IRENA
International Renewable Energy Agency

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Progress report of the Director-General on the Implementation of the 2014-2015 Work Programme and Budget

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IRENA Highlights 2015

- IRENA membership rose to **140 countries** with an additional 32 in the process of accession.
- IRENA/ADFD project facility allocated **USD 57 million** in concessional loans to five projects in January 2015, leveraging an additional **USD 86 million**.
- **Renewable Energy and Jobs – Annual Review 2015** estimated that renewable energy employs 9.2 million people worldwide, for the first time including jobs in large hydropower in this estimate.
- **The Renewable Power Generation Costs report** demonstrates that biomass, geothermal, hydropower, and on-shore wind are all now in the range or lower than fossil fuel electricity generation costs.
- REmap country reports were released on **China, Mexico, the UAE and the USA,** with working papers on **Ukraine and Poland**.
- A comprehensive **statistics time-series** was published covering renewable electricity generation capacity from 2000 to 2013.
- **Global Atlas 2.0** and **Global Atlas Pocket** were released, covering all renewable technologies, including new maps and information, and enabling access to global resource data from any mobile device.
- Country briefs for **20 Latin American** countries and a synthesis highlighting regional policy trends were released.
- More than **11 million** page views for IRENA publications since January 2014.
- IRENA has **300,000** followers on social media.
- **68 media releases** were published since January 2014.
- Almost **9,000** media news items in at least **127 countries** since January 2014.
- **47,410,000 potential viewership** in first quarter of 2015.
- More than **2,500 articles** mentioned IRENA in the first quarter of 2015.
- The Members' portal, REmember, has **550 users** from 120 countries.

1. This report provides an account of the progress the Agency has made over the past four months since the Annual Report submitted to the Assembly at its fifth session in January 2015. With the current programmatic cycle entering the last stages, it is increasingly evident that a biennial cycle has allowed a more strategic approach to the implementation, as well as a greater focus on the impact of the Agency's work.

2. IRENA's membership continues its steady growth, a testament to global recognition of the importance of the worldwide transformation to more sustainable energy systems. At the 4th session of the IRENA Assembly in January 2014, there were 125 Members of the Agency, with 42 countries in the process of joining. At the time of writing of this report, IRENA's membership included 140 Members and 32 countries in the different stages of the accession process, reflecting a growing interest in the work of the Agency and in international cooperation for deployment of renewables.

3. Evidence of countries' commitment to renewable energy is widespread. In 2014, over 260 billion US dollars were invested in renewable energy deployment, an increase of more than 15% over 2013 and more than five times higher than a decade ago. Well over 100 gigawatts of new capacity has been added worldwide every year for the past three years, with the largest additions in the developing world. In that same timeframe, renewables have accounted for more than half of net capacity additions in the global power sector.

4. Indications are that these trends will only become greater. IRENA's report on *Renewable energy Target Setting* shows that, as of early 2015, 164 countries had adopted some form of national renewable energy target, a four-fold increase since 2015. For instance, China is targeting 100 gigawatts (GW) of solar PV and 200 GW of onshore wind by 2020. India announced a solar capacity target of 100 GW by 2022, up from just over 3 GW today, and a wind capacity target of over 80 GW. The share of renewables in the US power generation rose from 11% in 2011 to 14% in 2013, and its utility-scale solar capacity is predicted to increase by 60% in the coming two years. The growth rate for solar projects in Latin America was a staggering 370% between 2013 and 2014, in large part due to the quick emergence of solar projects in Chile, and this trend is continuing in 2015. Ethiopia, Kenya and Tanzania combined have identified 15 gigawatts of cost-effective geothermal and 40 GW of cost-effective hydro potential.

5. These examples illustrate the change that is taking place globally as falling costs have transformed the global case for renewables, unlocking a broad range of socio-economic benefits. IRENA's *Renewable Energy and Jobs - Annual Review 2015* shows that employment in the sector reached 7.7 million globally in 2014. For the first time, IRENA has also estimated employment in large hydropower, adding 1.5 million jobs to the renewable energy sector. The jobs series showcase the transformative power of renewables and its growing presence in the market place today.

6. Long-term plans are paramount to a sustainable and long-term energy transformation and long-term economic development. REmap 2030, a roadmap for doubling the share of renewable energy in the global energy mix, shows that not only can renewable energy meet the world's rising demand, it can do so more cost-effectively than conventional technologies, while setting the world on a pathway to limiting global warming to under 2 degrees Celsius. During the 16th Annual Symposium of the French Renewable Energy Association in Paris in February 2015, the Director-General spoke on REmap findings, stating that a doubling of the share of renewables in the global energy mix can significantly contribute to the decarbonisation of energy production by 2030. This message was reiterated on the occasion of a high-level conference in Brussels entitled 'EU leading on renewable energy policy' where he also spoke about the contribution of renewables to sustainability, security and competitiveness in Europe. In March 2015, the Director-General spoke on the ability of renewable energy as a means to reduce fossil fuel dependence, strengthen energy security and contribute to creating a more sustainable economy during a high-level conference in Berlin entitled 'Energy Transition Dialogue: Towards a Global *Energiewende*'.

7. Analyses on the role of renewables in transforming the energy system and in improving resilience to energy security risks is contributing to international fora to further inform policy-makers on possible

options. The Director-General promoted regional co-operation in energy strategies at the Caribbean Energy Security Summit, hosted by US Vice President Joseph R. Biden, Jr. in Washington, DC, and at the 2nd Ministerial Conference on Environment and Renewable Energies of the Western Mediterranean Dialogue in Lisbon. Most recently, the Director-General participated in the meeting of the G7 energy ministers in Hamburg, Germany. The Communiqué, G7 *Hamburg Initiative for Sustainable Energy Security* calls upon IRENA to further contribute to efforts of these countries to advance the deployment of renewable energy. The priority of the integration of a large share of renewable energy into the grid to transform the energy system was also reiterated at the sixth Clean Energy Ministerial (CEM6), where the Director-General spoke about the latest developments in innovation and technology in renewable power. Furthermore, IRENA is working with the Presidency of G20 to promote renewable energy solutions in this setting.

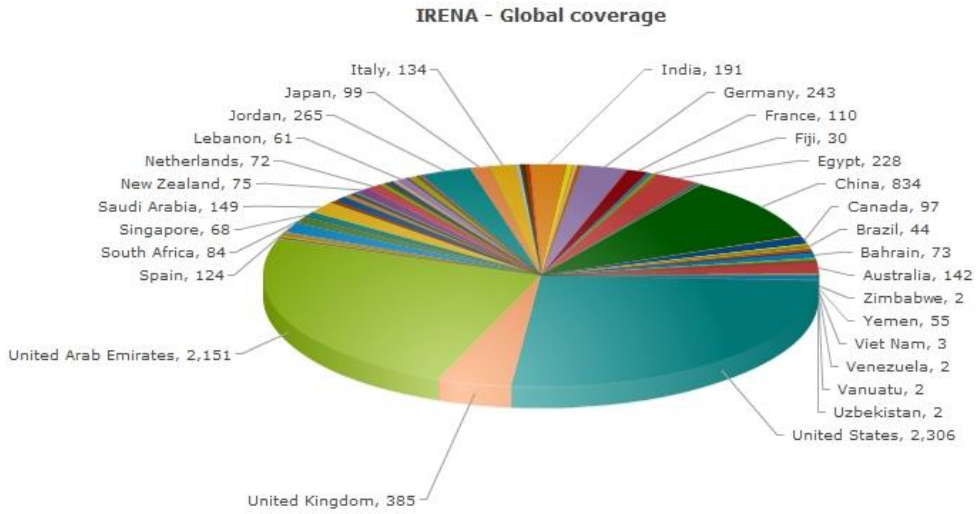
8. In view of an important milestone of the upcoming 21st meeting of the Conference of the Parties to the 1992 United Nations Framework Convention on Climate Change (COP 21) in Paris, the positive message of renewable energy resonates with countries around the world as they are looking for practical solutions available today. Through participation in climate-related events and initiatives, IRENA is ensuring prominence of the renewable energy solutions, as well as leveraging partnerships, such as with the Workstream 2 of the United Nations Framework Convention on Climate Change (UNFCCC), the Climate Technology Centre and Network (CTCN) and the Green Climate Fund. Furthermore, in cooperation with the European Commission and the Syndicat des Energies Renouvelables (SER), IRENA is organising a renewable energy event to promote renewable energy solutions as a means to climate change mitigation in the course of COP 21.

9. IRENA has also focused on reaching out to private sector constituents. Of note is the Director-General's participation in the 11th Wall Street Renewable Energy Finance Forum in New York, where discussions were focused on energy transformation, the changing dynamics in renewable energy markets, and the positive trends in renewable energy financing and its increasing cost-competitiveness.

10. In May 2015, IRENA participated in the Sustainable Energy for All (SE4ALL) Forum in New York. In the course of the Forum, which gathered some 2,000 participants, the Director-General and the Chief Executive Officer of Acciona launched IRENA's latest jobs review to benefit from the presence of stakeholders from public and private sectors and civil society. In its role as SE4ALL Renewable Energy Hub, IRENA also led the renewable energy day, which provided a unique opportunity to reach a wide audience and present a range of programmatic activities. Ministers, stakeholders from the private sector, international and regional organisations, and civil society participated in discussions on Coalition for Action, IRENA's Project Facilitation Platform, and the SIDS Lighthouses Initiative, among others. The Director-General also participated in the annual SE4ALL Advisory Board meeting, which, under the chairmanship of the Secretary-General of the United Nations and the President of the World Bank, brings together Ministers, CEOs and leaders of international organisations to discuss progress and advance the goals of the SE4ALL.

11. In the fourth year since the Agency's official establishment, IRENA's substantive products have gained global recognition and are contributing to increasing awareness about renewable energy. In this programmatic cycle, IRENA products have been presented in 8,890 media news items in at least 127 countries. IRENA's social media platforms have over 330,000 followers and is growing by a minimum of 100 new followers every day. Records to date show that there have been more than 4 million page views for the IRENA website and more than 11 million page views for IRENA publications. To increase accessibility of renewable energy information IRENA launched REsource, an intelligent online search engine with free access to IRENA analysis and data covering over 170 countries.

Global media coverage January 2014 to end April 2015



12. The progress to date has been facilitated with the timely receipt of Members' contributions. To date, against 2014 assessed contributions, USD 19.3 million have been received with USD 0.7 million remaining outstanding. Against 2015 assessed contributions, USD 9.9 million have been received with USD 10.1 million remaining outstanding. For the biennium, USD 6.9 million were received from Germany and USD 11.9 million were received from the United Arab Emirates (UAE) as part of budgeted Voluntary Contributions. In addition, USD 12.9 million were pledged in additional Voluntary Contributions from Belgium, France, Germany, Iceland, Japan, New Zealand, Norway, Switzerland and the UAE with USD 6.2 million received to date. The Fund for Developing Country Representatives (FDCR), which facilitates inclusiveness by enabling the fullest possible participation, based on available funds, of Least Developed Countries and Small Island Developing States in governing body meetings, continues to need additional voluntary contributions to sustain the requirements placed upon the Fund.

Thematic Programme Areas

I. Planning for the global energy transition

13. This thematic area addresses planning needs required to mainstream renewable energy options and strategies in national and regional energy plans, covering IRENA's role as the SE4ALL Renewables Hub, the recently released REmap 2030 analysis, work on cities, water, energy and land nexus, transforming power grid infrastructure, innovative planning tools, and renewable readiness assessments and advisory services.

Sustainable Energy for All renewables hub

14. IRENA has continued its work with SE4ALL in its role as the Renewable Energy hub. IRENA continues to provide substantive contributions to the Global Tracking Report, led by the World Bank and the International Energy Agency (IEA), and collaborate with the World Bank in the Readiness for Investment in Sustainable Energy (RISE). Furthermore, IRENA is strengthening its collaboration with other thematic and regional hubs, to help ensure that renewable energy is represented in all facets of the Initiative's work, and to benefit from synergies among stakeholders. In this context, IRENA has participated in the meetings of the access and finance hubs, as well as the Africa regional hub led by the African Development Bank, and has initiated cooperation with the Inter-American Development Bank as it advances its work in the Latin America and Caribbean (LAC) region.

REmap 2030

15. Building on analysis of the initial 26 countries, REmap 2030 – IRENA's roadmap for doubling the share of renewable energy - is translating results into action options through country reports. Working with national experts and country expert groups, REmap country reports have already been released for China, Mexico, the UAE and the United States of America (US), as well as working papers for the Ukraine and Poland. Four more country reports are planned for 2015. REmap country-level work is ongoing with Argentina, Belgium, Colombia, the Dominican Republic, Egypt, Ethiopia, Iran, Kazakhstan, Kenya, the Russian Federation, Sweden and Uruguay. Building on completed country analyses, IRENA has initiated regional analyses for Africa, South-east and South Asia, and the LAC region. Engagement with non-IRENA countries has also commenced, including Brazil and Canada. Expansion of this work was made possible with in-kind support by governments, and through voluntary contributions from Germany and Japan.

16. The impact of REmap work is emerging in different parts of the world. For instance, China REmap 2030 analysis has resulted in broader cooperation with the China National Renewable Energy Centre (CNREC) to cover scenario analysis, costing and renewable energy policy analysis, as well as follow-up work in the area of standards and quality control. The Asia-Pacific Economic Cooperation (APEC) has identified the doubling of renewable energy as an objective and has invited IRENA to discuss this during a meeting organised by the Asia Pacific Energy Research Centre (APERC) in June 2015. The G20 have asked IRENA to assess renewable energy options for its members. REmap findings are also informing the climate debate and are clarifying the potential role of renewables as part of the Ad-Hoc Durban Platform and various meetings related to the technology mechanism.

17. Following the release of the ocean energy technology readiness package and the bioenergy working paper on demand and supply, costs, sustainability and policy issues released in 2014, IRENA released in February 2015 a manufacturing industry renewable energy roadmap and supporting working paper. The *Renewable Energy for Manufacturing Industry* roadmap fills an important knowledge gap in the assessment of the renewable energy potential for the manufacturing industry. The report identifies six priority areas for

policy-makers and industrial stakeholders: energy-intensive sectors, small and medium size enterprises (SMEs), biomass, solar thermal systems, electrification and regional aspects. IRENA has presented findings of this roadmap at an IEA workshop on the topic of renewable energy in manufacturing.

REpowering cities

18. As cities grow and expand, there is a growing need to do so sustainably. To support public and private stakeholders seize such opportunities, IRENA in cooperation with the government of Israel organised a workshop and study tour on renewable energy deployment in Sub-Saharan African Cities in January 2015. The workshop was attended by 21 participants from 12 Sub-Saharan African countries and exposed participants to strategic thinking and a variety of tools to support the implementation of new policies and applications of renewable energy in their own countries. The workshop aimed to strengthen national and urban stakeholder capacity and accelerate renewables deployment through the sharing of knowledge and experience and on-site observation of renewable energy deployment practices in Israel.

19. Work in this area has also continued on a methodology for the techno-economic potential of available biomass reserves, practitioners' guides for wind energy and outdoor lighting. IRENA is also developing a series of case studies for solar rooftop systems in commercial settings and commercial retail outlets, for procurement and deployment of solar roof top systems.

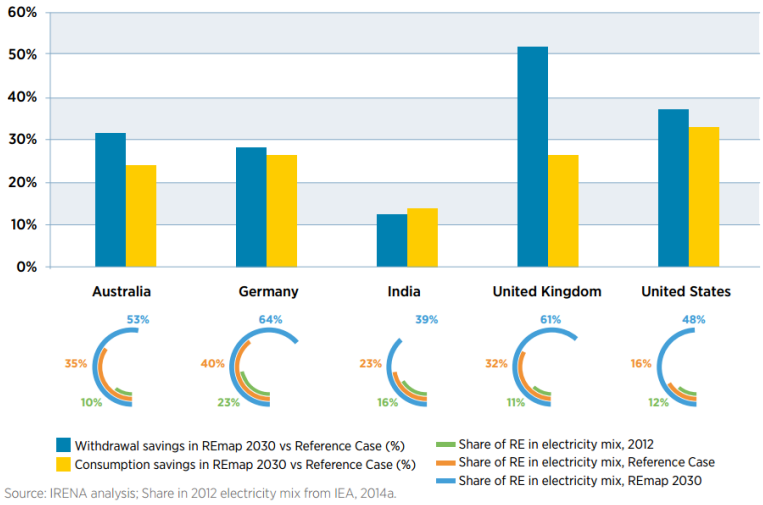
Water, Energy and Land Nexus

20. It is estimated that, growing food production requirements will mean that by 2025 "two in every three countries will be water stressed and 2.4 billion people will face "absolute water scarcity""[1]. Renewable energy can offer a cost-effective, secure and environmentally-sustainable supply of energy to improve water and food security, while reducing the development constraints imposed by the water, energy and food nexus. In response to these challenges and in an effort to reduce knowledge gaps, IRENA launched the *Renewable Energy in the Water, Energy and Food Nexus* report in January 2015. The comprehensive report provides qualitative and quantitative evidence on the opportunities for renewables adoption across the water, energy and food sectors and highlights potential risks that need to be managed for rapid deployment. Since its launch, the report has been widely cited in the global discourse on the nexus with over 60 media articles identified within the first week alone. IRENA has been invited to present report findings at various global and regional forums including the International Water Summit, 6th World Water Forum, the United Nations Economic and Social Commission for Western Asia (UNESCWA), the Arab League Expert Group Meeting on Water, Energy and Food Security Nexus in the Arab region, the Food and Agriculture Organization (FAO) technical workshop on solar irrigation pumping, SE4All Forum 2015 and the Stockholm World Water Week. In the course of 2015, the tool will be implemented as a post-Renewables Readiness Assessment (RRA) advisory service.

[1] http://www.un.org/waterforlifedecade/pdf/01_2014_sustainability_eng.pdf

Renewable energy technologies can substantially reduce water use in the power sector

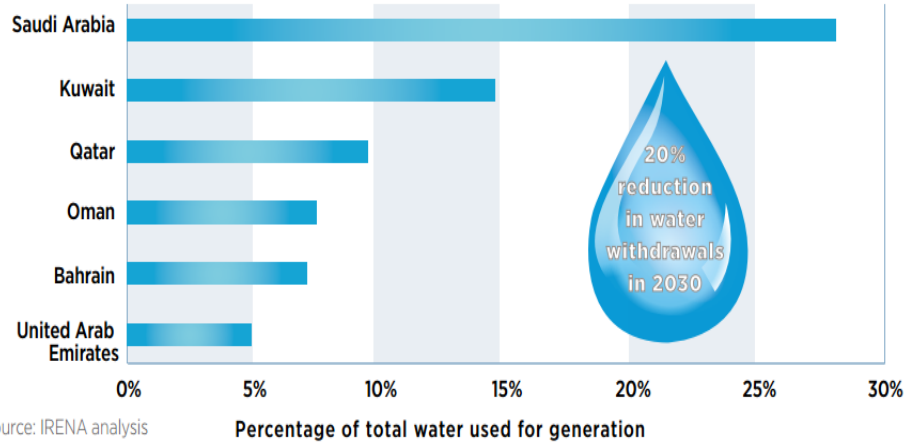
Across their life cycles, some renewable energy technologies are less water-intensive than conventional options. During the power generation stage, solar photovoltaic (PV) or wind can withdraw up to 200 times less water than a coal power plant to produce the same amount of electricity. Geothermal and concentrated solar power (CSP) have higher water needs for operation then other renewable energy technologies, however, recent projects have shown that the application of dry cooling systems in CSP plants and conventional power technologies can substantially reduce water-use.



Source: IRENA analysis; Share in 2012 electricity mix from IEA, 2014a.

IRENA's report *Renewable Energy in the Water, Energy and Food Nexus* finds that increasing the share of renewable energy in the total energy mix can substantially reduce water-use in the power sector. A preliminary analysis on select REmap 2030 countries (Australia, Germany, India, the United Kingdom, and the United States) found that after a substantial scale-up in renewable energy deployment, in particular in solar PV and wind, water withdrawals in 2030 could decline by nearly half in the United Kingdom, by more than a quarter in the United States, Germany and Australia, and by over 10% in India.

At a regional level, the report estimates that realising renewable energy plans for the water-scarce Gulf Cooperation Council (GCC) region will result in a 20% reduction in water withdrawal for power generation and associated fuel extraction. Analysis shows that most of this reduction will come from the largest economy in the region, Saudi Arabia, due to its heavy reliance on crude oil for electricity generation and its ambitious renewable energy plans, primarily based on solar technologies.



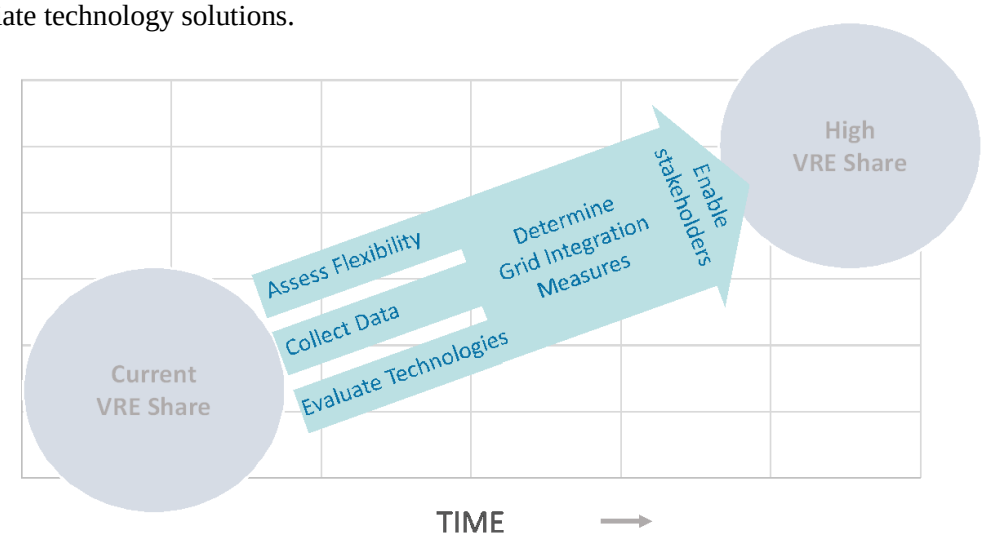
Source: IRENA analysis

Transforming Power Grid Infrastructure

21. Increasingly countries seek to transition to a renewables-based energy mix, and significant progress has been made especially in the power sector. As the share of variable renewables increases, there is a need to better understand infrastructure and technology requirements that would enable the share of renewables to grow. In this context, IRENA has developed a technology roadmap for renewable energy grid integration that compiles and structures the key activities required to support a transformation towards high shares of renewables. The roadmap includes important new information regarding features, costs and benefits of smart grid technologies for integration of variable renewables, an overview of demonstration projects, and a new methodology and case study assessment on the impact of renewables on grid investment streams. Preliminary results were discussed in a roundtable on a regional strategy for smart grids and renewables in the Association of South East Asian Nations (ASEAN) region and informed a Ministerial Roundtable that took place during the 5th IRENA Assembly in January 2015. This work also increasingly supports IRENA's work on Clean Energy Corridors and the REmap power sector options analysis. In a next step, guidelines will be deployed for country analysis for optimal renewable energy integration pathways. At IRENA's 5th Assembly, Ministers requested that IRENA strengthen its work on grid integration and system design, and this request was re-emphasised in the communiqué of the G7 energy Ministers in May 2015.

IRENA's renewable energy grid integration roadmap

IRENA's technology roadmap on renewable grid integration is part of REmap 2030, and provides a comprehensive perspective on the different technology options for integrating and transitioning towards renewable power generation. Based on the lessons learned from other recent studies in this area, the roadmap provides overarching and practical guidance on the sequence of steps needed to assess appropriate technology solutions.

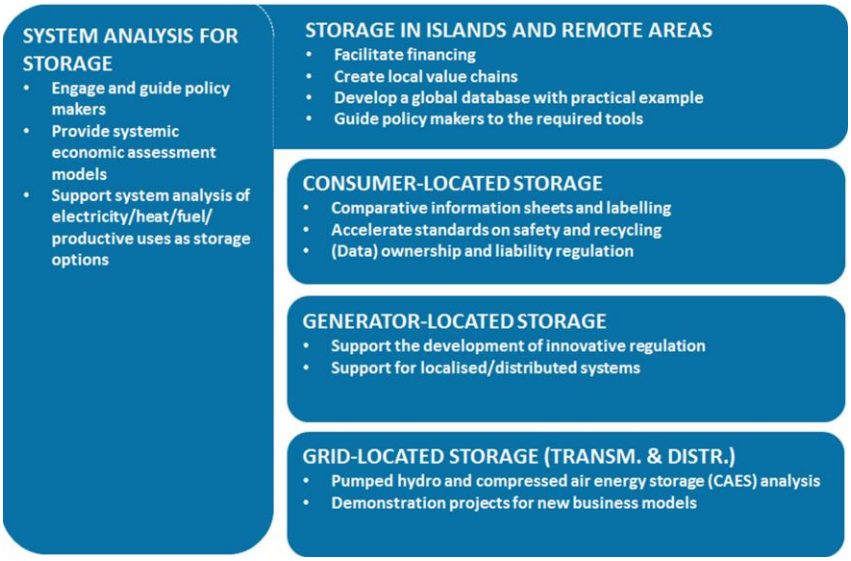


The steps include the assessment of current and future system flexibility, data collection methods to inform and facilitate decision making, and an evaluation of smart grid and storage technologies available within the region. Based on these inputs, different renewable energy grid integration measures and appropriate stakeholders are identified. The analysis shows that smart grid investments make economic sense, as they contribute to the reduction of non-technical losses and black-outs. Smart inverters and smart meters are only marginally more expensive than conventional technologies, but have short payback times due to reduced operational and maintenance expenditure. Each step and measure is augmented with practical examples from IRENA's technical studies on renewable energy grid integration and 14 country case studies.

22. IRENA has also concluded a technology roadmap on electricity storage as well as a technology outlook report on battery storage for renewables. IRENA is now recognised as a leading institution in storage for renewable energy deployment, witnessed by multiple event invitations and over ten planned keynote speeches at electricity storage events. Based on this work, Cameroon, Colombia, Egypt and India have requested to organise national electricity storage workshops. South Africa has requested support in assessment of storage role in the ongoing energy transition. This work is supported through a voluntary contribution from Japan.

IRENA's electricity storage technology roadmap

IRENA's technology roadmap on electricity storage is part of REmap 2030, and provides a comprehensive perspective on the role of electricity storage for accelerating the deployment of renewable power generation. The technology roadmap is based on a series of three expert workshops that took place in Dusseldorf (March 2014), Tokyo (November 2014), and New Delhi (December 2014), followed by a concluding review workshop in Dusseldorf in March 2015. In total, more than 150 experts from 50 countries participated in these workshops. The technology roadmap identifies 14 action items in five priority areas.



Each action item is substantiated with practical examples and identifies relevant stakeholders. The technology roadmap concludes that electricity storage systems are not a prerequisite for a continued growth of renewable power generation. However, for islands and grids in remote areas, it is already a cost-effective solution to facilitate the transition from diesel generators to renewable power generation. In larger systems, pumped hydro stations (PHS) are the most important electricity storage technology to support the integration of variable renewables into the grid.

In the next five to ten years, the declining costs of rooftop solar PV systems combined with advanced electricity storage systems can enable consumers to produce and consume their own electricity more cheaply than buying electricity from the grid. Although this would not diminish the importance of transmission and distribution grid infrastructure, it impacts the utility business models. As a consequence, policy-makers and regulators need to start today to create regulatory frameworks that ensure electricity storage systems for self-consumption will be able to support the grid. Such a regulatory framework will require methods and procedures that allow for aggregation, support for technology development for control systems and software, and procedures to deal with data ownership.

Planning with Renewables

23. To plan for the global energy transition, governments require tools to assess resource potential, security of supply, energy access, affordability, and environment and financial constraints. IRENA has continued to support the development of these tools and their use at the national and regional level.

24. Planning work in Africa was presented at a pre-Assembly event in January 2015 entitled *Planning renewable energy strategies: Africa power sector*, which was attended by more than 70 delegates. Members commended IRENA's effort in energy planning and underscored the lack of adaptable, realistic energy plans for the continent, the need for more substantive data in the power sector, as well as the need for greater coordination between government and industry.

25. IRENA has continued to work on the development and evaluation of methodologies in order to improve energy planning. Bridging the gap between the scientific modelling community and government energy planners, IRENA has consolidated results from the Workshop *Brainstorming session on the modelling of renewables for policy-making* in a project called Addressing Variable Renewables in Long-term Energy Planning (AVRIL) to improve long-term system integration planning methodologies with a higher share of renewables. In March 2015, IRENA organised the second AVRIL expert workshop in Bonn, gathering 20 energy modelling experts from academics and industry, as well as energy planners from North African government planning offices. The expert workshop discussed the AVRIL methodology catalogue, which will be published mid-2015.

26. In June 2015, IRENA is hosting the 34th International Energy Workshop (IEW). The IEW is a conference for the international energy modelling community and provides a venue for scholars and researchers to compare quantitative energy projections, to understand diverging views of future energy developments, and to observe new trends in global energy production and consumption. For the first time in its 34-year history the IEW will be hosted in the Middle East. Furthermore, IRENA's presence in the UAE will enable the IEW community to strengthen its engagement in the MENA region.

27. Investment decisions made today on power plants and transmission grids can shape the energy system for decades. Long-term infrastructure planning is required to support cost-effective renewable energy system integration. Least-cost energy system modelling is a tool that helps policy-makers explore investment decisions for an optimal energy mix and transition pathway. In this context, IRENA has completed the development of five African power pool system planning test models (SPLAT models), together with user manuals. Analysis findings are summarised in the publication *Africa Power Sector: Planning and Prospects for Renewable Energy*, published in January 2015. Using the same tool, IRENA has also quantified CO_2 mitigation impacts of the Clean Africa Energy Corridor initiative.

Addressing variable renewables in long-term planning (AVRIL)

System integration of high shares of renewable energy requires both long-term techno-economic planning in the energy sector as well as short term network design in the power sector. In particular, long-term scenario planning is key to enabling the transition to a renewables-based energy system, as demonstrated by countries currently undertaking such a transition. There is a lack of established best practices on energy planning with high shares of renewables, which hinders countries' efforts to establish long-term energy plans to guide their policy decisions.

IRENA received a number of requests from energy planning offices, particularly in North Africa and in Latin America, to support them in enhancing the quality of long-term energy planning with higher variable renewable energy (VRE) shares. In order to meet the request, IRENA organised two workshops on the matter, attended by over 100 experts from around the world. Meeting outcomes have provided the basis for an assessment of current long-term planning methodologies for the integration of renewable energy into national and regional power systems.

IRENA has since consolidated this work under the project Addressing Variable Renewables in Long-term Energy Planning (AVRIL) aimed to improve long-term system integration planning methodologies with a higher share of renewables. An AVRIL methodology catalogue will be published in 2015 and feature at a regional workshop towards the end of 2015. Following the completion of the catalogue, a regional workshop will be organised in Latin America.

Beijing, June 2014

Bonn, March 2015

Technical cooperation in energy planning

Lack of institutionalised long-term planning could cause significant short-term economic losses as countries face expensive emergency capacities and power outages. On the other hand, a good planning framework will speed up the investment appraisal process and reduce long-term investment uncertainty. The importance of planning in attracting renewable energy investment was the main theme discussed at the Africa Planning Summit organised by IRENA in January 2015 in Abu Dhabi.

Summit speakers and participants underscored the need for adaptable, realistic energy plans for the continent, as well as the need for more substantive data in the power sector and coordination between government and industry. Accordingly, speakers noted the importance of using updated data and tools in long-term planning, collaboration with academia and governments, and a commitment to capacity building. IRENA's concerted efforts together with other organisations were commended.

So far IRENA has organised five regional energy planning workshops spanning continental Africa and is developing a more comprehensive capacity building program on energy planning based on SPLAT modelling tools and in cooperation with partner organisations such as the ECOWAS Centre for Renewable Energy and Energy Efficiency (ECREEE), United Nations Economic Commission for Africa (UNECA), the International Atomic Energy Agency (IAEA), and the South African National Energy Development Institute (SANEDI).

Abidjan in November 2012 with ECREEE

Johannesburg in December 2012 with SANEDI

Yaoundé in September 2014 with IAEA

Tunis in March 2014 with IAEA

Kigali in October 2014 with UNECA

Renewables Readiness Assessment and Advisory Services

28. IRENA has continued to engage at the national and regional level through Renewable Readiness Assessments (RRA). RRA is a country-led process that evaluates key policies, potentials and technologies for renewable energy deployment and identifies the actions needed to overcome barriers to this deployment. To date, IRENA has supported the RRA process in 26 countries. Six[2] RRAs were initiated in the last four months and 20 are completed or in progress[3].

29. Results are having an impact. Two RRA recommendations were taken into the Philippines' 2015 annual work programme after preliminary findings were presented in a strategic planning workshop of the Renewable Energy Management Bureau of the Department of Energy. The Djibouti RRA, released in May 2015, highlighted significant geothermal, wind and solar resources that could meet the country's demand and export surplus potential. The United States Agency for International Development (USAID) is framing its intervention in Djibouti's geothermal sector based on the guidance provided by the RRA. In line with RRA recommendations, Mozambique has adjusted its rural electrification approach by opening the sector to private sector involvement, while in Niger a Rural Electrification Agency to promote renewables-based electrification solutions was established. A rural electrification master plan is also under development with the support of the ECOWAS Centre for Renewable Energy and Energy Efficiency (ECREEE).

30. The Swaziland RRA was launched by Energy Minister Mashwama on 19 March 2015 with the participation of a large group of stakeholders from the government, utilities, regulators, private sector, and development partners. Organized back-to-back with the launch event, specific modules of post-RRA technical advice on energy statistics and energy planning enabled early engagement of the country in the implementation of RRA recommendations. As a follow-up to the session on energy statistics, and to enable sharing of best practices, IRENA facilitated participation of the Swazi government officials to an expert consultation workshop on bioenergy data collection organised in Abu Dhabi on 28-30 April 2015. Pursuant to the RRA action plan, Swaziland has already developed an Independent Power Producer Framework and a Grid Code with support from the USAID Southern African Trade Hub. This will strengthen the enabling framework for investment in grid-connected renewable energy and a standardised power purchase agreement (PPA) for various renewable energy technologies which has led to the signing of four PPAs.

31. IRENA has continued post-RRA advisory services in support of the further implementation of RRA recommendations and the continued uptake of renewables. As part of advisory services, IRENA organised a workshop in January 2015 in the margins of the World Future Energy Summit (WFES) to discuss preliminary findings of the joint IRENA/European Investment Bank study on renewable energy manufacturing potential in Egypt, Morocco and Tunisia. The workshop explored opportunities of cooperation between IRENA and key regional actors in support of resource mobilisation for manufacturing potential in these countries. Pilot country participants expressed interest in national workshops to engage industry representatives and the formation of a more detailed mapping of stakeholder relations, exploring the possibility of manufacturing solar and wind components in the region, and comparing the feasibility of industry development with import policy alternatives. The importance of technology transfer and capacity building; research and development (R&D); development of trade agreements in the region; improved competitiveness of local products; the need for financial instruments, and the role of micro-finance institutions (MFIs) were underlined. A report on findings will be released at the end of 2015.

[2] Antigua and Barbuda, Bahamas, Egypt, Pakistan, Tanzania, and Zimbabwe.
[3] Djibouti, Fiji, Gambia, Ghana, Grenada, Kiribati, Mauritania, Mongolia, Mozambique, Nicaragua, Niger, Oman, Peru, Philippines, Marshall Islands, Senegal, Swaziland, Tunisia, Vanuatu, and Zambia.

II. Gateway to knowledge on renewable energy

32. An important barrier to deployment of renewable energy is the lack of accurate, objective and reliable data and information. IRENA continues its efforts to become the centre of excellence for global renewable energy information, to increase awareness and inform stakeholders of the state of play in markets, policies, financing, and technology options, including their costs and benefits.

Knowledge Gateway Platform

33. IRENA's Knowledge Gateway platform, REsource, was launched at IRENA's 5th Assembly in January 2015. REsource enables free public access to all IRENA renewable energy information and data through an intelligent search engine. Enabling rapid access to country-specific data with customisable charts and graphs, REsource covers over 170 countries on metrics such as renewable energy use and deployment, renewable energy market statistics, costs and benefits, resource potentials, policies and finance, innovation and education. Since its launch, REsource has had 60,000 users.

34. In subsequent phases, IRENA will expand REsource to become the global hub for trusted and relevant renewable energy information and data, linking with and complementing existing renewable energy information providers. To make a wider range of data and information available, agreements with IEA and the Renewable Energy Network for the 21st Century (REN21) have been signed. A voluntary contribution from Norway enables the Agency to advance the work on REsource.

REthinking Energy

35. Since its release in September 2014, IRENA's flagship series, *REthinking Energy*, has received international recognition as a source of accurate and impartial knowledge. It has been acknowledged for its clear assessments of the progress of renewable energy deployment and forward-looking analyses to inform policy-makers. IRENA is in the process of preparing the second edition of the series, to be released by the end of 2015, in time for COP21 in Paris.

Renewable Statistics

36. To improve availability of data and information about trends and developments in renewable energy, IRENA continues to work with countries through an annual renewable energy statistics questionnaire and statistical capacity building with national, regional and global institutions. Data received from the first annual renewable energy statistics questionnaire in 2014 have been analysed, and a second questionnaire was issued in July 2014. The number of countries returning the questionnaire increased from 40 in 2014 to 65 in 2015. Combined with secondary data collected, a time series for generation capacity covering 170 countries and territories from 2000 - 2013 has been available on the REsource portal since January 2015. Preliminary global capacity data for 2014 will be released in June 2015.

37. IRENA continues to collaborate with regional and global institutions to improve the reliability and availability of renewable energy statistics. Technical support was provided to the Secretariat of the Pacific Community (SPC), UNECA, AFREC and APEC for the development of their energy data collection activities and, most recently, best practices in data collection and dissemination was shared with REN21 and IEA. Support was also given to Djibouti and Swaziland to improve their renewable energy statistics, which was identified as a priority area in their RRAs. In April 2015, IRENA brought together 22 national and international experts for a consultation on bioenergy statistics, to provide a basis for the upcoming IRENA Guidelines, to be released later in 2015.

Global Atlas for Renewable Energy

38. IRENA's Global Atlas remains the world's largest database on renewable energy potentials. The Global Atlas links its Geographic Information System (GIS) to a number of data centres and renewable energy resource datasets worldwide. Released in 2015, Global Atlas 2.0 features enhanced access information, direct linkages to REsource country profiles, a PV system simulator (for the Middle East and North Africa - MENA), a PV site screening tool (Europe, MENA), display of wind statistics (Africa, Europe, LAC), and solar statistics (global coverage). The Global Atlas Pocket is also now freely available for all mobile devices through App stores worldwide. This mobile application turns any mobile device into a prospecting tool for renewable energy opportunities. For any location on the planet, the Global Atlas App enables a user to list all resource datasets collected by IRENA, display them and extract the values.

Global Atlas facts

- Over 80,000 viewers worldwide
- Hosts more than 1,000 datasets
- 67 countries, 8 multilateral initiatives and 50 partner technical institutes, companies and organisations
- Daily traffic of 150 visitors since release of 2.0.
- Worldwide use ranges from more than 6,000 users in the USA, 1 300 in Brazil and 1,000 in Russia to 28 in, Fiji, 36 in Nepal, and 3 in Kiribati.

39. IRENA accelerated its efforts to compile geothermal-related information and has released new maps related to Enhanced Geothermal Systems (EGS). For bioenergy, IRENA has primarily focused on working with the FAO to further disseminate the revised Global Agro-ecological Zoning (GAEZ), and is considering the possibility of integrating existing tools for bioenergy assessment. IRENA has also analysed past and current measurement campaigns and mapping exercises to identify key activities to accelerate the development of renewables in identified hotspots. The analysis shows that, in most locations, only a limited amount of resources is needed to complete a zoning analysis to help locate new projects. This in turn helps government and donors focus investment. Analysis has been completed for the Philippines and selected Pacific Islands. Analysis is being expanded to all islands of the Global Renewable Energy Islands Network (GREIN) resource assessment cluster and those Global Atlas consortium countries that do not have national atlases.

40. With funding provided by the Government of Flanders (Belgium) and Germany, a practical capacity-building module targeted at energy planners and policy-makers was developed and three sessions held (Tanzania for East Africa, Egypt for the MENA region, Peru for Latin America), with 32 energy planners and policy-makers trained. IRENA has also conducted an extensive survey to establish user priorities for 2016-2017. Over 200 participants contributed to the survey and ranked the importance of providing measurement data for projects; online simulators for renewable energy potentials; high-level zoning for corridor projects; training courses for spatial energy planning; and resource analysis for high-density population areas (cities).

IRENA Renewable Energy Learning Partnership (IRELP)

41. The IRENA Renewable Energy Learning Partnership (IRELP) was formed in May 2012 to increase awareness of, and broaden access to educational opportunities and resources. Since 2014, IRELP has increased coverage for Asia, Africa and Latin America and is examining education gaps that could hinder renewable energy deployment, particularly in these regions. IRELP today offers access to four global databases with more than 3,000 courses, degree programmes, webinars, training guides, internships and resources for educators, facilitates the mobility of talented youth through an internship database and supports educators create renewable energy lesson plans for youth from elementary school to graduation through a curriculum development database.

IRELP facts

- An average of 12,000 unique monthly visitors
- More than 240,000 followers
- Engaged with private training institutions, renewable energy employers and private companies
- Total of 125,000 unique users
- 550,000 page views to date

42. As part of IRELP, the IRENA Community was launched in May 2014 and offers discussion forums on topics from finance, economics, technology or policy to education, careers, and sustainability. The IRENA Community today has over 3,500 members and enables the public to engage directly with IRENA and other users, ask questions and share ideas. The Community also serves as a social media tool to showcase IRENA projects, disseminate activities and reports, and gauge public perceptions on informative or controversial topics.

43. As part of IRENA's knowledge management activities, IRELP has also developed an IRENA Webinar Series. The IRENA Learning Platform has hosted 9 webinars with over 1,000 participants. Webinars are archived in the renewable energy education database, on the IRENA homepage and on IRENA's YouTube channel, where recordings provide free training and information to the public. Viewed by 1,700 people to date, the Webinar Series has helped to raise awareness of IRENA projects and tools. It has engaged new stakeholders, disseminated knowledge and highlighted important activities on behalf of IRENA, Member countries and other partners.

Renewable Energy Policy and Best Practice: Status and Trends

Experts share experiences and best practices on the socio-economic benefits of renewable energy, IRENA workshop at the World Future Energy Summit, January 2015

44. IRENA is working in partnership with the IEA to reinforce and promote the Joint Global Renewable Energy Policies and Measures Database ("the IEA/IRENA Joint Database") featuring 1,800 policies from 116 countries and consulted by 67 000 users. Since 2014, 75 new policies have been added with 50 new policies and 30 policy revisions since October 2014 alone. IRENA has also continued to conduct policy briefs, providing country-validated, comprehensive and up-to-date summaries of renewable energy policies in countries including Argentina, Belize, Bolivia, Brazil, Chile, Colombia, Costa Rica, Ecuador, El Salvador, Guatemala, Guyana, Honduras, Mexico, Nicaragua, Panama, Paraguay, Peru, Suriname, Uruguay, and Venezuela. Policy briefs are primarily based on information contained in the IEA/IRENA Joint Database, complemented with information drawn from other existing legislation; official government sources such as plans, reports and press releases; and input from country policy-makers and experts. Briefs address the increasing demand from policy-makers, researchers and the general public for accurate, timely, accessible information on renewable energy policies and measures through a global reference repository of renewable energy policies, regulations and best practices.

45. Building on policy briefs, IRENA aggregated regional information to identify current policy trends and gaps forming the basis of regional synthesis analyses. A regional synthesis for Latin America is underway and will include a summary table of the most significant regional trends. Results will be posted on IRENA's REsource web portal and will be used to update the IEA/IRENA Joint Policies and Measures Database. The report will also form the basis of IRENA's forthcoming policy work in Latin America by identifying case studies and best practices.

Renewables: The true costs

46. IRENA's cost data and analysis is increasingly being used as the main source of renewable cost data around the world. The release of the *Renewable Power Generation Costs in 2014* in January 2015 contains the most up-to-date analysis of renewable power generation costs available and has received widespread media and industry coverage. IRENA's world-class database of real project costs of some 9,000 utility-scale projects (and an additional 6,000 with partial cost data) and over 750,000 small-scale solar PV systems gives the Agency a competitive advantage and allows costing analysis to be both deep and comprehensive. Analysis is attracting increasing interest and IRENA's Renewable Costing Alliance has already grown to 19 members since its launch in January 2014. Discussions are underway with approximately 50 private and public organisations who have expressed interest in joining the initiative.

Cost fast facts

- World-class database for over 9,000 utility-scale projects and over 750,000 small-scale solar PV systems
- Approximately 3 costing downloads every minute of every day.
- Multiple IRENA quotes on cost issues in leading journals (Financial Times, Huffington Post, La Stampa, CSP Today etc.

"The Renewable Power Generation Costs in 2014 report from the International Renewable Energy Agency (IRENA) has a diagram that is a must-see for CSP fans. It shows the levelised cost of energy (LCOE) for CSP last year and what it might be in 2025."

CSP Today, 6 March 2015

47. This interest has led to IRENA being asked to work more closely with a wide variety of government and private sector organisations, providing data and analysis to support their communications, research and analysis, and policy and decision-making. For instance, IRENA has been asked by the G20 to help analyse renewable cost reduction potentials. Other examples include the use of IRENA costing data in the United States Energy Information Administration work, in the development of the New Climate Economy report of The Global Commission on the Economy and Climate, the UN Secretary General's New and Renewable Energy report and the Intergovernmental Panel on Climate Change (IPCC) Working Group III Mitigation of Climate Change report. IRENA cost data and analysis has also been provided to organisations such as the World Bank (RISE indicators); the SE4ALL process (Global Tracking Report); REN21 (Global Status Report); European Climate Foundation; the Political Economy Research Institute (PERI); the Australian Bureau of Resources and Energy Economics; the Climate Council of Australia; the Cadmus Group Inc.; IKEA Group; and CleanTechnica.

48. Analysis on the role of renewables in improving energy security and the cost reduction opportunities for solar PV, concentrated solar power, and onshore and offshore wind is also underway thanks to the support of Germany. IRENA is also working on a third report on the costs and performance of renewable technologies and fuel for use in the industry, services and residential sectors for release in late 2015.

The future of competitiveness: Cost reductions for solar and wind

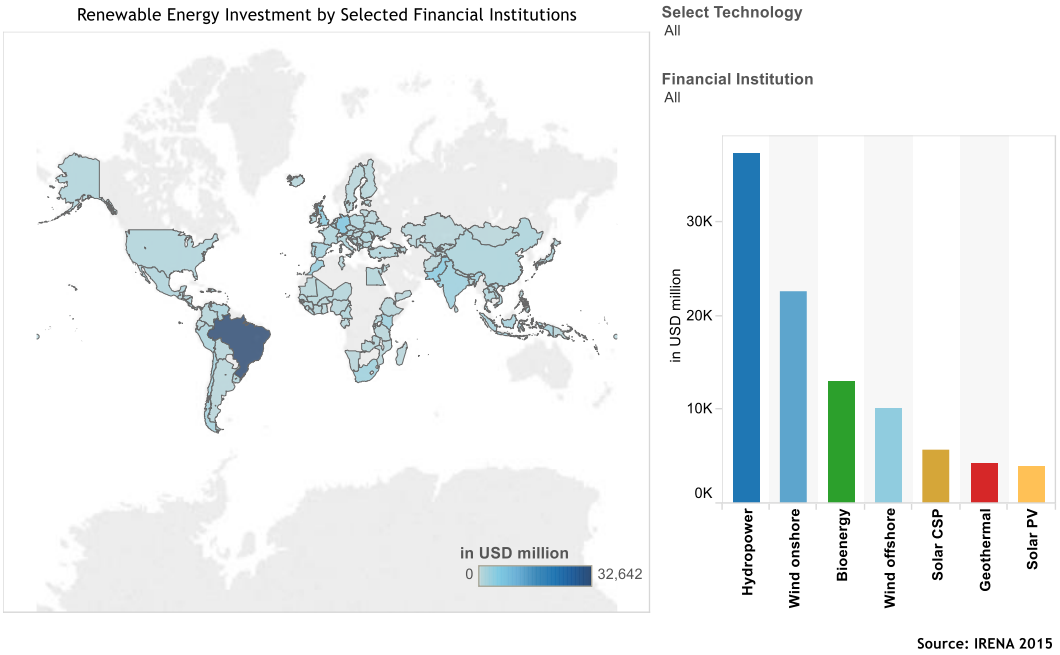
Renewable power generation technologies have achieved remarkable improvements in their competitiveness, but more needs to be done to achieve universal competitiveness. IRENA is examining the future cost reduction potentials for solar PV, concentrated solar power (CSP), and onshore and offshore wind.

In an era of low equipment costs, particularly for solar PV and to a lesser extent wind, future cost reduction opportunities are changing and balance of project, operations and maintenance, and financing costs could potentially provide the largest cost reduction opportunities. At the same time, there remains a wide range of costs, both within countries and between countries. Understanding what represents best practice in different markets can help identify reasonable expectations for efficient cost levels in different markets at different stages of maturity.

Understanding future cost reduction opportunities will be critical to adapting policy to anticipate coming challenges in an era where most cost reduction opportunities will come from balance of system, financing and O&M cost reductions. These savings will be challenging to unlock, given they cover a wider range of stakeholders, but in many cases they are areas where good policy can have rapid benefits.

Global Investment Dynamics

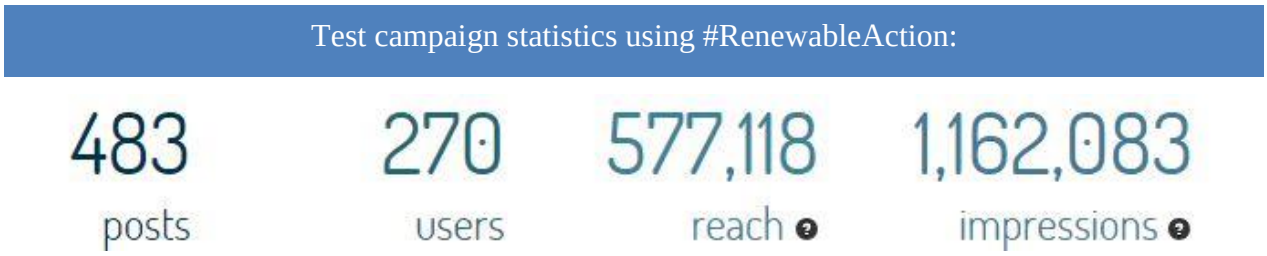
49. The Global Renewable Energy Investment Dynamics project provides a comprehensive overview of renewable energy investment information and financial flows, showcases global investment dynamics and potential sources of financing. This authoritative collection of investment statistics provides reliable and freely accessible information to a wide range of stakeholders from policy-makers to project developers. Building on work achieved in 2014, IRENA has grown the database on investments in renewable energy projects from 800 to 1,200, with the focus on public financing institutions such as multilateral, regional and bilateral development financing institutions. An interactive dashboard was published on REsource showing *International financial flows in renewable energy projects by selected financial institutions*. The database covers over 120 countries and constitutes a volume of approximately USD 100 billion or the equivalent of 60-80% of the estimated total international public investment (USD 150-200 billion) in renewable energy between 2009 and 2014. Database results indicate that public investment played a major role in developing renewable energy markets. Public financial flows continue to be systematically collected.



Coalition for Action

50. In January 2014, 35 of the world's leading renewable energy players joined IRENA in the establishment of a Coalition for Action to bolster public support for renewable energy. The Coalition consolidates existing efforts to communicate the latest renewable energy facts. It provides authoritative information in response to public concerns, strengthens social acceptance of technologies and engages decision makers and the broader public. Facilitated by IRENA, the Coalition operates as an independent body. It currently has 45 members, including IRENA, 17 members of civil society, ten industry associations, nine companies, four international entities and one public-private partnership. The Coalition steering group acts as the main decision-making body.

51. Two core activities for the Coalition have been initiated based on feedback and suggestions from the members. The first activity is the execution of a large communication campaign designed to address the core mandate of the Coalition: to promote the latest and most accurate renewable energy facts across the diverse member network. The second activity of the Coalition is the development of a Renewables Made (REmade) label scheme which aims to be the leading label for all future products produced with renewable energy. IRENA has facilitated the development of work plans for each activity and is working with task force teams to execute agreed upon plans. To provide practical experience for Coalition-wide collaboration, the Coalition undertook a social media communication campaign on the socio-economic benefits of renewables. Campaign results reached a large online audience with 1,162,083 total online impressions.



III. Enabling investment and growth

52. Since the 5th session of the Assembly, IRENA activities continued to focus on filling knowledge gaps to further encourage the investment in renewable energy and economic growth. The increasing depth and scope of the work in these areas will more effectively guide the global policy discourse on renewable energy deployment.

Policy assessment

53. With experience in policy design acquired over the past four years, IRENA continues to support governments in designing and implementing innovative policies to address prevalent barriers to renewable energy deployment. The study, *Adapting Renewable Energy Policies to Dynamic Market Conditions* presented during IRENA's 7th Council meeting, was further introduced at a side event on *Next Generation of Policies* at the World Future Energy Summit 2015. The report was well-received and served as a basis for enriching discussions on the appropriate policies that can help adapt to the changing landscape of renewable energy on policy assessment. In this context, IRENA is expanding this body of work and focusing analysis on renewable energy target-setting and auctions.

54. To support policy-makers define and design renewable energy targets, IRENA has undertaken a study on *Renewable Energy Target Setting*. As of early 2015, 164 countries around the world had adopted some form of national renewable energy target, up almost four-fold increase from 43 countries in 2005. Since the majority of countries now have a minimum of one renewable energy target in place, more attention needs to be given to how policy-makers can revise and improve upon them. Preliminary report findings were presented and discussed in a side event at IRENA 5th Assembly session in January 2015. Attended by field experts and policy-makers who have set targets, the workshop allowed IRENA to gain valuable feedback on the report.

Renewable energy targets

Renewable energy targets are playing an increasingly important role in shaping investment decisions and in defining overall business strategies in the renewable energy sector today. Taking a variety of forms, from simple political announcements to detailed and legally-binding renewable energy obligations, renewable energy targets can apply to the electricity, heating/cooling or transport sectors, or to the energy sector as a whole, and often include a specific time period or date by which the target is to be reached. Renewable energy targets also increasingly provide the broader framework within which particular policies and measures are designed and implemented, guiding sector development and resource allocation.

The report, *Renewable Energy Targets*, highlights the importance of establishing a sound basis for renewable energy targets with sound data and analysis and clear motivations and processes. It examines a series of specific design issues for policy makers to consider, including whether the targets should be established as long-term or short-term, mandatory or aspirational, technology specific or neutral. In order to be seen as credible by investors and to provide a clear trajectory for the future evolution of the energy mix, renewable energy targets need to be accompanied by a clear strategy and backed by specific policies and measures. The report concludes by looking more closely at how renewable energy targets are translated into the specific policy tools and measures that will be used to achieve them.

Global Map of National Renewable Energy Targets All Types, 2015

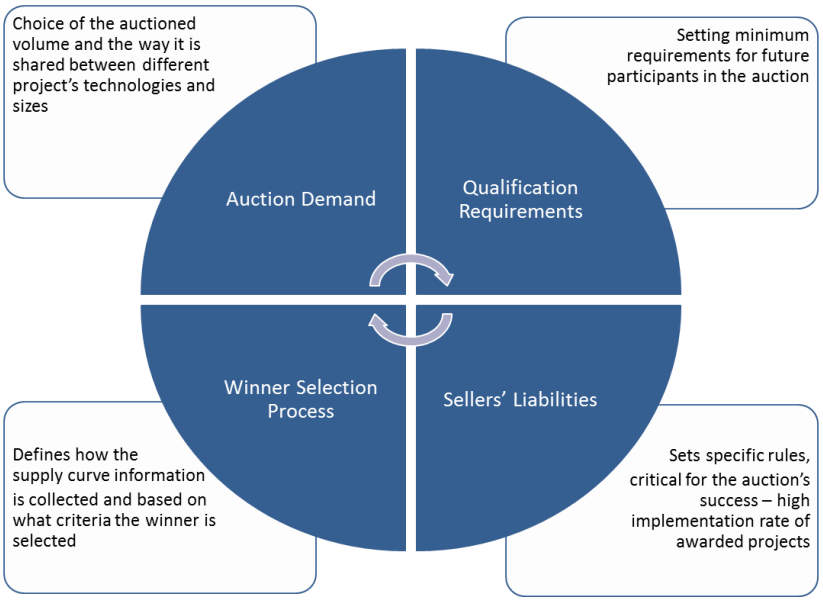
Source: IRENA based on REN21 Global Status Report, 2014.

55. To support governments in the design of support schemes effective in deploying renewable energy while maximising efficiency in terms of needed resources, IRENA is conducting a study on *Renewable Energy Auctions Design and Best Practices*, to be launched at the Policy Day of the 9th meeting of the IRENA Council. The study presents a comprehensive guidebook for policy-makers and practitioners on the design of renewable energy auctions, based on best practices and lessons learnt from countries that have implemented auctions. Preliminary findings were presented in Washington DC and received positive feedback from experts and countries engaged in auctions. The report will be presented to the European audience in Brussels during the European Union Sustainable Energy Week 2015. This work has been made possible with voluntary contributions from Germany.

Renewable energy auctions

The design and process of a renewable energy auction, when designed strategically, can be used to convey a clear policy message, shaping the market via the competitive process and within the auction environment. IRENA's analysis in *Renewable Energy Auctions and Best Practices* identifies four key elements of auction design in support of policy-makers:

i. A*uction demand*, which involves key decisions on what exactly is to be purchased in the auction, and under which conditions (demand-side considerations);
ii. *Qualification requirements*, that determine which suppliers are eligible to participate in the auction, as well as conditions they must comply with and documentation they must provide prior to the bidding stage;
iii. The *winner selection process*, at the heart of the auction procedure itself, involves the bidding and clearing rules, as well as the process of awarding contracts to the winners; and
iv. *Seller's liabilities,* chiefly associated with the characteristics of the product being auctioned, along with certain responsibilities and obligations spelled out in the auction documents.



Regional Market Analysis

56. Market analysis for the Gulf Cooperation Council (GCC) has been finalised in cooperation with the Gulf Research Council and National Technical University of Athens under the umbrella of EU-GCC Clean Energy Network. The GCC renewable energy market analysis explores the broader economic, demographic, and social conditions as well as recent regional energy sector trends driving a shift towards a sustainable energy development path. Analysis focuses on key drivers of renewable energy technologies, including supportive policies and regulations, financing mechanisms, socio-economic benefits and regional cooperation. Opportunities and barriers are explored, best practice identified and policy recommendations drawn for the integration of renewable energy. In addition, the analysis provides a focus on desalination – an intrinsic part of the energy landscape in the GCC – with analysis of the existing economics of renewable desalination in the region and potential future market development opportunities.

57. IRENA is developing a report on Latin America's renewable energy market to capture the wealth of knowledge embedded in the region and identify emerging market trends and lessons learnt. The report will

build on work completed in 2014, namely a mapping of key stakeholders at the regional level and across all sectors, a review of the latest available information and a visit to the region in July 2014 and further examine the main economic and energy trends in the Latin American region. Analysis on the economic and energy sector has been initiated as part of this process and includes an introduction to the region, an overview of the economy, a detailed overview of the energy sector, and sections on environmental and climate policy and on energy pricing and subsidies. As part of the scoping analysis, IRENA identified two emerging themes at the intersection of public policy and regional market development. In addition to an in-depth analysis of these themes, the study explores the complementarity of hydropower with other renewable technologies and the role renewables play in heating applications for the industrial sector.

GCC market analysis

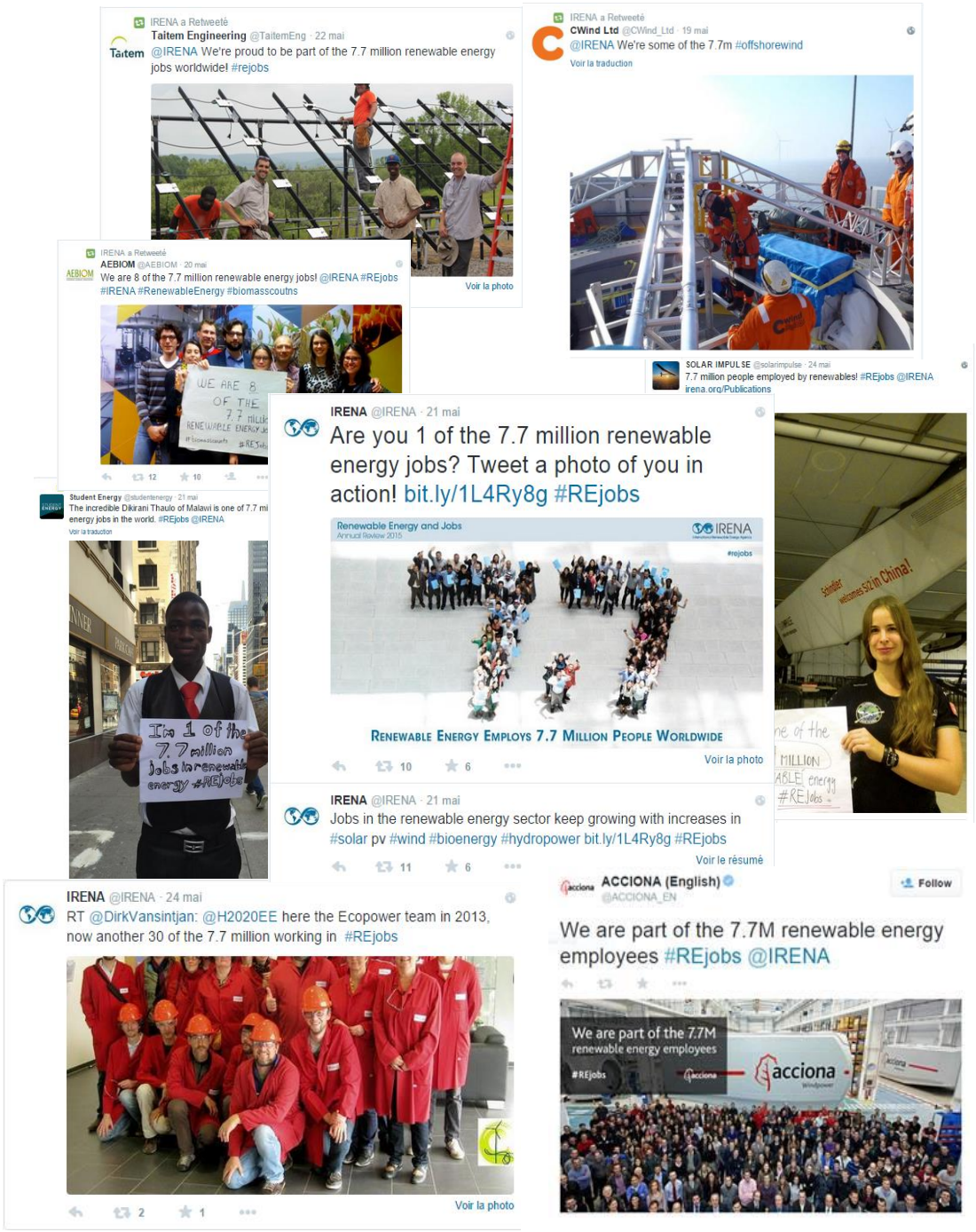
GCC renewable energy market analysis has been presented at regional events such as the Middle East and North Africa Solar Industry event of 2015 (MENASOL 2015), Middle East Economic Digest (MEED) Dubai Clean Energy Forum and the Renewable Industry Advisory Board (RIAB) World Future Energy Summit 2015. In addition to desk research, the GCC renewable energy market analysis is based on comprehensive stakeholder engagement including surveys, expert interviews and workshops in the region. The first of these workshops was organised alongside the WFES 2015 and brought together policy-makers and experts from all GCC countries to discuss different aspects of renewable energy deployment including policies and regulation, financing, socio-economic benefits, water and energy nexus and regional cooperation.

Panel on Policies and Regulations at the Gulf Cooperation Council Regional Energy Market Analysis workshop

REvalue: social, economic and environmental impacts

58. IRENA continues to support the business case for renewable energy deployment through global and numerical analysis of the socio-economic benefits of renewable energy and how these benefits can be maximised. Building on reports launched in 2014 and early 2015, IRENA is conducting a series of studies on the socio-economic and environmental impacts of renewable energy: *Quantitative Socio-economic Assessment* will provide empirical evidence on the global socio-economic impacts of renewable energy deployment on variables such as gross domestic product (GDP), jobs or welfare, taking into consideration the economic interactions across all sectors. A study on the *Socio-economic Benefits of Off-grid Heating, Cooling and Motive Applications* aims to increase support for these applications by showing how they improve the livelihood of people that lack access to modern energy services. *Opportunities for Local Value Creation from the Deployment of Solar and Wind* will assist policy-makers in identifying which areas of the value chain of selected technologies (onshore wind, solar PV and solar water heaters) should be undertaken locally in order to maximise value creation. Study findings will form the basis for key recommendations for policy-makers for the selection of locally procured services and components.

59. The second edition of *Renewable Energy and Jobs – Annual Review 2015* was launched in May 2015 in New York during the Renewable Energy Plenary of the SE4ALL Forum. *Renewable Energy and Jobs – Annual Review 2015* estimated that renewable energy employs 7.7 million people worldwide. Furthermore, large hydropower employs additional 1.5 million jobs according to the first global estimate carried out by IRENA for the industry. The results of the annual review have been widely reported by media outlets. Effective dissemination of the report and its key findings was enhanced by coordinated participation of IRENA Members and stakeholders who acted as multipliers in the outreach campaign. Following the successful launch, the Annual Review will be disseminated at various events including the IRENA Council meeting in June and the European Union Sustainable Energy Week 2015.



RE Finance

60. To encourage the scale-up of renewable energy investments and to strengthen policy advice, IRENA is exploring risks and barriers to renewable energy through analysis, expert meetings and advisory assignments on the topic. In January 2015, IRENA held its expert meeting on renewable energy finance, *Financial Instruments and Approaches to Address the Risks and Barriers of Investing in Renewable Energy - Practical Ways toward Implementation,* on the margins of the World Future Energy Summit. The meeting presented findings on risks and barriers of investing in renewable energy and the effective utilisation of risk mitigation instruments. IRENA presented plans for a project facilitation platform to address financing barriers as well as potential applications of structured finance approaches for renewable energy projects in developing countries to some 40 participants representing eight countries.[4] Positive feedback was received with a number of instruments and mechanisms addressing key risks and barriers highlighted to scale-up renewable energy investments, including PPA guarantees, standardised contracts, aggregation and securitisation. The importance of close ties between IRENA and the private sector, the challenge of scaling up risk mitigation instruments, and the need to reconcile cultural differences between investors and developers were stressed.

61. Following the World Future Energy Summit 2015, IRENA sponsored the event RE-Invest in cooperation with the Government of India in February 2015. RE-Invest is the 1st global renewable energy investors meet and exposition and brought together public and private stakeholders to discuss policy and financial approaches to lower the high cost of capital for renewable energy projects. Discussions revealed that high cost of debt for renewable energy projects in India can be alleviated by adjusting policy measures to incentivise renewable energy investment, streamlining and simplifying regulatory hurdles, enhancing liquidity in the market, and mitigating currency risk and power off-taker risk. Participants stressed the need to adjust banking sector regulations to target renewable energy and to create a large pool of capital through aggregation and securitisation. There was broad agreement that financial options and policy measures targeted at renewable energy are more effective in creating a level playing field for renewable energy to compete with conventional energy, rather than direct subsidies (e.g. for loans or hedging costs).

1st Global Renewable Energy Global Investors Meet and Expo, February 2015

62. A second event on renewable energy, *Financing for small and medium-scale renewable energy projects – Approaches for the private sector,* highlighted the need for diverse financial instruments and business models as well as appropriate policy frameworks to incentivise private sector investment in small-scale renewable energy projects in India. This event was attended by some 200 participants and identified financing challenges for small-scale renewable energy projects in India, including the lack of incentives and policies, lack of investor interest, banks' limited awareness of renewable energy, and lack of sustainable business models.

63. IRENA's work on finance has highlighted the need for practical activities to support renewable energy investment, which has led to the development of a project facilitation platform – a virtual market place – for projects and financiers. In the initial stage, this platform will focus on the Africa Clean Energy Corridor (ACEC) region to encourage project initiation, development and the financial closure of projects. Work will also include small scale projects in Small Island Developing States (SIDS) with a focus on financing models to overcome investment barriers. In addition, IRENA is working with financial institutions, both public and private, to address risk mitigation needs and possible financial instruments to address these needs in the renewable energy sector.

[4] Cuba, Denmark, Germany, India, Namibia, Nicaragua, Niger, and Uganda.

64. As part of IRENA's commitment to assist project developers in accessing financing, IRENA has launched the Project Navigator. The Navigator is a tool designed to help project developers in the development and implementation of renewable energy projects. The tool provides users with written and interactive guidelines on project development and access to information on funding. Technical guidelines, designed to guide users through the technological requirements of a specific technology, have been developed for on-shore wind and utility-scale PV plants; guidelines for mini/micro-grid applications and residential PV are in progress. Technical guidelines for bioenergy, geothermal and small-hydro projects will be developed this year. Additionally, in order to facilitate access to financing, the Financial Navigator currently provides information on 25 global and regional funds.

Project Navigator statistics
April 21 – May 28 2015

- **3,600** unique users
- **2,167 returning visitors**
- **29,048** page views
- Accessed from **148 distinct countries** (**1025 cities**)
- The **top 5 country visits**: United States, Germany, France, Spain and Italy
- The top 5 city visits: Paris, Bonn, Ulaanbaatar, Abu Dhabi and London
- **42.77 %** bounce rate
- **Referrals:** Twitter: 51.85%: Facebook: 29.06% LinkedIn: 18.23%
- The **Project Navigator Webinar,** on 13 May, was attended by 106 people. Overall attentiveness participants over 90 minutes was rated at 49.54% and IRENA received 41 questions.

65. After the success of the first Project Navigator Workshop which took place in Cabo Verde in September 2014, IRENA hosted a second Project Navigator Workshop, organised in cooperation with Mongolia and the Mongolian National Chamber of Commerce and Industry. The workshop was held in Ulaanbaatar in May 2015, and it brought together 60 policy-makers and project developers from the region in order to address issues on the renewable energy project development environment in Mongolia, renewable energy technology project development challenges, key success factors of realised renewable energy technology projects and lessons learnt from past experiences, renewable energy funds' functionality, structure and requirements.

66. Regional and sectoral partnerships are leveraging Project Navigator. Technical guidelines for small-hydro projects are being created in partnerships with the Japan International Cooperation Agency (JICA) by adapting and complementing JICA's Guideline and Manual for Hydropower Development. With the support of the United Arab Emirates, the Navigator is being employed to strengthen project proposals submitted to the UAE Pacific Fund. In cooperation with the Carbon War Room, the Navigator will also focus on the Caribbean region to provide regional and local content such as regulation, technical environments and regional financing. Other partnerships are under development to expand the reach of the Project Navigator, including with SE4ALL, ECREEE, EUEI-PDF's Africa-EU Renewable Energy Cooperation Programme, the German Energy Agency (DENA), the Caribbean Policy Research Institute (CaPRI) and the African Fund Finder. Additional requests for Project Navigator Workshops have come from Azerbaijan, Namibia, the Dominican Republic and Mexico. The German Energy Agency (DENA), through the Federal Ministry for Economic Affairs and Energy (BMWi) also intends to fund Project Navigator Workshops in their partner countries (Morocco, Tunisia and Turkey).

Project Navigator

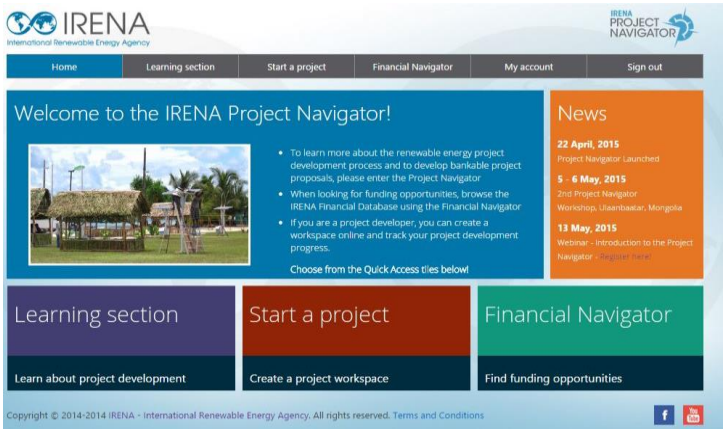
The Project Navigator is an online tool to help project developers develop bankable project proposals and identify funding opportunities. The Navigator has three main components:

1. The 'Learning Section' contains project development information as well as a large set of resources and tools to help developers make the right decisions for their projects. In addition to general guidelines, the learning section also contains case studies with best practices and technology-specific guidelines.

2. The 'Start a Project' section provides developers with a personalized project workspace where they can navigate the project development process in a clear and systematic way while tracking their progress. Clear checkpoints, milestones and control questions ensure the adequate development of a project proposal.

3. The Financial Navigator provides developers with access to information on some of the most relevant renewable energy financing institutions and funds.

The Project Navigator is available online at www.irena.org/navigator.



Cooperation with the Abu Dhabi Fund for Development

67. IRENA's mission to scale up renewable energy globally is actively supported through the IRENA/Abu Dhabi Fund for Development (ADFD) project facility. Through this facility, USD 350 million in concessional loans have been allocated by ADFD to projects in developing countries recommended by IRENA. These funds are disbursed over seven cycles, leveraging the equivalent or more from other sources. The facility's focus is on innovative projects with transformative results that enhance learning, are easily replicated or scaled-up and advance deployment of energy and sustainable development.

Transformation impacts of a Saint Vincent and the Grenadines geothermal project

"*On completion of this project, we anticipate that three quarters of the [country's] electricity will be produced by renewable resources. We will slash our USD 27 million import bill, drastically reduce our carbon footprint and enhance our energy independence and security. Most importantly the project will ensure a roughly 25% reduction in electricity bills for end consumers below current prices which has wide ranging impacts on national efforts on poverty reduction.*"

H.E. Camillo Gonsalves,
Minister of Foreign Affairs, Foreign Trade,
Commerce and Information Technology

Geothermal project volcanic region in St. Vincent and the Grenadines

68. Following the first cycle, which resulted in the allocation of USD 41 million and an additional USD 42 million leveraged in January 2014, the second cycle allocated USD 57 million in concessional loans to five projects in January 2015, leveraging an additional USD 86 million. The second cycle will see a combined total capacity of 35 megawatts installed and bring reliable and sustainable power to more than 280,000 people in rural communities that currently lack access to modern energy services. Cycle projects constitute a diverse mix covering Asia, Africa, Latin America and Small Island Developing States and cover a broad range of technologies. The increased diversity and growth in requested and allocated loan amounts and increased power capacity demonstrate progress for the future of the IRENA/ADFD project facility and its ability to reach a wide range of countries and promote the widespread use of renewable energy. The third cycle is currently at the shortlisting stage. Final project selection will be announced in January 2016.

69. A major announcement was made by ADFD in early November 2014 on the further softening of loan terms applicable to the IRENA/ADFD facility with rates of 1% and 2%, a 20-year term and 5-year grace period. These new terms are also applicable to projects approved under first and second cycles. The IRENA/ADFD project facility continues to benefit from the work of the Advisory Committee and its experts to improve the application and selection process and to set up a project feedback framework.

Table 1: Outcomes of the first and second cycle of the IRENA/ADFD project facility

Outcome	**First cycle**	**Second cycle**	**Totals**
Loan allocated (USD m)	41	57	98
Co-finance (USD m)	42	86	128
New capacity online (MW)	21	35	56
Number of people benefiting	300,000	280,000	580,000
Loan rates improved	Loan rates reduced from 2-6% to 1-2%, 20 year loan period including 5 year grace period		

Table 2: Projects selected for funding in the second cycle

Country	**Technology**	**Power (MW)**	**Loan (USDm)**
Argentina	Hydro	4	15
Cuba	Solar	10	15
Iran	Geothermal	5	6
Mauritania	Hybrid (wind, solar, hydro)	1	6
Saint Vincent and the Grenadines	Geothermal	15	15

Benefits of ADFD projects selected in the second cycle

- An innovative mini-hydro project will provide stable energy supply to the northern rural region in Argentina. It will pump irrigation and clean drinking water to Nahueve inhabitants. More than 22 500 people will benefit from the project.
- The Cuban project will provide energy stability, demonstrate renewable energy's viability in the country, create jobs and help the environment. More than 5 300 people will benefit from the project.
- Iran's first-of-its-kind, small-scale geothermal project will produce electricity and thermal energy for rural Ardebil to provide local heating, greenhouse agriculture and fish farming. The local population of 150 000 people will benefit from the project.
- The project in Mauritania involves electrification by solar multifunctional platforms for small villages including 10 solar photovoltaic power plants with storage, small wind turbines installed in fishing villages, and the connection of a group of villages with a hydroelectric network. The improved access to electricity will benefit various stakeholders including small villages, rural centres and fishing villages.
- The Saint Vincent and the Grenadines project has strong development benefits. The project will connect to the energy grid to provide a consistent power source for the entire country and will influence the deployment of additional geothermal projects in the Caribbean. The entire population of 105 000 people will benefit from the project.

Quality Assurance and Standardisation

70. Enabling healthy and robust renewable energy markets, and building on work achieved in the LAC region and Africa, IRENA has continued training quality infrastructure exports, and promoting best practice exchange. In response to the identified shortage of qualified solar PV installers and maintenance technicians in West Africa, IRENA has designed a strategy to assist Economic Community of West African States (ECOWAS) countries implement harmonised certifications for solar PV installers. The initiative builds on the completed IRENA project *Promoting a Sustainable Market for PV Systems in the ECOWAS Region* (ProSPER), which focused on strengthening local capacities of policy-makers, regulators and utilities, financial institutions, educational and research institutions, and renewable energy entrepreneurs and technicians.

Technical workshop IRENA - UEMOA in April 2015 in Burkina Faso – working session

71. A technical workshop to kick-start the development of regionally harmonised technical guidelines for solar PV installers was organised in cooperation with the West African Economic and Monetary Union (UEMOA) in April 2015. The workshop formed a preliminary regional technical committee, which has started the review of a first draft of technical guidelines for West African solar PV installers. Participants included solar PV industry and academia experts and government officials from the certification, normalisation and energy sectors. Regional design and guideline validation have to date received wide acceptance, understanding and consensus. A medium-term implementation activity for the establishment of a regional certification scheme for the ECOWAS region was also well received. A regionally harmonised technical guideline is expected to be validated by the end of 2015 following a six month review period.

Poorly maintained and damaged PV systems in West Africa

72. The success of the workshop has triggered ECREEE's interest in becoming the Regional Certification Provider and the immediate inclusion of remaining ECOWAS countries in the training scheme. The strong consensus on the program's regional benefits and on the implementation procedure, the identified synergies between participating countries and the collaborative execution of tasks during the workshop have laid the foundations for the creation of a regional market via the harmonisation of technical standards and the free movement of solar PV installers within the region. A Regional Certification Provider will be developed in the next phase of this project. It will include the adaptation of a pilot training program to the guidelines and the implementation of a pilot of regionally certified technicians.

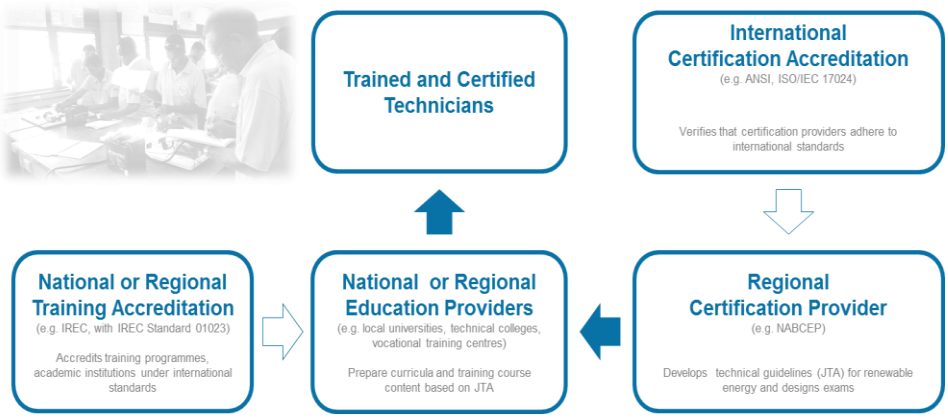
Technical workshop IRENA - UEMOA in April 2015 in Burkina Faso – main participants

Certification scheme in West Africa

Competency standards for solar PV installers will be developed by the regional technical committee of the Regional Certification Provider. These regionally validated standards will be used as a basis for the adaptation or development of training programs by national training institutions.

The program itself, training institutions and their education programs will be internationally accredited. After taking the training institutions' courses, technicians will sit on the certification exam as developed by the committee of the Regional Certification Provider. Having passed the exam technicians will become regionally certified installers for the installation and maintenance of solar PV systems.

The figure below illustrates the implementation phases and operational flows of the regional certification scheme. The Regional Certification Provider will certify and administer the program at a regional level.



Innovation and Research, Development and Demonstration (RD&D)

73. Work in innovation has in recent months focused on the LAC and Central Asia region. A study on how cooperation can support innovative renewable energy technology (RET) solutions in the LAC region has been finalised and will be released later this year. The report provides implementation recommendations for policy-makers in the LAC region on issues such as knowledge development and diffusion, promotion of entrepreneurial activities and market formation for new technologies. To facilitate regional deployment and uptake of recommendations, IRENA is transforming recommendations into priority areas such as smart

micro-grids, advanced biofuels or coordination of technology centres in the LAC region and is translating the analysis into Spanish.

74. A dialogue with countries in the Central Asia region concerning renewable energy technology development has commenced. As a first step, IRENA has identified the technology needs and potentials for renewable energy deployment in conjunction with national plans. Countries involved in the analysis to date include Kazakhstan, the Russian Federation and Ukraine. Regional organisations such as the United Nations Economic Commission for Europe (UNECE) and the Energy Charter have also expressed interest in working with IRENA on renewable energy technology development for Central Asia.

75. IRENA has also initiated work on renewable energy resource technology outlooks for advanced biofuels and mini-grids to analyse the current innovation status of energy solutions, developments required to make these solutions competitive in current markets and opportunities to achieve commercialisation phase. This series of studies, started in 2014 with ocean technologies, is a comprehensive source of information on technology development, useful for policy-making purposes. In view of its role as a renewable energy Centre of Excellence, the Agency aims to expand this work in the next biennium to new technology areas, and further compile this information into a comprehensive and reader friendly renewable energy Technologies Outlook handbook.

IV. Renewable energy access for sustainable livelihoods

76. With proven solutions, declining technology costs, successful business models and available financing, renewable energy may have an immediate and transformative impact on the quality of life of millions worldwide. IRENA is working to increase access to renewable energy through its International Off-Grid Renewable Energy Conference (IOREC), the work on mini-grid and off-grid applications, and capacity building.

IOREC platform

77. Off-grid renewable energy systems are now the most cost-effective solution for electrification in most rural areas. Tapping into this vast potential requires enabling effective policy and regulatory frameworks, tailored business and financing models and technologies adapted to the rural context. IOREC convened off-grid sector stakeholders to collectively identify pathways to scale-up off-grid renewable energy deployment. IOREC 2014, a joint effort by IRENA, the Asian Development Bank and the Alliance for Rural Electrification, was held in June 2014 in the Philippines, and convened over 400 key stakeholders from across the off-grid renewable energy value chain including representatives from rural electrification agencies, ministries in charge of renewable energy development, the private sector, academia, financing institutions and international organisations.

78. Of the messages emerging from the meeting, the urgent need to change mind-sets from a ‘grant-driven’ approach to a ‘marked-based’ approach was expressed, reflecting the cost-competiveness of off-grid renewable energy technologies and the untapped market that energy-deprived off-grid communities. Meeting discussions also emphasised the need to engage local communities in the design and implementation of rural electrification programmes and initiatives, and to build local technical and managerial capacities to ensure the long-term sustainability of projects and local value retention. Key findings from the conference including stakeholder survey results are summarised in the Conference outcome paper, available on the IOREC website, and have been widely disseminated across global and regional fora. Conference findings are also informing IRENA work including analysis of policies and regulatory frameworks to enable private sector involvement in mini-grid development.

Mini Grids

79. The United Nations Environment Programme (UNEP), Siemens and IRENA have concluded work on the economic and financial viability of hybridising isolated diesel mini-grids with renewable energy. Report on *Renewable energy in hybrid mini - and isolated grids: Economic benefits and business cases* was based on private sector financing terms and the US Energy Information Administration (EIA) mid-case scenario for oil prices. Analysis was conducted in three physical islands - Bequia, Saint Vincent and the Grenadines, Nusa Penida, Indonesia; and Busuanga, Philippines - and four virtual islands - Puerto Leguizamo, Colombia; Las Terrenas, Dominican Republic; Hola, Kenya; and Basse Santa Su, The Gambia. Report findings show hybridisation as a feasible option, based on costs benefits primarily influenced by plant size, diesel costs and renewable energy resource availability (solar radiation). Key findings include:

- Hybridisation can reduce average generation costs at five of seven sites from 0.3 to 8%.
- Hybrid mini-grids can achieve cost reductions at all sites (12 to 16%) provided they are financed with public funds at a 5% real discount rate, assuming the same oil price scenario.
- Cost reductions exist even when PV generation at sites would provide just 31 to 40% of total electricity needs.

80. As part of an RRA follow-up in the Philippines, a study is being undertaken on the potential of hybrid and clean energy mini-grids for off-grid electrification of island states and remote sites in the country. Composed of an archipelago of 7,107 islands, the Philippines government has expressed interest in expanding off-grid programmes and provide universal access. The study will evaluate existing policy and frameworks, programmes and schemes, explore how these incentivise the private sector and how renewables may hybridise existing plants and build new green mini-grids. Recommendations will help the government to address key barriers and gaps for deployment of mini-grids and also revisit its long-term strategy for creating a market for mini-grid deployment.

81. IRENA has also undertaken a scoping study in Mali and Burkina Faso on the potential of biomass power generation for off-grid power as a follow up to RRA findings. A draft report, currently under review, determines the potential of rice husk and agro residues for power generation through gasification. Capacity assessments of existing small and medium manufacturing entities shows that suitable technology transfer and training in operations and maintenance will help sustain operations.

Capacity Building for Entrepreneurs

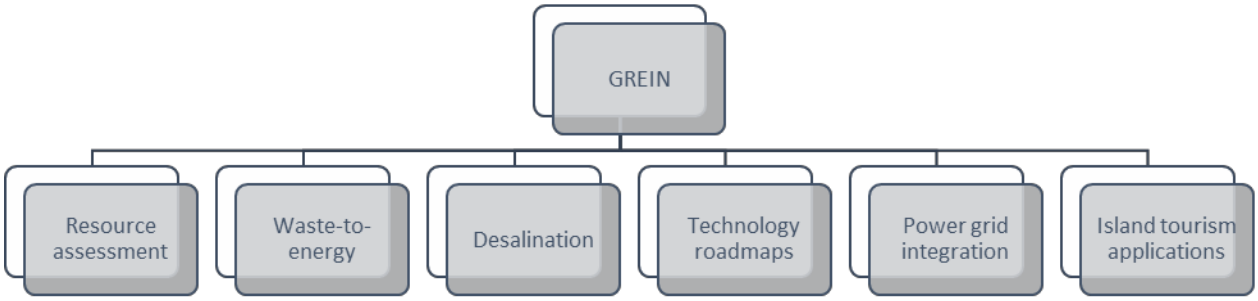
82. IRENA has engaged with entrepreneurs within the African region in an effort to build capacity, share knowledge and improve project bankability. IRENA and the ECOWAS Centre for Renewable Energy and Energy Efficiency (ECREEE) have set up a support and mentorship facility for small and medium-sized renewable energy entrepreneurs to strengthen the ideas of entrepreneurs, improve bankability and project success. The Facility, named the *ECOWAS Renewable Energy Entrepreneurship Support Facility*, is housed at the International Institute for Water and Environmental Engineering (2iE) based in Ouagadougou, Burkina Faso and provides assistance in areas such as business management and operations, project proposal refinement, capacity building and technology adaptation. At the inaugural meeting of the Facility, held in Ouagadougou in April 2015, an advisory board with a steering committee and technical committee were established. Through a series of regional workshops, entrepreneurs and incubation centres from East Africa and South Asia were able to share knowledge and perspectives from different countries, build partnerships and strengthen potential opportunities for entrepreneurs through incubation vehicles.

V. Islands: lighthouses for renewable energy deployment

83. Following the success of the Climate Summit and in anticipation of COP 21, IRENA has ramped up work in support of islands transitions. SIDS Lighthouses initiative has seen increasing interest from public and private partners and work in resource assessment, quick-scans, waste-to-energy, desalination and tourism has been released under as part of GREIN.

Global Renewable Energy Islands Network (GREIN)

84. Under GREIN, IRENA has continued work to support islands develop renewable energy resource assessment strategies and strengthen the business case for investment in renewable energy in the tourism sector, in waste-to-energy and desalination technologies.



85. A Conference on *Island Energy Transitions: Pathways for Accelerated Update of Renewables* is being organized in cooperation with France and the Region of Martinique on 22-24 June 2015. The event will consider and adopt an action agenda for renewable energy development on islands, with a particular focus on resource assessment, technology potential, and public-private partnerships to enable investment.

86. Many islands face a critical shortage of space for disposal of wastes from their indigenous populations and visiting tourists. A *Review of Opportunities for Waste-to-Energy Technologies at Island Scale* is being prepared in partnership with the National Renewable Energy Laboratory (NREL) of the United States. The study will assess the potential for combustion, gasification and anaerobic digestion technologies to reduce electricity costs and environmental impacts by converting organic waste streams on islands to electricity. Furthermore, in partnership with the Fraunhofer Institute for Solar Energy Systems (ISE), a draft report has been prepared on *Technology Options for Renewable Desalination on Islands*. The report demonstrates that the cost of water on islands can be reduced by running desalination systems based on reverse osmosis or multi-effect distillation with electricity from solar PV or concentrating solar power (CSP), as well as by running reverse osmosis systems on power produced from wind. Results of the study were presented to a meeting of the GREIN Desalination Cluster in Abu Dhabi on 17 January 2015, which was attended by some 70 delegates from 28 countries and island territories, indicating significant interest for renewable desalination projects by islands. Since, work proceeded on follow-up studies of renewable desalination options for specific islands, starting with Kiribati in the Pacific and Cabo Verde in the Atlantic in conjunction with roadmaps for those islands.

Building on the baseline report *Renewable Energy Opportunities for Island Tourism*, released in 2014, IRENA hosted a joint event with the Government of Germany at the ITB Berlin Convention in March 2015, which brought together government, private sector and international organisations to devise strategies for further engagement and to accelerate the deployment of renewable energy in islands' tourism sector. Further, a process is underway to assess the capacities of energy service companies to conduct energy efficiency and renewable energy (EERE) audits of buildings, with a focus on the Caribbean, Pacific and Indian Ocean. Work to collect additional examples of renewable energy applications for tourism has also been initiated, to

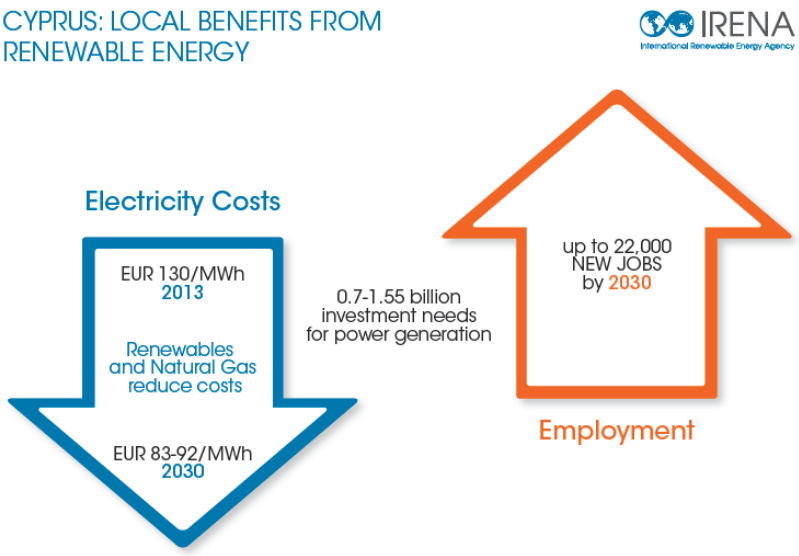
be shared through GREIN, with a focus on islands in the Caribbean, Pacific, Southeast Asia and Indian Ocean.

Partnerships for Action in SIDS

87. The SIDS Lighthouses, launched at the Climate Summit in September 2014, has been growing rapidly, in size and scope, in preparation for the upcoming COP21. As a first step in the initiative, IRENA is working with partners to develop a comprehensive overview of knowledge and information on the SIDS power sector, best practice on renewable energy development and deployment, and energy sector transformation issues. This overview is already starting to bridge the gap between studies and concrete action to accelerate deployment. A number of SIDS have made specific requests for technical and other support and IRENA, enabled by with voluntary contributions from Germany, New Zealand and Norway, IRENA has been able to swiftly respond to these requests. IRENA is also working with a number of other partners to advance the initiative, including France on a workshop in Martinique in June 2015, which will be followed by a Japan-sponsored workshop in Bangkok and Germany-sponsored side event at the South Africa International Renewable Energy Conference (SAIREC). Further, the US is contributing to capacity-building efforts in the Pacific in a joint US/SPC/IRENA workshop. ENEL, a private sector partner, is also contributing knowledge products to the initiative. IRENA is receiving increasing interest from potential partners, with new partners expected to join and contribute in the coming months.

88. Roadmaps for the Republic of the Maldives, Kiribati and Barbados are ongoing. The Republic of the Maldives' roadmap will provide the government of the Maldives with a set of clear milestones for the integration of renewables in the national energy mix, supported by recommendations on the necessary policies to enable the transition. The Kiribati Integrated Energy Roadmap (KIER), developed in partnership with SPC and in close coordination with development partners active in the country, is a government-led exercise that will look at the entire energy sector of the country, with a specific focus on shifting diesel grids towards renewable energy and providing energy access to the outer islands through renewable energy. The Barbados roadmap will explore minimum cost pathways to a target of 29% by 2029 and include implications of increasing this target.

89. Island roadmaps are having impacting the future of their energy systems. The roadmap for Nauru, completed in 2014 in cooperation with GIZ and SPC, was endorsed in early 2015. The Nauru roadmap sets the way for Nauru to contribute to global initiatives in combating and mitigating the effects of climate change. Findings for the Cyprus roadmap, released in December 2014, provided key inputs for Cyprus' reporting obligations and set the baseline for the review of the national energy policy and the national renewable energy action plan.



90. Wind measurement guidelines for islands have been completed. It is anticipated that donors might support measurement campaigns using these guidelines on selected islands where the Global Atlas shows to have excellent yet unexploited wind resources. Dialogue is underway with islands to assess sustainable feedstock such as sugarcane, bagasse or rapidly growing grasses which might be used to generate electricity. A marine energy section of the Global Atlas is being developed to help islands assess the potential of wave energy, tidal energy, salinity gradient energy, and ocean thermal energy. Finally, grid stability assessments are at present being undertaken in Antigua and Barbuda, Barbados, the Cook Islands and Samoa and preparations to support a PPA for Kiribati has continued.

Building Capacity in Islands

91. Across the SIDS, successful examples of renewable energy deployment exist, however policy design and implementation need stronger frameworks, particularly to spur investment. In support of the Pacific Island States, IRENA has designed a capacity building initiative in 2012 in consultation with target countries and in co-operation with local partners. Building on work undertaken since that time, capacity building activities have focused on assessing the needs of islands through engagement with key regional stakeholders and development partners. Although initial capacity building focused on solar, needs assessments demonstrated the need to develop other renewable energy technologies. Intervention has been prioritised along the following three key activities: building technical skills, strengthening financing for renewables and strengthening policy and regulation frameworks and training has covered these areas.

92. In support of further training, IRENA has developed a technical manual for financing institutions, a financing manual and handbook for financing institutions, and published Palau financing model case studies and case studies for the certification, policy and innovative business delivery. A webinar on regional industry based certification has also been developed in addition to a webinar and training workshop handout released on the design of meaningful renewable energy targets and policies for implementation. As a result of these activities and outputs, IRENA has observed an increased number of countries reviewing and implementing renewable energy policies and incentive schemes. Grid connected PV generation has increased in at least 6 island countries (Fiji, Kiribati, Marshall Islands, Samoa, Tonga, Tuvalu) as well as renewable energy market activities in at least three countries (Marshall Islands, Tonga and Tuvalu) with increased interest from development banks to finance solar technology.

VI. **Regional action agenda**

93. IRENA is using its convening power and expertise to catalyse action by regional stakeholders and accelerate the introduction of renewable power options at the regional level, drawing upon the knowledge and experience of electric utilities, transmission companies, independent power producers, regulators, power pools, regional political and economic bodies, multilateral financial institutions and development partners.

Africa Clean Energy Corridor (ACEC)

94. The ACEC is an IRENA initiative to promote a regional approach to the development and enabled deployment of renewable energy on the African continent beginning with those countries that make up the Eastern Africa Power Pool (EAPP) and Southern African Power Pool (SAPP). Following the Africa Clean Energy Corridor (ACEC) ministerial communiqué, adopted on the occasion of the 4th session of the IRENA Assembly in January 2014, and building on the study *Analysis of Infrastructure for Renewable Power in Southern and Eastern Africa*, completed in 2014, IRENA has prioritised its activities on zoning and resource assessment, enabling regulatory environments and capacity building under the ACEC framework.

95. A study on Renewable Energy Resource Assessment and Zoning for ACEC has identified, valued and prioritised high-quality wind, solar PV, and concentrated solar power (CSP) resources for grid integration

based on techno-economic criteria, generation profiles, and socio-environmental impacts in 21 countries in the EAPP and SAPP. A zoning methodology to identify developable, high resource-potential zones for solar (PV and CSP) and wind based on multi-criteria was developed and validated through workshops by regional stakeholders. The developed zoning methodology and the results of the zoning study, which identify potential renewable power development zones, are documented in a publication which will be released later this year.

Renewable Energy Zoning workshop for the SAPP, 6-8 October 2014, Zimbabwe

Renewable Energy Zoning workshop for the EAPP, 30 Sept – 2 October 2014, Ethiopia

96. IRENA is engaging with regional and national regulators and power system governance decision makers through the IRENA Regulatory Empowerment Project (REP) and in cooperation with the Regional Electricity Regulatory Authority of Southern Africa (RERA). Under the REP, IRENA is strategically engaging and advising decision makers in South Africa at a technical level in the development and integration of renewable technologies, thereby supporting the implementation of enabling environments, renewable energy investment, enhanced private sector participation, reduced investment risks and the reliable integration of renewable energy into power systems. Based upon this consultative approach, IRENA has identified areas of future engagement including pricing, renewable energy support, system code governance and regulatory impact assessment.

97. Under the REP, IRENA held a Renewable Energy Training Week (RETW) designed to support regulatory decision making for the development and integration of renewable generation resources into national and regional power systems. Held in Abu Dhabi in January 2015, RETW attracted 25 participants from senior and mid-level management from nine ministries, eight regulatory authorities, four associations, three sustainable energy development authorities, one utility and a regional facility from Africa, Asia, Central and Latin America and the Middle East. IRENA has since received an official request from the RERA Executive Secretary, supported by the South Africa regulator, to implement a similar week of training in Eastern and Southern Africa.

98. The Planning Governance Project (PGP) assesses and, where relevant, improves energy planning methodology frameworks and the implementation of methodology results. Focus is placed on best practice, the development of long-term plans and the often changing systemic requirements with the integration of renewable resources. The implementation of results will focus on frameworks to determine project pathways with low risks and high benefits, as well as on procedures for facilitating renewable energy investment. It is expected that the PGP will result in the development of regional good practice guidelines, owned by RERA, and the application of two guideline pilots in the SAPP region. The PGP has full endorsement and support from relevant stakeholders in SAPP and will be jointly implemented between the two parties.

99. IRENA continues to engage stakeholders in the region to identify new areas of activity and improve upon existing ones. Most recent engagement in April 2015 indicate the growing awareness of IRENA activities by stakeholders in the region and may result in further requests of support in the medium to long-term. It is envisaged that the progress made in the development of ACEC will be showcased in both SAIREC and COP21.

Central America Clean Energy Corridor

100. Further to the informal consultation with stakeholders from Central America held in January 2014, a technical group from IRENA met with key regional actors including the National Energy Commission of El Salvador (CNE), USAID, and the Regional Operator of the Electricity Grid (EOR), the Regional Electricity Interconnection Commission (CRIE), GIZ and the Integration System of Central America (SICA), among others. The meeting identified priority areas for regional intervention. IRENA and the Central American Integration System (SICA) then organised stakeholder consultation workshops to seek feedback on technical and governance/regulatory components, including its synergies with climate change regional policies. The workshops, held in El Salvador in February 2015, convened some 60 participants including high-level officials, decision makers, technical experts from national and regional energy and climate change bodies, as well as international development partners active in the region. Workshop participants highlighted the importance of technically assessing control centre practices and tools, conducting a diagnostic on maximum penetration levels of variable renewable energy under secure conditions and designing technical requirements or grid codes for these technologies. Participants also expressed their interest for IRENA to provide support in governance and regulation, focusing on the identification and assessment of barriers to renewable energy deployment; economic impact assessments of renewable energy deployment including cost allocation rules; and reliable and affordable system operations and development with renewable energy resources. Capacity building activities to complement these components were also requested.

101. Workshop findings led to the development of a comprehensive strategy for CACEC which highlights possible collaborations with existing and/or planned activities and programmes from regional international development partners. The strategy and action agenda will be released in the course of 2015.

Abu Dhabi Communiqué on Accelerating Renewable Energy Uptake in Latin America

In January 2015, in the framework of the IRENA's fifth Assembly, Vice-Ministers and senior government representatives from 12 Latin American countries and high level representatives from regional organizations participated in the Executive Strategy Group Meeting on *Renewable Energy in Latin America: Challenges and Opportunities*. Broad consensus was expressed for the need to develop a positive agenda for IRENA to further engage with the countries of the region. Following meeting discussions, a Communiqué was developed to identify opportunities for collaboration with IRENA to facilitate the deployment of renewable energy in the region. Opportunities included renewable energy resource potential assessment; energy planning; system reliability with high shares of renewables; assessment of policy mechanisms to promote renewable energy deployment; evaluation of the social and territorial impacts of large projects; energy integration through market integration; energy access through off-grid photovoltaic and wind solutions; and capacity needs assessments.

Emerging Regional Clean Energy Corridors

102. In 2014, IRENA teamed up with the League of Arab States (LAS) and other regional organisations to identify the actions needed to attract investments for larger deployment of clean and indigenous renewable energy resources in the Arab region. Work to develop an integrated power grid covering the entire Arab region to allow for renewables-based power exchanges has continued. The development of a situational analysis in the countries of the Maghreb region is also underway and will include information on the current status of renewable power and associated infrastructure and supply chains, zoning and resource assessment capabilities, country and regional planning processes, market and financial frameworks for investment, human capacities and knowledge sharing. In addition, IRENA is advancing the work on the integration of higher share of renewables in the ASEAN region. Implementing a "Greening APG" initiative, IRENA will aim to present strategic options for the region to maximise the use of renewable energy sources in tackling

the intertwined challenges of energy security, environmental stresses and the need to create new job opportunities. Focus has to date been placed on the Greater Mekong Sub-region.

Empowering through partnerships

103. To catalyse multilateral cooperation on capacity building, IRENA has partnered with a wide range of stakeholders. Technical training to date have included specialised training on the small scale biogas household applications for rural areas and large scale applications for urban areas with the University of Oldenburg in Germany; solar resource assessment methods with the Kuwait Institute for Scientific Research (KISR); and small hydro power development with the India Institute of Technology Alternate Hydro Energy Centre (AHEC). Partnerships in support of regional considerations have included support to Andean countries in their status assessment through a partnership with the Latin America Energy Organisation (OLADE) and the International Geothermal Association (IGA); training in geothermal technology and regulatory considerations in the Andean region with the Andes Geothermal Centre of Excellence (CEGA) and the Geothermal Institute (University of Auckland, New Zealand); and training on designing and implementing renewable energy targets with the Japanese Ministry of Foreign Affairs and the Ministry of Environment.

104. In 2015, IRENA has continued to build strong partnerships in support of the strengthening of national capacity and uptake of renewable technologies. In partnership with the United Nations Foundation, IRENA will support initiatives taken up under SE4ALL towards 'Energy for Health'. Baseline studies are being conducted by UNF on power requirements to run primary health centres and health clinics in rural Africa and a workshop for local entrepreneurs, health NGOs and key policy-makers will be held to showcase global best practices and sustainable business models that have used renewable energy based micro grids and mini-grids to power health clinics.

VII. Member Relations, Communications and Outreach

105. IRENA has continued its growth toward universal membership, a testament to the increasing recognition of the Agency and the worldwide acknowledgement of the importance of renewable energy. As of the writing of this report, there were 140 Members of IRENA (139 countries and the European Union), and 32 states in the process of accession to the Agency. The Secretariat continues to assist non-Members in their accession to IRENA.

106. The number of Permanent Representatives accredited to IRENA has also seen steady growth, and as of the writing of this report, there were 28 countries with accredited Permanent Representatives (PRs) to IRENA.[5] The Permanent Representation system has started to increase the level of communication between Members and the Secretariat, especially in between governing body meetings, and is an important tool for the creation of a renewable energy community at the Agency's headquarters. As the PR community grows, it is envisioned that PR participation in local IRENA workshops and events will become an important means of learning and exchanging renewable energy information in Abu Dhabi and of linking PRs closer to the ongoing activities of the Agency.

107. During the reporting period, the Secretariat has continued its work on strengthening the institutional and legal framework of the Agency, with a view to ensuring greater protection of the Agency's rights and interests, including through the operation of the Internal Audit Office. The Secretariat has also continued liaising with Members to support the adoption of measures aimed at granting to IRENA the privileges and

[5] Antigua and Barbuda, Belgium, Cyprus, Denmark, Djibouti, Ecuador, Egypt, Ethiopia, Fiji, France, Germany, Greece, India, Iran, Iraq, Israel, Italy, Japan, Jordan, Kazakhstan, New Zealand, Pakistan, Sierra Leone, Spain, Sudan, Turkey, United Arab Emirates, and Uruguay.

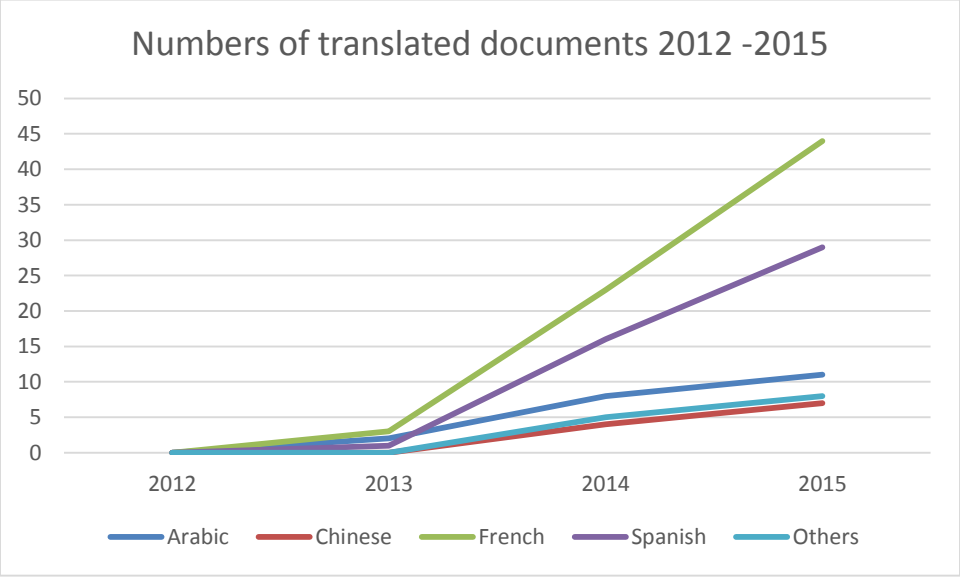
immunities it requires for the exercise of its functions. As of 4 June 2015, the number of parties to the Agreement on the Privileges and Immunities for IRENA, as endorsed by the Assembly at its third Session, still stood at three.

108. The Secretariat continues to support Members' decision-making processes by organising the Agency's intergovernmental meetings and providing substantive inputs to these meetings. The Secretariat is organising the ninth meeting of the Council, and related committee meetings, with the participation of Council members and around 70 other Members.

Outreach

109. REmember, an e-platform for IRENA Members, offers up-to-date information tailored to Members' needs and interests. This includes governing body meeting and sessional documents, key internal documents, and contact information of Members and the Secretariat that is not publicly available. REmember is also the central repository of messages from the Secretariat to the membership. It contains an up to date list of IRENA activities, as well as the IRENA Bulletin. There are currently over 550 REmember users from 120 countries.

110. To ensure a wide reach of its programmatic products, IRENA continues its efforts to make key products available in different languages. *REthinking Energy* was published in English and French, with an executive summary in eight languages (Arabic, Chinese, English, French, German, Japanese, Russian and Spanish). A 60-page summary of the REmap report was released in Arabic, Chinese, French and Spanish. Country-specific studies and promotional materials were also released in relevant languages. When warranted by programmatic needs, documents are translated in full[6], and where sufficient, only the executive summary of a report[7] is translated to ensure broad reach in an efficient manner.



111. As part of its stakeholder outreach, the Secretariat has begun systematic engagement with members of Parliament, who in many countries play a significant role in the decision-making process for renewable energy and energy-related policies. With support of IRENA focal points, a network of Parliamentarians

[6] Renewables Readiness Assessments (RRAs), REmap country reports, and REthinking Energy.
[7] REmap 2030 summary findings, executive summaries of the Renewable Energy and Jobs Report and REthinking Energy publication.

active in the field of renewable energy is being developed. Through this network, the Secretariat is planning to disseminate information and knowledge generated by the Agency and to introduce Parliamentarians to services and tools the Agency has developed, among them REsource, to support them in their work. The dissemination of IRENA publications to Parliamentary libraries worldwide has begun, as well as an outreach to regional and global Parliamentary assemblies and associations with a focus on renewable energy and sustainable development.

112. 2015 was also the inaugural year for 'Model IRENA', 50 UAE-based students and young professionals participated in the simulation of an IRENA Council meeting. These participants assumed the role of delegations, representing an IRENA Member country they were assigned. The simulation, which is envisaged to be repeated annually, aims to raise awareness about pressing energy challenges and IRENA's work among students and young professionals in the host country.

The inaugural Model IRENA Council simulation took place in April 2015.

Communications and Media Relations

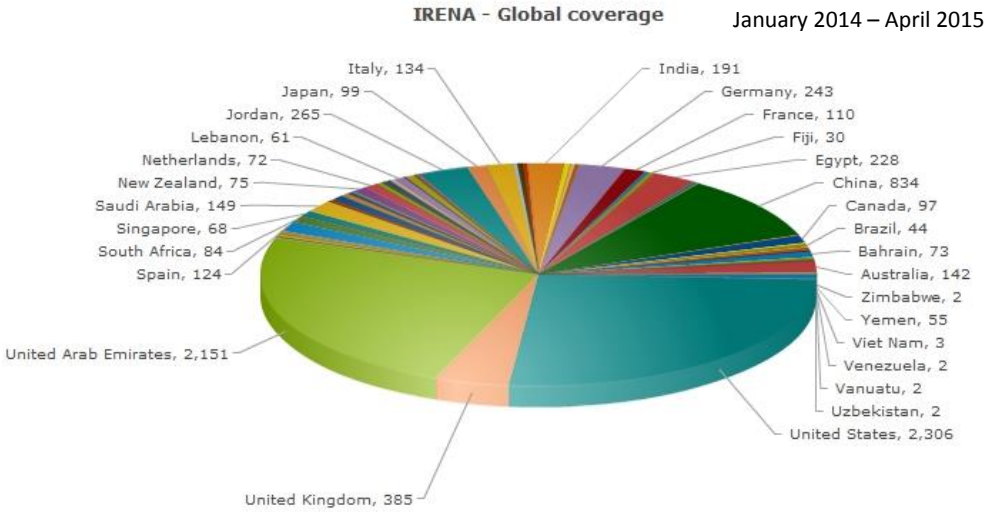
113. As IRENA's outputs expand and the Agency enhances its ability to produce timely, relevant and meaningful work in the sphere of renewable energy, the need to communicate that work in a way that makes a lasting impact is becoming increasingly important. 2014-15 witnessed a sizable increase in both capacity and output from the communications unit, and the organisation's growth and increased number of products means that the communications unit workload is expanding concomitantly.

114. Expanded communications capacity in 2014-15 has enabled the Secretariat to keep pace with the flow of publications, events and initiatives stemming from the Work Programme. One of the key mechanisms for communicating the Secretariat's messages is the media. As such, the Secretariat has intensified its media relations efforts to support its activities and reach key audiences. One of the key media relations activities for the Secretariat is the regular production and dissemination of news releases. From January 2014 to present, 68 releases were published, compared to 30 releases for the previous 15-month period. In an effort to expand reach and media coverage in targeted media outlets, the Secretariat has also increased the multilingual development and distribution of press releases in the 2014-2015 biennium, publishing press releases in Arabic, Chinese, English, French, Japanese and Spanish. In support of the May Renewable Energy and Jobs – Annual Review 2015, the Secretariat simultaneously distributed press releases in five languages.

- Total number of articles mentioning IRENA in 2014: 6,300+
- Total number of articles mentioning IRENA to date in 2015: 3,100+
- Potential viewership in 2014: 73,416,490
- Potential viewership in the first quarter of 2015: 47,410,700
- Total number of countries with coverage of IRENA: 127+
- Countries with the most IRENA coverage: China, Germany, United Arab Emirates, United Kingdom, United States of America

115. Strengthening relationships with key journalists and outlets around the world has increased the quality and quantity of media coverage for the Agency, delivering immediate but also 'long-tail' returns. The strategy of inviting key media influencers for direct engagements at the IRENA Assembly and the World Future Energy Summit in Abu Dhabi, the SE4ALL Forum in New York City, the International Off-Grid Renewable Energy Conference in Manila, and *REthinking Energy* stakeholder events in Beijing, Tokyo and Paris, has leveraged resources and increased awareness of IRENA, its work and its mandate, and has also increased the occurrence of media turning to IRENA as the source of renewable energy knowledge and information. IRENA also conducted its first hosted media programme with eight journalists at the 2015

Assembly, resulting in more than 50 articles, six TV segments and 15 radio pieces in the Caribbean, Africa, Latin America, South Asia and the Middle East.



116. Continuing the expansion of IRENA's social media presence, IRENA has regularised the use of social media to expand the Agency's reach, amplify its messages and engage with key target audiences around the world. As a result of this increased focus, IRENA has increased 'followers' across its social media platforms to over 300,000 and is adding more than 100 new followers every day. In addition, the creation of the IRENA Newsroom (www.irena.org/newsroom) has allowed for a new mechanism for the delivery of news items, thought leadership pieces, videos and other digital products to support the Agency's overall communications strategy. Since its launch in December 2015, the IRENA newsroom has posted 73 articles attracting more than 22,000 views from 70 countries. In the first quarter of 2015, IRENA also began the first phase of the planned website redesign and overhaul.

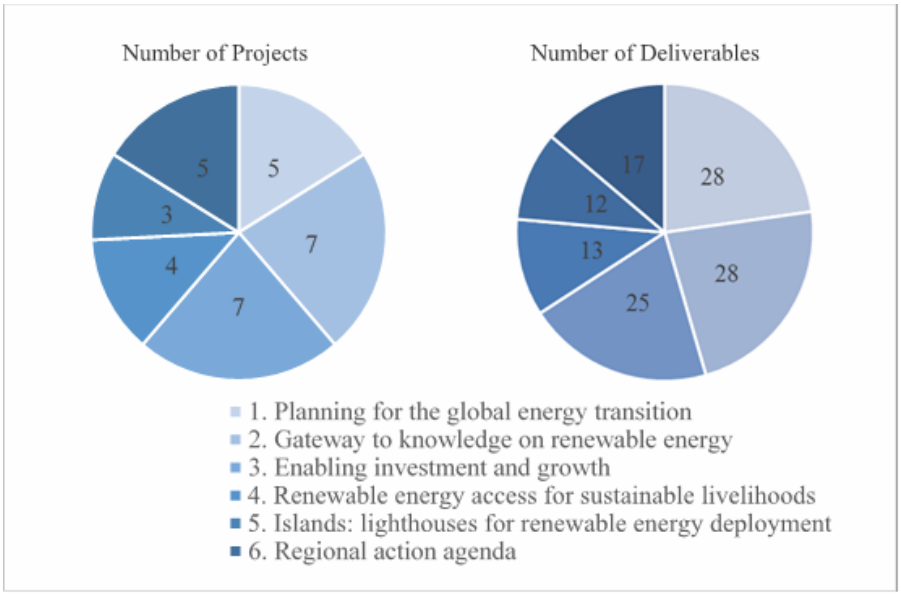
117. In 2014, IRENA expanded its capacity to deliver graphical and other multimedia elements to support various communications and publications efforts. In addition to ensuring a consistent and recognisable brand identity and graphical interface across its suite of publications, the Secretariat is also now developing a growing library of digital graphics and videos.

VIII. **Programme coordination, monitoring and evaluation**

118. To ensure effective management and administration of the programmatic activities, the Work Programme for 2014-2015 has been structured along 31 projects, covering 123 deliverables. Through the Project Management Office (PMO) function, project documentation and progress reporting has been standardised across divisions, so as to promote consistency and coordinated delivery of the Agency's products, ensure the most efficient use of resources, and introduce economies of repetition in the execution of projects. A detailed matrix of Work Programme deliverables and their status of implementation is included in Annex I. As of 30 April, 34 deliverables have been completed, 12 of which are ahead of schedule, and 9 have been delayed, with the remaining deliverables in progress and on schedule.

An important part of the PMO function is the monitoring and evaluation of the Agency's activities. Indications are that, with some four years of implementation, there are growing possibilities to evaluate the impact of different aspects of the Agency's work. Information in this respect will be consolidated and analysed at the end of the current programmatic cycle.

Projects and Deliverables by Thematic Area



119. The Work Programme and Budget 2014-2015 includes a range of programmatic activities that would strengthen the impact of IRENA's work, but require additional voluntary contributions. A number of Members have already provided or pledged generous voluntary contributions that will enable the implementation of many of these deliverables.

IX. Administration and Management Services

120. Over the course of biennium, the Administration and Management Services (AMS) Division continued to provide effective and efficient support services to all Agency divisions and activities. Services provided include Human Resources, Finance, Information Communication Technology, Procurement and Travel. Through a collaborative effort throughout the Agency, AMS continues to develop and update policies, procedures and related processes required for the optimal support of the Agency's operations and project implementation. Different areas of AMS service sections were subject to external and internal audit during the year, resulting in continuous improvement of service delivery. AMS sections and services continue to explore opportunities for provide efficient services while ensuring the highest levels of accountability and transparency.

Human resources

121. Timely recruitment of staff through a competitive and transparent process remains a priority. As of April 2015, out of 89 approved posts, 87 positions were either filled or under active recruitment and 2 were vacant. Staff represent 40 nationalities, 48% of which are female and 52% are male.

122. Over 10,000 applications were received in response to vacancies announced during 2014 and 2015, with the average number of applicants per vacancy continuing to increase compared to previous years, demonstrating increasing interest in employment with the Agency. To ensure a transparent process and selection of the best candidates for the vacant positions, candidates are being assessed through a standardised process involving a panel of staff members at appropriate levels. All recommendations are reviewed and approved by the Director-General before the final selection and appointments are made.

123. In addition to the Junior Professional Associate and Internship programmes that enable young professionals to gain renewable energy and administrative experience, eight individuals from three Members are serving the Agency under loan arrangements. One is provided by the Government of China and assigned to CSP in Abu Dhabi; one is supported by the Government of Japan and is working with IITC Bonn; and six are loaned from the United Arab Emirates, working across all divisions, four of whom are based in Abu Dhabi and two in Bonn.

Finance and Budget

124. The Agency's financial statements continued to be prepared in accordance with the International Public Sector Accounting Standards (IPSAS). For the year ended on 31 December 2014, financial statements received a clean and unqualified audit opinion from the external auditors and are being presented to the 9th meeting of the Council under document C/9/6.

125. The new Budget Planning Application, internally developed by the Agency's ICT services, continued to be utilised by all divisions and sections providing live financial and budgetary data necessary to efficiently manage the process of issuing budgetary allotments and facilitate the process of monitoring commitments and utilisation. This application is as a bridging tool, pending the introduction of the Enterprise Resource Planning (ERP) system.

126. The Finance section continues to provide services to Members, staff and external stakeholders. The Finance Policy Manual has been updated and shared with all staff in support of the most up to date guidelines and standards utilised in the financial management of the Agency's resources.

Procurement

127. The Agency continues to implement its institutionalised procurement plan to ensure the coordination and cost-effectiveness of its activities across all divisions. As of 30 April 2015, approximately 600 contracts and purchase orders, including 25 project agreements, were successfully processed for the amount of USD 10.7 million. To ensure transparency and competitiveness, procurement opportunities are being posted on IRENA's website and, where appropriate, Long-term Agreements for various services are being entered into. As of April 2015, six Long-term Agreements have been concluded. Additionally, the Procurement Policy Manual has been updated and shared with all staff in support of the most up to date guidelines and standards utilised in the procurement process and prudent utilisation of Agency resources.

Information and Communications Technology

128. IRENA's Information and Communication Technology (ICT) Office provided a broad range of centralised solutions and services to IRENA offices, which operate in a single virtual office environment. ICT facilitated the development and released of external portals. Further, ICT continues to support internal business processes of all Divisions through custom developed applications and support.

129. To enhance service availability and resilience, IRENA has adopted Cloud-based infrastructure and services. IRENA's email system has already been moved to cloud based Office 365 platform and the external information management portals were moved to Microsoft Azure Cloud Infrastructure. These two moves are expected to provide added benefits of improved performance and scalability along with centralised management. Using cloud infrastructure provides increased operational flexibility with no major capital investments needed for ICT infrastructure.

130. The Enterprise Resource Planning system (ERP) implementation efforts are advancing to automate the processes and procedures of Finance, Human Resources, Procurement and Travel. User Acceptance Testing for

Finance and Procurement has been completed and data migration options are currently being explored. It is envisaged that the ERP's Finance and Procurement modules would go live subsequent to the successful completion of the data migration, with other modules soon to follow.

Travel and General Services

131. The Travel and General Services Office facilitates staff, delegates, conferences and workshops participants' worldwide travel through the Agency's Abu Dhabi and Bonn Offices. Approximately 2,720 travel, accommodation and workshops arrangements have been made from January 2014 to April 2015.

132. The Agency's move to its permanent Headquarters offices provided by the host country at the new complex in Masdar City was successfully completed with no interruptions to the implementation of the programmatic services and support functions. Facility Management services and procedures are ongoing to further improved and enhance IRENA work environment.

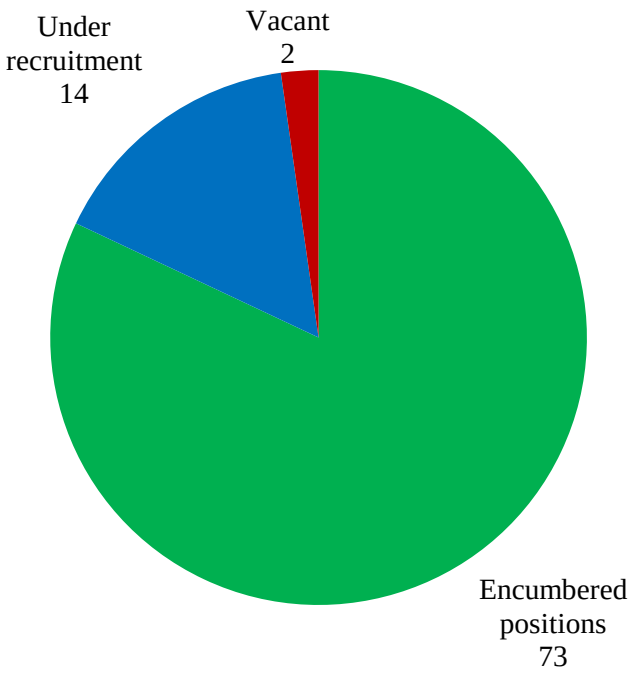
Approved and filled/under recruitment posts by level as of 30 April 2015:

133. Between 1 January 2014 and 30 April 2015, 51 vacancies for Fixed Term and Temporary Appointment and Junior Professional Associates were advertised and more than 10,000 applications were received. Out of 89 core posts, 87 positions were filled or under recruitment (73 filled and 14 under active recruitment) and 2 were vacant. The 73 staff under fixed-term appointment are from 40 nationalities out of which 48 % are females and 52 % are males.

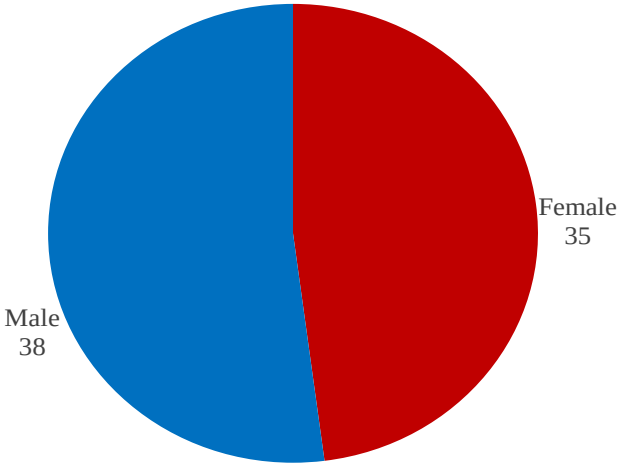
Table 1: Approved and filled/under recruitment posts by level as of 30 April 2015

Level	Approved	Filled or Under Recruitment
ASG	**1**	**1**
D-2	**1**	**1**
D-1	**5**	**5**
P-5	**18**	**16**
P-4	**15**	**15**
P-3	**23**	**23**
P-2/1	**2**	**2**
Sub-total Professional and above	**65**	**63**
General Services	**24**	**24**
Total	**89**	**87**

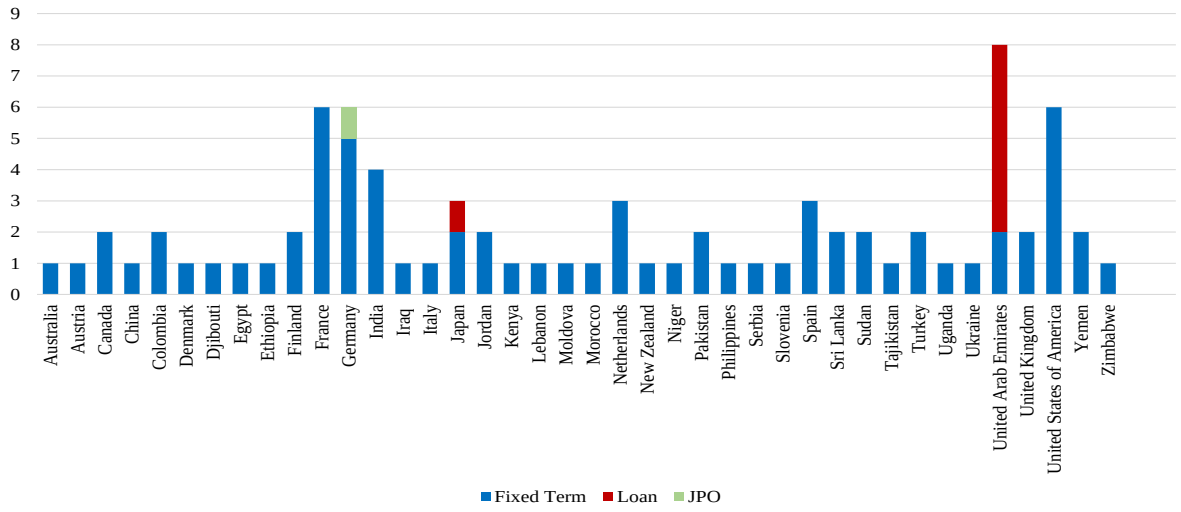
Staffing Status as of 30 April 2015



Gender Balance (based on filled posts) as of 30 April 2015



IRENA Staff Nationalities (based on filled posts) as of 30 April 2015



Junior Professional Officers (JPO) and Loaned Staff

Division	Title	Loaned from	JPO
SMED	Liaison and Protocol Officer	UAE	
IITC	Bioenergy Analyst	Japan	
IITC	Programme Officer	UAE	
IITC	Programme Officer	UAE	
AMS	Human Resources Officer	UAE	
CSP	Programme Officer	UAE	
KPFC	Programme Officer	UAE	
KPFC	Associate Programme Officer, Data and Information (JPO)		Germany

Table 1: 2014-2015 Biennium budget utilisation by funding sources (in USD thousands)

	2014-2015 Biennium Approved Budget	Utilisation as at 30 April 2015	
		Commitments and Expenses	Proportion of 2014-2015 Biennium Budget
Assessed Contributions (Core Budget)	**40,000**	**32,955**	**82%**
Voluntary Contributions from the: UAE:			
Operations	5,800	4,381	76%
Research	5,800	3,666	63%
Governing Body Meetings	3,200	2,912	91%
Sub-total UAE Contributions	**14,800**	**10,959**	**74%**
Voluntary Contributions from the Germany:			
Innovation and Technology	9,200	6,915	75%
Sub-total Germany Contributions	**9,200**	**6,915**	**75%**
Total Voluntary Contributions	**24,000**	**17,874**	**74%**
Grand Total	**64,000**	**50,829**	**79%**

Table 2: 2014-2015 Biennium budget utilisation by Thematic Areas (in USD thousands)

Division/Thematic Area	Combined Core and Voluntary Contributions		Budget Utilisation as at 30 April 2015	
	Amount (USD)	Proportion of Total	Amount (USD)	Proportion of Biennium Budget
A. Strategic Management and Executive Direction	12,270	19%	9,051	74%
Governing Body Meetings	3,200	5%	2,912	91%
Subtotal	**15,470**	**24%**	**11,963**	**77%**
B. Thematic Programme Area				
Planning for the global energy transition	10,816	17%	7,566	70%
Gateway to knowledge on renewable energy	7,624	12%	6,415	84%
Enabling investment and growth	8,252	13%	7,108	86%
Renewable energy access for sustainable livelihoods	3,393	5%	1,918	57%
Islands: lighthouses for renewable energy deployment	2,972	5%	1,825	61%
Regional action agenda	4,244	7%	4,058	96%
Subtotal	**37,301**	**59%**	**28,890**	**77%**
C. Administration and Management Services	**11,229**	**17%**	**9,976**	**89%**
Total Estimated Requirements	**64,000**	**100%**	**50,829**	**79%**

Voluntary Contributions Budgeted, Received and Pledged to date (as of 30 April 2015)

Voluntary Contributions in 2014-15 Biennium

as of 30 April 2015, in USD

Budgeted Voluntary Contributions

	2014-2015 Biennium	
	Commitments	**Receipts**
GERMANY		
IRENA Innovation and Technology Centre	9,200,000.00	6,850,000.00
UAE		
Operations	5,800,000.00	4,350,000.00
Research	5,800,000.00	4,350,000.00
Governing Body Meetings	3,200,000.00	3,200,000.00
Subtotal UAE Contributions	**14,800,000.00**	**11,900,000.00**
Total Budgeted Voluntary Contributions	**24,000,000.00**	**18,750,000.00**

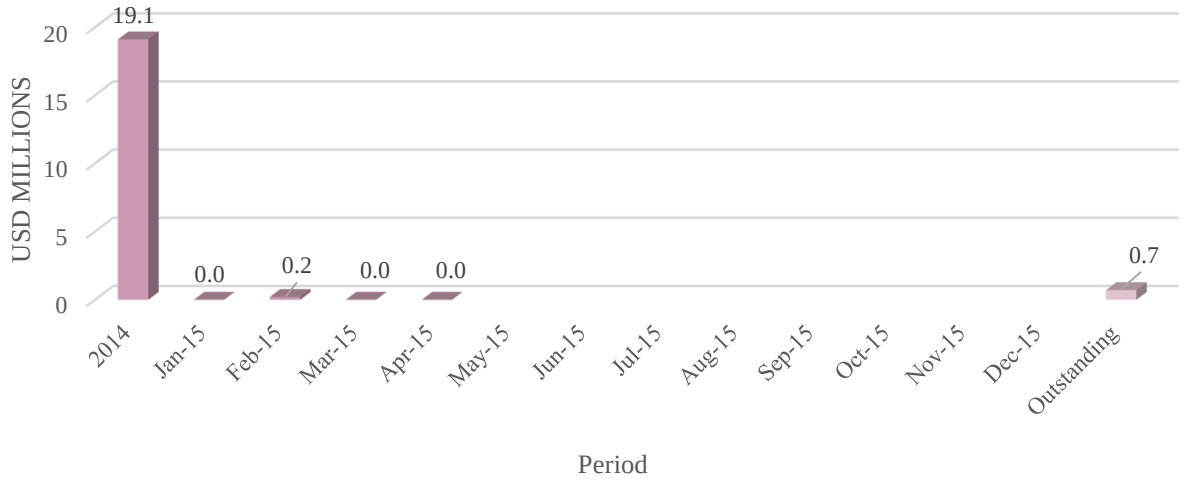
Additional Voluntary Contributions

	2014-2015 Biennium	
Donor/Project	**Commitments**	**Receipts**
Belgium/Flemish Government	103,448.25	103,448.25
France	190,000.00	190,000.00
Germany	5,141,742.07	1,437,784.43
Iceland	200,000.00	200,000.00
Japan	1,387,877.58	1,387,877.58
New Zealand	415,200.00	415,200.00
Norway	5,000,000.00	2,000,000.00
Switzerland	200,000.00	200,000.00
Subtotal	**12,638,267.90**	**5,934,310.26**

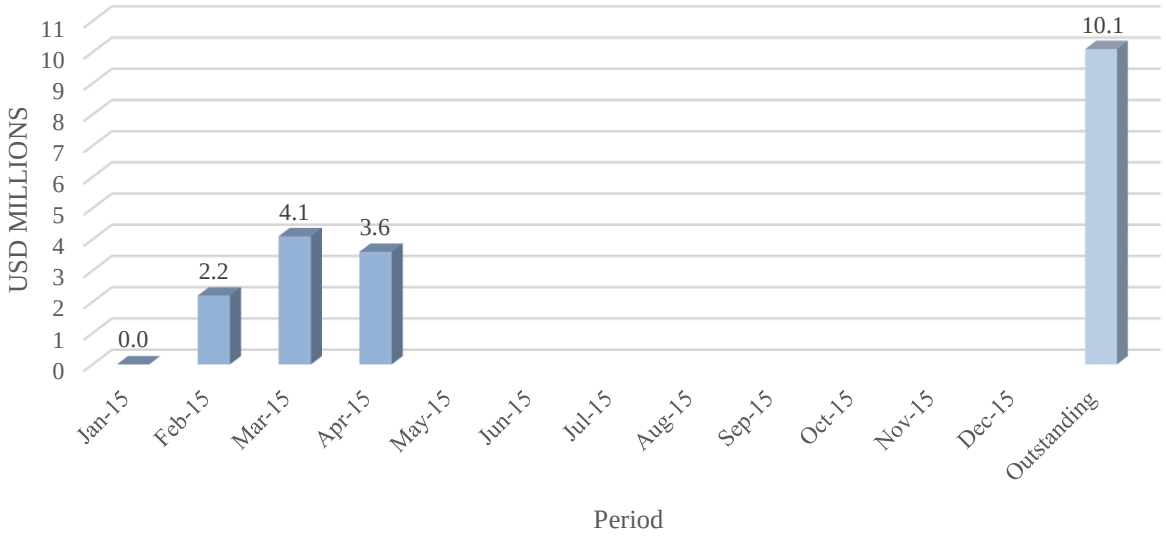
Fund for Developing Countries Representatives

	2014-2015 Biennium	
Donor	**Commitments**	**Receipts**
Germany	68,835.80	68,835.80
UAE	150,000.00	150,000.00
Subtotal	**218,835.80**	**218,835.80**
Total Additional Voluntary Contributions	**12,857,103.70**	**6,153,146.06**

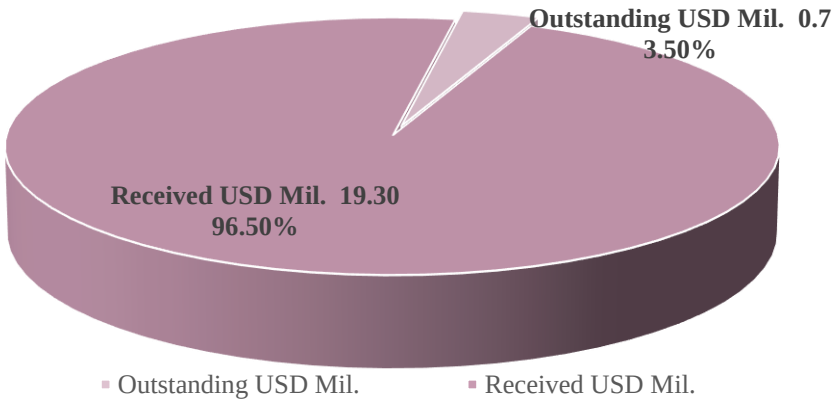
Received and outstanding assessed contributions for 2014 core budget
(as of 30 April 2015)



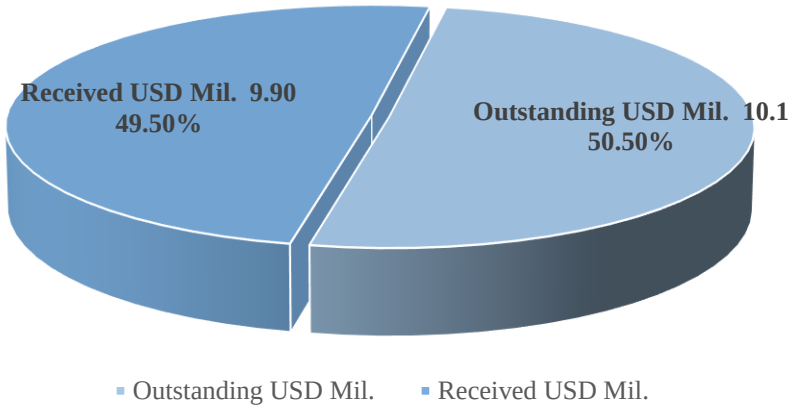
Received and outstanding assessed contributions for 2015 core budget
(as of 30 April 2015)



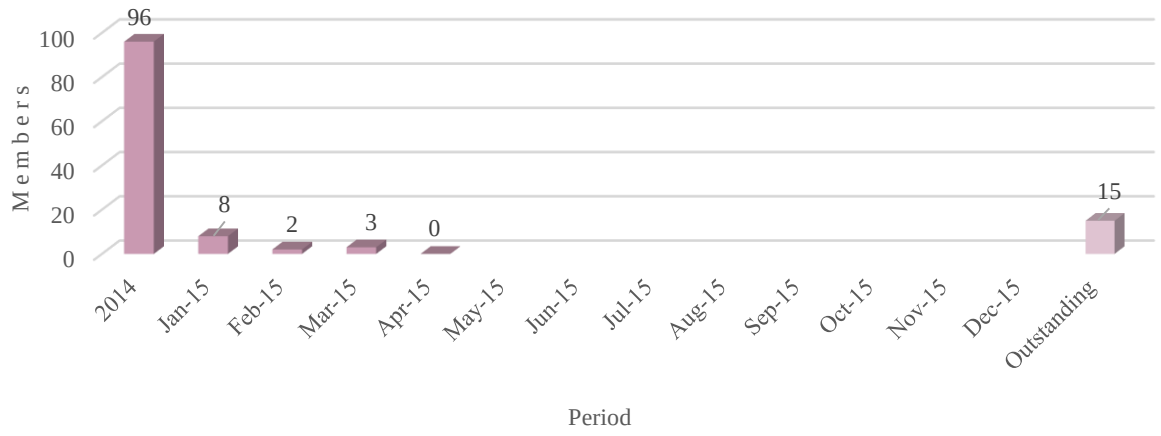
Status of contributions to the 2014 core budget (as of 30 April 2015)



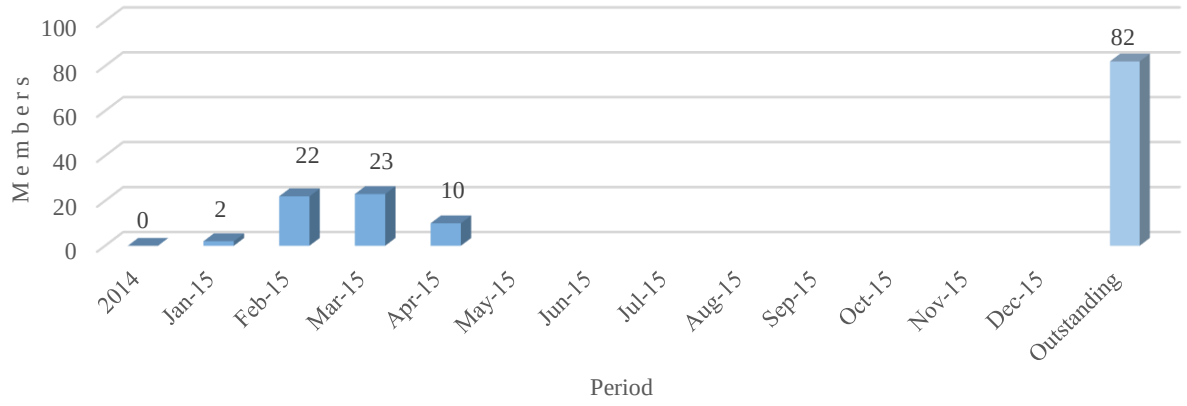
Status of contributions to the 2015 core budget (as of 30 April 2015)



Number of Members with received and outstanding contributions to the 2014 core budget
(as of 30 April 2015)



Number of Members with received and outstanding contributions to the 2015 core budget
(as of 30 April 2015)



Thematic area: Planning for the global energy transition								
Objective: Mainstreaming renewable energy options and strategies in energy plans								
Resources: **10,816 (USD thousands)**								
Component	**Impact**	**Division**	**Activities**	**Deliverable (2014-2015)**	**Deliverable (subject to additional voluntary contributions)**	**Indicators of achievement[8]**	**Timeframe**	**Status**
SE4ALL Renewables Hub	Established platform for cooperation and concerted action by stakeholders to accelerate deployment of renewable energy	CSP IITC KPFC	Develop the hub function with the participation of all stakeholders, management of IRENA activities and development of a forward looking renewable energy reporting framework for 2030	Inclusive cooperation framework for all actors, and monitoring and reporting framework for 2030 renewable energy doubling target		- Operational framework agreed with SE4ALL stakeholders - Framework put into operation	Ongoing	- Inclusive cooperation framework for all actors, and monitoring and reporting framework for 2030 renewable energy doubling target **IN PROGRESS, ON SCHEDULE**
			Support the hub function by developing analysis on the role of women in RE, RE for sustainable livelihoods, and the Nexus	- Develop an analytical approach on the role of women in RE and policy recommendations as input to the conference - Contribute to the SE4ALL Hub on issues related to RE for sustainable livelihood and the Nexus	International conference on the role of women in RE	- Enhanced global awareness on the role of women in improving livelihoods through RE	2014-2015	- Develop an analytical approach on the role of women in RE and policy recommendations as input to the conference **IN PROGRESS, ON SCHEDULE** - Contribute to the SE4ALL Hub on issues related to RE for sustainable livelihood and the Nexus **IN PROGRESS, ON SCHEDULE** - International conference on the role of women in RE **SUBJECT TO VC, IN PROGRESS** *To be held in June 2015, supported by the European Union.*
			Develop policy recommendations and technical advisory services related to High Impact Opportunities (HIO)		White papers with concrete recommendations on:1) enabling legal and regulatory frameworks for scaling up mini-grids; 2) the role of renewable energy in managing peak demand in cities; 3) developing financing solutions for small-scale renewable energy in islands	Recommendations contribute to High Impact Opportunities activities in SE4ALL	2014-2015	- White papers with concrete recommendations **SUBJECT TO VC, FUNDS NOT IDENTIFIED**
REMAP 2030	Comprehensive and acknowledged roadmap on options and action for doubling the share of	IITC KPFC	Further develop the REMAP 2030 analytical framework and develop guidance on possible pathways, technology and policy options and international cooperation, as well as country and regional analysis, on doubling the share of RE by 2030	Comprehensive policy and technology roadmap -2nd edition		- REMAP2030 influences global debate and catalyses action - REMAP used to shape the IRENA work programme	Q4 2015	- Comprehensive policy and technology roadmap, 2nd edition **IN PROGRESS, ON SCHEDULE**

[8] Indicators of achievement assume full funding from combined core budget and voluntary contributions from Germany and the United Arab Emirates, as well as additional voluntary contributions to be mobilised.

	renewable energy by 2030			2 workshops of national REMAP expert teams		- National experts engaged in the development of REMAP2030 - More and better quality country data feed the global debate - Global insights are increasingly used for national policy making	Q4 2014 (1 workshop) Q2 2015 (1 workshop)	- 2 workshops of national REMAP expert teams **IN PROGRESS** *First workshop completed, second workshop scheduled for November 2015.*
				Development of country action agendas		Implementation and application of REMAP technology options	Q3 2014 (1 meeting) Q1 2015 (1 meeting)	- Development of country action agendas **COMPLETED, ON SCHEDULE**
			Establish three REMAP action teams; two on substantive themes (transport, energy efficiency) and one to support the SE4ALL RE hub initiatives	REMAP - Transport and efficiency roadmap reports		- Reports' recommendations cited in RE global debate - New strategies identified that allow for higher RE shares	Q4 2015	- REMAP - Transport and efficiency roadmap reports **IN PROGRESS, ON SCHEDULE** *Work on transport roadmap report started.* *Thematic webinars are planned for May and late summer.*
				REMAP/SE4ALL framework for cooperation amongst hubs		- Alignment in approaches with other SE4ALL hubs - New access, efficiency and RE nexus strategies identified that yield higher benefits and reduce cost - REMAP used to guide SE4ALL activities	Q3 2014 (1 meeting) Q3 2015 (1 meeting)	- REMAP/SE4ALL framework for cooperation amongst hubs **IN PROGRESS, ON SCHEDULE** *A joint analysis of the benefits of combined efficiency and renewable energy strategies is under preparation.*
			Develop Technology Briefs with concise, policy-relevant and objective information on technology solutions	10 additional Technology Briefs for IRENA technology repository		Technology Briefs referenced as authoritative source on RE technology	Q2 2015	- 10 additional Technology Briefs for IRENA technology repository **COMPLETED, AHEAD OF SCHEDULE** *4 technology briefs published 2014 (ocean).* *6 technology briefs published in January 2015 (solar thermal in industry, solar thermal in residential applications, biomass for heat and power, hydropower, renewable energy grid integration, RE options for shipping)* *4 technology briefs in the pipeline (biomass logistics, biogas, algae, wind).* *Other proposed technology briefs (hydrogen, geothermal) will be published in 2016.*
			Assess the socio-economic impact of renewable energy deployment in REMAP 2030	Analysis of the impacts of the REMAP 2030 scenarios on employment, income, energy security, and trade balance		REMAP2030 reflects the broader macro-economic benefits of renewable energy deployment	Q4 2015	- Analysis of the impacts of the REMAP 2030 on employment, income, energy security, and trade balance **IN PROGRESS, ON SCHEDULE** *Preliminary results of the quantitative analysis successfully completed.*
REpowering Cities	Increased awareness, partnerships and technical support to local governments on	CSP KPFC	Address energy-related issues in cities by undertaking assessments to identify relevant RE deployment options to complement energy efficiency measures		Assessment methodology to help local governments prioritise energy efficiency and RE options	3 cities complete a RE assessment	2014-2015	- Assessment methodology to help local governments prioritise energy efficiency and RE options **IN PROGRESS, ON SCHEDULE** *Collaborative work on the biomass assessment methodology is being performed together with Rutgers Eco Complex, New Jersey.*

	renewable energy options in cities		Build a systematic approach for expertise and knowledge transfer in waste-to-energy, solar PV and solar thermal, and heating and cooling, through technical assistance and peer-to-peer learning		A systematic approach to transfer expertise and knowledge amongst cities in specific technology areas, designed and implemented	Concrete and focused technology cooperation between practitioners in 4 cities	2014-2015	- Build a systematic approach for expertise and knowledge transfer **SUBJECT TO VC, FUNDS NOT IDENTIFIED**
			Identify and promote successful renewable energy deployment business models in cities	A conference to showcase effective business models for deploying RE in cities in partnership with the Global Sustainable Cities Network and Masdar City		90 entrepreneurs, decision makers and other stakeholders attend the workshops	2014-2015	- Conference to showcase effective business models for deploying RE in cities **COMPLETED** *The Conference was organized at the World Future Energy Summit 2014.*
				Three workshops to build capacity of entrepreneurs, decision makers, and other key stakeholders in cooperation with Member States				- Three workshops to build capacity of entrepreneurs, decision makers, and other key stakeholders **IN PROGRESS, ON SCHEDULE** *One workshop within the IRENA Bioenergy Event at IRENA Assembly 2015. Two more will be held in 2015.*
			Analyse policies for the deployment of RE in Cities		Guidelines on policy measures needed to integrate RE at the local level	Outcomes and recommendations used by city decision makers	2014-2015	- Guidelines on policy measures needed to integrate RE at the local level **SUBJECT TO VC, FUNDS NOT IDENTIFIED**
Water, Energy and Land Nexus	Analytical and empirical framework for informed cross-sectoral policy and decision-making in resource-constrained environments	CSP KPFC	Develop an empirical policy framework and deploy an energy-centric tool that will allow policy-makers to empirically assess the impact of renewable energy in the water/energy/land Nexus in specific settings, and to bridge the existing knowledge gaps on the benefits of renewable energy deployment from a Nexus perspective	A comprehensive, analytical and empirical approach to inform policy-making in designing strategies that emphasise integrated resource management		Reference to the Nexus approach to resource management in the sustainable development energy debate	2015	- Comprehensive, analytical and empirical approach to inform policy-making **COMPLETED** *IRENA published the Renewable energy in the water, energy and food nexus study in January 2015 at the IRENA Assembly.*
				Tool for policy-makers to quantitatively assess the impact of RE in the nexus and country case studies to demonstrate it		Raised awareness on the role of RE in the Nexus for greater integration in decision-making	Q4 2015	- Tool for policy-makers **IN PROGRESS, ON SCHEDULE** *The conceptual framework for an energy-centric nexus tool has been published*
				Capacity building of the nexus tool		Trained country-level decision makers	Q4 2015	- Capacity building of the nexus tool **IN PROGRESS, ON SCHEDULE** *Tool will be implemented in an RRA in the course of 2015.*
Transforming Power Grid Infrastructure	Comprehensive knowledge, resources and guidelines for grid and storage technologies for renewables deployment	IITC	Develop roadmaps on RE grid and electricity storage to facilitate RE integration in different settings	Two grids & storage technology related workshops to engage stakeholders in the development of roadmaps		- Roadmap recommendations agreed upon - Better understanding of Member countries how to cope with high shares of variable renewable power	Q4 2014	- Two grids & storage technology related workshops **COMPLETED** *Four electricity storage workshops completed on 27 March 2014 (Dusseldorf), 7 November 2014 (Tokyo), 3 December 2014 (New Delhi), 10 March 2015 (Dusseldorf). Grid integration workshop WFES 17 January 2014 (Abu Dhabi), Ministerial Roundtable Transformation of the Power Sector 17 January 2015 (Abu Dhabi).*
				Report on consolidated grid & storage technology roadmaps		Report recommendations uti-lised by planners and decision makers at the national level	Q3 2015	- Report on consolidated grid & storage technology roadmaps **COMPLETED, AHEAD OF SCHEDULE** *Draft roadmaps presented in March 2015, launch scheduled for June 2015*
			Refine IRENA grid-stability assessment methodology, and assistance to countries in the application to facilitate integration of renewables	Improved and extended IRENA grid-stability assessment methodology and country support in its application		- Methodology used by countries - Increased understanding and consensus how to plan for grid stability	2014-2015	- Improved and extended IRENA grid-stability assessment methodology **IN PROGRESS, ON SCHEDULE**

			Development of broad knowledge framework for grid, storage and management of variability	Technical guide(s) with latest developments in RE grid integration technologies, including solutions for storage, smart grids and mini-grids		- Reports' recommendations cited in RE integration debate - Member countries use IRENA information to plan grids and storage	2014-2015	- Technical guide(s) with latest developments in RE grid integration technologies **IN PROGRESS, ON SCHEDULE**
				Analysis and recommendations on economic and technical feasibility of options of grid and storage technologies for integration of renewables		- Increased awareness among project developers and other stakeholders on RE grid integration technologies - Better understanding of market opportunities	Q4 2015	- Analysis and recommendations on economic and technical feasibility of options of grid and storage technologies **IN PROGRESS, ON SCHEDULE** *One report in drafting stage (RE grid integration costs)*
Planning With Renewables	Renewable energy mainstreamed in energy planning, with a focus on the power sector	IITC	Comprehensive overview and assessment of current planning methodologies for RE integration into energy systems	Report on effective planning methodologies and practices for RE integration into energy systems		- Report's recommendations cited in RE debate - Better understanding of energy supply and demand feedbacks results in more efficient and effective RE policies	Q4 2014	- Report on effective planning methodologies and practices for RE integration **IN PROGRESS, DELAYED** *Report "Addressing variable renewables in long term energy planning (AVRIL)" delayed to Q3 2015.*
			Analyse the costs of RE integration into energy systems	Comprehensive policy-relevant knowledge framework on RE systems integration cost		Recommendations utilised by decision makers and cited in RE integration debate	Q4 2015	- Comprehensive policy-relevant knowledge framework on RE systems integration cost **IN PROGRESS, ON SCHEDULE, ADJUSTED** *Merged with RE grid integration costs activity*
			Facilitate regional exchanges on best practices in system planning	Two regional workshops on best practices in system planning with RE in LAC and Asia		- Active engagement of key regional stakeholders - Increased understanding of key planning framework components - Guidelines for its design accepted and deployed	Q4 2014 (1 workshop) Q4 2015 (1 workshop)	- Two regional workshops **IN PROGRESS, ON SCHEDULE** *Asia workshop, Beijing, June 2014.* *LAC workshop planned for Q3 2015.* *Africa Energy Planning Summit 16 January 2015, Abu Dhabi.*
			Inform the development of long-term global and regional energy outlook through engagement with energy modelling stakeholders	Cooperation with entities developing modelling scenarios		- Insights translated into policy-relevant information for Members - Better understanding of the planning uncertainties and how to deal with these in RE policy strategy development	Ongoing	- Cooperation with modelling entities **IN PROGRESS, ONGOING** *International Energy Workshop, 3-5 June 2015 (Abu Dhabi)*

Renewables Readiness Assessment and Advisory Services	Countries equipped with knowledge and expertise to implement an enabling policy framework to upscale renewable energy deployment	CSP IITC	Facilitate RRAs, a country-driven process for assessing key policies, potentials and technologies for renewable energy deployment and the actions necessary to create an enabling policy and decision-making framework in Africa, Asia-Pacific, the Middle East and North Africa (MENA), and Latin America and the Caribbean (LAC)	- Facilitate the RRA process upon request in 10 member states. Five (5) RRA reports are published in 2014 and five (5) in 2015 - Design and operationalise an effective approach to utilise the expertise offered by Renewable Energy Policy Advisory Network (REPAN) in RRA and other IRENA programmes	- Facilitate the RRA process upon request in additional member states.	- Implementation of actions identified in the RRA country report - Collaboration with at least one international organisation as a partner for each RRA and follow up	2014-2015	- Facilitate the RRA process in 10 member states **IN PROGRESS, ON SCHEDULE** *The RRA workshop in Tunisia is scheduled for May 2015.* *The launch event for RRA Mauritania is planned for end of April 2015.* *RRAs in Vanuatu and the Philippines completed.* *RRA Swaziland launched in March 2015.* *RRA Tanzania and Zimbabwe to be initiated and completed in 2015.* *RRA Ghana and RRA Djibouti will be launched in 2015.* - Design and operationalise an effective approach to utilise the expertise offered by Renewable Energy Policy Advisory Network (REPAN) in RRA and other IRENA programmes **IN PROGRESS, ON SCHEDULE** *The REPAN experts have been involved in providing specific expertise during the RRA process.* - Facilitate the RRA process upon request in additional member states **SUBJECT TO VC, IN PROGRESS** *Additional funding provided by the Government of Norway for RRA Tanzania which is to be initiated and completed in 2015. Initial discussion with Kuwait for RRA is ongoing subject to VC.*
			Utilising IRENA's knowledge base and technical expertise, provide in depth, targeted technical advisory services upon request in resource assessments, legal and regulatory frameworks, implementation of standards and quality assurance mechanisms, structuring public-private partnerships, and RE technology deployment frameworks such as small hydro development in Latin America, biomass co-generation, solar and wind in Caribbean and Africa	- Advisory services on standards and quality assurance and enabling frameworks for deployment of renewables provided - Best practices in financing small hydro disseminated	- Advisory services on structuring public-private partnerships and resource assessments provided	- 15 countries are able to utilise the advisory services to design implementation pathways for accelerating RE deployment - Advisory services enable participating Member States to make informed decisions and drive actions - Improved frameworks for small hydro investment in 5 LAC Countries	2014-2015	- Advisory services **IN PROGRESS, ON SCHEDULE** *A launch event of the report is planned Q4 2015.* - Advisory services on structuring public-private partnerships and resource assessments provided **SUBJECT TO VC, IN PROGRESS** *Additional funding provided by the Government of Norway, second phase of zoning under implementation.*

Thematic area: Gateway to knowledge on renewable energy								
Objective: Renewable energy knowledge accessible to all								
Resources: **7,624 (USD thousands)**								
Component	**Impact**	**Division**	**Activities**	**Deliverable (2014-2015)**	**Deliverable (subject to additional voluntary contributions)**	**Indicators of achievement**	**Timeframe**	**Status**
Knowledge Gateway	Authoritative, freely accessible global knowledge on renewable energy	KPFC	Design of the structure and launch of the Knowledge Gateway platform	Web-based Knowledge Gateway platform	2 outreach workshops to seek partnerships with other knowledge organisations	Establishment of the Knowledge Gateway as the single publicly available source of authoritative renewable energy information	Q4 2014 2014-2015	- Web-based Knowledge Gateway platform **COMPLETED** - 2 outreach workshops **SUBJECT TO VC, IN PROGRESS** *Additional funding provided by the Government of Norway*
			Integration of additional data and information from IRENA projects and external sources into the platform	Wider range of data and information available through the Knowledge Gateway	Introduction of the Open Link Data to include data from third parties	Diverse streams of data and information from the Knowledge Gateway used as the basis of analysis by different stakeholders	2015	- Wider range of data and information available through the Knowledge Gateway **IN PROGRESS, ON SCHEDULE** *Agreements with IEA and REN21 signed. A survey to analyse the end user profile is ongoing.* - Introduction of the Open Link Data **SUBJECT TO VC, IN PROGRESS** *Additional funding provided by the Government of Norway. Discussions ongoing with public finance organisations.*
REthinking Energy (Institutional Publication)	Informed global debate on the transformative potential of renewable energy technologies to address rising global energy challenges	KPFC	Identify themes, research and produce two editions of the annual REthinking Energy publication	Second and third editions of REthinking Energy publication		Annual report becomes authoritative reference work for renewable energy developments	Q4 2014 Q4 2015	- Second and third editions of REthinking Energy publication **IN PROGRESS, ADJUSTED** *First edition was launched in September 2014.*
Renewables statistics	Solid foundations established for the most complete, up-to-date and freely accessible global renewable energy statistics database with high quality data	KPFC	Collection and standardisation of RE data from countries and secondary sources	Data collected from member countries and secondary sources, standardised, validated and posted online		IRENA renewable energy statistics database widely cited as data source in analytical reports	Ongoing	- Data collected from Member countries and secondary sources, standardised, validated and posted online **IN PROGRESS, ONGOING** *Second round of data collection completed. Capacity data now available online.*
			Improvements to RE data accounting methodologies	Guidebook on practical approaches to RE accounting and reporting		Guidebook widely used by Members in their RE statistics reporting	Q4 2015	- Guidebook on practical approaches to RE accounting and reporting **IN PROGRESS, ON SCHEDULE**

The Global Atlas	Enhanced global awareness of renewable resource potentials and policy-makers enabled to make informed planning decisions	IITC KPFC	Expand the coverage of the Global Atlas to all 6 renewable energy sources (solar, wind, bioenergy, geothermal, hydropower, marine energy)	Global Atlas interface and data infrastructure upgraded to accommodate maps for five renewable energy sources	Global Atlas interface and data infrastructure includes maps for marine energy	The Global Atlas cited as the reference for resource assessment of all 6 renewable energy sources	Q4 2015	- Global Atlas interface and data infrastructure upgraded to accommodate maps for five renewable energy sources **COMPLETED** - Global Atlas interface and data infrastructure includes maps for marine energy **SUBJECT TO VC, FUNDS NOT IDENTIFIED**
				Data quality framework (quality, validation and limit of use of the data) developed and implemented in the entire Atlas		Increased understanding by Global Atlas users of the limits of use of diverse datasets in the Atlas	Q4 2015	- Data quality framework developed and implemented **IN PROGRESS, ON SCHEDULE** *Data quality collection process started for all solar and wind providers. Demonstration for bringing the information to the user in Q1 2015.* *A country-by-country assessment of renewable resources in Africa released.*
			Capacity building for energy planners and policy-makers on the use of spatial planning techniques for energy systems planning and policy making, as well as beginning the integration of the Atlas and Costing work		Develop a practical capacity building module targeted at energy planners and policy-makers	50 energy planners and policy-makers trained	2014-2015	- Develop a practical capacity building module targeted at energy planners and policy-makers **COMPLETED, SUBJECT TO VC, FUNDED** *Funding provided by the Government of Flanders (Belgium) and the Government of Germany*
				Detailed guidebook on the methods used for mapping renewable energy potentials		Countries use the guidebook to assess their technical renewable energy potential	Q4 2015	- Detailed guidebook on the methods used for mapping renewable energy potentials **IN PROGRESS, ON SCHEDULE, ADJUSTED** *Scope change to case studies and focused on methodology.*
			Facilitation of resource measurement campaigns	Upon countries request, scope the need for technical assistance and seek for possible resources and technical partnerships to initiate measurement campaigns		Address requests of 5 countries	Q4 2015	- Upon countries' request, scope the need for technical assistance and seek for possible resources and technical partnerships to initiate measurement campaigns **COMPLETED** *Delivered geospatial analysis for West Africa, analysis for the Philippines, analysis for pacific islands (to GREIN) and support to zoning for the ACEC. Requests of 3 out of 5 have been completed (Namibia, Philippines and Uganda), whilst a measurement campaign in Namibia is ongoing. An analysis was published in the Philippines and is online.*
IRENA Renewable Energy Learning Partnership (IRELP)	Freely accessible renewable energy education and training database enriched with career opportu-nities and guid-ance, and best practices for long-term education strategies	KPFC	Establishment of an online forum to facilitate the development of renewable energy curricula by stakeholders	Launch of the online forum and establishment of an online community		Facilitation services used by 5 educational institutions for the development of renewable energy curricula	Q4 2014	- Launch an online forum and establish an online community **COMPLETED, ON SCHEDULE** *Online Community launched and operational.*
			Expansion of the renewable energy career centre	Develop and expand the career centre and provide information on RE job opportunities and links with employers and employment agencies		IRELP contains access to RE employment opportunities	Q4 2015	- Develop and expand the career centre **IN PROGRESS, ON SCHEDULE**
			Cooperation with partners to increase access to and awareness of renewable energy education and training	Joint promotion of renewable energy education, training and tools worldwide		Active participation of IRELP at global education fora	Q4 2014	- Joint promotion of renewable energy education, training and tools worldwide **IN PROGRESS, ADJUSTED** *Joint promotion is ongoing with numerous partners. A planned November 2014 UNESCO / JREF event was cancelled and will not take place. An alternative opportunity for promoting RE education may be done if a suitable venue is found.*

RE Policy and Best Practice: Status and Trends	Global reference repository of renewable energy policies, regulations and best practice	KPFC	Analysis of policy status and trends based on standarised information on renewable energy policies and measures from Members	Contents of the policies and measures database updated on a biannual basis and expanded through cooperation with leading RE policy database providers		Double the number of new entries in the Policy Database from the 2013 call (68 new entries)	Q4 2015	- Contents of the policies and measures database updated on a biannual basis and expanded **IN PROGRESS, ON SCHEDULE** *The joint IRENA/IEA database holds around 1,800 policies from 116 countries. In 2014, 75 new entries have been added to the database.*
				Annual report on status and trends in renewable energy policy		Policy reports disseminated at 10 events	Q4 2014, Q4 2015	- Annual report on status and trends in renewable energy policy **IN PROGRESS, ON SCHEDULE**
			Systematise best practice and case studies on renewable energy deployment	Case studies and best practice information integrated in the Knowledge Gateway		Best practices utilised by countries for informed decision making	Q4 2015	- Case studies and best practice information integrated in the Knowledge Gateway **IN PROGRESS, ON SCHEDULE**
Renewables: The True Costs	Authoritative and comprehensive information and analysis of the true cost competitiveness of renewables globally to help shape national and global debates, and global analysis of real cost issues and clear policy recommendations and tools to accelerate renewables deployment.	IITC	Renewable Costing Alliance and expansion of the IRENA Renewable Cost Database to become the most comprehensive resource on renewable energy costing	Launch and operation of the Alliance, substantially expanding the Cost Database and improving the quality of data available		- Increased membership of the Alliance adds data into the Cost Database - Alliance is the global network for cost issues on renewable energy technologies	Ongoing	- Launch and operation of the Alliance **IN PROGRESS, ON SCHEDULE** *18 new Alliance members. Discussions underway with 50 public and private organisations.*
			Up-to-date analysis of the improved cost competitiveness of solar PV compared to local retail electricity prices	Quarterly report on PV parity evolution for 10 countries		Informed decisions based on reliable information on PV parity	Ongoing	- Quarterly report on PV parity evolution for 10 countries. **IN PROGRESS, ONGOING** *Database of 200,000 small-scale solar PV systems developed. Parity indicator reporting is operational for the USA.*
			Expansion of IRENA Costing Reports to cover the entire spectrum of energy uses	Three RE cost reports: Updated power generation, marine/aviation/rail transport, grid integration technologies, RE integration systems costs		- Reports disseminated in 10 countries - IRENA costing data and analytical reports cited	Q4 2014 (1 report) Q4 2015 (2 reports)	- Three RE cost reports **IN PROGRESS, ON SCHEDULE, ADJUSTED** *Cost of Renewables for Power Generation launched January 2015.* *Report on industrial, residential and commercial stationary applications in preparation.* *Africa solar PV cost reduction opportunities in preparation (Q3 2015).* *RE integration systems cost merged with RE grid integration costs activity.* *Marine costing merged with RE for shipping technology brief.*
Global investment dynamics	Solid global resource of RE investment in-formation and financial flows, accessible to all, showcasing global investment dynamics and potential sources of financing	KPFC	Complementing information on renewable energy investment by developing standardised data on gaps identified, including small-scale renewable energy applications and a mapping of sources of possible financing for project developers	Collection of targeted investment data to support policy-makers and IRENA analyses	Analysis of renewable energy investment flows, highlighting investment trends and gaps and business models	Access to more comprehensive data on RE financial flows	2014-2015	- Collection of targeted investment data **IN PROGRESS, ON SCHEDULE** - Analysis of renewable energy investment flows **SUBJECT TO ADDITIONAL VC, IN PROGRESS.** *Additional funding provided by the Government of Norway*
				Methodological paper establishing a framework for comprehensive renewable energy investment flows data collection		Paper used by countries in their renewable energy investment flows reporting	Q4 2015	- Methodological paper **IN PROGRESS, ON SCHEDULE**

Coalition for Action on Public Support to RE	Global coalition effectively disseminating authoritative, consistent, and unified mess-ages on RE	KPFC	Operationalise the Coalition for Action on Public Support to gather and disseminate effectively renewable energy facts and analysis in collaboration with major RE advocates in industry and civil society	Establishment of the structure, operational mode and strategy of the Coalition for Action		20 members join the Coalition and develop joint activities	Q2 2014	- Establishment of the structure, operational mode and strategy of the Coalition for Action **COMPLETED** *45 members joined and developed activities in 2 clusters. Terms of references agreed on two task forces. Initial practical communications actions planned.*
				Formation of a network of RE public information experts		50 communication officers and media outlets become part of the network and start working on improved messaging on RE benefits	Q4 2014	- Formation of a network of RE public information experts **IN PROGRESS, DELAYED** *A network of 10 communicators has been formed and will be expanded to improve geographic and sectoral scope. Terms of reference have been agreed. Operational by Q3 2015.*
				Development of innovative mechanisms for dissemination of information		RE facts better known and positively perceived by stakeholders through the innovative mechanism	Q2 2015	- Development of innovative mechanisms for dissemination of information **IN PROGRESS, ON SCHEDULE**

Thematic area: Enabling investment and growth								
Objective: Improving policy frameworks and enabling market conditions for accelerated deployment of renewable energy								
Resources: **8,252 (USD thousands)**								
Component	**Impact**	**Division**	**Activities**	**Deliverable (2014-2015)**	**Deliverable (subject to additional voluntary contributions)**	**Indicators of achievement**	**Timeframe**	**Status**
Policy assessment	Contribution to the global debate and increased awareness of policy options in a dynamic energy market	KPFC	Assess the key challenges faced by policy-makers in adapting to the structural changes in the energy sector (specifically changing ownership structures), analyse best practices in adopting effective measures and provide recommendations	Analysis of the impact of the changing market dynamics, including ownership structure, in the energy sector on RE deployment and policy adaptation measures		Increased understanding of timely policy adaptation measures required in dynamic market conditions	Q4 2014	- Analysis of the impact of the changing market dynamics **IN PROGRESS, DELAYED, ADJUSTED** *Scope of the report was modified to avoid duplication with reports published in 2014 by other organisations*
Regional Market Analysis	Enhanced global knowledge of policy options for opening energy markets to renewable energy investment	KPFC	Analyse regional markets for the deployment of RE in two regions, identify best practices of several countries and formulate recommendations	Regional assessment of status and trends in the LAC region to draw policy lessons, identify best practices and help leverage potential synergies	Regional workshop and outreach to discuss and disseminate the results of the LAC assessment	Improved knowledge on opportunities in the RE sector	Q4 2015	- Regional assessment of status and trends in the LAC region **IN PROGRESS, ON SCHEDULE** - Regional workshop and outreach **SUBJECT TO VC, FUNDS NOT IDENTIFIED**
				Regional market assessment of policies and trends for RE in the GCC, including best practices on policy, regulatory and administrative frameworks facilitating the transition to clean energy systems	Regional workshop and outreach to discuss and disseminate the results of the GCC assessment	Improved knowledge on opportunities in the RE sector	Q4 2015	- Regional market assessment of policies and trends for RE in the GCC **IN PROGRESS, ON SCHEDULE** - Regional workshop and outreach **SUBJECT TO VC, FUNDS NOT IDENTIFIED**
ireValue: Social, Economic and Environmental Impacts	Unique knowledge platform on socio-economic and environmental impacts empowers policy-makers and increases public awareness with relevant analysis and information	KPFC	Develop the knowledge framework on socio-economic impact of renewable energy deployment (income, trade balance, energy security) of RE deployment for solar, wind and off-grid applications. With partners, carry out studies that analyse experiences and best practices from different countries and regions that will focus on the adoption of policies that maximise value creation and the dissemination of existing tools that allow policy-makers to empirically assess selected socio-economic impact	Re Jobs - Comprehensive and authoritative analysis on the status and trends of renewable energy jobs drawing from the IRENA data collection on jobs		Annual analysis on renewable energy jobs referenced in the international debate	Q4 2014, Q4 2015	- Comprehensive and authoritative analysis on the status and trends of renewable energy jobs - 2014 edition **COMPLETED** *Renewable Energy and Jobs – Annual.* - 2015 edition **COMPLETED** *Renewable Energy and Jobs - Annual*
				Report on the socio-economic impacts of large-scale as well as off-grid renewable energy technologies		Increased understanding of the business case for renewable energy among policy-makers, including local content	Q4 2014, Q4 2015	- Report on the socio-economic impacts of large-scale as well as off-grid renewable energy technologies - econValue report 2014 **COMPLETED** - econValue report 2015 **IN PROGRESS, ON SCHEDULE**

					Dissemination of tools and methodologies to estimate the socio-economic impacts of renewable energy deployment	Developed national frameworks for the estimation of the socio economic impact of RE deployment	2014-2015	- Dissemination of tools and methodologies **IN PROGRESS, SUBJECT TO VC, FUNDED, ON SCHEDULE** *Funded by the Government of Germany*
			Study environmental impact, including analysis of policies for end of life treatment of PV modules through a multi-stakeholder consultative process		Formulation and dissemination of best practices on end of life treatment of PV modules	Increased adoption of best practices by policy-makers and industry	2014-2015	- Formulation and dissemination of best practices on end of life treatment of PV modules **IN PROGRESS, SUBJECT TO VC, FUNDED, ON SCHEDULE** *Funding from the Government of Germany*
Energy Pricing	Increasing investment in renewable energy by developing guidelines and approaches to optimal energy pricing frameworks and reforms required in current policies	KPFC	Analyse energy pricing frameworks under specific market conditions, with the objective of developing recommendations for economically, socially and environmentally optimal pricing that enables renewables technologies to be effectively integrated in decision-making	Contribution to MENAREC 6 in Libya in May 2014 through an analytical framework for North Africa		Outcomes and recommendations used by MENA countries decision makers	Q2 2014	- Contribution to MENAREC 6 in Libya in May 2014 **IN PROGRESS, DELAYED** *MENAREC6 has been postponed to Q1 2016.*
				Report on the impact of energy pricing on renewable energy deployment in GCC countries		Informed policy making in GCC countries on the impact of energy pricing structures of renewable energy deployment	Q3 2014	- Report on the impact of energy pricing on renewable energy deployment in GCC countries **IN PROGRESS, DELAYED** *Delayed to Q4 2015. Regular consultation with major stakeholders on energy pricing and deployment opportunities*
					Development of guidelines and approaches on energy pricing	Guide disseminated and substantiated by multi-stakeholder dialogue on reform	2014- 2015	- Development of guidelines and approaches on energy pricing **SUBJECT TO VC, FUNDS NOT IDENTIFIED**
RE finance	Enhanced understanding of risks and innovative mitigation options and tools to develop bankable projects to facilitate renewable energy investment	IITC KPFC	Analyse risk and evaluate risk mitigation instruments in renewable energy investment	Report classifying the risks, identifying the gaps in risk mitigation and evaluating the performance of existing risk mitigation instruments		Report used as a reference in the renewable energy investment de-risking debate	Q2 2014	- Report classifying the risks, identifying the gaps in risk mitigation and evaluating the performance of existing risk mitigation instruments **IN PROGRESS, DELAYED, ADJUSTED** *Work has been consolidated. Report planned for Q3 2015, with expanded scope.*
					High-level meeting about risk mitigation, including political and technology risks	Inform high-level decision makers of innovative risk mitigation options in renewable energy investment	2014-2015	- High-level meeting about risk mitigation, including political and technology risks **SUBJECT TO VC, FUNDS NOT IDENTIFIED**
			Develop technology- and region-specific modules for the IRENA project development tool, the "Project Navigator"	Expansion of the navigator to include additional technologies (Biomass, Concentrated Solar Power, Geothermal and Hydropower) and region-specific aspects (financial sources, regulatory, policy and technical aspects required for project de-velopment)		Expanded Project Navigator utilised by project developers in three regions to improve bankability of projects	2014-2015	- Expansion of the navigator **IN PROGRESS, ON SCHEDULE**

			Validate and refine the Project Navigator tool by carrying out 7 pilot studies	Refined Navigator based on the results of 7 pilot projects in collaboration with partners (ADFD, Pacific Fund)		Improved bankability of the 7 projects	Q4 2014 (3 pilots) Q4 2015 (4 pilots)	- Refined Navigator based on the results of 7 pilot projects **IN PROGRESS, ON SCHEDULE**
Cooperation with the Abu Dhabi Fund for Development	Investments in projects with replicable and/or innovative business models that promote energy access in developing countries	KPFC	Support the implementation of two project cycles of the IRENA/ADFD project facility	Annual award of approximately USD 50 million for projects under the IRENA/ADFD project facility		Disbursement of funds to selected projects	Ongoing	- Annual award of approximately USD 50 million for projects under the IRENA/ADFD project facility **COMPLETED**
Quality Assurance and Standardisation	Higher investor confidence through development of authoritative information and advice on standards and quality assurance	CSP IITC	Operationalise standards and quality assurance mechanisms tailored to the needs of IRENA Members	Technical advice to regional initiatives on quality assurance for RET - regional studies and workshops		Incorporation of IRENA's recommendation in regional initiatives for quality on RET	Q4 2014 (1 region) Q4 2015 (2 regions)	- Technical advice to regional initiatives on quality assurance for RET **IN PROGRESS, ON SCHEDULE** *IRENA is part of the steering committee*
			Develop best practices and recommendations on quality assurance for selected RE technologies	Report on development and implementation of quality assurance mecha-nisms for three renewable energy technologies, including solar domestic hot water and off-grid PV systems		- Report's recommendations cited in RE quality and markets debate - Deployment of IRENA recommendations results in higher quality and increased market confidence	Q4 2014 (2 reports) Q4 2015 (1 report)	- Report on development and imple-mentation of quality assurance mechanisms for three renewable energy technologies **IN PROGRESS, ON SCHEDULE**
			Develop and operate a Standards and Patents information platform	Expansion and improvement of web platform for RE standards and patents		Up-to-date and improved web-based platform	Q4 2015	- Expansion and improvement of web platform for RE standards and patents **COMPLETED** *Platform is operational and will go live in June 2015*
			Develop competency standards for trainings to certify installers in renewable energy technologies through a consortium of technical institutions, industry associations and forums of leading practitioners	- Establish a global collaboration for a recognized certification scheme of renewable energy technology installers – starting with solar PV - Preliminary competency standards developed for solar PV installers certification training		Provide qualified skilled technical force to support deployment of renewable energy projects in the country	2014-2015	- Establish a global collaboration for a recognized certification scheme of renewable energy technology installers **IN PROGRESS, ON SCHEDULE** - Preliminary competency standards developed for solar PV installers certification training **IN PROGRESS, ON SCHEDULE**
			Assist countries in adopting and implementing certification of renewable energy technology installers through national and regional technical institutes		Dissemination of the certification scheme for solar PV installation and operation	6 countries adopt a recognised certification scheme for solar PV installation and operation	2014-2015	- Dissemination of the certification scheme for solar PV installation and operation **SUBJECT TO VC, FUNDS NOT IDENTIFIED**

Innovation and Research, Development and Demonstration (RD&D)	Enhanced innovation through international cooperation and streamlined national RD&D plans	IITC	Analyse the policy framework for optimal technology deployment and provide advice for successful diffusion of modern RE technologies in developing countries	Assessment of options for modern biomass in Africa and advanced biofuels in Asia		Results of the studies used in policy making and planning for deployment	Q4 2014 (1 region) Q4 2015 (2 regions)	- Assessment of options for modern biomass in Africa and advanced biofuels in Asia **IN PROGRESS, DELAYED** *Analysis for Africa delayed but publication scheduled for 2015. Analysis for Asia at preparation stage.*
			Map and analyse the gaps for and benefits of collaborative RD&D on RE technologies in regions and RD&D planning	- Regional assessments on collaborative RD&D for RE in Africa, Eastern Europe and Central Asia - Advice on national RD&D programming upon request		Recommendations used in regional RE innovation and market strategies	Q4 2014 (2 reports) Q4 2015 (1 report)	- Regional assessments on collaborative RD&D for RE in Africa, Eastern Europe and Central Asia **IN PROGRESS, ON SCHEDULE, ADJUSTED.** *Central Asia: Remap analysis for selected countries to understand technology needs in the region. Africa: South-south cooperation between Brazil and Africa for biofuels production has been assessed. Study to be published. Latin America: Due to the interest from the region in this topic IRENA has completed its analysis on cooperative RD&D for RET in the region.* - Advice on national RD&D programming upon request **IN PROGRESS, ON SCHEDULE**
			Analysis of future technologies and potential for deployment in markets to match new energy needs with innovative and cost-effective RE solutions	Studies on innovative RE technologies, including advanced biofuels, new electricity storage, mini-grid, floating off-shore wind		Study contributes to national perspectives for expanding technology options	Q4 2015	- Studies on innovative RE technologies **IN PROGRESS, ON SCHEDULE,**

Thematic area: Renewable energy access for sustainable livelihoods								
Objective: Contributing to sustainable livelihoods through access to renewable energy								
Resources: **3,393 (USD thousands)**								
Component	**Impact**	**Division**	**Activities**	**Deliverable (2014-2015)**	**Deliverable (subject to additional voluntary contributions)**	**Indicators of achievement**	**Timeframe**	**Status**
IOREC platform	Scaling up off-grid renewable energy deployment by providing the platform for stakeholder engagement on a global level	KPFC	Support enabling frameworks for off-grid renewable energy deployment	Second International Off-grid Renewable Energy Conference and Exhibition and associated activities within the IOREC platform		Policies for mainstreaming RE in off-grid energy supply	Q4 2014	- Second International Off-grid Renewable Energy Conference and Exhibition **COMPLETED** *The conference was held in June 2014*
				Regional workshop with practitioners and public institutions responsible for rural electrification on barriers and solutions			Q4 2015	- Regional workshop with practitioners and public institutions **COMPLETED, AHEAD OF SCHEDULE** *The workshop was held in January 2015*
Mini-Grids	Enabling conditions for renewable energy-based mini-grid deployment to shift the paradigm for universal energy access	CSP KPFC	Facilitate a consultative process and develop an analytical framework to increase RE mini-grid deployment	Recommendations on policies and regulatory measures to support renewable energy-based mini-grid deployment		Improved policies for the deployment of RE mini-grids	Q4 2015	- Recommendations on policies and regulatory measures to support renewable energy-based mini-grid deployment **IN PROGRESS, ON SCHEDULE**
			Build a public-private partnership to promote hybrid mini-grids	Preparation of site-specific business models for 6 sites, including recommendations on financial mechanisms, local stakeholder base and key steps required for implementation of demonstration projects		Financial closure of at least 3 hybrid/RE grids projects	Q4 2015	- Preparation of site-specific business models for 6 sites **COMPLETED, AHEAD OF SCHEDULE** *Economic analysis and business cases developed for seven sites on three continents.*
			Build a cross-cutting mini-grid initiative focusing on policy, regulatory, finance and business models in collaboration with well-established implementing and financing institutions including the private sector	Four analytical country studies focusing on the policy and regulatory frameworks necessary to promote investments in mini-grids, including follow up for designing implementation strategies		10 mini grids projects initiated in countries	2014-2015	- Four analytical country studies **IN PROGRESS, ON SCHEDULE**
			Build capacity of policy-makers and entrepreneurs to deploy renewable energy mini-grid at scale	Capacity needs assessment in one region and two training workshops on enabling frameworks and business model delivery	Capacity needs assessment and training workshops on enabling frameworks and business model delivery in additional regions	80 policy-makers and entrepreneurs trained	2014-2015	- Capacity needs assessment in one region and two training workshops **IN PROGRESS, ON SCHEDULE** - Capacity needs assessment in additional regions **SUBJECT TO VC, FUNDS NOT IDENTIFIED**
Off-grid for Niche Applications	Accelerated deployment of off-grid renewable energy solutions in isolated communities and urban areas	CSP	Assist countries, upon request, in developing deployment strategies and facilitate knowledge exchange on off-grid renewable energy technologies in rural and remote settings	Expert training workshops conducted for off-grid applications for productive use (e.g. solar pumping and micro-hydro)		40 people trained in 2 workshops on RE applications	2014-2015	- Expert training workshops **IN PROGRESS, ON SCHEDULE** *Planned for 2015*

			Partner with private sector actors with regional or global presence to design and implement a plan to showcase renewables technologies for off-grid applications in urban and peri-urban areas		Implementation strategies for off grid designed with private sector players	Partnerships with 3 private sector players to showcase renewable energy off grid application	2014-2015	- Implementation strategies for off grid designed with private sector players **SUBJECT TO VC, FUNDS NOT IDENTIFIED** *Project proposals for refugee initiatives and sustainable food preservation have been developed but still require funding.*
Capacity Building for Entrepreneurs	Increased renewable energy deployment through greater financial and technical assistance to SMEs	CSP	Support SMEs by creating expert groups to provide guidance to RE entrepreneurs on identifying business opportunities	Expert groups established		- 20 experts commit to mentor entrepreneurs through advisory boards - 4 existing business incubation centres will support energy entrepreneurs - 10 financial institutions trained on financing RE projects	2014-2015	- Expert groups established **COMPLETED**
			Support business incubation centres and facilitate sharing of experience among similar institutions across regions	Facilitate experience sharing between business incubation centres and similar institutions across regions				- Facilitate experience sharing between business incubation centres and similar institutions across regions **COMPLETED, AHEAD OF SCHEDULE**
			Build capacity of financing institutions to assess technology risks in developing countries	Two webinars to build the capacity of public service officials for developing proposal for funding	Two training workshops for financing institutions to build capacity to assess technology risks and provide best practices to structure lending to RE project			- Two webinars to build the capacity of public service officials for developing proposal for funding **COMPLETED, AHEAD OF SCHEDULE** - Training workshops for financing institutions **SUBJECT TO VC, FUNDS NOT IDENTIFIED**

Thematic area: Islands: lighthouses for renewable energy deployment								
Objective: Island energy systems transformed through renewable energy								
Resources: **2,972 (USD thousands)**								
Component	**Impact**	**Division**	**Activities**	**Deliverable (2014-2015)**	**Deliverable (subject to additional voluntary contributions)**	**Indicators of achievement**	**Timeframe**	**Status**
GREIN	Improved knowledge of solutions and conditions for investment in renewable energy applications on islands	CSP IITC	Establish and support of 6 GREIN clusters	- Clusters on resource assessment, waste-to-energy, desalination, roadmaps, grids and tourism established and operational - Report on settings for success in implementing renewables on islands		Work plans implemented by clusters	Q4 2015	- Clusters on resource assessment, waste-to-energy, desalination, roadmaps, grids and tourism established and operational **COMPLETED, AHEAD OF SCHEDULE** *All of the six clusters have been launched, support ongoing.* - Report on settings for success in implementing renewables on islands **COMPLETED, AHEAD OF SCHEDULE**
			Assist islands in the development of their Renewable Energy Roadmaps	Technical assistance provided for island roadmaps		Recommendations of the roadmaps integrated in planning processes of islands	Q4 2015	- Technical assistance for island roadmaps **IN PROGRESS, ON SCHEDULE**
			Analyse islands' grid stability for the integration of a higher share of renewable energy upon request	Advice to island utilities on how to maintain grid stability with high shares of variable renewables results in accelerated deployment		Higher share of renewables integrated in island grids	Q4 2015	- Advice to island utilities on how to maintain grid stability **IN PROGRESS, ON SCHEDULE** .
			Demonstrate the business case for investments in renewable energy in the tourism sector	RE audits completed in 9 islands		- 9 hotels embark on renewable energy audits - 2 hotel associations adopt a renewable energy agenda	Q4 2014	- RE audits completed in 9 islands **IN PROGRESS, DELAYED, ADJUSTED** *Capacity needs assessments for energy efficiency and energy audits ongoing and considering alternative approaches in addition to audits.*
			Demonstrate the business case for waste-to-energy and desalination systems	Cost/benefit analysis for waste-to-energy and desalination systems on islands with projected payback periods		Islands undertake solar desalination and waste-to-energy projects	2014-2015	- Cost/benefit analysis for waste-to-energy and desalination systems on islands with projected payback periods **COMPLETED , AHEAD OF SCHEDULE**
			Assist islands to develop renewable energy resource assessment strategies	Guidebook for detailed wind resource measurement on islands		Islands use the guidebook to help produce bankable data for wind projects	Q3 2014	- Guidebook for detailed wind resource measurement on islands **COMPLETED**
Partnerships for Action in SIDS	Strengthened partnerships to advance renewable energy deployment in SIDS	IITC	Showcase opportunities for RE deployment through IRENA activities on islands as a contribution to the SIDS Conference in Samoa	Contribution to the Conference and building partnerships for action with islands and development partners	Follow-up on renewable energy-related outcomes of the Conference	Inclusion of renewable energy in the post-conference action agenda	2014-2015	- Contribution to Samoa Conference **COMPLETED** *RE prominent in the post-conference action agenda.* - Follow-up on renewable energy-related outcomes of the Conference **COMPLETED, SUBJECT TO VC, FUNDED** *Funding provided by Government of Germany and Government of Norway.*
Building Capacity in Islands	Improved capacities to meet national renewable energy	CSP	Implement the on-going IRENA capacity building initiatives in Pacific SIDS	- 2 training workshops on policy and regulatory frameworks		Lessons learnt from Pacific SIDS replicated in other	2014-2015	- 2 training workshops on policy and regulatory frameworks - 3 training workshops and follow-up technical assistance for financing institutions

	targets and attract investments in SIDS			- 3 training workshops and follow-up technical assistance for financing institutions		Islands through GREIN - Pacific Islands gradually transition to promoting renewable energy projects with commercial financing - 5 SMEs deploy renewable energy technologies for meeting their energy needs		**COMPLETED, AHEAD OF SCHEDULE** *Additional capacity building activities will be undertaken under the Lighthouses Initiative*
			Assist island States to create a pool of certified technicians	One training workshop to certify renewable energy engineers and technicians	Additional training workshops to certify renewable energy engineers and technicians			- Workshop to certify renewable energy engineers and technicians **COMPLETED** - Additional training workshops **IN PROGRESS, SUBJECT TO VC, FUNDED, ON SCHEDULE** *Will be undertaken within the Lighthouses Initiative, Germany, New Zealand and Norway funding.*
			Provide targeted technical assistance to SMEs in the Caribbean to deploy renewable energy technologies	Training workshops for SMEs in Caribbean and AIMS islands				- Training workshop for SMEs in Caribbean and AIMS islands **IN PROGRESS, ON SCHEDULE**

Thematic area: Regional action agenda								
Objective: Regional integration with increased shares of renewables to meet energy needs								
Resources: **4,244 (USD thousands)**								
Component	**Impact**	**Division**	**Activities**	**Deliverable (2014-2015)**	**Deliverable (subject to additional voluntary contributions)**	**Indicators of achievement**	**Timeframe**	**Status**
Africa Clean Energy Corridor	Growing renewable power deployment and investment in Eastern and Southern Africa strengthens economic growth, job creation and energy access	CSP IITC KPFC	Implement the action agenda for the Clean Energy Corridor formulated in close consultation with regional and national stakeholders	Identification and analysis of renewable power development zones and associated transmission corridors in Eastern and Southern Africa Power Pool countries	Workshops and outreach activities to strengthen the engagement of the donor community and the private sector in the Africa Clean Energy Corridor	- Ministerial endorsement of an action agenda - 2 renewable power development zones identified - 40 participants from Eastern and Southern Africa Power Pool countries are trained in RE zoning and system planning - Increased investments in renewable power	2014-2015	- Identification and analysis of renewable power development zones **COMPLETED, AHEAD OF SCHEDULE** *Renewable Energy Zones have been identified in all ACEC countries.*
			Support country and regional planning processes and identify potential renewable power development zones	Workshops to promote integrated resource planning of generation and transmission facilities in the Eastern and Southern African Power Pool countries				- Workshops to promote integrated resource planning of generation and transmission facilities in the EAPP and SAPP countries **IN PROGRESS, ON SCHEDULE**
			Forge regional consensus on long-term needs for new generation and transmission capacity needed to harness renewable energy	Agreement reached on long-term needs for generation and transmission capacity				- Agreement reached on long-term needs for generation and transmission capacity **COMPLETED** *Synthesis report 'Africa Power Sector: Planning and Prospects for Renewable Energy' published March 2015.*
			Assist countries and regional entities to develop enabling regulatory frameworks	- Recommendations for harmonised regulatory frameworks to promote renewable power investment and trade - Workshops on market and regulatory frameworks to encourage the market entry of renewable power sources in Africa				- Recommendations for harmonised regulatory frameworks to promote renewable power investment and trade **IN PROGRESS, ON SCHEDULE** - Workshops on market and regulatory frameworks to encourage the market entry of renewable power sources in Africa **IN PROGRESS, ON SCHEDULE**
			Build the capacity of policy-makers, utilities, grid operators to incorporate increased shares of variable renewable power	- Capacity building workshops to help power pools in Africa assess the options for renewable power development zones - Capacity building workshops to help transmission utilities in Eastern and Southern Africa Power Pools operate power grids with a diversified mix of renewable power plants				- Capacity building workshops to help power pools in Africa assess the options for renewable power development zones **COMPLETED** *Capacity building workshops held to help power pools in Africa assess the options for renewable power development zones.* - Capacity building workshops to help transmission utilities in Eastern and Southern Africa Power Pools operate power grids with a diversified mix of renewable power plants **COMPLETED, AHEAD OF SCHEDULE** *Two capacity building workshops for renewable energy integration in grids in EAPP and SAPP conducted.*
			Assess financial models and mechanisms for lowering the cost of capital	- Recommendations on implementable mechanisms to lower the cost of finance - Dissemination of strategies for reducing costs of capital for renewable power options in Africa through workshops		At least 2 financial institutions actively considering mechanisms to lower the cost of finance	2014-2015	- Recommendations on implementable mechanisms to lower the cost of finance **IN PROGRESS, ON SCHEDULE** - Dissemination of strategies for reducing costs of capital for renewable power options in Africa through workshops **IN PROGRESS, ON SCHEDULE**

								- Workshops and outreach activities to strengthen the engagement of the donor community and the private sector in the Africa Clean Energy Corridor **IN PROGRESS, SUBJECT TO VC, FUNDED, ON SCHEDULE**
Central America Clean Energy Corridor	Integrated power market for renewables in Central America taking advantage of regional scale economies	CSP KPFC	Identify opportunities for accelerated renewable power development in SIEPAC with a focus on transmission infrastructure and regulations	- Report on gaps and opportunities for renewable power development, including gaps in financing - Convene stakeholders to discuss key actions for zoning, planning & enabling markets and finance that could help overcome the barriers - Assessment of regulatory frameworks to promote investments, trade & long-term contracts	Workshops and outreach activities to strengthen the engagement of the donor community and the private sector in the Central America Clean Energy Corridor	- Increased uptake of RE in the regional grid - Improved regulatory frameworks at the regional level to upscale RE generation and transmission in the region - Capacities developed in key areas to facilitate the intake of RE in the System - Regional planning processes include higher share of renewable power options	2014-2015	- Report on gaps and opportunities for renewable power development, including gaps in financing **IN PROGRESS, ADJUSTED** *Focus adjusted based on stakeholder feedback* - Convene stakeholders to discuss key actions for zoning, planning, and enabling markets and finance that could help overcome the barriers **IN PROGRESS, ON SCHEDULE** *Meetings and workshops held with key stakeholders, leading to development of a strategy for CACEC. The strategy and action agenda will be released late 2015* - Assessment of regulatory frameworks to promote investments, trade and long-term contracts **IN PROGRESS, ADJUSTED** *Focus adjusted based on stakeholder feedback.*
			Identify potential zones for concentrated renewable power development and links with the SIEPAC transmission corridor	- Identification and analysis of renewable power development zones and associated transmission corridors - Workshops to promote integrated resource planning of generation and transmission facilities in the Central American Electrical Interconnection				- Identification and analysis of renewable power development zones and associated transmission corridors **IN PROGRESS, DELAYED, ADJUSTED** *Focus adjusted based on stakeholder feedback.* - Workshops to promote integrated resource planning of generation and transmission facilities in the Central American Electrical Interconnection **IN PROGRESS, ADJUSTED** *Focus adjusted based on stakeholder feedback.*
			Build the capacity of power pools, utilities and regulators to plan and operate grids with a diversified mix of renewable power	- Capacity building workshops to help power pools assess the options for renewable power development zones - Capacity building workshops to help transmission utilities in Central America operate power grids with a diversified mix of renewable power plants				- Capacity building workshops to help power pools assess the options for renewable power development zones **IN PROGRESS, ADJUSTED** *Focus adjusted based on stakeholder feedback.* - Capacity building workshops to help transmission utilities in Central America operate power grids with a diversified mix of renewable power plants **IN PROGRESS, ON SCHEDULE** - Workshops and outreach activities to strengthen the engagement of the donor community and the private sector in the Central America Clean Energy Corridor **SUBJECT TO VC, FUNDS NOT IDENTIFIED**
Emerging Regional Clean Energy Corridors	Effective regional frameworks of cooperation to increase the share of renewables in power grids	CSP KPFC	Support Southeast Asian countries to exploit renewable resources in the region through the on-going integration of the ASEAN Power Grid	- Reports on gaps and opportunities for renewable power development in Southeast Asia, Middle East and North Africa, and Central Asia - Three regional workshops to	- Workshops and outreach activities to strengthen the engagement in the Emerging Regional Clean Energy Corridors	- Endorsement of the Clean Energy Corridor Concept by countries and related regional entities - Regional planning processes and national	2014-2015	- Reports on gaps and opportunities for renewable power development in Southeast Asia, Middle East and North Africa, and Central Asia **IN PROGRESS, ON SCHEDULE**

			Launch a MENA Solar Bridge Initiative to focus on the wind and solar opportunities in the region and their effective integration in regional power grids	develop work plans to support the integration of renewable energy options into the grid, with power pools, utilities, regulators and other stakeholders		integrated resource plans includes higher share of renewable power options		- Three regional workshops to develop work plans to support the integration of renewable energy options into the grid, with power pools, utilities, regulators and other stakeholders **IN PROGRESS, ON SCHEDULE** - Workshops and outreach activities to strengthen the engagement in the Emerging Regional Clean Energy Corridors **SUBJECT TO VC, FUNDS NOT IDENTIFIED**
			Support countries in South East Europe to investigate opportunities to develop renewable power options more efficiently through better planning and zoning					
			Assist countries in Central Asia to develop renewable electricity generation					
Empowering through partnerships	Enhanced knowledge and skills to design and implement renewable energy policies and projects	CSP	Build an active interface, in different renewable energy technologies, between countries, to share experiences and know-how to overcome barriers and attract investments	- Identification of 2 training institutions/organisations in Member countries to deliver targeted trainings in partnership with IRENA - 2 practical training sessions for technicians for early stages of the supply chain	- Identification of additional training institutions/organisations in member countries to deliver targeted trainings in partnership with IRENA - Additional practical training sessions for technicians for early stages of the supply chain	- 150 participants trained in various aspects of RE development - policy, finance, technical - 2 Research or University institutions develop courses or curriculum in geothermal - 30 trainees for technical geothermal complete training	2014-2015	- Identification of 2 training institutions/ organisations in Member countries to deliver targeted trainings in partnership with IRENA **COMPLETED** - 2 practical training sessions for technicians for early stages of the supply chain **IN PROGRESS, ON SCHEDULE** - Identification of additional training institutions/ organisations and additional training sessions **SUBJECT TO VC, FUNDS NOT IDENTIFIED**
			Solicit expertise from its Member States, training institutions and development partners to provide training programmes responding to needs identified through RRAs, and regional initiatives					
			Develop capacities of key stakeholders to design and implement legal and regulatory frameworks for geothermal deployment	Technical assistance in geothermal law and regulations in Latin America and Caribbean, Asia and Africa				- Technical assistance in geothermal law and regulations **IN PROGRESS, ON SCHEDULE**
			Form a global IRENA Resource Network that supports various renewable energy projects in their countries	(Global IRENA Resource Network that supports various renewable energy projects in their countries)	Enhancement of curriculum for renewable energy in collaboration with expert institutions			- Global IRENA Resource Network **IN PROGRESS, ON SCHEDULE** - Enhancement of curriculum for renewable energy in collaboration with expert institutions **SUBJECT TO VC, FUNDS NOT IDENTIFIED**