ASIA



from different IRENA areas of work, including policy, data and statistics, finance, costs, benefits, potentials, tools, technology roadmaps and country support. To date, IRENA has launched three editions of the market analysis, focusing on the Gulf Cooperation Council countries (2015), Latin America (2016) and Southeast Asia which was launched in January 2018. This year, IRENA will update the analysis on GCC and is initiating the analysis on South East Europe.

37. IRENA regional action agendas and plans, as a central Agency activity, have continued in the new biennium. Since January 2018, work has been undertaken on regional agendas and plans for Africa, South East Europe, Central Asia, and Latin America.

38. **Clean Energy Corridors in Africa.** In March, IRENA attended the meeting of the Programme for Infrastructure Development in Africa (PIDA) Steering Committee in Nouakchott, Mauritania. The Agency will closely work with the African Union Commission (AUC) and New Partnership for Africa's Development (NEPAD) to provide substantive input into the preparatory process for the next phase of PIDA implementation for the period 2020-30, based on the Agency's significant work undertaken under the Clean Energy Corridor initiatives in Africa. In particular, inputs will focus on assessment of planning and prospects for renewable energy in Eastern and Southern Africa, including country level resource assessment, zoning of solar PV and wind resources, and variable renewable energy scenario analysis.

39. In partnership with the Economic Community of West African States (ECOWAS) Centre for Renewable Energy and Energy Efficiency (ECREEE), the ECOWAS Commission for Energy and Mines, the ECOWAS Regional Electricity Regulatory Authority (ERERA), the West Africa Power Pool (WAPP) and GIZ, IRENA initiated a capacity building programme on the planning and operation of grids with higher shares of variable renewable energy and on the development of renewable energy

IRENA contribution to the Programme for Infrastructure Development in Africa.

IRENA became a member of the Steering Committee of the Programme for Infrastructure Development in Africa (PIDA) at the end of 2017 and attended the Steering Committee meeting that was held in Nouakchott, Mauritania in March 2018. The objective of this Steering Committee meeting was to evaluate the current status of PIDA implementation, identify challenges and initiate discussions around the scope of the second phase of the programme. With non-hydro renewables expected to feature in this second phase, IRENA presented the Africa Clean Energy Corridor (ACEC) initiative in Eastern and Southern Africa, which are based on the current PIDA's North-South Transmission Corridor. Three key activities for implementation have been identified. These include the capacity building; the review and update renewable energy development plans factoring in the Clean Energy Corridor; and support to regional economic communities and African institutions such as the NEPAD Planning and Coordination Agency in the overall framework of PIDA.

IRENA finalised the System Planning Test (SPLAT) model configuration for the ACEC region. The SPLAT-ACEC model incorporates the analysis of high potential, cost-effective zones for solar PV and wind generation that IRENA conducted with Lawrence Berkeley National Laboratory (LBNL). The current assessment provides a scenario analysis of different shares of non-hydro renewables in the power mix of the ACEC region. It identifies potential utility scale solar PV and wind projects of regional importance to meet the scenario's VRE targets, as well as related transboundary transmission capacity projects. The findings serve as input to regional / continental infrastructure planning processes.

The assessment is in progress and preliminary insights on the scenario analysis and zone selection were shared with the PIDA Steering Committee. IRENA will also provide input on the methodology being developed as part of the PIDA job creation toolkit.

power purchase agreements (PPAs). The programme is designed to strengthen the capacities of local stakeholders. Since the initial meetings in December 2017 and January 2018, IRENA has conducted scoping analysis and developed the training curricula for both topics. Regional training on the planning and operation of grids with higher shares of variable renewable energy will be held in May 2018 in English in Ghana and in French in Cote D'Ivoire for grid operators and utility engineers from the 15 ECOWAS countries.

40. Since January 2018, IRENA has also been engaged in supporting WAPP through the process of the update of the ECOWAS masterplan. The Agency's contribution is expected to cover the support in the collection of reliable data on renewable energy resource potential, costing as well as capacity building on planning and project facilitation. The System Planning Test model for **West Africa** (SPLAT-W) has been updated, with new results incorporated in the forthcoming publication *West Africa: Planning and prospects for renewable energy*. Insights from the analysis were shared and discussed with the WAPP leadership and the technical service provider responsible for the WAPP Masterplan update.

41. Support has been provided to Mali, Togo, Swaziland and Zimbabwe through the Site Appraisals service by assessing the financial pre-feasibility of respectively 32 sites earmarked for renewable energy project development. Financial pre-feasibility will provide a benchmark tariff for the opening of solicited bids within those sites, and allow local authorities and prospective project developers to have a clearer understanding of the economic feasibility and investment needed to develop the sites. The service has also been initiated in Nigeria.

42. In July 2016, Economic Community of Central African States (ECCAS) and IRENA signed a Memorandum of Understanding to support the uptake of renewable energy in **Central Africa**. Specifically, cooperation has included development of the renewable energy component of regional energy policy and identification of priority actions to unlock the region's potential in renewable energy. In this context, the ECCAS Secretariat has asked for support to develop a regional roadmap for renewable energy to identify the bottlenecks and the key priority actions to be taken. As input to the roadmap, the System Planning Test model analysis of planning and prospects for renewable energy in Central Africa is being updated. The results of the roadmap will form the renewable energy component of the regional energy policy, being developed with the support from the African Development Bank. The draft roadmap is expected to be validated by the experts of the region and endorsed by the Ministers of Energy mid-2018.

43. IRENA has also contributed to different regional energy partnerships to streamline planning work across key implementation agencies and improve joint delivery. For example, IRENA forms part

Policy-makers and experts identify key factors to help develop bankable geothermal projects in East Africa

East Africa is one of the regions with the greatest geothermal potential. However, Kenya is the only country that harnesses this potential. The development of geothermal resources in the region will therefore require some form of public intervention to absorb some of the risks, develop clear and transparent licensing requirements and mechanisms to attract private investors.

Ninety participants from nine countries of the region, including project developers, development partners, managers of risk mitigation facilities and capacity building programmes disseminated best practices and innovative models to finance operations, reduce risks, and improve the bankability of geothermal projects in the region.

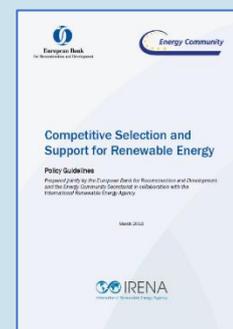


Site visit to Olkaria geothermal field in Kenya

Policy guidelines on Competitive selection and support for renewable energy (March 2018)

Policy guidelines on Competitive selection and support for renewable energy were prepared jointly by the European Bank for Reconstruction and Development (EBRD) and the Energy Community Secretariat in collaboration with the International Renewable Energy Agency.

Intended for countries of the Energy Community Treaty who are also EBRD countries of operation, Guidelines build on IRENA's *Renewable Energy Auctions: A Guide to Design*. They provide recommendations for governments in four areas of auction design: i) the competitive process framework; ii) procurement choices; iii) selection process choices; and iv) delivery mechanism of renewable energy support.



Guidelines are already being used in the policy work of the EBRD and Energy Community Secretariat. In Albania and the former Yugoslav Republic of Macedonia, the EBRD is using the guidelines to assist the local authorities. In Ukraine the guidelines are informing the discussions on the policy framework for supporting renewables.

of the Energy Modelling Platform for Africa (EMP-A) that was launched in January 2018, and contributed to a modular training programme on Capacity Development in Energy Demand and Supply Planning in Africa that will be delivered by training institutes and universities in Africa.

44. **South East Europe.** Engagement with South East Europe is based on Abu Dhabi Communiqué on *Accelerating the Uptake of Renewables in South East Europe*, adopted in January 2017. Building on past work, the European Bank for Reconstruction and Development (EBRD), the Energy Community Secretariat and IRENA developed policy guidelines on *Competitive selection and support for renewable energy*. Policy guidelines provide targeted guidance on the design and implementation of renewable energy auctions, which supports the identification of competitive price for renewable energy technologies (see box on policy guidelines below). The Agency has also supported regional processes. For example, IRENA's *Cost-competitive renewable power generation: Potential across South East Europe* influenced the discussion on the inclusion of renewable energy into the European Commission-led Central and South-eastern European Energy Connectivity (CESEC) initiative. IRENA is initiating regional REmap analysis of the CESEC region, results of which will be incorporated into the CESEC Renewable Energy Action Plan. Analytical next steps were discussed at the first CESEC Working Group Meeting on renewable energy and energy efficiency in Brussels (March 2018) and meeting of the Energy Community's Renewable Energy Coordination Group in Vienna (March 2018).

45. **Central Asia.** Engagement in Central Asia is guided by the Astana Communiqué on *Accelerating the Uptake of Renewables in Central Asia* and its Action Plan. In this context, IRENA is conducting a suitability analysis for solar and wind energy in the region. Analysis will yield detailed and up-to-date information on the renewable energy potential available and support plans to expand power generation and transmission. Once completed, training for national experts will be organised on how to integrate resource assessment maps in the project planning process. IRENA is also planning to organise a workshop on renewable energy policies and on renewable energy statistics for national stakeholders. Other work in the region includes development of a renewables readiness assessment (RRA) for Azerbaijan with expert consultation workshop scheduled to take place from 31 May – 1 June 2018.

46. **Latin America.** Engagement in Latin America is guided by the Abu Dhabi Communiqué on *Accelerating Renewable Energy Uptake in Latin America*, adopted during IRENA's fifth Assembly, and the findings of the 2016 IRENA *Renewable Energy Market Analysis for Latin America*. Under the Clean Energy Corridor of Central America (CECCA), IRENA is supporting power system operators in

Panama (pilot country) to increase variable renewable energy integration. This includes the efforts to support investment, and IRENA is currently piloting a tool to assess incentives in power purchase agreements for wind and solar PV energy. Future work will also address some of the RRA recommendations which are being finalised.

Collaborative platforms

47. Building on momentum in both energy and climate action, IRENA has continued to engage in key strategic partnerships including Small Island Developing States (SIDS) Lighthouse Initiative and Geothermal Global Alliance. The **SIDS Lighthouse Initiative** continues to support accelerated energy transition on islands – today more than 120 MW of new solar PV generation has been installed since the launch of the Initiative, surpassing the original initiative target. Grid stability studies, integration studies, support on NDCs and creation of enabling environments for investment are providing the ground work for partners to implement pathways that enable large-scale, sustainable deployment of renewables. As part of this line of work, IRENA is continuing work under the Project Navigator. The islands module of the Navigator, developed to help SIDS address project development issues to strengthen smart integration of renewables to grids, will be introduced to participating countries through regional workshops in the Pacific and the Caribbean in 2018.

48. To communicate the wealth of information available and encourage exchange of best practice, IRENA developed a SIDS Lighthouse Initiative website, made public in October 2017. Since launch, the website has been enriched with updated information on SIDS, including on new capacity installed, ongoing initiatives and recent publications including Quickscans, island roadmaps and grid integration studies. A SIDS video was also produced to raise awareness on the current issues facing islands and to highlight the need for immediate action to transform SIDS into resilient economies. The work on SIDS Lighthouses is supported by the Governments of Germany and Norway.

SIDS Lighthouse Quickscan: Interim report

IRENA recently published the SIDS Lighthouses Quickscan: Interim report. This interim report highlights the advantages and benefits of renewables for 38 countries and territories which completed the quickscans. IRENA and SIDS Lighthouses partner the Overseas Countries and Territories Association (OCTA) of the European Union (EU), assisted 28 island partners of the SIDS Lighthouses in completing the quickscans. Another 10 island countries and territories also completed quickscans with the assistance of OCTA. The report explains the quickscan methodology and presents quickscan findings from multiple SIDS and other islands.



Quickscans provide a rapid, country-owned, qualitative assessment of existing conditions. To achieve this, government-appointed local energy experts complete a questionnaire, which is then analysed by Lighthouses partners and IRENA to determine barriers and to highlight opportunities for the deployment of renewable energy solutions.

28 island partners: Anguilla, Antigua and Barbuda, Aruba, Bahamas, Bermuda, British Virgin Islands, Cook Islands, Federated States of Micronesia, Fiji, French Polynesia, Kiribati, Maldives, Mauritius, Montserrat, Nauru, New Caledonia, Niue, Palau, Republic of the Marshall Islands, Samoa, Seychelles, Sint Maarten, Solomon Islands, Tonga, Trinidad and Tobago, Tuvalu, Turks and Caicos, Vanuatu.

10 OCTA island countries and territories: Bonaire, Falkland Islands, French Southern and Antarctic Territories – TAF, Pitcairn Islands, Saba, Saint Barthelemy, Saint Helena, Saint Pierre-et-Miquelon, Sint Eustatius and Wallis et Fortuna.

Islands: Strong. Small. Resilient.

To date, the SIDS video on Facebook has had 1.6 million views, reached 2.8 million people, and had 14,731 post engagements (comments, likes, etc.). An edited version of the video, reduced to 1 minute, was promoted on Instagram and has had over 1.1 million views and more than 93,000 likes to date. This reduced video has also had more than 121 thousand impressions on Twitter.

Featured Video



In the face of climate change, Small Island Developing States are strong and resilient. They sit on the frontline of climate change and are leading the way with deploying renewable energy as the solution to a sustainable future.

49. IRENA also continues to support countries realise the untapped potential of geothermal energy through the **Global Geothermal Alliance (GGA)**. Following the launch of the initiative in December 2015, the Alliance has expanded its reach to 44 members and 31 partners³, with Germany, Portugal, the United States Energy Association (USEA), and Geothermal Power Plants Investors Association (JESDER) of Turkey being the most recent GGA members/partners. Thanks to the substantive and financial support of GGA members, IRENA is working to consolidate and disseminate knowledge on

³ **Member countries:** Argentina, Bolivia, Burundi, Chile, Colombia, Comoros, Costa Rica, Djibouti, Ecuador, Egypt, El Salvador, Fiji, France, Germany, Guatemala, Honduras, Iceland, India, Indonesia, Italy, Kenya, Kingdom of the Netherlands, Malaysia, Mexico, Nicaragua, New Zealand, Pakistan, Papua New Guinea, Peru, Poland, Portugal, Romania, Saint Vincent & the Grenadines, Switzerland, the Philippines, the Solomon Islands, the United Republic of Tanzania, the United States of America, Tonga, Turkey, Uganda, Vanuatu, Zambia, Zimbabwe.

Partner institutions: African Development Bank, African Union Commission, AGH University of Science and Technology (Poland), Andean Geothermal Center of Excellence (Chile), Association GeoEnergy Celle e.V. (Germany), Canadian Geothermal Energy Association, Eastern African Power Pool, Energy Institute Hrvoje Požar (Croatia), European Geothermal Energy Council, GEODEEP - Geothermal Cluster for Heat and Power (France), Geothermal Energy Association (USA), Geothermal Power Plants Investors Association (Turkey), 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, Regional Center for Renewable Energy and Energy Efficiency, Serbian Geological Society, Southern Africa Power Pool, Pacific Community, United Nations Environment Programme, United Nations University - UNU GTP, United States Energy Association (USA), World Bank/ESMAP.

the complex challenges associated with geothermal development, helping to unlock investments on a global scale. To strengthen collaboration between key geothermal stakeholders, the Agency will support the organisation of a workshop under the GGA umbrella in April 2018 to identify what strategies industry clusters can jointly develop to accelerate geothermal deployment.

50. The Agency is also working to foster an enabling environment to attract investments in **geothermal energy** through regional capacity building programmes in East Africa, Central America, and the Pacific, as well as a thematic programme on renewable energy applications for district heating and cooling in the urban setting. The regional workshop co-organised with the Governments of Kenya and Japan, and the African Union Commission (Kenya, 31 January - 2 February 2018) fostered exchange of knowledge and best practices on innovative financing models and risk mitigation mechanisms and discussed the way forward for the development of geothermal energy in East Africa.

51. IRENA is also working to foster targeted geothermal resource development through the enrichment of the geothermal component of the Global Atlas. In collaboration with the World Bank (ESMAP) and the International Geothermal Association (IGA), the Agency launched a pilot project to inventory and classify geothermal resource areas in four countries starting with Indonesia, as a strategy to provide new datasets for the Global Atlas platform and to promote standardisation in geothermal resource assessments and reporting. The Agency will also organise a workshop on geothermal direct utilisation and food security. The event, which will take place in Iceland on 24 April 2018, will identify the key factors behind successful experiences and present partnership opportunities for geothermal energy projects in the agriculture and fishery sectors. IRENA's work on GGA and geothermal energy deployment is supported by the Governments of Iceland, Japan, France, and Switzerland.

Multi-stakeholder engagement

52. Continuing to engage a wider group of stakeholders has helped IRENA leverage synergies, and understand the challenges the transformation of energy brings. The **Coalition for Action** promotes such an engagement by gathering private sector entities, industry association, civil society, research- and international organisations. The IRENA Coalition for Action today has over 75 members⁴ operating through a number of Working Groups. At the eighth session of the IRENA Assembly, the Business and Investors Working Group and its Community Energy sub-Group launched two white papers on the *Scaling Up of Renewable Energy Investment in Emerging Markets*, and *Community Energy: Broadening the Ownership of Renewables*. During its second Annual Strategy Meeting in January 2018, the Coalition agreed to continue the three Working Groups from 2017 as well as establishing the Towards 100% Renewable Energy Group.

53. The new website, launched in April 2018, will help disseminate information on the work of the Coalition. Related activities include support for the development of the REMade Index on corporate sourcing of renewable energy, which is being finalised and will be launched at the Clean Energy Ministerial in May 2018. The REMade Index is made possible thanks to voluntary contributions from the Government of Germany.

54. Continuing its engagement of legislators, the 2018 IRENA **Legislators Forum**, held at the sidelines of the eighth session of the IRENA Assembly, saw the active participation of close to 60 members of parliament from 30 different countries. In its third annual meeting, the Forum established itself as an important platform for global parliamentary discussions on renewable energy. IRENA also co-organised a joint parliamentary forum with the Federal National Council (FNC) of the UAE. Discussions were framed around the legal and institutional frameworks to engage the private sector in the implementation of the Sustainable Development Goals (SDGs), and SDG7 in particular. A specific

⁴ For a list of members please see <http://coalition.irena.org/HOME/Members>



Annual Coalition meeting, January 2018

focus was also placed on the food-energy nexus to illustrate the interlinkages between energy access and other SDGs, and on the latest trends and developments in bioenergy.

55. IRENA is currently examining partnering with different relevant parliamentary stakeholders to reach a wider pool of interested parliamentarians in order to support parliamentary action on renewable energy and the implementation of SDG7. An Inter-Parliamentary Union (IPU) resolution was adopted at the organisation's 138th Assembly's session calling on parliaments around the world to engage the private sector to address energy access with renewables — including by participating in IRENA's Parliamentary Network. IRENA continues to provide targeted information to members of parliament through the *REview for Parliamentarians*, as well as through targeted social media campaigns and digital platforms of exchange.

56. Reinforcing the Agency's role as a facilitator for knowledge and experience-sharing among key stakeholders, IRENA initiated the first of its kind "public-private dialogue" between legislators, members of the IRENA Coalition for Action and government representatives. Some 200 participants including senior government representatives, legislators and Coalition members discussed the unlocking of renewable energy investment, among other issues.

IV. Source of advice and support

57. Through direct engagement with Members, IRENA has made its knowledge products increasingly policy-relevant and accessible and has refined its tools, platforms and methodologies to better address common challenges. Building on work to date, IRENA is offering targeted support in project development, access to finance, and resource and readiness assessments. It has also further developed its renewable energy solutions lab offering direct support to entrepreneurs and local businesses.

Project support and facilitation

58. Creating a renewable energy project pipeline is one of the key priorities for acceleration of the global energy transformation. IRENA contributes to this with its convening power, expert knowledge and tools and platforms that facilitate projects. In 2018, IRENA organised a training workshop in Singapore on the development of bankable solar PV projects. This workshop gathered project developers, business developers and utilities from the ASEAN region and gathered regional lessons learned. The Agency also contributed to a webinar series with the USAID-lead network "*Women in African Power*" designed to advance the participation and representation of women within the energy sector across the African continent. The **Project Navigator** makes an important contribution in this context. The Navigator is continuously refined and expanded, most recently to include support for biogas and small-scale woody biomass projects. An algorithm has been developed to estimate wood crops yields in specific locations, which had not previously been available. This function will be incorporated in the bioenergy simulator to help farmers choose the best mix of food and fuel crops.

59. Leveraging its regional work, IRENA has continued to support project development in specific regional settings. Small Island Developing States (SIDS) push for solutions to build greater resilience and adapt to the impacts of climate change. They deploy renewable energy solutions as a sustainable and low-cost path to social and economic development. However, this path is frequently limited by major barriers for investments such as geographical constraints, resource availability, market size, sensitive ecosystems, and lack of economies of scale. This was the subject of the side-event at the eighth Assembly of IRENA "*Improving islands capacities to develop bankable renewable energy projects*" where Member countries and observer institutions discussed the use of IRENA's project facilitation platforms and other programmes in place by SIDS. The side-event highlighted the need to refine the concept of bankability of renewable energy projects in islands to account for positive non-financial externalities. It also stressed the need for more project bundling and standardisation. Several capacity building workshops were announced for project developers in the Caribbean, Africa, Indian Ocean, Mediterranean, South China Sea (AIMS), and Pacific regions.

60. In collaboration with the Ministry of Environment, Japan and other partners Pacific SIDS were provided support to develop concept notes for submission to Climate Finance institutions, with a focus on GCF proposals. Workshops were conducted in Japan and in Fiji in 2017 to train participants from Fiji, Samoa, Maldives, Palau, Papua New Guinea, Marshall Islands, Nauru, Niue, Tonga and Tuvalu. The Green Climate Fund (GCF) and Global Environment Facility (GEF) Secretariat staff have been involved in these workshops. The work on SIDS project facilitation is supported by contributions from the Governments of Germany and Japan.

61. Efforts are being made to translate the information in the **Global Atlas** in support for project development. With the Atlas site appraisal service, IRENA is finalising support for Zimbabwe, Togo and Mali with the screening of 30 prospective sites for planned solar and wind projects. The Agency has also responded to official requests from Zambia, Nigeria, Nauru and Kazakhstan and initiated discussions with local authorities in these countries to support the screening of around 45 sites in total over the second and third quarters of 2018. IRENA has also supported a zoning study for Southern Mali to identify highly promising areas in the region to consider for grid connected solar PV development. In addition, efforts at upgrading and modernising key elements of the Global Atlas infrastructure and interface for its user base are underway including; the development of conceptual designs to enable visualization of rooftops in cities and their potential to host solar PV installations. This work is supported through a voluntary contribution from France.

62. IRENA's **Sustainable Energy Marketplace** has continued to support the match-making between projects under development and financing, with new projects being presented, a growth in the number of financial institutions using the platform, and additional projects displayed benefiting from support and financing. IRENA plans to launch the Asia regional platform at the Asia Clean Energy Forum in Manila in June 2018 and the Pacific regional platform at the Pacific Power Association Annual Meeting in August 2018. The Agency has continued its partnerships for the existing regions served by the Marketplace to intensify the pace of project collection, screening and facilitation. For the new

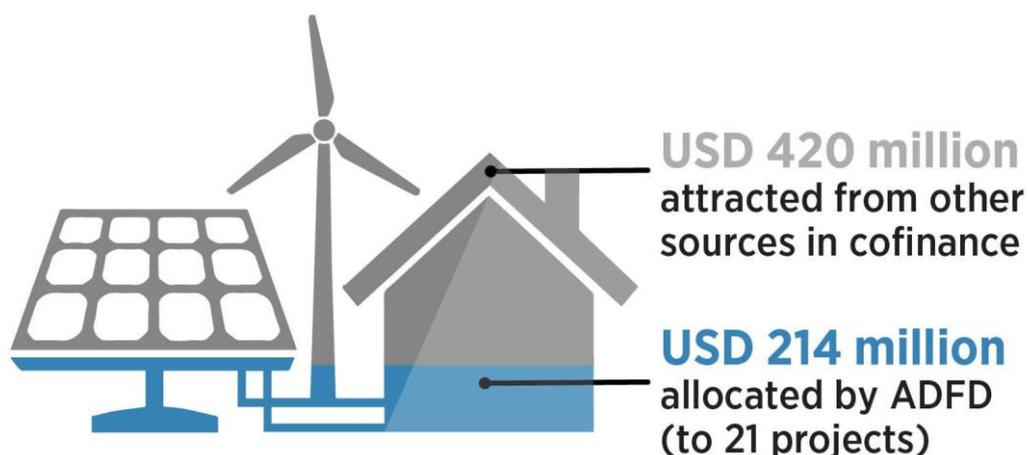
regions served, partnerships are being progressively pursued with agencies such as the Asian Development Bank, the International Finance Corporation, the Private Finance Advisory Network, the Pacific Center for Renewable Energy and Energy Efficiency, the Association of Development Finance Institutions in the Pacific and the Pacific Regional Infrastructure Facility.

63. As renewable energy projects grow in number, it is becoming increasingly important to have standardised processes and templates to increase efficiencies and ensure quality of project development. IRENA and the Terrawatt Initiative launched the **Global Solar Energy Standardisation Initiative** to streamline solar project processes and accelerate solar development through the provision of standardised contract templates. Following months of hard work and close cooperation between multiple stakeholders – including leading law firms, financial institutions and industry leaders – the Initiative is on the verge of releasing its first set of document templates. This comprehensive set of contract templates will highlight how simplified and bankable standardised contracts can reduce risk, save time and unlock greater investment.

64. IRENA continued its collaboration with the **Abu Dhabi Fund for Development (ADFD)** to facilitate project selection and financing of renewable energy projects in developing countries. The results of the fifth of seven annual project selection cycles of the IRENA/ADFD Facility were announced in January 2018. The total allocated loans by ADFD is USD 214 million for 21 renewable energy projects in 20 developing countries. These projects promise to deliver 120 MW of renewable energy and advance sustainable development.

65. In the sixth cycle, currently in process, IRENA received a total of 112 applications from 51 developing countries. This marks a 25% increase in the number of applications compared to the previous cycle. The majority of submissions are solar PV projects in Africa, but also a high number of bioenergy and hydropower projects. Feedback by the independent panel of experts engaged to evaluate and recommend projects indicated that the quality of projects presented this year is higher than in the previous year. This is in part due to the effort to build capacity of applicants to understand the selection process and properly fill the necessary forms. A new feature of the seventh cycle is that the online application process is open for applicants to already start working in the system well in advance of the submission deadline.

The IRENA/ADFD Project Facility has mobilised USD 630m for renewable energy projects



Ministerial Roundtable
“Accelerating the Global Energy Transformation: Scaling up Renewable Energy Investment”

Allocation of capital into the energy sector is undergoing a profound and rapid transformation, as renewables currently attract more capital than fossil fuel power. Policy makers have a critical role to play to strengthen this positive trend, and put in place supportive, transparent and stable policies that address key concerns of capital providers. The Ministerial Roundtable “Accelerating the Global Energy Transformation: Scaling up Renewable Energy Investment” brought together international policy makers, leading experts from public and private finance, and industry to discuss financial and policy aspects of the rapidly evolving renewable energy sector.

Action points raised by the participants to scale up renewable energy investment globally included:

- A more targeted use of public capital to provide initial support and address risks not easily borne by private financiers
- Improving access to risk mitigation instruments can also be achieved via creation of a global risk mitigation platform dedicated to renewables
- Wider adoption of standardisation and aggregation of small-scale projects
- Levelling the playing field by phasing out fossil fuel subsidies, implementing carbon pricing, and making ‘green finance’ mainstream through common criteria and disclosure requirements
- Given the global nature of markets, a concerted international effort will make these efforts most effective, and IRENA is uniquely placed to help replicate successful models and develop innovative solutions.



Renewable energy solutions lab

66. As part of IRENA’s work stream on the **Water, Energy and Food Nexus**, the Agency conducts country-level quantitative analysis on the impacts of greater renewable energy deployment on water use in the power sector. In this context, IRENA launched *Water Use in India’s Power Sector – Impact of renewables and cooling technologies to 2030* at the World Future Energy Summit in January 2018. The publication has met ample interest, including invitations to present results, and 400 website downloads and take-up across social media by researchers, policy makers and the civil sector. IRENA will continue to highlight socio-economic benefits gained from energy access. Analyses will examine policy measures to support the integration of decentralised renewable energy solutions in different agricultural value-chains.

67. IRENA continues to assist entrepreneurs scale up renewable energy enterprises through its **SADC Renewable Energy Entrepreneurship Support Facility**. In March 2018, the SADC Centre for Renewable Energy and Energy Efficiency and IRENA launched the first call for applications for SADC-based entrepreneurs to submit requests for assistance under the Facility. Applications will be evaluated and proposals selected that can benefit from the Facility’s support in the form of mentorship, technical assistance, training as well as facilitation for access to financing.

68. IRENA is supporting the establishment of a regional certification scheme to strengthen capacity for solar PV deployment in the 15 member states of the Economic Community of West African States (ECOWAS). The inception meeting of the initiative took place in February 2018 in Praia, Cabo Verde. The ECOWAS Centre for Renewable Energy and Energy Efficiency (ECREEE), with technical advice from IRENA, will be piloting the scheme by conducting standardised examinations for solar PV installers. This will be done in partnership with selected national examination partners, guided by the ISO 17024 standard and agreed Job-Task Analysis (JTA) for off-grid solar PV installers, previously developed with the support of IRENA. Presently, 21 training institutes from eight countries will be benefitting from this project.

Local solutions and tailored advice

69. IRENA's extensive knowledge products, tools and methodologies provide a sound basis for tailored advice to countries and IRENA's engagement on the ground. Its various frameworks such as renewable readiness assessments, resource assessments, planning and socio-economic models provide countries with clear recommendations on how to achieve their ambitions.

70. Starting in April 2016, IRENA provided energy planning support to Swaziland, through training on the System Planning Test (SPLAT) least-cost optimisation model, data management and scenario development. Based on the training, the national group of training recipients formed a technical working team, and applied the energy planning tools for preparation of a national Energy Masterplan, with IRENA ad-hoc support as needed. The Energy Masterplan is now being finalised by the national working team and will be submitted to national Cabinet for approval mid-2018 and one of the options presented in the Plan is the 100% Renewable Energy Scenario.

71. An **RRA** report for Pakistan has been launched on 10 April 2018 in Islamabad. IRENA's assessment presents options for Pakistan to strengthen its policy, regulatory and institutional framework for renewables. It suggests ways to strengthen renewable energy targets, examines the constraints of existing grid infrastructure, highlights the best mechanisms to reduce costs and ease technical challenges, and underlines the potential for private investment in renewables for off-grid and rural electrification. Furthermore, the RRA for Panama has been finalised with the planned launch of the report in May 2018 and RRA processes have been initiated in Azerbaijan, Bhutan and Moldova.

72. Other work initiated has included grid integration planning guide for medium size power systems for the Dominican Republic and a study on the Assessment of Renewable Energy Manufacturing Potentials for Jordan, Lebanon and the United Arab Emirates, jointly conducted by IRENA and UNESCWA. The report analyses the supply chains for renewables manufacturing in terms of technical skills, manufacturing processes, industrial capacity extensions, enabling policies and incentives, local and regional market investments and financing infrastructures.

V. International cooperation and strategic engagement

73. Providing leadership in global agenda-setting on energy transformation, the Agency has spent the first months of its new Work Programme engaging with various international fora on the intersection of renewable energy in the global energy landscape. Topics of engagement have included SDG7, the 2030 Agenda for Sustainable Development, and youth and women in climate action. IRENA also hosted its first intergovernmental session of the programmatic cycle, and its eighth Assembly session.

International cooperation and strategic management

74. With Ukraine and Paraguay joining the Agency in 2018, IRENA's global family includes 156 Members, 25 Signatories and States in Accession, and one applicant for membership. This near-universal reach provides a unique access to the wealth of knowledge and experience. IRENA leverages its Membership, underpinned by the knowledge and information concentrated in the Agency, to accelerate progress in transforming the global energy system. IRENA continues to engage, including at the highest-level, with Members and a wide range of stakeholders.

75. Through his activities, the Director-General continued to raise the profile of renewables, highlighting their contribution to national and global efforts to tackle climate change and advance sustainable development. He delivered a keynote address at the opening of the Global Conference on SDG7 in Bangkok, Thailand (21-23 February), a preparatory meeting for the review of SDG7 at the upcoming 2018 UN High-level Political Forum. At the World Government Summit in Dubai, UAE, the Director-General chaired the Global Council on SDG7, and led energy discussions at the SDGs in Action Forum. This is a new initiative by the UAE to advance the implementation of Agenda 2030. Also at the Summit, the Director-General guided the discussion on the role of youth and women in climate action at the Forum organised by the UAE Ministry of Climate Change and Environment.

76. IRENA also contributed to the founding conference of the International Solar Alliance that took place in New Delhi, India. Co-hosted by Prime-minister Modi of India and President Macron of France, the conference gathered diverse stakeholders interested in promoting solar deployment in solar-resource rich counties. The Director-General participated in the high-level panel discussion on investment, highlighting the cost-effective. On this occasion, IRENA and ISA signed a Joint Declaration which affirms the commitment to collaborate on advancing solar projects, highlighting the opportunities for ISA to benefit from IRENA's existing knowledge, initiatives, and project facilitation tools.

77. The Director-General also visited several Member countries to discuss plans and efforts to scale-up renewables and the Agency's contribution. In January, he opened the Sustainable Energy Forum in Cuba that gathered the Cuban energy sector and government, the European Union, international energy companies, and the private sector. During a meeting with Cuba's Vice President of the Councils of State and Ministers, Minister of Energy and Mines, and Minister of Science, Technology and Environment, the Director-General agreed to strengthen the cooperation with Cuba in support of the country's energy transformation. In March, he visited China to conclude a Memorandum of Understanding with Hebei Province with the objective of assisting the province in delivering low carbon winter Olympics in 2022. The Director-General also delivered key note at the Global Launch of the 2018 Singapore International Energy Week (SIEW). During this visit, he met with Singapore's Minister of Energy to discuss bilateral and regional cooperation, given that Singapore is chairing the ASEAN Meeting of Energy Ministers (AMEM).

78. At the invitation of the Foreign Minister, the Director-General visited Japan in April 2018 to further strengthen cooperation as Japan seeks to raise its renewable energy ambitions. He also met with the Ministries of Environment; Economy, Trade and Industry; and Agriculture, Forestry and Fisheries. The Director-General used this opportunity to engage with researchers from the Fukushima Renewable Energy Institute and addressed the international seminar on "The Age of Renewable Energy Diplomacy and Japan's Course". He took part in a dialogue with the Japanese private sector and a meeting on "Energy and the Empowerment of Women", with leading female public officials, researchers, and entrepreneurs in the energy sector.

79. Through the New York Liaison Office, IRENA has continued to engage with the UN system and other stakeholders, in particular in relation to the 2030 Agenda for Sustainable Development and the upcoming review of SDG 7 by the UN High Level Political Forum. In this context, IRENA has supported global reporting efforts on SDG7 with the provision of analytical input and statistical data on a broad range of topics, including through the Technical Advisory Group on SDG7 coordinated by the UN. IRENA hosted the second meeting of the Technical Advisory Group at the margins of the eighth session of the IRENA Assembly. The Agency has also participated in expert meetings and outreach activities at UNHQs in New York, such as the UN Expert Group Meeting on SDG interlinkages (25-26 January). Outreach efforts have also been targeted to specific groups, such as youth, with the organization of a thematic session on sustainable energy at the request of the UN during the ECOSOC Youth Forum in January 2018.

80. Member engagement in the Agency continues through the regime of Permanent Representatives (PRs). There are currently 45 PRs accredited to IRENA including El Salvador, Ireland, the Republic of Korea and Uganda that have joined the IRENA network of PRs since the beginning of the year.

81. To develop more tailored outreach materials for IRENA Members, a communications survey was conducted based on which a new suite of communications to support Members in assessing the critical facets of the global energy transformation will be developed. The survey results have informed the development of communication strategy for the Agency and have proven useful to understanding Member communication preferences.

What communications medium do Members prefer to receive IRENA communications?

Most Members (60%) prefer to receive information via email, followed by the IRENA website (38%), social media (22%), and the REmember portal (17%).

What substantive content would Members like to receive? Most Members want to receive information about publications, upcoming IRENA events, and IRENA insights and analysis.

In what format would Members like to receive content? Infographics / graphs / images; briefs or factsheets; key messages; PowerPoint slides; and articles.

What are your priorities for Member communications? Ability to use content directly in their work (key messages, graphs, etc.); Member content/achievements; specific to their country/region; unique IRENA insights; translating content to other languages.

What statements are true about Remember? 53% of Members indicate that if Remember had photos, video and other content from IRENA meetings they would use it more; 52% said that Remember is useful for Assembly document hosting; less than half said that they would use it more if it facilitated greater Member interaction.

Governing body meetings

82. The eighth session of the IRENA Assembly and related meetings, held on 12-14 January 2018 in Abu Dhabi, provided the opportunity for 1300 registered participants, including several Heads of State or Government and over 80 Ministers, along with delegates from 139 countries and the European Union, to shape the global renewable energy agenda, monitor progress and guide the Agency on important policy, programmatic and governance matters. The attendees comprised 127 Members of IRENA, 8 Signatories and States in Accession, 5 other states and 145 international and regional partners, organisations and other entities engaged in the renewable energy field.

83. Plenary discussions, ministerial roundtables and programmatic events served as platforms for dialogue, knowledge-sharing, cooperation and partnerships. Members considered the Agency's strategic direction contained in the Medium-term Strategy 2018-2022, and its Work Programme and Budget for 2018-2019, aligning IRENA's activities with its refined strategy and vision. Programmatic discussions on topics pertinent to the global energy system transformation included a "Strategic Plenary Ministerial discussion on Nationally Determined Contributions (NDCs)", and programmatic discussions on "Renewable energy policies in a time of transition" and "Accelerating the deployment of geothermal energy". In addition, two Ministerial Roundtables on "Accelerating the global energy transformation: Scaling up of renewable energy investment" and "Innovation for the energy transformation: E-mobility", provided an opportunity for Ministers and high-level officials to engage in discussions and knowledge sharing. Several thematic side events brought together policy makers, experts and other stakeholders to address key measures and solutions needed to accelerate the global deployment of renewables.

84. On the sidelines of the eighth Assembly session, the Global Commission on the Geopolitics of Energy Transformation was launched. The Commission was established at the request of Norway, Germany and the United Arab Emirates. It seeks to achieve a better understanding of the geopolitical implications of energy transformation driven by the growing share of renewables. The Commission will present its report at the ninth Assembly session in January 2019.

85. To foster high levels of inclusiveness and ownership by all IRENA Members, the Fund for Developing Country Representatives (FDCR) was key in making possible the participation of 64 representatives of Least Developed Countries and SIDS at the Assembly. However, the Fund, which is exclusively based on voluntary contributions from IRENA Members, could be facing shortfalls prior to the ninth session of the IRENA Assembly, and Members are encouraged to ensure its replenishment.

VI. Efficient, transparent and innovative management

86. The achievement of IRENA's strategic objectives relies on its responsiveness, effectiveness, internal capacity, and institutional efficiency. IRENA continues to seek remain dynamic, innovative and results focused solutions in its management and administration of the Agency's resources, underpinned by transparency and accountability as hallmarks of an open institution.

Strategic management

87. The planning and organisation of IRENA's programmatic meetings has been consolidated and streamlined to facilitate efficient organisational delivery. A centralised approach assists in ensuring consistency and resource efficiency, and facilitates monitoring of implementation. The Agency has also taken active steps to increase the environmental sustainability of its meetings. For example, by making documents for the eighth Assembly available electronically on the IRENA Meeting Mobile App, the Agency has reduced printing by 55% compared to the previous year. Further steps are under active consideration, taking into consideration lessons learnt.

88. IRENA has intensified its outreach to identify potential partners that could contribute to diversification of its resource base. To this end, IRENA is gaining a systematic overview of the strategic priorities of different countries, to better connect them with the Agency's medium-term strategic objectives. It is also reviewing options for the creation of the Renewable Acceleration Fund, based on examples and best practice that can be found in other organisations. To this end, discussions are ongoing with a number of countries to secure support for the programmatic implementation. Internally, a system for monitoring of voluntary contributions has been put in place, to ensure timely reporting and efficient management.

89. Demonstrating the impact of IRENA's work is vital for its long-term direction and priority setting, as well as for diversification of its resource base. Such is reflected in the currently prevailing legislative context of the Agency that places importance on the delivery of fewer but more sharply articulated programmatic activities, which aim for discernible impact. IRENA is assessing potential approaches and best practice to design a monitoring and evaluation system that is agile, while remaining consistent with its size and capacity. This work is complemented with efforts to baseline types, quality, breadth and volume of data in relation to programmatic activities, with the view of systematising collection across the Agency. Once in place, the monitoring and evaluation system will also support the Agency's internal decision-making processes and enable continuous improvement. The extent to which IRENA can achieve this objective depends on the resources available to this designated line of work.

Administration and Management Support

90. The Administration and Management Services support efficient implementation of the work programme and facilitate 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 implementation of the ERP system since January 2018 will go a long way to facilitate timely and streamlined support to programme implementation.

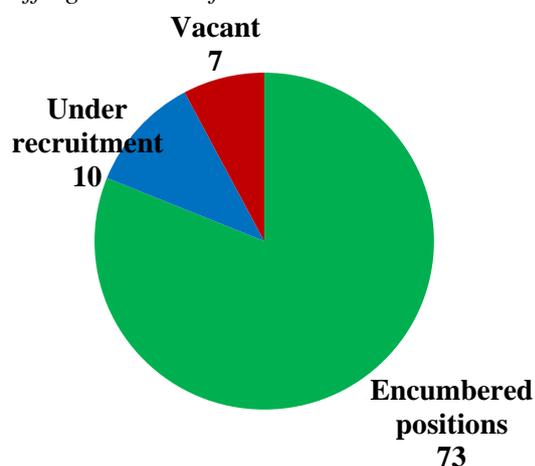
91. **Finance and budget.** The Agency’s full compliance with its Financial Regulations and Procedures in accordance with the International Public Sector Accounting Standards (IPSAS) underpins finance and budget activities. Financial and budgetary services were provided to Members, staff and other stakeholders, aligned with international accounting standards and budget practices. The services included preparation of the financial statements for IRENA and the Staff Provident Fund, issuance of annual bills and regular follow-up with Members for the collection of outstanding assessed contributions, registering and allotting voluntary contributions, settlement of vendor and supplier invoices, and regular internal support services including payroll, budget utilisation updates and general advice to support the sound financial management of the Agency. Additional activities included support for addressing internal and external audit recommendations and extensive efforts associated with going live with the ERP implementation.

92. **Information and Communication Technology (ICT).** As a knowledge-based organisation operating in an increasingly digital environment, ICT has become a strategic enabler and tool for the Agency in the implementation of its Work Programme. To lower the operational risks and reduce costs related to ICT support, many services have been in-sourced, strengthening internal capacity. To enhance the availability and resilience of ICT services, IRENA has adopted hybrid Cloud-based and on-premise infrastructure and services. This provided increased operational flexibility with no major capital investments needed for ICT infrastructure. A major part of the work in 2018 includes the integration of ERP modules in different streams of IRENA’s management and administration work. After the piloting and training of staff, ERP will significantly improve the efficiency and timeliness of business processes.

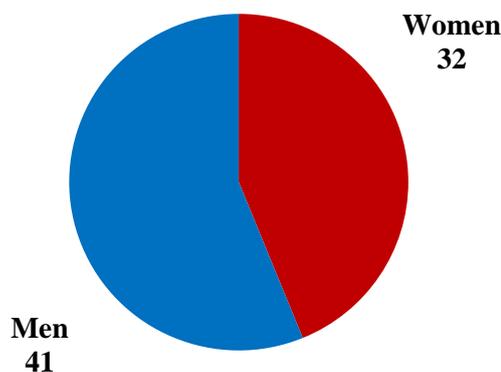
93. **Human Resources.** Human resources spanned administrative, operational and strategic activities. Significant effort was placed on aligning human resource policies and processes more closely with the Agency’s strategic and programmatic objectives. This included additional personnel sourcing and 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 resource 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.

94. 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 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 2018 and 31 March 2018, 6 vacancies (core and non-core) were announced and over 500 applications received, in addition three vacancies are ongoing and are in the process of receiving applications. Out of 90 core posts, 83 are filled or under recruitment (73 filled and 10 under active recruitment) and seven were vacant. The 73 staff are from 41 nationalities out of which 44 % are women and 56 % are men.

Staffing status as of 31 March 2018



Gender distribution as of 31 March 2018 (filled posts)



Approved and filled/under recruitment posts by level as of 31 March 2018

Level	Approved	Filled or Under Recruitment
ASG	1	1
D-2	1	1
D-1	5	5
P-5	17	16
P-3/4	37	32
P-2/1	3	3
Sub-total Professional and above	64	58
General Services	26	25
Total	90	83

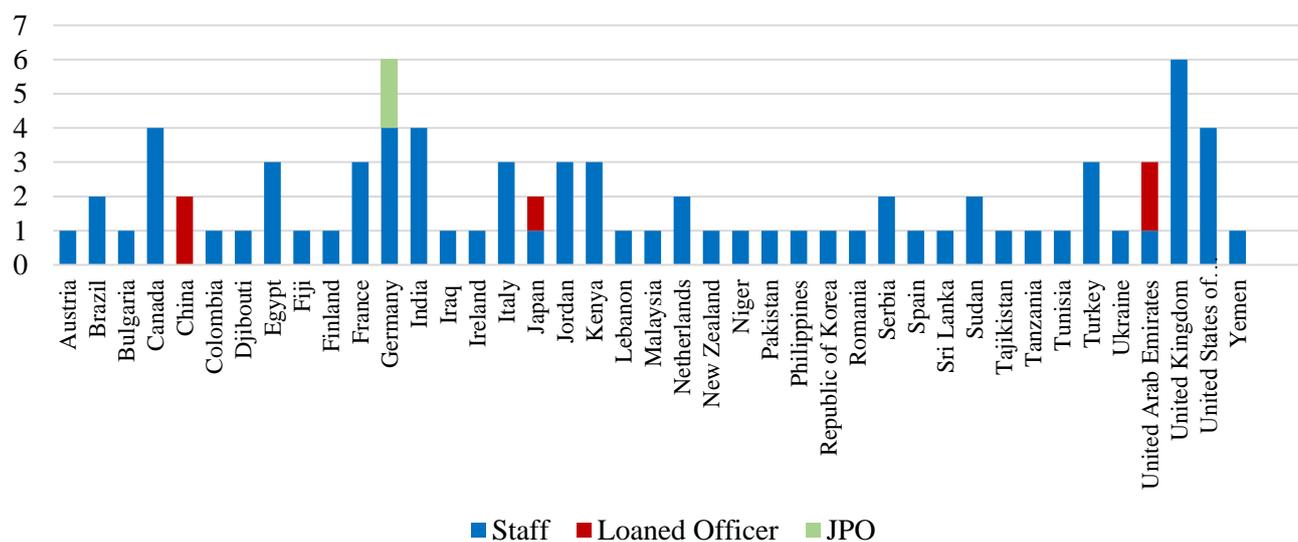
Loaned Personnel

Division	Title	Loaned from
SMED	Liaison and Protocol Officer	UAE
SMED	Advisor - Outreach and Communications	UAE
IITC	Bioenergy Analyst	Japan
IITC	Programme Officer, State Grid Corporation of China	China
CSP	Programme Officer, State Grid Corporation of China	China

Junior Professional Officers (JPO)

Division	Title	JPO from
KPFC	Associate Programme Officer - Policy	Germany
IITC	Associate Programme Officer - Energy Planning	Germany

Geographical distribution as of 31 March 2018 (filled posts)



95. **Procurement.** The Agency has continued to implement its procurement planning for cost-effective solicitation of goods and services. To ensure transparency, fairness, openness and competitiveness, procurement opportunities continue to be posted on IRENA's website, and disseminated to the vendors registered with IRENA. Through continuous market research and a recent call for Expression of Interest (EOI), IRENA's vendors' database has been further enlarged to maximise competition. The database has been updated to include more than 350 new vendors specialised in renewable energy consulting services from 25 countries of different regions of the world. As of 31 March, 2018, 200 procurement actions for goods and services have taken place totalling USD 1.4 million.

96. **General services and travel.** Travel support and services were provided to staff, delegates, and participants in conferences and workshops. As of 31 March 2018, the Agency facilitated participation in eight workshops and co-ordinated more than 800 travel services. The section has continued to provide facility management services for IRENA Headquarters and staff. This is an important function which contributes to a healthy and productive work environment while delivering continuous day-to-day services for staff. As part of these ongoing services, General Services has instituted a Health and Safety programme and further measures are planned to be implemented in the future.

Biennial budget overview

2018-2019 Biennium Budget Utilisation by funding source (in USD Thousands)

	2018-2019 Biennium Budget	Utilisation as at 31 March 2018	
		Commitment and Expenses	Proportion of 2018-2019 Biennium Budget
Assessed Contributions (Core Budget)	43,130	11,554	27%
Core Non-Assessed UAE			
UAE Support	5,000	1,194	24%
Governing Body Meetings	3,200	264	8%
IT Infrastructure Support	920	316	34%
<i>Subtotal</i>	9,120	1,774	19%
Core Non-Assessed Germany			
Innovation and Technology Centre	10,200	2,276	22%
<i>Subtotal</i>	10,200	2,276	22%
Core Non-Assessed Other Contributions			
Core Non-Assessed Other	1,704	0	0%
<i>Subtotal</i>	1,704	0	0%
Total Core Non-Assessed	21,024	4,050	19%
Grand Total	61,154	15,604	24%

Core Non-Assessed Contributions
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as of 31 March 2018, in USD

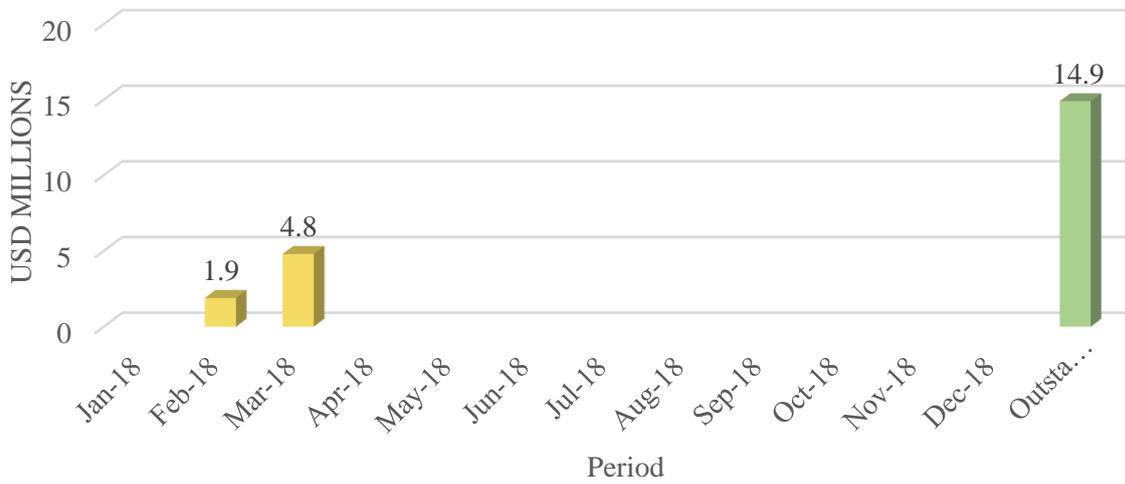
<i>Budgeted Voluntary Contributions</i>

	2018	
	Committed	Received
Germany		
IRENA Innovation and Technology Centre	5,100,000	5,100,000
United Arab Emirates (UAE)		
UAE Support	2,500,000	-
Governing Body Meetings	1,600,000	-
IT Infrastructure Support	460,000	-
Subtotal UAE Contributions	4,560,000	-
Total	9,660,000	5,100,000

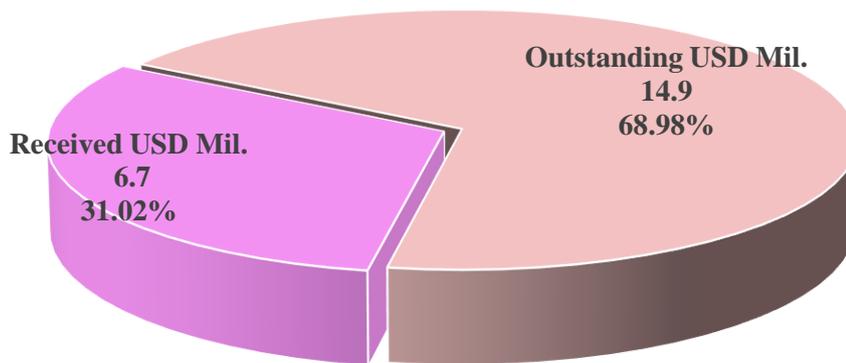
<i>Other Voluntary Contributions</i>

Donor/Project	2018	
	Committed	Received
Germany (JPO)	83,360	83,360
Japan	450,455	450,455
United Arab Emirates (UAE)	1,500,000	-
Total	2,033,814	533,814

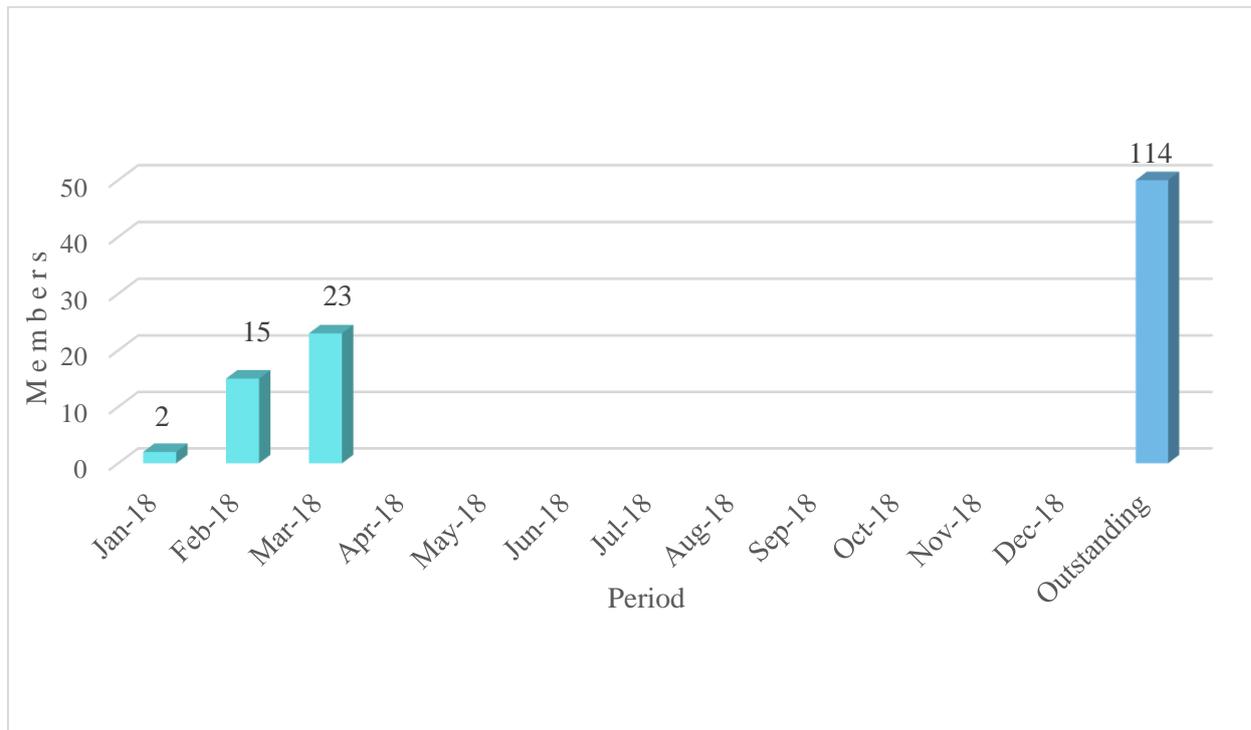
Received and outstanding assessed contributions for 2018 core budget (as of 31 March 2018)



Status of contributions to the 2018 core budget (as of 31 March 2018)



Number of Members with received and outstanding contributions to the 2018 core budget (as of 31 March 2018)



SUMMARY OF PROGRESS

Centre of Excellence for Energy Transformation

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

Transformation pathways		Core resources: USD 4,020,000
<i>Output: Countries provided with the tools and information necessary to support accelerated deployment of renewable energy.</i>		
Deliverable	Status ⁵	Remarks
REmap Global report	In progress	<ul style="list-style-type: none"> - <i>Renewable Energy Outlook: Thailand</i>, Bangkok, January 2018. - <i>Renewable Energy Prospects for the European Union</i>, Brussels, February 2018. - <i>Global Energy Transition: a roadmap to 2050</i>, Berlin, April 2018.
Grid integration planning guide for medium size power systems	In progress	- Dominican Republic case study. Expert consultation underway.
Global report on policy and market design for integration of VRE	In progress	<ul style="list-style-type: none"> - <i>Renewable Energy: a key enabler transitions to cleaner energy systems</i>, presented at the G20 preparatory meeting in Argentina, Feb. 2018. - In-depth analysis of policies, regulations and market instruments to support flexibility options commenced.
Report on long-term planning with high share of VRE	In planning	

⁵ **Definitions:**

In planning: Implementation scoping.

In progress: Activities have commenced, budget and other resources have been allocated.

Completed: Deliverable has been finalised and/or full completion reached.

Ongoing: Deliverable does not have a finite end, is cyclical or of operational nature (e.g., governance and management related deliverables).

Analytical briefs (demand-side flexibility, 100% renewable power system operation; system integration costs)	In progress	- 100% Renewable operations brief prepared with the University of Michigan.
Development of Energy Transformation Model (integrating REmap, planning, flexibility and grid assessment models)	In progress	- The flexibility assessment model (FlexTool) completed in March 2018, currently piloted.
Technical workshops on best practices for long-term planning and grid assessment	In planning	
REmap expert network	In progress	- Meeting of the G20 in Buenos Aires, Argentina, February 2018; Forum of the Energy Planners of Latin America in Rio de Janeiro, Brazil, March 2018; 1 st CESEC Working Group Meeting on renewable energy and energy efficiency in Brussels, Belgium and Meeting of the Renewable Energy Coordination Group at the Energy Community in Vienna, Austria in March 2018.
Access solutions		Core resources: USD 1,327,000
<i>Output: Countries informed of technology, policy and finance solutions for improved energy access.</i>		
Deliverable	Status⁵	Remarks
Report on renewable energy contribution to access	In progress	- Off-grid statistics released
Policy briefs on enabling frameworks for off-grid renewables	In progress	- <i>Policies and regulations for private sector renewable energy mini-grid</i> in preparation; report to be presented at IOREC 2018.
Convening of stakeholders through IOREC	In progress	- 4 th IOREC, Singapore, 31 October – 01 November 2018
Accelerating innovation		Core resources: USD 3,719,000
<i>Output: Countries are aware of the latest innovations in technology, policies and finance.</i>		
Deliverable	Status⁵	Remarks
Innovation Landscape report	In progress	- <i>Innovation Landscape Report for the Power sector</i> under preparation, Q4 2018.
Technology status and outlooks	In progress	- <i>Innovation Outlook for Electric Vehicles</i> under preparation
Global report on innovative policy design and practice	In progress	- Joint IRENA-IEA-REN21 report <i>Renewable Energy Policies in a Time of Transition</i> presented at the Berlin Energy Transition Dialogue, April 2018. - <i>Renewable Energy: a key enabler of the global energy transformation</i> presented at G20 preparatory meeting in Argentina, March 2018.

Analytical briefs on innovative capital market instruments and investment trends	In progress	- <i>Global Landscape of Renewable Energy Finance</i> , January 2018.
Design of risk mitigation facilities	In progress	- IRENA expert workshop in Nairobi, Kenya, January 2018. - Concept note developed for the insurance/guarantee platform.
Innovation week	In progress	- Innovation Week will be held in Bonn, Germany in September 2018.
Engagement with innovation-related fora (CEM, MI)	In progress	- IRENA expert dialogue on innovation for thermal storage technologies, January 2018.
Knowledge hub		Core resources: USD 1,959,000
<i>Output: Information about renewable energy, including best practice, is presented in a timely and user-friendly way.</i>		
Deliverable	Status⁵	Remarks
REthinking energy	In planning	
Report on renewable energy targets and policies	In planning	
IEA/IRENA policy database	In progress	- Focus on countries in the Caribbean and Sub-Saharan Africa in 2018.
REsource search engine maintenance and development	Ongoing	- <i>REsource</i> has been integrated into IRENA's new corporate website. Includes statistics on renewable energy auctions; renewables in NDCs; renewable energy balances; REmap options; finance; costing; technology innovation; patents; and socio-economic benefits.

Global Voice of Renewables

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

Realising socio-economic benefits		Core resources: USD 2,552,000
<i>Output: Contribution of renewable energy to socio-economic and climate goals articulated.</i>		
Deliverable	Status⁵	Remarks
Quantitative analysis of socio-economic benefits	In progress	- <i>Global Energy Transition: a roadmap to 2050</i> , Berlin, April 2018
Report on best practice to maximise local benefits from renewable energy projects	In progress	- Analysis of project-level impacts of large-scale wind and solar projects has commenced. - <i>Maximising community benefits of large-scale renewable energy deployment: Insights from sub-Saharan Africa</i> , estimated release Q3 2018. - <i>Renewable Energy Benefits: Leveraging Local Capacity</i> , estimated release Q2 2018.
Report on leveraging local capacity (selected technologies)	In planning	
Jobs annual review 2018	In progress	- 2018 edition of the <i>Renewable Energy and Jobs - Annual Review</i> , May 2018.
Jobs annual review 2019	In planning	
Analytical framework for the renewable energy components in NDCs	In progress	- Design and preparatory work for the implementation of the NDC facility. - Input to UNFCCC in support of the Talanoa Dialogue, April 2018.
Informing markets		Core resources: USD 4,161,000
<i>Output: Unbiased, timely and accurate information about renewable energy trends and developments.</i>		
Deliverable	Status⁵	Remarks
Renewable energy statistics 2018	In progress	- Fourth edition of <i>Renewable Capacity Statistics</i> , March 2018.
Renewable energy statistics 2019	In planning	
Four cost-related reports, including annual updates on power generation	In progress	- <i>Renewable Power Generation Costs in 2017</i> , January 2018.
Two topical cost briefs	In progress	- Update of the analysis on CSP cost reduction potential to 2030 underway.
Two reports on quality assurance (offshore wind and smart grids)	In planning	

Technical guides on data collection	In planning	
Technical guides on quality infrastructure for emerging renewable energy technologies	In planning	
Expanded Renewable Cost Database	In progress	- Database of fossil fuel-fired power plant investment costs, efficiency and fuel costs.
INSPIRE platform enhancement	In planning	
INSPIRE new module on quality assurance systems for renewables	In planning	
Training on data collection	In planning	
Training on the implementation of quality infrastructure	In planning	
Amplifying impact	Core resources: USD 5,566,000	
<i>Output: Knowledge generated by IRENA is disseminated widely and accessible to target audiences.</i>		
Deliverable	Status⁵	Remarks
Communication content for broad consumption	In progress	- Special series of the CNN Eco Solutions show “Renewables on the Rise” aired. - IRENA campaign run across select CNN TV and online platforms.
Communication content for target audiences	In progress	- Visions of Sustainability, January 2018. - Eight side events at the World Future Energy Summit. - Periodic e-bulletin and publication briefs issued.
IRENA website maintenance	Ongoing	
Publication development planning and management	In progress	- New email format for sharing targeted IRENA publications piloted with the launch of <i>Renewable Energy Prospects for the European Union</i> report.
Collaboration with media	Ongoing	- The Assembly-hosted media programme has cultivated key relationships with reporters from global news outlets.
Member Communicators network	In progress	- Communications survey conducted to refine support to Members in assessing the critical facets of the global energy transformation.
Dissemination of IRENA knowledge products (traditional and digital)	In progress	- New outreach strategy under development.

Network Hub

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

Regional action agenda		Core resources: USD 7,025,000
<i>Output: Regional action plans and initiatives supported by IRENA.</i>		
Deliverable	Status ⁵	Remarks
SEE regional market analysis	In planning	
GCC regional market analysis	In progress	- GCC Renewable Energy Market Analysis update underway.
Solar and wind site assessment/mapping (Africa, Central Asia, MENA)	In progress	- Suitability Analysis in Central Asia for solar and wind energy ongoing. - Site assessments for Togo (1 site), Zimbabwe (16 sites), Mali (13 sites). - 45 sites in Kazakhstan, Nauru, Nigeria and Zambia planned to be screened in Q2 and Q3 of 2018.
Financial assessment tool for renewable energy PPAs (Latin America)	In progress	- Ongoing development and piloting of a tool to assess investment incentives in PPAs for wind and solar PV energy.
Planning workshops (Africa, MENA, SEE, Southeast Asia)	In progress	- Analysis of planning and prospects for renewable energy in Central Africa under development. - System Planning Test (SPLAT) model configuration for the ACEC finalised. Assessment of non-hydro renewable energy prospects in the ACEC in progress and preliminary insights presented to PIDA Steering Committee, March 2018.
Regulations and policy workshops (Africa, Latin America, Central Asia, MENA, SEE, Southeast Asia)	In progress	- Regional training on the development on renewable energy power purchase agreements in West Africa in May, June and July 2018. - CECCA regional meeting planned for May 2018 to disseminate findings from technical and regulatory work.
Renewable energy statistics workshop (Central Asia)	In planning	
Project development workshop (SEE)	In progress	- South East Europe regional Workshop on renewable energy project development and financing, 12-13 June 2018, Belgrade, Serbia
Grid integration workshops (Africa, Central Asia, Latin America, Southeast Asia)	In progress	- Regional training on the planning and operation of grids with higher shares of variable renewable energy in West Africa in May 2018.

Regional collaboration platforms and partnerships	In progress	<ul style="list-style-type: none"> - Draft Regional Renewable Energy Roadmap for Central Africa expected to be validated by regional experts and endorsed by Ministers of Energy in June 2018. - The Clean Energy Corridors in Africa have been included in the African Union Commission's action plan on Energy for 2017-2018
Collaborative platforms		Core resources: USD 1,299,000
<i>Output: Multi-stakeholder approaches to renewable energy deployment are supported by IRENA.</i>		
Deliverable	Status⁵	Remarks
Annual progress report on SIDS Lighthouses initiative	In progress	<ul style="list-style-type: none"> - SIDS Lighthouses Quickscan: Interim report, January 2018 - Updated Quickscan methodology to roll-out in 2018 - Ongoing tracking of renewable energy capacity installed and key initiatives in SIDS
SIDS knowledge sharing platform	In progress	<ul style="list-style-type: none"> - SIDS Lighthouses Website revamped and updated - Webinars on renewable energy in SIDS planned for Q2 and Q3 2018
GGA knowledge sharing platform	In progress	<ul style="list-style-type: none"> - Regional Cluster workshop: <i>Strategies for future collaboration</i>, April 2018. - Regional workshop on Geothermal Financing and Risk Mitigation in Africa (90 participants including delegates from 9 governments of the region) co-organised with Governments of Kenya and Japan and the African Union Commission, Nairobi, February 2018. - Workshop on geothermal direct utilisation and food security, April 2018.
SIDS Lighthouses Facilitation	Ongoing	- SIDS Lighthouses 2.0, launch planned for September 2018.
GGA coordination	Ongoing	
Creation of GGA Practitioner Group	In planning	
Multi-stakeholder engagement		Core resources: USD 1,695,000
<i>Output: Engagement of a broad range of stakeholders is supported through IRENA communications and events.</i>		
Deliverable	Status⁵	Remarks
Tailored information for parliamentarians	Ongoing	<ul style="list-style-type: none"> - IRENA Legislators Forum (60 members of parliament from 30 countries), Abu Dhabi, January 2018. - The Review for Parliamentarians (quarterly)
Coalition of Action web platform	Ongoing	- New Coalition for Action website, April 2018.

Coalition for Action coordination	Ongoing	<ul style="list-style-type: none"> - <i>REmade Index on corporate sourcing of renewable energy</i>, to be launched at the Clean Energy Ministerial, May 2018. - <i>Scaling Up of Renewable Energy Investment in Emerging Markets</i>, January 2018 - <i>Community Energy: Broadening the Ownership of Renewables</i>, January 2018
Communication and outreach to parliamentarians	Ongoing	<ul style="list-style-type: none"> - Cooperation with the Inter-Parliamentary Union (IPU) and parliamentary stakeholders on the implementation of the SDG7. - Public-private dialogue between legislators, members of the Coalition for Action and government representatives initiated.

Source of Advice and Support

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.

Project support and facilitation		Core resources: USD 2,460,000
<i>Output: Tools, platforms and partnerships are provided to support renewable energy deployment.</i>		
Deliverable	Status⁵	Remarks
Design and development of standardised contract templates	In progress	- First set of standardised contract templates for solar PV projects near completion.
Functional Global Atlas applications	In progress	<ul style="list-style-type: none"> - Site assessment methodology now functional and applied to support countries' pre-feasibility assessment. - Enhancement of the geothermal component of the Global Atlas. Pilot project to review and classify geothermal fields and resource estimates in prospective geothermal markets.
IRENA Project tracker dashboard	In planning	
Project Navigator module on competitive technical requirements for EPC tender	In planning	

Sustainable Energy Marketplace global coverage	In progress	- Global platform launched. Investor events planned for different regions.
Project collection and screening	Ongoing	- 172 projects now registered on the Marketplace, with 14 added this year (Argentina, Brazil, Colombia, Chile, Dominican Republic, Kenya, Mexico, Peru, Rwanda, Saint Vincent and the Grenadines, Uganda). - 78 Financing institutions now registered, with 6 added this year, offering a total of 140 financing instruments.
Project Navigator modules in French	In progress	- Translation of project development guidelines to French and Spanish.
Dissemination of standardised contract templates	In planning	
Marketplace regional platforms	In progress	- Asia regional platform planned to be launched at the Asia Clean Energy Forum, June 2018. - Pacific regional platform planned to be launched at Pacific Power Association Annual Meeting, August 2018.
Capacity building workshops on project development	In progress	- Workshop on the development of bankable solar PV projects, Singapore, March 2018. - Contribution to the webinar series with the USAID-led network <i>Women in African Power</i> , March 2018. - Webinars on renewable energy systems for SIDS, Q2 2018.
Renewable energy solutions lab		Core resources: USD 775,000
<i>Output: Information and capacity building provided on renewable energy solutions for sustainable livelihoods.</i>		
Deliverable	Status⁵	Remarks
Three policy briefs on nexus-related topics	In progress	- <i>Water Use in India's Power Sector - Impact of renewables and cooling technologies to 2030</i> , January 2018.
Southern African Development Community (SADC) Renewable Energy Entrepreneurship Support Facility	In progress	- First call for applications, March 2018.
Two workshops for entrepreneurs, financing institutions and incubation centres	In planning	
Direct mentoring	In progress	- Contribution to a regional certification scheme for the improvement of sustainable energy skills in the 15 member states of ECOWAS.

Local solutions and tailored advice		Core resources: USD 2,757,000
<i>Output: Advice and capacity building provided to countries about the options for accelerated deployment of renewable energy.</i>		
Deliverable	Status ⁵	Remarks
Five country processes for renewables-based transition	In progress	<ul style="list-style-type: none"> - Post-RRA technical assistance to Thailand underway. - RRA report of Mali under finalization - RRA report for Pakistan, April 2018. - RRA report for Panama, planned for May 2018. - RRA process initiated for Azerbaijan, Bhutan, Republic of Moldova. - RRA REmap report for Egypt, launch Q3 2018 - RRA/REmap process initiated for Lebanon - Assessment of Renewable Energy Manufacturing Potentials for Jordan, Lebanon, and the UAE, Q3 2018.
Power system flexibility assessment for countries upon request	In progress	- The flexibility assessment model (FlexTool) pilot applications completed jointly with the governments of Colombia, Panama, Thailand, Uruguay. Follow-up detailed assessment completed for Colombia and in progress for Thailand.
National master plans supported in Africa	In progress	- Support to Swaziland for the preparation of a national Energy Masterplan. Expected completion Q2, 2018.
Grid integration and power system operation support upon request	In planning	

International Cooperation and Strategic Engagement

Objective: Provide leadership in global agenda-setting on energy transformation, and ensure active Member participation in the delivery of the programme of work.

International cooperation and strategic management		Core resources: USD 5,018,000
Outputs	Status ⁵	Remarks
Strategic management of the Agency and thought leadership and coherence of the message on renewables in the global discourse on energy.	Ongoing	<ul style="list-style-type: none"> - Selected high-level participation of the Director-General: <ul style="list-style-type: none"> - Keynote address at Global Conference on SDG7; Bangkok, February 2018; - Chaired the Global Council on SDG7 and moderated two sessions at Climate Change Forum at World Government Summit, Dubai, February 2018; - Participated in the founding conference of the International Solar Alliance, New Delhi, March 2018; - Visited China, Cuba, Germany, Japan, Pakistan, Singapore. - Global Commission on the Geopolitics of Energy Transformation launched, January 2018. First meeting April 2018.
Regional Member interaction and cooperation on programmatic and governance issues.	Ongoing	
Effective communication and outreach to Members to ensure the flow of information and active engagement.	Ongoing	- 45 PRs accredited to IRENA (2018: El Salvador, Ireland, the Republic of Korea and Uganda)
Governing body meetings		Core resources: USD 3,200,000
Outputs	Status ⁵	Remarks
Substantive support and efficient servicing of meetings of the governing bodies is ensured.	Ongoing	<ul style="list-style-type: none"> - Eighth session of the Assembly and related meetings completed, January 2018. - Preparations for the 15th meeting of the IRENA Council, to be conducted in May 2018. - Planning and systematic organisation of governing body meetings consolidated and streamlined. - Documents available electronically on the IRENA Meeting Mobile Application. Reduced printing by 55% compared to the previous year.

Efficient, Transparent and Innovative Management

Objective: Ensure quality and accountability in programme planning and implementation and the associated management of financial, human and information technology resources to achieve impact in the programme of work and medium-term strategy.

Strategic Management		Core resources: USD 4,448,000
Outputs	Status⁵	Remarks
Accountability and transparency in the management of the Agency and its resources.	Ongoing	- Planning and systematic organisation of IRENA's programmatic meetings has been consolidated and streamlined to facilitate efficient organisational delivery.
Resource diversification strategies and plans developed and operationalised.	Ongoing	- Engagement with potential partners. - Development of communication materials based on the WP and MTS - Reporting to contributors - Coordination and development of substantive and contractual arrangements for VCs
Evaluation system to monitor progress and improve performance over successive programmatic cycles introduced.	In progress	- Monitoring and evaluation mechanisms, including qualitative and quantitative data collection system, under development
Effective review, oversight and legal support with timely implementation of related recommendations.	Ongoing	- Continued legal support. Contracts for the procurement of goods and services, memoranda of understanding and voluntary contribution agreements reviewed, advice on the implementation of IRENA's headquarters agreements with the United Arab Emirates and Germany and on the application of IRENA regulations, rules and procedures. - Ongoing discussion on a supplementary agreement with the Government of the United Arab Emirates concerning IRENA's occupancy of its headquarters in Abu Dhabi.
Administration and Management Support		Core resources: USD 12,172,000
Outputs	Status⁵	Remarks
Effective workforce planning and efficient staff recruitment maintained, with due regard for geographical representation and gender balance.	Ongoing	- Implementation of automated recruitment process completed

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Effective utilisation of resources through finance and budgetary management, in line with IRENA regulations and procedures.	Ongoing	<ul style="list-style-type: none">- Financial Statements for 2017- External and internal audits- Implementation of ERP based budgeting in progress
Efficient support to programme implementation, including procurement, travel and general services, compliant with IRENA rules, regulations and procedures.	Ongoing	<ul style="list-style-type: none">- Annual Agency-wide procurement plan- Expansion of the Agencies' vendors database to include more than 1500 vendors.- Implementation of the Procurement and Contracts Management ERP system- Agency wide travel arrangement for the Assembly and the Council.
The use of ICT tools and services to improve organisational effectiveness and staff productivity.	Ongoing	<ul style="list-style-type: none">- Revamping of Bonn IT infrastructure completed.- ERP modules implemented or piloted. Transition to operations ongoing.- New council registration system and meeting application completed.- Development and maintained of IRENA websites, platforms and tools