IRENA
International Renewable Energy Agency

17 December 2015

INTERNATIONAL RENEWABLE ENERGY AGENCY
Sixth session of the Assembly
Abu Dhabi, 16-17 January 2016

Proposed Work Programme and Budget for 2016-2017

Report of the Director-General

Proposed Work Programme and Budget for 2016-2017

Contents

Introduction

1.   On 4 April 2016, IRENA will mark the fifth year of its formal existence, an occasion which will mark a substantial growth and maturity in its structures and work since the Agency's beginnings. Its membership is nearing universality with 143 Members[1] and over 30 states at various stages of accession, attesting to the strong relevance of its mandate. The need for international cooperation at a time of unprecedented growth in renewable energy is evident, as the world looks for sustainable solutions to meet growing energy and economic needs, while averting the effects of climate change.

2.   Renewable technologies are an essential component of an unfolding energy transition. Renewable energy production is soaring, growing far more quickly than many predicted, and today, mainstream projections for its future envisage a profound impact on the global energy mix. Investment passed USD 270 billion in 2014, more than five times what it was only a decade ago. Renewable technologies have snowballed from niche to a rising global industry with a speed and intensity that has changed the global energy landscape in a few years.

3.   Worldwide, renewable energy power capacity has grown 85% over the past 10 years.   As this global rush brought economies of scale to what had been infant industries, the cost of wind and solar energy fell drastically. As a result, renewables today constitute 30% of all installed power capacity, the largest share of any source. In the last five years, installed solar power increased seven-fold from 23 GW to 180 GW, while installed wind power capacity more than doubled from 158 GW to 362 GW. Some 36 GW of new hydropower capacity was commissioned in 2014, increasing total global capacity by 3.6%[2]. A total of 21 new geothermal power plants came online in 2014 adding about 716 MW of new capacity to electricity grids globally, the most capacity to come online in one year since 1997[3]. These trends, together with rapid innovation in renewable energy and enabling technologies, indicate that the transition to a sustainable energy future is underway.

4.   A key driver for this expansion has been the strong business case of renewable energy technologies. With many economies faced with low growth, socio-economic benefits of renewables have also become a strategic consideration. Many countries see immense opportunities in the accelerated development of a renewable energy sector, with a potential to increase income, improve trade balance, and contribute to industrial development. Job creation has been an important driver, with the sector creating on average more jobs than fossil fuel technologies. Solar PV, for example, creates more than twice the number of jobs per unit of electricity generated than coal or natural gas. IRENA estimates that, in 2014, over 9.2 million people worked in the renewable energy sector globally[4].

5.   These changes are taking place at the time when countries are looking for sustainable pathways to ensure economic prosperity and improved quality of living for all, with transformation of the current energy system as key element. Accounting for some two thirds of greenhouse gas (GHG) emissions, the energy sector has become a primary arena for efforts to stabilise the climate system. IRENA's Roadmap for Renewable Energy, REmap 2030, demonstrates that renewable energy, coupled with energy efficiency, offers a compelling path to decarbonisation of energy which is essential to keep temperature rise below 2 degrees Celsius. It also stressed that a concerted global effort is needed to reach this objective.

---

[1] As at October 2015

[2] IRENA Renewable Energy Statistics (2015)

[3] idem

[4] IRENA Renewable Energy and Jobs - Annual Review 2015

6.   The adoption of the Paris Agreement at COP21 marks a turning point in this respect. It recognizes the need for deep reductions in global emissions and emphasizes the urgency in addressing climate change. With some 190 countries submitting their Nationally Determined Contributions (NDC), the commitment to act is evident, even though a greater ambition in needed to meet the agreed objectives. For that, decarbonizing energy will have to include accelerated deployment of renewables, coupled with the boost to energy efficiency, both in developed and developing countries. In this context, the Agreement specifically acknowledges the need for enhanced deployment of renewable energy to meet the objective of universal access.

7.   Averting the effect of climate change will require engagement of all stakeholders. The COP21 has made the Lima-Paris Action Agenda (LPAA) an integral pillar of its meeting in Paris. LPAA demonstrated immense commitments to a concerted action by all stakeholders, complementing the plans outlined in NDCs. In the course of the LPAA Energy day, as well in other LPAA focus areas, renewable energy has emerged as a key solution to addressing climate change and to advancing sustainable development.

8.   Building on the substantial progress made within the 15-year framework of the Millennium Development Goals, the UN General Assembly at its current session adopted Sustainable Development Goals (SDG) to guide international cooperation for global development until 2030. SGDs include energy as an essential, cross-cutting ingredient (SDG7). The universal nature of SDG7[5] highlights that meeting the ambition to substantially increase the share of renewable energy in the global energy mix is a shared connection among the international community. With the sustained focus on the implementation of the Global Goal on Energy and the commitment to climate action, it is inevitable that the deployment of renewable energy will scale up, making its business case stronger and accelerating the transition to a sustainable energy future.

9.   Since IRENA's establishment in 2011, renewable energy deployment has experienced rapid growth: increased investment, growing deployment, falling electricity prices and decreased carbon emissions. But it also provided focus on the challenges that need overcoming to make the next step-change. The energy transformation that is taking place is not just replacement of one source of energy for another. It is charting a path for the economy of the future, underpinned by a new, sustainable system that transforms the way energy is produced, distributed and used. International cooperation is accelerating the learning curve for this transformation, ensuring that renewable energy is widespread and growing, synonymous with positive change and sustainable prosperity.

Strategic Direction

10.   Moving forward, IRENA will play a critical role in supporting its Members in the energy sector transformation, focusing on its core strengths and comparative advantages, consistent with the direction of the Medium-term Strategy. IRENA will lead the global renewable energy effort as a centre of excellence for renewable energy, a source of authoritative advice to countries and a catalyst for partnerships and concerted action. Within this framework, the rapidly changing environment in which the Agency operates requires prioritisation of programmatic activities in areas where IRENA can make the most impactful contribution.

11.   The Work Programme and Budget for 2016-2017 has been developed in close collaboration with Members. It benefited from the strategic discussion on the future of the Agency undertaken in the course of 2014-2015, and Member contribution to the preparation of the preliminary framework that the Council discussed at its 9th meeting. This process has been buttressed by the external qualitative evaluation of the

---

[5] SDG7: Ensure Access to Affordable, Reliable, Sustainable and Modern Energy for All

IRENA's programmatic work completed in October 2015[6]. The outcome has shown that, to date, IRENA has met and exceeded the expectations of its Members, and that its work has made a difference on a country, regional, and global level. But it has also highlighted the need to carefully select its programmatic priorities in the coming years, as the global focus on renewable energy grows and the Agency's membership increases. Combined, these processes have enabled effective priority setting to ensure IRENA's sustained impact and, drawing on its strengths, demonstrate the unique value of its mandate.

12.	The proposed Work Programme and Budget is underpinned by three strategic priorities. The first is the continuous emphasis on the business case of renewable energy. New investment and financing instruments and mechanisms, including climate finance, are coming on-stream and IRENA must help ensure that significant resources are channeled to renewable energy projects. As private sector interest in renewable energy increases, public sector focus on mitigating investment risks along the renewable energy value chain is of growing importance. IRENA will also continue to identify, quantify and analyse economic spill over and positive externalities associated with renewable energy. IRENA's increasing intellectual capital accumulated through programmatic work and interaction with countries, and growing credibility and authority based on substantive products makes it an authoritative and credible voice that can advance the business case for renewable energy.

13.	The second priority is regional action. Regional cooperation is a key element for bringing about the efficiencies and economies of scale of the deployment of renewable energy technologies. Adopting an integrated approach to trans-boundary issues such as energy trade, regulatory frameworks and policies, regional power infrastructure and other cross-border issues allows countries to benefit from accessing regional renewable resources at affordable prices in well-regulated markets. Importantly, such an approach facilitates a diverse mix of renewable energy sources that overcome technology barriers and increase security of supply. The Agency's focused and concrete mandate, broad membership base, and strong and direct engagement with Members enables IRENA to recognise opportunities for, and catalyse action on regional approach to deployment of renewable energy.

14.	The third area is placing increased focus on strengthening IRENA's effectiveness through strategic partnerships. The increasing deployment of renewable energy means that demand for IRENA's services will be on the rise. To secure a long-term impact of its work, IRENA will seek synergies and formulate strategic partnerships with its Members, development partners and stakeholders in the energy sector to promote greater effectiveness and sustainability of its work, and to facilitate convergence of effort. In this context, IRENA will leverage its role as the Renewable Energy Hub within the SE4ALL network to encourage inclusive, participatory and sustained action. To amplify impact, IRENA will continue to contribute to global and regional initiatives, such as the Clean Energy Ministerial (CEM), G7 and G20 processes, The World Future Energy Summit, the Africa Renewable Energy Initiative (AREI), and others.

15.	The programmatic work for the 2016/2017 biennium spans a range of services from knowledge and advisory products to its convening role with the aim to enable action within six established thematic areas on;

- Planning for the global energy transition;
- Enabling investment and growth;
- Renewable energy access for sustainable livelihoods;
- Regional action agenda;
- Islands: lighthouses for renewable energy deployment; and
- Gateway to knowledge on renewable energy.

---

[6] Results of the external evaluation are provided in the context of the Annual Report of the Director-General on the Implementation of the Work Programme and Budget for 2014-2015

16.   The current draft attempts to sharpen and rebalance programmatic components in each of the thematic areas to better address the priorities identified through the consultative process with Members, the recommendations stemming from the external evaluation, as well as the experience gained in the implementation of the work programme since 2011. The programmatic priorities for the next biennium take account of evolving renewable energy trends and drivers and reflect a balance of diverse needs and requirements among Members. The underlying approach is to prioritise and target key issues of common interest while allowing for growth, where needed and appropriate.

17.   The achievement of IRENA's strategic objectives relies on its effectiveness, internal capacity, and institutional efficiency. Focused communication and outreach and systematic engagements with Members is essential to ensuring that IRENA's activities are relevant, effective and realising lasting change. Building on the progress made in the current biennium, IRENA will integrate these elements in all aspects of the programme.

18.   To effectively deliver its programme, IRENA needs to remain dynamic, agile, innovative, and results focused. As the Agency matures, workforce planning becomes more important as natural attrition is likely to occur due to the inherent limitations to career advancement within a relatively small organisation. A comprehensive workforce strategy will be institutionalised in the next cycle. IRENA will pursue efficiency measures through business process improvements, staffing optimisation and implementation of technology solutions, including ERP, to benefit from information technology efficiencies. Some limited additional resources are however required to strengthen core management and administrative functions to enable effective support to the programme implementation. In this context, the programme management and coordination function will be refined to include more focus on monitoring and evaluation of impact.

19.   Over the last year in the course of discussions on options for future financing of the Agency, it was emphasised that Members' ambition cannot be met through core resources only. As a result, the Assembly at its fifth session requested that this work programme provide a diversified approach to the resource base. The Proposed Work Programme and Budget for 2016-2017 incorporates diverse funding streams for all programmatic areas as an integral part of a coherent programmatic framework. It also highlights a number of areas where greater resource efficiency could be achieved through strategic partnerships with Members and other stakeholders.

20.   The core budget, amounting to USD 46 million for the biennium, takes into account assessed contributions from new Members, inflation estimated at 2.5 percent, and full staffing costs for the existing posts that were partially costed in the last biennium to account for delayed recruitment. Core non-assessed contributions comprise USD 10 million from Germany for the IRENA's Innovation and Technology Centre and USD 8.2 million from the United Arab Emirates, comprising USD 5 million for IRENA's operations and USD 3.2 million for governing body meetings[7]. The proposed biennial budget also outlines the resource requirements of USD 26.6 million to be mobilised as part of the Agency's resource diversification strategy. An indication of the source of funding provides a transparent overview of the areas where additional resources would be necessary, and where the Agency's work would be expanded or augmented should additional resources, financial or otherwise, become available.

---

[7] UAE continues to provide staff housing allowance, averaging USD 1.1 million per annum, and contribution to IT infrastructure amounting to USD 460,000 per annum.

Thematic Programme Areas

I. Planning for the renewable energy transition

Objective: Countries successfully transform their energy systems to meet national targets, advance strategies to decrease global emissions and improve energy security

Introduction

21.   The ongoing transformation of the energy system has quickly risen to the forefront of the global agenda. From the focus on climate action and introduction of the energy goal for sustainable development within the UN framework, to conclusions in G7 and G20 settings, maximising the deployment of renewable energy options is recognised as key to addressing the imperative of climate change with a growing focus placed on energy security and industrial growth. Viable renewable energy options for the future energy mix are now plentiful: from mature geothermal and hydropower, through increasingly competitive solar and on-shore wind, to promising advancements in marine, next generation biofuels and off-shore wind technologies. Several countries are already managing grid systems with more than 20% of power consumption produced by variable renewables, with upward trends emerging worldwide. Increasingly, renewable energy ambition is expanding to end-use sectors where the share is still in the nascent stages.

22.   As a result of these trends, the structure of the industry and the nature and role of power producers and distributors are undergoing change at multiple levels. Existing business models are at the centre of policy discussion across many countries and new players are entering the market. Attracting investments in grid infrastructure is increasingly becoming a priority, as are the strategies and enabling technologies to flexibly manage the power supply and demand. Rapid developments and innovation, such as smart grid and storage solutions, are providing new avenues to innovate in designing the energy system of the future.

23.   While there is widespread agreement that the share of renewables for power generation will continue to rise, the future electricity system design is still not evident. Furthermore, sectors such as transport, heating and buildings are increasingly including renewable energy options, with the necessary underpinning of increased efficiency. In the 2016-2017 biennium, IRENA's programmatic focus on transformation of the energy sector will target selected issues to help address priority areas for the next step-change in the deployment of renewable energy. This will include power system design, technology solutions for power and end-use sectors, and resulting policy and market implications. In this programmatic focus, IRENA will expand its collaboration efforts to include not only country experts and policy makers, but also energy planners, utilities, regulators and others as the transformation of the energy sector will require the concerted engagement of all.

24.   An important aspect of the transformation of the energy system will be the provision of, and access to, timely, accurate and accessible data, analysis and advice on the latest developments. IRENA will generate and disseminate this information, and engage with partners who can contribute to, and build upon IRENA's work to accelerate the transition to a greater share of renewable energy and bring targeted advice and technology and policy options to decision makers.

Programmatic components

25.   **REthinking Energy.** The global energy transition will require profound changes in the way that energy is produced, distributed and used, and require a reorientation of the policies and institutions that manage activities in the sector. IRENA's publication *REthinking Energy* will continue to provide policy-relevant and forward looking analysis to disseminate accurate and timely information on the transformation of the energy sector and to further the business case of renewable energy. It will focus on themes and topics that are of high relevance, prioritising those where IRENA can add most value and fill the knowledge gap. To ensure the most accurate information and wide application, *REthinking Energy* will be developed in consultation with a broad range of stakeholders, enriched by the Agency's global reach and wealth of knowledge and experience IRENA Members possess.

> **Activities**: Assessing the role of renewables in the energy transformation in general and within the area of focus of each edition, IRENA will collect and analyse data and information on trends and developments, supported through an inclusive consultative process with key stakeholders.
>
> **Impact:** Informed global debate on the role of renewables in the energy sector transformation.

26.   **Power system design for renewable energy integration.** Integration of high shares of renewables into the grid is widely considered a key challenge for accelerated deployment. To better understand key characteristics such as power supply mix, grid features, demand structure, market design, framework conditions and priorities of key stakeholders, IRENA will map measures for the integration of renewable power and track progress on increasing the system flexibility, based on the quantitative and qualitative indicators identified in the grids and storage roadmaps. This will facilitate the dialogue between policy makers who set targets and the utilities responsible for power system management. IRENA will continue to support countries with methodologies for grid and storage analysis and assessment. Upon request, support will be provided to countries in the development of their national renewable energy roadmaps and transition plans.

> **Activities:** IRENA will develop a database of grid integration and flexibility measures. IRENA will also analyse topics such as electric vehicle programmes, the role of interconnectors, and national electricity storage systems as flexibility measures. IRENA will continue to deploy established IRENA methodologies for assessment of renewable energy integration potentials and impacts in existing power grids and identify technical solutions to allow higher shares of variable renewables. It will support countries in applying methodologies for smart grid cost-benefit analysis, grid investment assessment, design, and evaluation methods for smart grid demonstration projects and systemic value assessment of electricity storage systems for renewables.
>
> **Impact:** Increased knowledge on renewable energy grid integration and strengthened dialogue between policy makers and the utilities.

27.   Long-term energy planning is an essential element of designing a power system with a large share of renewables. The full assessment of the economic potential of renewable energy requires that technologies are viewed as an integral element in analysing their relationship with non-renewable technologies, transmission and distribution, employment effects, carbon emissions and international trade. IRENA will help enhance the quality of power sector planning with a greater share of renewables in the existing planning tools, and by highlighting integration challenges and opportunities. IRENA will contribute to international planning model-based studies undertaken by others, such as the International Energy Agency (IEA), Energy Modeling Forum (EMF), International Energy Workshop (IEW) and Intergovernmental Panel on Climate Change (IPCC), as well as regional and national planning entities, and help translate the insights into policy-relevant information for Members. IRENA will further disseminate good planning practices through workshops and invite interested countries to apply energy planning practices that facilitate integration of renewables in the long-term energy mix.

> **Activities:** IRENA will support long-term energy planning through strengthening national and regional capacities to develop and update energy master plans. IRENA will analyse the effect of dispatch models on long-term planning for power systems in selected regions. IRENA will further explore benefits of industry-standard simulation tools for energy planning to establish a link between optimal generation mixes resulting from long-term energy plans, and operational constraints identified by stationary and dynamic grid studies.
>
> **Impact:** Power systems and national energy master plans that include large shares of renewables.

28.   **Transforming Energy.** REmap 2030, A Renewable Energy Roadmap, provides a pathway to doubling the share of renewable energy in the world's energy mix between 2010 and 2030. REmap 2030 demonstrates that the global ambition on renewable energy enshrined in the SDG7 is technically possible, economically viable, and socially beneficial, while decarbonising the energy system. REmap 2030 complements traditional scenarios deployed by other organisations by identifying the costs and benefits of actionable options that countries can consider. In the course of 2016-2017, REmap 2030 will build on the existing work to monitor renewable energy sector progress and the global outlook until 2030. It will assess selected technology options for accelerated deployment, and act as a vehicle for identification and exchange of best practice. Comprehensive country and regional reports, sector-specific roadmaps and targeted socio-economic analysis will further inform decision-makers on the progress and priorities in accelerating renewables technology deployment. In addition to continuous collaboration with national experts, engagement with multilateral bodies and the financing community as well as the private sector will be further strengthened, including through the SE4All energy efficiency hub (C2E2), G20, UNFCCC's technical entities, IEA Implementing Agreements, World Bank, regional banks, as well as the private sector.

29.   One of the key REmap 2030 findings was that decarbonising energy will have to be accelerated in the end-use sector. To deepen the analysis of technology and policy options in end-use sectors, multistakeholder action teams will be established on renewable energy and energy efficiency, and renewable energy and transport. REmap 2030 also highlighted that biomass can play a decisive role in the end-use sectors. However, despite representing 60% of global renewable energy potential, bioenergy deployment growth lags behind other renewables. The diversity of feedstock types and bioenergy applications, the lack of accurate bioenergy statistics, competing land use and land ownership, biomass logistics, agricultural productivity growth and product demand, biodiversity, carbon balance, local air pollution and trade barriers are among the issues that make bioenergy deployment more complex than other

forms of renewables. Creating more clarity around these issues is key to advancing the sustainable use of bioenergy. IRENA will analyse sustainable bioenergy deployment including sustainable feedstock supply potentials, and the cost and price outlook, and develop support tools for bioenergy deployment. In this effort, IRENA will cooperate with national bioenergy centres, relevant international organisations and multilateral initiatives such as GBEP and IEA Bioenergy Implementing Agreement.

Activities: IRENA will refine REmap 2030 methodology and develop additional country and regional reports, sector-specific roadmaps and targeted analysis. A third edition of REmap 2030 will feature global aggregate country and regional findings with special focus on end-use and socioeconomic impacts. IRENA will refine global biomass feedstock supply curve data for 2030 to include growing food demand and agricultural productivity, cost of biomass collection, logistics and land. IRENA will develop and deploy a support tool for technology pathway identification for agro-processing residues and a bioenergy module for Project Navigator, both intended to enhance the selection of biomass applications.

Impact: REmap messages on the options and priorities for accelerated deployment of renewables influence national, regional and global decision makers.

---

30. **Technology status and outlook.** Innovation is essential to transition to a higher share of renewable energy technologies. Designing and implementing appropriate mechanisms to boost innovation can be challenging and international cooperation may advance development and encourage innovative solutions. In 2016-2017, focus will be placed on the analysis of the latest technology innovation trends and their implications for mid- and long-term outlook for renewables. IRENA will explore technology and business model innovation that are helping bring new technologies to the commercial stage. This will be complemented by continuing work on technology status briefs and forward looking in-depth technology outlooks for power and end-use sectors.

31. In the course of 2016-2017, IRENA will place a special focus on hydropower. Hydropower is the largest renewable electricity source today, dominating the electricity mix in several countries and currently supplying more than 15% of world electricity employing 1.5 million people globally[8]. Although most developed regions already exploit a significant share of the economically viable hydropower potential, there remains a vast untapped potential in some emerging and developing countries. The economic hydropower potential is estimated to be double of today's production level. IRENA will undertake a comprehensive analysis of the status and trends of hydropower to feature an overview of global hydropower capacity and production; the physical, technical, and economic potential; and the requirements for establishing an appropriate enabling framework to further develop sustainable hydropower and increase or diversify energy supply. Special attention will be given to potential social and economic benefits deriving from hydropower, as well as environmental sustainability considerations.

32. An important part of the work on technology status and outlook will be dissemination of information. To facilitate outreach, an IRENA Renewable Energy Week will be piloted where country representatives and technology providers can meet to discuss the latest innovation and resulting implications for deployment of renewables in the medium and long term.

---

[8] IRENA Annual Jobs Review 2015

Activities: IRENA will continue to develop technology status briefs and in-depth technology outlooks. This will include a report on *The Innovation Landscape for Renewable Energy Technologies* and a dedicated report on hydropower. To strengthen outreach and dissemination of technology information, IRENA will pilot the IRENA Renewable Energy Week.

Impact: Increased, reliable and up to date knowledge on technology solutions to enable informed decision making.

33.   **Global Geothermal Alliance.** The Global Geothermal Alliance (GGA), launched at COP21 by over 30 partners from geothermal resource-rich countries, international and regional organisations, financial institutions and the geothermal industry, is a global platform to increase the share of geothermal energy in the global energy mix through both geothermal power generation and direct use of geothermal heat. IRENA will support its establishment, as well as consolidation and expansion of IRENA's geothermal work under the GGA umbrella. IRENA will seek to replicate the Andes geothermal capacity building programme in regions such as South Asia, East Africa and in island states. Particular focus will be placed on the operationalisation of the Global Geothermal Alliance as a platform for dialogue, cooperation and coordination, to support regions and countries in the creation of enabling regulatory and institutional environments for investment in, and deployment of, geothermal technologies.

Activities: IRENA will operationalise the Global Geothermal Alliance. IRENA will also provide capacity building support to key stakeholders along the geothermal energy value chain and support regions and countries in the creation of enabling regulatory and institutional conditions for timely and efficient private investments, efficient operation of geothermal resources and associated network infrastructure, and to facilitate availability of, and access to, innovative financing and risk mitigation tools. Through coordinated outreach, IRENA will help raise awareness about the importance of geothermal energy in efforts to ensure a sustainable global energy future.

Impact: Accelerated deployment of geothermal energy worldwide.

34.   **REpowering cities.** REthinking Energy 2014 highlighted that, in 2030, some 5 billion people will live in urban settings, with resulting exponential growth in energy needs. Recognising this trend, a large number of cities have programmes to reduce their carbon footprint, but focus has so far been mainly on energy efficiency and less on the role of renewable energy technologies. The climate action in the preparation for COP21 highlighted the importance of engagement of stakeholders at sub-national and city level as well as the need for continuous engagement of these stakeholders. In October 2016, the city of Quito will host Habitat III, an important milestone in ensuring that the climate action momentum is captured in the outcome of this Conference. IRENA will support the preparatory process for Habitat III, and partner with public and private sector institutions and networks to promote opportunities for renewable energy deployment in sub regional and urban settings.

Activities: To contribute to the Habitat Conference, IRENA will highlight best practice and possible strategies for deployment of renewables for sustainable urban development. IRENA will work with the existing networks and

institutions to stimulate action at the sub regional and city level, including by building on the progress made in the context of the Lima-Paris Action Agenda (LPAA) and the priorities identified by Habitat III.

Impact: National, sub regional and local stakeholders empowered with concrete advice to design and implement transformational change in the way energy is produced, distributed and consumed in sub-national and city settings.

Planning for the renewable energy transition					
Objective	**Impact**	**Component**	**KPFC**	**IITC**	**CSP**
Countries successfully transform their energy systems to meet national targets and strategies to decrease global emissions and improve energy security	Informed global debate on the role of renewables in the energy sector transformation	REthinking Energy	✓	✓	✓
	Increased knowledge on renewable energy grid integration and strengthened dialogue between policy makers and the utilities. Power systems and national energy master plans that include large shares of renewables.	Power system design for renewable energy integration		✓	
	REmap messages on the options and priorities for accelerated deployment of renewables influence national, regional and global decision makers.	Transforming Energy	✓	✓	
	Increased, reliable and up to date knowledge on technology solutions to enable informed decision making.	Technology status and outlook		✓	
	Accelerated deployment of geothermal energy worldwide.	Global Geothermal Alliance	✓	✓	✓
	National, sub regional and local stakeholders empowered with concrete advice to design and implement transformational change in the way energy is produced, distributed and consumed in sub-national and city settings.	REpowering cities	✓	✓	✓

Core assessed and core non-assessed Resource Requirements 2016-2017 (in USD thousands)	**6,052**	Proportion of IRENA budget	**9%**
Other resource requirements 2016-2017 (in USD thousands)	**6,326**	Proportion of other resources	**24%**

Breakdown of *core assessed* and *core non-assessed* costs (in USD thousands)	
Staff costs	**1,891**
Non-staff costs	**4,160**
Non-staff costs by component	
- REthinking Energy	778
- Power system design for renewable energy integration	1,085
- Transforming Energy	656
- Technology status and outlook	1,286
- Global Geothermal Alliance	201
- REpowering cities	155

Breakdown of *other resource* requirements (in USD thousands)	
Non-staff costs	**6,330**
Non-staff costs by component	
- REthinking Energy	74
- Power system design for renewable energy integration	1,980
- Transforming Energy	2,167
- Technology status and outlook	430
- Global Geothermal Alliance	678
- REpowering cities	1,000

II. Enabling investment and growth

Objective: Improving policy frameworks and creating enabling market conditions for accelerated deployment of renewable energy

Introduction

35.   There is a compelling and technically feasible business case to transform the energy system to make it more accessible, affordable and reliable, and to reduce its environmental impact. But energy system change is complex, as the implications are wide ranging and investing in energy infrastructure is capital intensive. Decreasing costs and increased recognition of the benefits provided by renewable energy are the key drivers of the on-going transformation of the power sector. IRENA's costing work to date has demonstrated that renewable energy technologies are an economically competitive solution in a growing number of settings. With many countries still faced with low growth, the economic rationale is further strengthened by the additional benefits renewable energy brings for socio-economic development as measured by IRENA's body of work on jobs, income, industrial development, and access.

36.   Accelerating the deployment of renewable energy requires an enabling environment that takes into consideration the dynamic changes in the market and the context-specific conditions that influence investment decisions. Policies continue to play a central role in driving deployment and they require long-term stability and timely and adequate adaptation. IRENA provides up-to-date analysis of enabling policy frameworks, spanning the renewable energy deployment cycle, best practice and trends in policy design and evaluation of support mechanisms and their adaptation. The outcomes give critical insights and recommendations for relevant stakeholders on emerging themes at the intersection of public policy and market development that are intrinsic to the energy landscape of a specific region, including market design and ownership structures.

37.   The specific characteristics and dynamics of regional markets play a decisive role in scaling up renewable energy deployment. The global and regional policy assessments will consider not only electricity where most other regional studies on renewable energy tend to focus, but also transport and heating, where there is significant, under-reported potential for renewable energy and where improved policies could yield substantial benefits.

38.   The appropriate policy and regulatory environment will help reduce renewable energy investment barriers and increase investors' confidence in the sector. The real or perceived risk, the relatively short track record of many renewable energy technologies, the relatively small size of many renewable energy projects and the limited experience of project developers all act as barriers to investment. Further analysis is necessary to understand the most effective use of financing instruments required to scale up investment, including those that de-risk investments and improve access to affordable capital for projects. In this context, IRENA's Project Navigator and the Sustainable Energy Marketplace will help facilitate access and scale-up of renewable energy investment. The Navigator provides project developers with knowledge, tools, case studies and best practices and the Marketplace offers a virtual market that brings together investors and project developers on a common platform and supports projects in moving from initiative to full investment maturity and eventually to financial closure.

Programmatic components

39.   **Renewable energy costs.** Up-to-date, accurate, reliable data on the cost and performance of renewable energy technologies is a critical element for the uptake of renewable energy technologies. IRENA's renewable technology cost analysis work has added significant transparency of cost trends and provided powerful communications messages about the continuing improvement in the competiveness of renewables. Costing work in 2016-2017 will leverage existing cost data and analysis to ensure its direct impact on the ongoing debate about the competiveness of renewables. Focus will shift to data analysis, cost competitiveness and solution analysis. The breakdown of regional and country level cost structures for renewable energy projects will provide insights regarding cost reduction potentials. The Costing Alliance will expand the database and disseminate key findings.

40.   IRENA will work with national entities to develop a systematic renewable cost data collection framework that builds on IRENA's experience with the IRENA Renewable Costing Alliance and tailors an approach to the specific country needs.

> **Activities:** IRENA will develop periodical reports and concise analytical pieces on renewable energy costs including power generation updates for 2016 and 2017, renewable energy finance costs, wind learning curve decomposition, and cost of different battery storage technologies.
>
> **Impact:** Informed decision making, and tools and data to strengthen the business case for renewable energy.

41.   **Renewable energy benefits**. To better understand the potential benefits of transitioning to a sustainable energy future and to contribute to policy design and implementation that can maximise these benefits, IRENA will analyse the current and forecast socio-economic impacts of renewable energy deployment through the collection of country and project level data and by undertaking a quantitative assessment of broader socio-economic benefits including income and welfare. The gender dimension of renewable energy employment will also be further explored with dedicated analysis in the annual jobs review. IRENA will continue to explore the opportunities to maximise benefits by studying activities needed for the deployment of selected technologies both off-grid and on-grid, and by providing policy recommendations on when these can be localised for optimal value creation. Quantitative analysis of the broader macro-economic impacts of renewable energy deployment will assess the potential of renewables from a holistic perspective.

> **Activities:** IRENA will deepen and expand analysis of current and forecast socio-economic impacts of renewable energy deployment to include more countries and technologies and analysis of the value chain, and study activities needed for the deployment of selected technologies. Quantitative analysis will be undertaken on the broader macro-economic impacts of renewable energy deployment.
>
> **Impact:** Socio-economic information and messages empower policy makers and increase public awareness.

42.   Policy options to accelerate deployment. The falling costs of renewable energy technologies have a profound impact on policies which need to adapt to rapidly-changing realities. In 2016-2017, IRENA will further analyse renewable energy policy developments at the global and regional level to guide policy making towards accelerating the deployment and maximising associated socio-economic benefits. IRENA will undertake in-depth analyses and provide recommendations on the design and implementation of renewable energy deployment policies to facilitate a learning process and the integration of large-scale renewable generation in support of the ongoing transformation of the power sector. To provide access to the most up-to-date information on policy developments, IRENA will maintain the IEA/IRENA Policies and Measures Database. Information received from Members will be standardised and, based on database input, a set of country policy briefs and synthesis reports will be developed for one region, highlighting the status and trends of renewable energy policy in electricity, heating/cooling and transport.

43.   Building on IRENA's growing body of work in policy, finance, costs, potentials, and technology, as well as previous market analyses, IRENA will conduct a regional market analysis focusing on Southeast Asia encompassing the broader economic and energy sector trends as well as renewable energy investment and policy developments in the region. Energy demand in Southeast Asia has expanded two-and-a-half times since 1990 and is expected to increase by more than 80% by 2035. Renewable energy offers tremendous potential for the region to meet this increasing demand, and expand access to energy, while enhancing energy security and mitigating negative environmental impacts. An in-depth analysis of important themes intrinsic to the region's energy landscape across electricity, heating/cooling and transport sectors will be undertaken featuring best practices on policy, regulatory and investment frameworks.

> **Activities:** IRENA will conduct in-depth analyses on policy assessment on power sector transformation and end-use, and maintain the IEA/IRENA Policies and Measures Database.   IRENA will undertake regional market analysis focused on Southeast Asia encompassing the broader economic and energy sector trends and renewable energy investment and policy developments in the region. Activities will include dissemination of best practices across countries, within the region and to other regions with similar conditions.
>
> **Impact:** Empowered decision making on policy options in dynamic energy markets.

44.   **Financing renewables.** Reliable investment statistics are central to good analysis, but most investment information today is scattered and not freely available. IRENA will work to provide transparent, authoritative and relevant information on investment flows, with a focus on public finance institutions, to help countries formulate and implement renewable energy investment policies, incentives and financing strategies to meet the growing interest in renewable energy markets. With increased transparency of investment statistics and trends, policy makers will be able to identify available options, examine the strengths and weaknesses of different approaches and implement the most appropriate mechanisms for different technologies.

45.   In the biennium 2014-2015, IRENA looked at how financial instruments and structures could be used to address key risks and barriers to renewable energy investments. A number of innovative financial instruments and structures have been identified with the potential to significantly scale up engagement of institutional investors and reduce the cost of capital. IRENA will evaluate the experience gained from these instruments and structures, including risk mitigation instruments, assess the wider geographical and sectoral application potential, and make recommendations on their use and further development. In collaboration with financial institutions, targeted interventions to attract institutional investors into emerging markets will

be identified. With the emergence of climate finance activities, an increasing amount of public finance is becoming available for renewable energy investments. IRENA will expand collaboration with the climate finance institutions such as the Green Climate Fund (GCF) and other International Financial Institutions, to promote and, where possible, facilitate an effective use of public funds to accelerate the scale-up of renewable energy investments.

> **Activities:** IRENA will create a publicly available database of transparent, authoritative and relevant information on investment flows, investment incentives, public investment and financial support for renewables, by country, type of support and renewable technology. IRENA will analyse financial instruments and structures including risk mitigation instruments, aimed at providing key information for mobilising private investments. IRENA will collaborate with GCF to assist with the programmatic work of the GCF secretariat related to renewables, support Members with GCF readiness activities and in accessing GCF funds.
>
> **Impact:** Scale up of renewable energy investment and improved understanding of, and access to financial structures and instruments.

46.   **Project facilitation.**   Investment projects especially in developing countries face multiple challenges from the institutional, policy and regulatory level to the market and project level. The latter include lack of transparency of the market, lack of financing and experience in project development, and lack of relevant information on regulations, markets and resource availability. This has led to a lack of bankable projects, and difficulties for investors to identify these. In order to alleviate the market and project level barriers and to scale up financing for renewable energy projects in developing countries, IRENA will design and implement methodologies to facilitate project initiation, development and financing. To mobilise private and public financing for projects and enhance project development activities, IRENA piloted a facilitation platform in 2015 for the Africa Clean Energy Corridor. This virtual market place for renewable energy projects will be further developed and expanded to include additional regions, sectors and funding sources such as climate finance. Project development will also be supported by IRENA's Project Navigator which provides detailed technology specific guidelines for the development of sound proposals. In 2016-2017, the Project Navigator features will be disseminated through workshops, pilot studies and webinars to promote the tool amongst industry and sector users and to broaden the scope of users from project developers to governmental institutions.

47.   IRENA will continue to cooperate with the Abu Dhabi Fund for Development (ADFD) to facilitate project selection and financing in developing countries. The joint IRENA/ADFD Project Facility offers long term soft loans worth USD 350 million over seven annual funding cycles to promising renewable energy projects in developing countries. In the first two funding cycles, over USD 2 billion in loans were requested by applicants and USD 98 million of loans were allocated to 11 projects. In 2016-2017, this effort will continue and emphasis will be placed on capturing project impacts and results. IRENA will continue to engage with other funds for co-funding of the IRENA/ADFD facility projects and on the possibilities of setting up new financing arrangements or a similar facility.

> **Activities:** IRENA will further develop the Sustainable Energy Marketplace and expand its geographic and sectoral scope and its use for the project facilitation. It will expand Project Navigator technology guidelines to include technical

concepts, broaden the scope of users and develop technical concepts for rooftop PV, geothermal, diesel generation hybrids substitutes, and grids. IRENA will facilitate two additional cycles of the IRENA/ADFD Project Facility, support project development, and engage with other financial institutions to develop the potential for tailored funding facilities or partnership arrangements.

Impact: Enhanced project development activities and increased public and private financing for renewable energy projects in developing countries.

Enabling investment and growth					
Objective	**Impact**	**Component**	**KPFC**	**IITC**	**CSP**
Improving policy frameworks and enabling market conditions for accelerated deployment of renewable energy	Informed decision making, and tools and data to strengthen the business case for renewable energy.	Renewable energy costs		✓	
	Socio-economic information and messages empower policy makers and increased public awareness.	Renewable energy benefits	✓		
	Empowered decision making on policy options in dynamic energy markets.	Policy options to accelerate deployment	✓		✓
	Scale up of renewable energy investment and improved understanding of, and access to financial structures and instruments.	Financing renewables	✓		
	Enhanced project development activities and increased public and private financing for renewable energy projects in developing countries.	Project facilitation	✓	✓	✓

Core assessed and core non-assessed resource requirements 2016-2017 (in USD thousands)	**9,291**	Proportion of IRENA budget	**14%**
Other resource requirements 2016-2017 (in USD thousands)	**3,471**	Proportion of other resources	**13%**

Breakdown of *core assessed* and *core non-assessed* costs (in USD thousands)	
Staff costs	**4,255**
Non-staff costs	**5,035**
Non-staff costs by component	
- Renewable energy costs	530
- Renewable energy benefits	927
- Policy options to accelerate deployment	1,238
- Financing renewables	608
- Project facilitation	1,732

Breakdown of *other resource* requirements (in USD thousands)	
Non-staff costs	**3,471**
Non-staff costs by component	
- Renewable energy costs	160
- Renewable energy benefits	419
- Policy options to accelerate deployment	394
- Financing renewables	886
- Project facilitation	1,612

III.   Renewable energy access for sustainable livelihoods

Objective: Improved livelihoods through access to renewable energy

Introduction

48.   Access to modern energy services is a key enabler of socio-economic development. An estimated 1.1 billion people continue to live without electricity access and 2.4 billion rely on traditional cooking fuels. With the aim to stimulate development, many developing countries are faced with the pressing challenge of expanding access to affordable, reliable and modern energy services. In recognition of the imperative to accelerate this effort, the SDG7 places universal access at the heart of the global energy agenda. This was reemphasised in the Paris Agreement which highlighted renewable energy as key solution to universal access to sustainable energy. Decentralised renewable energy solutions, such as stand-alone systems and mini-grids, provide a cost-competitive, reliable option that can be deployed rapidly and customised to meet energy needs in rural and remote areas. In recent years, many new solutions and business models have emerged, but this information is not available in a systematic manner, and there remains a lack of understanding and exchange of best practice. A substantial scale-up of the adoption of off-grid systems will require a context-specific environment that is built on enabling policy and regulations, customised access to financing, entrepreneurship, innovative business models and adaptable technology solutions. In developing such an environment, engagement between largely fragmented stakeholders in the off-grid sector needs to be facilitated.

49.   IRENA, through its programmatic activities, will convene stakeholders from different segments of the off-grid sector to identify context-specific deployment barriers and utilise cross-regional experience to formulate potential solutions. Dissemination of technology information, innovative business models, best practices and lessons learnt plays a central role in improving access to reliable data and information. On the other hand, concrete examples of applied decentralised solutions empower stakeholders to innovate and customise approaches to their own settings.   Together, IRENA's work on decentralised solutions, dissemination of information and focus on application will help guide stakeholders towards accelerating the expansion of modern energy services and maximising associated socio-economic benefits.

Programmatic components

50.   **Decentralised solutions for access.** To increase dialogue between different stakeholders in the off-grid renewable energy sector, IRENA has successfully held two International Off-grid Renewable Energy Conferences (IOREC), in Ghana and the Philippines. While the Conference takes place every two years, IRENA will leverage the IOREC network, including the Alliance for Rural Electrification and other partners, to enable continuous dialogue on deployment barriers and solutions, facilitate cross-regional exchange of best practices and raise awareness on emerging business models to stimulate financing. IRENA will analyse business models for small-scale financing, such as micro-finance, credit lines and crowd funding, and develop recommendations on suitable options, including supportive policy frameworks, financing options, and capacity building needs. Building on the policy work conducted to support private sector involvement in the mini-grid sector, IRENA will conduct in-depth policy analysis on specific aspects that have been identified as being crucial for the sustainability of mini-grid projects.

51.   Countries are increasingly deliberating and introducing new policies to enable market-led deployment of off-grid renewables; however, at present, no single platform tracks these policies.

Leveraging experience gained from the IRENA/IEA Policy and Measures Database, IRENA will initiate the development of a database to monitor the policy landscape for the off-grid renewable energy sector. The database will address the increasing demand for accurate and accessible information on off-grid renewable energy policies and regulations, while also linking the relevance of specific policies to different business models. IRENA will also analyse technology solutions to provide a good understanding of the components needed to operate various types of mini-grids, their availability, integration requirements and cost.

Activities: IRENA will use the IOREC platform to disseminate information and enable continuous dialogue. The third IOREC will take place in 2016. IRENA will conduct in-depth policy analysis on specific aspects such as tariff setting and national grid connectivity. IRENA will also develop a database of policies, and analyse off-grid renewable energy deployment for end-use applications. IRENA will highlight mini-grid technology solutions in support of assessments to identify and plan local distributed electricity systems and supplement top-down energy planning models

Impact: Increased deployment of stand-alone and mini-grid renewable energy solutions.

52.   **Applied decentralised solutions.** Local entrepreneurs play a major role in deployment of decentralised solutions in rural and remote settings, but the institutional and human capacity is often lacking to fully benefit from the varied opportunities renewable energy presents. Building on the Members' experience and the work to date, IRENA will focus on strengthening capacity of energy entrepreneurs and rural energy providers with the view to amplifying the impact they are making in expanding access to energy and opening up new economic opportunities. IRENA will work with incubation centres and development partners on capacity building programmes in Africa and Asia to help small and medium-sized enterprises provide decentralised energy solutions and promote the use of innovative decentralised solutions for essential public services.

Activities: Based on the analysis of options for policy frameworks, business models and technology solutions in promoting renewables-based decentralised systems, IRENA will develop customised approaches for specific sub-regions and countries to accelerate uptake of renewables-based electrification solutions. IRENA will further support capacity development to promote the PV market in the ECOWAS region with particular focus on renewables-based mini grids and implement the ECOWAS Renewable Energy Entrepreneurship Support Facility to strengthen entrepreneurs' capacity in the region. Options for their replication in other regions will also be considered. Furthermore, IRENA will assess the capacities needed for specific technologies and off-grid applications to set up and operate renewables-based decentralised systems, identify gaps in existing capacities, and collaborate with partners to design and implement capacity building programmes to fill the gaps.

Impact: Accelerated deployment of renewables-based off-grid and mini-grid systems to improve access to energy in an affordable, reliable and sustainable manner.

A/6/L.4

Renewable energy access for sustainable livelihoods					
Objective	**Impact**	**Component**	**KPFC**	**IITC**	**CSP**
Improved livelihoods through access to renewable energy	Increased deployment of stand-alone and mini-grid renewable energy solutions	Decentralised solutions for access	✓	✓	✓
	Accelerated deployment of renewables-based off-grid and mini-grid systems to improve access to energy in an affordable, reliable and sustainable manner.	Applied decentralised solutions	✓	✓	✓

Core assessed and core non-assessed resource requirements 2016-2017 (in USD thousands)	**2,364**	Proportion of IRENA budget	**4%**
Other resource requirements 2016-2017 (in USD thousands)	**2,023**	Proportion of other resources	**8%**

Breakdown of *core assessed* and *core non-assessed* costs (in USD thousands)	
Staff costs	**1,074**
Non-staff costs	**1,290**
Non-staff costs by component	
- Decentralised solutions for access	746,897
- Applied decentralised solutions	543,155

Breakdown of *other resource* requirements (in USD thousands)	
Non-staff costs	**2,023**
Non-staff costs by component	
- Decentralised solutions for access	256
- Applied decentralised solutions	1,767

IV. Regional action agenda

Objective: Regional integration with increased shares of renewables to meet energy needs.

Introduction

53.   Global demand for electricity is expected to double by 2040 with the bulk of the growth in developing and emerging economies. Energy security for many countries depends on designing a regional energy strategy to bolster national action. Regional cooperation is also a key element for bringing about the efficiencies and economies of scale of the deployment of renewable energy technologies. Such an approach is particularly effective in large-scale deployment of shared renewable resources for power generation. Many countries may find cross-border transmission lines an attractive option, in order to benefit from economies of scale and provide renewable power at a lower cost than smaller, national schemes can.. Adopting an integrated approach to trans-boundary issues such as trade, regulatory frameworks and policies, regional power infrastructure and other cross-border issues would allow the countries to benefit from accessing regional renewable resources at affordable prices.

54.   Creating an overall enabling environment for renewable energy deployment requires finding the right mix of policies and incentives, as well as multi-stakeholder collaboration at country and regional levels. While this approach requires the political will and firm commitment of all stakeholders, the rewards of the approach can be substantial. Cost-effective renewable energy technologies can unlock development opportunities, spur industrial growth, stimulate entrepreneurship, and facilitate transformation to a more secure and sustainable power sector. IRENA, through a number of cooperation instruments, will continue to work with countries and regions to support their efforts to harvest the full potential of renewable energy technologies and the socio-economic benefits they bring.

55.   To facilitate increased regional cooperation and greater integration of regional markets, IRENA will continue its efforts to facilitate regional cooperation in Africa and Central America, and explore potentials for a regional approach to deployment of renewable energy in Southeast Asia, Middle East and North Africa, South-Eastern Europe and Central Asia. This work will be strengthened by country-level work, including Renewable Readiness Assessments (RRA) and advisory support, to enable countries to assess key policies, potentials, and technologies for renewable energy deployment and identify and implement priority actions to unleash renewable energy potential. Building on the work to date, IRENA will focus on formulating strategic partnerships with a wide range of stakeholders to help realise the renewable energy ambition of countries and regions. IRENA will continue to provide capacity needs assessments, create partnerships to advance capacity building efforts and identify capacity building models and approaches that should be replicated and scaled up.

56.   IRENA will analyse zoning resource data to develop decentralised solutions and expand the Clean Energy Corridor work to decentralised systems in Sub-Saharan Africa. Building on IRENA's analytical work on best practices, IRENA will customise renewables-based decentralised electrification solutions for specific sub-regions and countries in Asia and Sub-Saharan Africa.

Programmatic components

57.   **Africa Clean Energy Corridor (ACEC).** IRENA estimates that Africa has the potential to generate at least 300GW of renewable energy by 2030.   African leadership, together with the key development partners and financial institutions, has embraced this message and placed renewable energy deployment as one of the key strategies for sustainable development of the continent.   It is in this context that the Africa Clean Energy Corridor for countries of the Eastern and Southern Power Pools will enter a new phase in the 2016-2017 biennium, aiming to facilitate a steady flow of bankable renewables-based generation and transmission projects to attract long-term stable investments within the Corridor.   The implementation of the Africa Clean Energy Corridor, in close cooperation with other regional and national initiatives, will advance the political and economic agenda of growth in a sustainable manner.   Work on ground validation of zoning results will be geographically expanded and the ACEC implementation framework will be further developed to facilitate dialogue among key stakeholders.   Support will be provided in system planning frameworks and in the design and implementation of sound regulatory structures at the national and regional level to encourage project initiation, project development, and access to finance.   IRENA will also provide targeted institutional and technical assistance and advisory support in the areas of zoning, planning, and enabling frameworks. To accelerate progress in meeting the renewable energy agenda for Africa, IRENA will extend the corridor concept to facilitate regional market integration for the West Africa Power Pool Countries in cooperation with key regional partners including ECOWAS, ECREEE and the African Development Bank.

> **Activities:** IRENA will focus on project development and financing for Eastern and Southern Africa power pool countries, and provide continuous support for market integration. Zoning work will be deepened at national levels to allow for identification of potential zones for off-grid / mini-grid project development. IRENA will engage governments and regional stakeholders in Western Africa in the action agenda by facilitating dialogue, cooperation and coordination and by building capacities of policy makers, regulators, utilities, and grids. IRENA will seek to engage a wide range of partners to advance the regional integration plans and facilitate access to finance.
>
> **Impact:** Steady flow of bankable renewables-based generation and transmission projects to attract long-term stable investments within the Corridor.

58.   **Central America clean energy corridor.** Member Countries of the Central American Integration System (SICA) have adopted the Central American Sustainable Energy Strategy 2020 which aims to increase the renewables share in the regional market by 11%. The growing share of renewable energy in the energy mix is reflected in increasing connection demands on the regional electricity grid in the Central American power transmission system, for the most part the SIEPAC line. The ambition for further deployment of cost-effective renewable energy technologies exists, so the infrastructural, policy and regulatory challenges need to be addressed to maintain the current and future share of renewables. Through a set of selected needs-based activities, IRENA will collaborate with stakeholders in the region to support the implementation of technical, structural and regulatory frameworks to enable the integration of a greater share of renewables.

> **Activities:** IRENA will engage with national and regional stakeholders in the development and implementation of the regional action agenda and help build

the capacity to plan and operate power systems with higher shares of renewables. IRENA, in coordination and cooperation with other stakeholders already active in the region, will advise and assist in the process of the development of enabling frameworks for investment and the adaptation of operating practices and governance frameworks for power systems with medium to high shares of variable renewables.

Impact: Integrated power market for renewables in Central America benefiting from regional economies of scale.

59.   **Emerging clean energy corridors.** IRENA's work on the Africa Clean Energy Corridor has shown that many countries are in a position to benefit from integrated resource planning, regional market integration and market arrangements supporting investment from the public and private sector.. Building on the successful establishment of the Southern and Eastern Africa corridor and Central America corridor, IRENA will replicate the approach in other regions, adapting it to local conditions.

60.   In support of Southeast Asian market integration and achievement of ASEAN renewable energy targets for 2025 and based on feedback received from the countries in the region, IRENA will deepen political and technical engagement with regional institutions and countries. Through this engagement, the corridor concept will be adapted to the regional context, to develop and implement an action agenda for harnessing the renewable energy potential. The region already benefits from abundant hydropower generation, so the focus will be on deployment of other cost-effective renewable energy technologies.

Activities: IRENA will engage Southeast Asian governments and regional stakeholders to develop and implement an action agenda for increased penetration of modern renewable energy technologies in the region. This will be accompanied by capacity building efforts and a special focus on collaboration with partners active in the region.

Impact: Accelerated renewable power deployment in Southeast Asia and improved cross-border trade of renewable electricity aligned with the ongoing development of the ASEAN Power Grid.

61.   **Enabling regional action.** As endorsed by Ministers of League of Arab States in September 2014, the Pan-Arab Clean Energy (PACE) initiative aims to achieve an integrated power grid linking North Africa and the Middle East. IRENA will facilitate the implementation of the initiative through the customisation of IRENA's regional clean energy approach. Initial work will focus on the Maghreb and gradually expand to include other countries in the MENA region.

62.   The countries of the Energy Community have committed to binding renewable energy supply targets in accord with European Union policies. Countries have prepared official National Renewable Energy Action Plans (NREAPs) to achieve targets by 2020; however, there has not been a systematic focus on the overall potential to develop a full range of diverse renewable energy potentials in the region over the long term. In particular, NREAPs do not consider the potential of solar photovoltaic systems which have declined in cost by a factor of three since the NREAPs were prepared. The recent assessment has shown that countries are falling behind their NREAP targets, so IRENA will seek to identify priority actions in South-Eastern Europe to complement the existing efforts and accelerate the deployment of renewables in the region.

63.   Given the vast, largely untapped renewable energy potential of Central Asia, IRENA will also assist key regional and national actors in the region to foster the uptake of renewable energy through enhanced regional dialogue and cooperation, and the strengthening of enabling conditions and capacities to plan, develop, govern and implement power systems with higher shares of renewables.

> **Activities:** IRENA will engage stakeholders in the Middle East and North Africa, South-Eastern Europe and Central Asia regions to identify priority actions, assess renewable energy potential, develop action agendas, and, where appropriate, take further action to implement a regional approach to deployment of renewables.
>
> **Impact:** Effective regional frameworks, accelerated assessment and deployment of renewable energy resources in the Middle East and North Africa, South-Eastern Europe and Central Asia.

64.   **Country support and advisory services**. IRENA's Renewable Readiness Assessments (RRA), a country-led process, enables the assessment of key policies, potentials, and technologies for renewable energy deployment and identifies priority actions to unleash renewable energy potential. In many countries, RRAs have a proven track record in supporting national efforts and ambition in advancing their renewable energy agenda. In 2016-2017, IRENA will continue to assist countries in undertaking their RRAs, upon request. One of the key findings of the qualitative evaluation was that the achievements of the RRA process needs to be complemented with follow-up action. As a result, IRENA will strengthen its post-RRA efforts to support the implementation of RRA recommendations and facilitate their integration into national policies and strategies. To enable countries to fully benefit from the RRA process, IRENA will seek to partner with those who provide long-term assistance and support in the implementation of recommendations. In addition, specific modules of post-RRA technical advice on topics of high demand such as statistics, planning, resource assessment and finance will be provided to enable early implementation of the RRA recommendations.

65.   As the ambition of countries increases, so does the demand for assessment of their renewable energy potentials. Through its role as the renewable energy hub within the SE4ALL, IRENA will collaborate with the development partners who are contributing in this context to ensure synergies and amplify impact. Advisory services to Members will be provided upon request, drawing on in-house technical knowledge and expertise based on specific country needs and will focus in particular on grid integration, planning, finance, policy design, and regulatory frameworks.

> **Activities:** IRENA will facilitate RRAs for renewable energy deployment. Advisory services, specifically focused on post-RRA follow up and needs-driven technical assistance will be provided or secured through partners to facilitate the implementation of RRA recommendations. Tailor-made support will be provided to empower regulatory decision makers in the design and implementation of regulatory frameworks for power systems operating with higher shares of renewables. Further advisory services and capacity building assistance will be provided upon request.

Impact: Countries equipped with knowledge and expertise to create and implement an enabling policy framework to accelerate renewable energy deployment.

Regional action agenda					
Objective	**Impact**	**Component**	**KPFC**	**IITC**	**CSP**
Regional integration with increased shares of renewables to meet energy needs.	Steady flow of bankable renewables generation and transmission projects to attract long-term stable investments within the Corridor	Africa clean energy corridor	✓	✓	✓
	Integrated power market for renewables in Central America benefiting from regional scale economies.	Central America clean energy corridor	✓	✓	✓
	Accelerated renewable power deployment in Southeast Asia and improved cross-border trade of renewable electricity aligned with the ongoing development of the ASEAN Power Grid.	Emerging clean energy corridors	✓	✓	✓
	Effective regional frameworks, accelerated assessment and deployment of renewable energy resources in the Middle East and North Africa, Southeastern Europe and Central Asia.	Enabling regional action	✓	✓	✓
	Countries equipped with knowledge and expertise to create and implement an enabling policy framework to accelerate renewable energy deployment.	Country support and advisory services	✓	✓	✓

Core assessed and core non-assessed resource requirements 2016-2017 (in USD thousands)	**8,851**	Proportion of IRENA budget	**14%**
Other resource requirements 2016-2017 (in USD thousands)	**8,141**	Proportion of other resources	**30%**

Breakdown of *core assessed* and *core non-assessed* costs (in USD thousands)	
Staff costs	**5,226**
Non-staff costs	**3,626**
Non-staff costs by component	
- Africa clean energy corridor	1,189
- Central America clean energy corridor	1,035
- Emerging clean energy corridors	190
- Enabling regional action	560
- Country support and advisory services	651

Breakdown of *other resource* requirements (in USD thousands)	
Non-staff costs	**8,141**
Non-staff costs by component	
- Africa clean energy corridor	1,945
- Central America clean energy corridor	1,501
- Emerging clean energy corridors	917
- Enabling regional action	652
- Country support and advisory services	3,126

V.   Islands: lighthouses for renewable energy deployment

Objective: Island energy systems transformed through renewable energy

Introduction

66.   Many island states have been increasing their renewable energy ambition in recent years, some aiming for a complete transition of their power generation to renewables in the course of less than five years. However, a clear roadmap on how to implement such a change is often lacking. Renewable energy project pipelines are being created due to falling equipment cost and systems integration is becoming increasingly important. This includes issues related to power systems control and electricity storage, as well as transmission and distribution grid upgrading. Moreover, in many instances the traditional model of a single utility/transmission company is being challenged as self-consumption and Independent Power Producers are on the rise. This raises new issues related to power purchasing agreements, tariff setting and distribution of network costs.

67.   Islands can become pioneers in demonstrating the possibilities that renewable energy solutions offer in addressing socio-economic development needs while reducing the vulnerability to environmental change and global resource constraints. To accelerate the Small Island Developing States' (SIDS) transition to a sustainable energy future, IRENA launched the SIDS Lighthouses Initiative at the Climate Summit in New York in 2014. The SIDS Lighthouses Initiative is an enabling platform for the strategic deployment of renewable energy in SIDS.   The Initiative attracts partners and stakeholders including bilateral, multilateral, public, private and non-profit partners that support SIDS in accessing knowledge, tools and services to facilitate planning for and implementation of renewable energy solutions. 27 SIDS from the Caribbean, Pacific, Africa, Indian Ocean, Mediterranean and South China Sea and 19 other partners joined forces to advance renewable energy deployment on islands, and these numbers are growing.

68.   Within the SIDS Lighthouses Initiative, the partners and stakeholders pledged to work together with the aim of achieving more than 120MW of new renewable energy deployment by 2020 of which 100MW of new solar PV, 20MW of new wind, and significant quantities of small hydropower, geothermal, and marine technology projects will be operational. Furthermore, all participating SIDS are committed to develop renewable energy roadmaps and the Initiative will facilitate engagement with stakeholders to mobilise USD500 million in financing to support the implementation of renewable energy roadmaps. To drive collective action of SIDS toward a sustainable climate resilient green growth future, a series of workshops with SIDS partners and stakeholders were held in 2015 in Martinique, Honolulu, Kuala Lumpur and Cape Town. These workshops identified the support SIDS need from stakeholders in terms of planning, policy and regulatory framework, implementation, and financing to achieve their renewable energy country targets and collective commitments made as part of the SIDS Lighthouses Initiative.

69.   In 2016-2017, the results of these workshops will be translated into a detailed implementation plan and ensure that the Initiative partners and stakeholders can track progress to make certain to meet the Initiative's stated goals. To ensure that the experiences are captured, shared and replicated among islands and similar settings, data applications, best practices and other relevant information will be collated and interpreted for policy, planning and budgeting purposes and shared through the Global Renewable Energy Islands Network (GREIN).

Programmatic components

70. **SIDS Lighthouses.** The SIDS Lighthouses Initiative brings together a significant number of partners who together, further the objectives of the Lighthouses to strengthen capacity, increase knowledge, and mobilise resources to accelerate energy transition in SIDS. In the course of 2016 and 2017, IRENA will support SIDS to transform their energy systems through technical assistance and advice in the form of Renewable Readiness Assessments (RRA), technology roadmaps, targeted capacity building and advisory support on grid integration, resource assessment and application of renewable energy technologies. IRENA will refine the grid integration methodologies to support the assessment of renewable energy integration potentials and identify and plan technical solutions that will allow higher shares of variable renewables. To facilitate the setting and planning of long term renewable energy policy targets, IRENA will link methodologies with power utility network requirements. Through this work and by strengthening local capacities, IRENA will support the sustainable development of future flexible and reliable power grids. Continuous efforts will be made to expand existing partnerships of the Initiative to accelerate progress and ensure suitability of the effort.

> **Activities:** IRENA will support islands to develop enabling policy, regulatory, institutional and technology frameworks; assess their renewable energy potential to facilitate financing of projects; and identify technology options to support the deployment of renewables in areas such as desalination and waste to energy. IRENA will also work to support SIDS in the application of grid integration methodologies and strengthen capacities in islands to plan, develop, govern, operate and maintain energy systems with higher shares of renewables. IRENA will also provide an operational structure for implementation and progress tracking for the SIDS Lighthouses Initiative.
>
> **Impact:** Accelerated deployment of renewable energy in SIDS.

71. **Global Renewable Energy Islands Network (GREIN).** GREIN will continue to serve as a platform for pooling knowledge, sharing best practices, and seeking innovative solutions for accelerated uptake of clean and cost-effective renewable energy technologies on islands. The focus in 2016-2017 will be on strengthening the existing GREIN clusters on renewable energy roadmaps, power grid integration, tourism applications, resource assessments, desalination and waste-to-energy systems, and integrating new features that will support knowledge sharing among a wide range of stakeholders.

> **Activities:** IRENA will use GREIN to facilitate stakeholder engagement and allow for focused discussions on experiences and lessons learned in the selected areas of common interest. IRENA will strengthen GREIN as an outreach and dissemination tool to enable wider and regular access to analytical and practical knowledge of renewable energy applications in islands and similar settings.
>
> **Impact:** Improved knowledge of, and conditions for investment in renewable energy applications in islands.

72. **Enabling projects in Islands.** Like in many other settings, financing renewable energy projects in SIDS is often hampered by the lack of capacity to develop bankable project proposals. IRENA has

mapped and analysed existing funds and best practice funding mechanisms to determine opportunities and gaps. Based on the outcome of this work, IRENA will pilot an application of innovative models to facilitate development of bankable renewable energy projects in SIDS. The experience with the pilot scheme will guide the longer term strategy and the identification of key partners who can help augment such a scheme. IRENA will also work to strengthen competencies in private and public financing for renewable energy investment in SIDS, including through relevant climate change financing mechanisms, with the aim of long term support to SIDS.

Activities: IRENA will identify and disseminate examples of successful business models and projects to highlight potential replicability. It will offer transaction advisory services to facilitate the renewable energy projects from development to financing stage. IRENA will further develop an island specific module of the IRENA Project Navigator to serve as a template for SIDS to develop bankable project proposals, and upon request provide advisory services in this respect. IRENA will monitor progress with particular attention to electricity mix trends, installed renewable energy capacities and project pipelines.

Impact: Increased number of bankable renewable energy technology projects in SIDS.

Islands: lighthouses for renewable energy deployment					
Objective	Impact	Component	KPFC	IITC	CSP
Island energy systems transformed through renewable energy.	Accelerated deployment of renewable energy in SIDS	SIDS Lighthouses	✓	✓	✓
	Improved knowledge of, and conditions for investment in renewable energy applications in islands.	Global Renewable Energy Islands Network (GREIN).	✓	✓	✓
	Increased number of bankable renewable energy technology projects in SIDS	Enabling projects in Islands	✓	✓	

Core assessed and core non-assessed resource requirements 2016-2017 (in USD thousands)	**1,011**	Proportion of IRENA budget	**2%**
Other resource requirements 2016-2017 (in USD thousands)	**2,728**	Proportion of other resources	**10%**

Breakdown of *core assessed* and *core non-assessed* costs (in USD thousands)	
Staff costs	**650**
Non-staff costs	**361**
Non-staff costs by component	
- SIDS Lighthouses	-
- Global Renewable Energy Islands Network (GREIN).	-
- Enabling projects in Islands	361

Breakdown of *other resource* requirements (in USD thousands)	
Non-staff costs	**2,732**
Non-staff costs by component	
- SIDS Lighthouses	1,574
- Global Renewable Energy Islands Network (GREIN).	1,158
- Enabling projects in Islands	-

VI.   Gateway to knowledge on renewable energy

Objective: Renewable energy knowledge accessible to all

Introduction

73.   One of the pillars of the IRENA's medium term strategy is its aim to be a centre of excellence for renewable energy information. IRENA seeks to provide accurate, current, objective renewable energy information accessible to all. Objective and authoritative data and information, qualitative and quantitative, is paramount to maintain the confidence of all stakeholders, as well as the general public, that renewable energy is an effective, affordable and reliable option for future energy systems from a technical, socio-economic or financial perspective. They are also a foundation of good decision making as global energy systems transition towards sustainability.

74.   IRENA, with its unique mandate and near-universal membership, will further its efforts to become the centre of excellence for global renewable energy information with an integrated approach to data and information management. IRENA collects from its membership and partners different streams of data and information, such as renewable energy market statistics, resource potentials, and information on education and career opportunities in the sector, among others. IRENA also generates data and analysis to inform the global discourse on renewable energy development, especially in the linkages between energy and water.

75.   With the growing body of work and data, IRENA will place the focus on ensuring that this information is disseminated widely and that it is reaching the right audiences. Success of this effort will, in great part, depend on IRENA's ability to engage a wide range of partners to amplify its reach. In this context, IRENA will strengthen its efforts to engage country and private sector actors, and reach out to new constituencies such as parliamentarians and young people.

Programmatic components

76.   **Renewable energy statistics.** Accurate and timely statistics help to reduce risks and support investment, and are essential for the development and monitoring of policies, programmes, plans and strategies. This is particularly true in rapidly developing sectors such as renewable energy. In addition, there will be greater demand to improve renewable energy statistics with the adoption of SDG7 and related indicators. IRENA will continue its efforts to build the most comprehensive, up-to-date and freely accessible database of renewable energy statistics through the continued collection of renewable energy country statistics, by strengthening collaboration with other data-collecting organisations, by consolidating and standardising data currently collected by IRENA, and by presenting this data in more accessible and user-friendly forms. IRENA will also continue to refine and improve methodologies for data collection and use, and work with countries and partners to support capacity building for renewable energy data collection.

> **Activities:** IRENA will collect and validate energy balance data; publish and disseminate renewable energy data and lessons learned; and undertake outreach activities to disseminate data collection and use methodologies.

Impact: Reliable, relevant and up to date global source of renewable energy statistics.

77. **The Global Atlas** is the largest online prospector for renewable energy resources providing free information and software, embedded expertise and other tools to assist countries with assessing their renewable energy potential. Building on the release of Global Atlas 2.0 and the Global Atlas Pocket (a smart-phone application), Global Atlas will maintain current technology platforms adding bioenergy and geothermal platforms and new datasets for marine and hydro energy. IRENA will structure the Global Atlas to provide tailor-made tools and services, to allow users to: 1) identify high potential renewable energy zones and perform preliminary market prospection; 2) publish and access data, including ground measurements, to supply the private sector with relevant data for project pre-feasibility studies; and 3) offer training for country experts on the use of resource maps for zoning and for estimating data for policy schemes.

Activities: IRENA will continue to develop and maintain the Global Atlas for all sources of renewable energy, and expand its content through partnerships. The Atlas will support zoning and market prospection for solar and wind, followed by bioenergy, geothermal and marine energy. It will provide access to data required for project pre-feasibility studies, including ground measurement data, historic measurement data, and real-time measurements in support of energy modelers; and it will offer training for country experts on the use of resource maps for zoning and estimating data for policy schemes.

Impact: Stakeholders possess information that facilitates assessment of renewable energy potential for support policy formulation and project development.

78. **Quality assurance and standardisation** are key enablers for healthy and robust renewable energy markets. Building on standards and quality assurance work from 2014-2015, IRENA will support testing, certification and standardisation of renewable energy technologies to help mitigate technical risk for renewable energy systems, enable investment flows, global trading of renewable energy technologies and ensure that stakeholder expectations on the safety and performance of renewable energy technologies are met. Together with UNITAR and regional partners, IRENA will set up an internationally accredited regional certification scheme, piloted in 2014-2015 in West Africa, to be replicated in other regions. By supporting the regional and national organisations in the implementation of the Regional Certification Scheme and the Support Facility, IRENA will identify opportunities for collaboration with key stakeholders to amplify impact of the activities and ensure their sustainability.

Activities: IRENA will expand analysis to identify strategies for countries to develop quality infrastructure and increase access to information on how to operationalise quality assurance and standards for renewable energy technologies. Through the enhancement of the standards and patents platform, INSPIRE, IRENA will support the continued dissemination of country information on quality assurance and standards for renewable energy. IRENA will set up a structure and scheme elements for a Regional Certification

Programme for Renewable Energy for solar photovoltaic installers including elements such as design of curricula and train-the-trainers activities.

Impact: Accelerated adoption of quality assurance and standards for renewable energy.

79.   **Enhancing environmental and resource sustainability.** Renewable energy technologies offer substantial benefits for the environment, resource utilisation and end-use efficiency. Their adoption can decouple energy sector expansion from emissions growth and water use, as well as reduce losses in the system through distributed generation. Developing empirical evidence and sound analysis on these benefits can further strengthen the case for renewable energy adoption. Building on its earlier work on the water, energy and food nexus, IRENA will conduct in-depth analysis on specific renewable energy applications which can meet energy demand in an environmentally sustainable manner, reduce strains on limited natural resources and contribute to furthering countries' sustainable development objectives. In strengthening the data and information basis needed to inform integrated decision making, IRENA will expand its quantitative analysis of the relationship of renewable energy deployment with water use in the energy sector focusing on water stressed countries. IRENA will also work with partners to identify key features of a water-energy statistical framework that allows context-specific empirical analysis. Work on environmental impacts of renewable energy will also continue to highlight benefits and focus on the life-cycle impacts of different renewable energy technologies. Net environmental impacts of renewables will be quantified, comparing specific renewable energy impacts to equivalent impacts of conventional energy technologies.

Activities: IRENA will expand its analysis to illustrate the additional benefits of renewable energy, including reduced environmental impact and improved sustainability beyond the energy sector.. Utilising methodologies developed in close consultation with stakeholders, IRENA will generate empirical evidence and analysis to inform the global discourse on renewable energy opportunities across multiple sectors. In this context, IRENA will conduct quantitative analysis of the impacts of renewable energy deployment on water use in the energy sector as well as deepen analysis on the environmental impact of solar, wind and geothermal.

Impact: Environmental and resource information and messages empower policy makers and increased public awareness.

80.   **Knowledge hub.** In the course of the previous programmatic cycles, IRENA focused on the systematic collection, harmonisation and dissemination of data and information. To make this information easily accessible, IRENA developed REsource, a platform that provides a central access point to the growing body of IRENA's knowledge products, statistics, briefings and policy analysis, as well as underlying data. REsource will evolve in the coming years to include information and data from reputable and trusted partners with the aim of becoming the globally recognised, most comprehensive source of information and data on renewable energy. The IEA, REN21 and the Frankfurt School of Economics are already amongst REsource partners and IRENA will seek to increase its partnerships to complement its existing knowledge base. In 2016-2017, IRENA will also seek to improve the end-user experience by making REsource an integral part of the IRENA web portal and by facilitating access to wider audiences.

> **Activities:** REsource as integral platform within the IRENA corporate website will provide users with a unified navigation experience, making the IRENA portal the go-to place for renewable energy knowledge. IRENA will approach the major information providers and seek to establish strategic partnerships to ensure that all relevant data can be accessed.
>
> **Impact:** REsource will become the central hub for renewable energy reports, statistics, or charts as a multilingual tool to enlarge IRENA's audience and increase the global awareness on renewable energy status and trends.

81.   **Multi-stakeholder engagement.** Private sector companies, civil society, and research institutions have extensive knowledge about technology, markets and environmental impacts of renewables, as well as how regulatory framework conditions directly impact the market place. Throughout its programmatic activities, IRENA engages with these stakeholders to enrich its knowledge base and facilitate their input to IRENA's programmatic work. Engaging partners from these spheres also allows more effective outreach and advancements of common objectives.

82.   The Coalition for Action, comprising 48 private sector and NGO partners, has been instrumental in devising messages to debunk myths around renewable energy. Following this effort, the Coalition partners, combining 3.8 million Twitter followers (as of 1 June 2015), will use their communication means to help overcome misconceptions about renewable energy technologies and their impacts. IRENA and the Coalition will also support the establishment of a renewable energy label, allowing for certification of renewable energy products and activities and the display of renewable energy credentials to consumers.

83.   IRENA's annual job review found that, in 2014, the renewable energy sector, excluding hydro, employed 7.7 million in 2014 people while REmap estimates 17 million will be needed in 2030. To spur increased uptake of renewable energy related education, IRENA's Learning Platform will continue to collaborate with a wide range of public and private partners to update, maintain and provide access to its four global databases with more than 3,000 courses, degree programmes, webinars, training guides, internships and resources for educators. The IRENA Community, an on-line collaborative forum currently comprising 3.500 members, will be used to effectively disseminate information through webinars and other on-line tools. IRENA will also promote e-learning to provide free online education and certification, as well as introduction to IRENA's knowledge projects and tools such as the Global Atlas and REsource. In order to further strengthen the Agency's outreach to students and youth and stimulate interest in renewable energy, IRENA will support targeted programmes, including a simulation programme "Model IRENA" that was successfully implemented in the UAE in 2015.

84.   In 2016-2017, IRENA will reach out to new key constituencies who can effect positive change. In this context, IRENA will systematically engage with members of Parliament to provide timely and relevant information to facilitate their decision making. Benefiting from the existing networks of legislators, and through outreach to parliamentary committees and global and regional parliamentary assemblies, this information will be made widely available. IRENA will host a meeting of legislators on the margins of the sixth session of the IRENA Assembly to devise a strategy for a mutually beneficial long-term engagement.

Activities: IRENA will systematically engage with key stakeholders to sustain their engagement in the work of the Agency and disseminate knowledge on renewable energy. IRENA will enhance cooperation with the Coalition for Action partners and support specific communication projects and a labelling scheme to promote the use of renewable energy. IRENA will maintain and expand the IRENA Learning Platform for renewable energy educational resources. It will expand social media and outreach activities through the IRENA Community, and develop an e-learning initiative. IRENA will engage members of Parliament and provide them with targeted information on the latest trends, policies, programmes and innovation in the field of renewable energy.

Impact: Improved engagement with a wide range of stakeholders and increased awareness of the renewable energy business case.

Gateway to knowledge on renewable energy						
Objective	**Impact**	**Component**	**KPFC**	**IITC**	**CSP**	**SMED**
Renewable energy knowledge accessible to all	Reliable, relevant and up to date global source of renewable energy statistics.	RE Statistics	✓		✓	
	Stakeholders possess information that facilitates assessment of renewable energy potential for support policy formulation and project development.	The Global Atlas	✓			
	Accelerated adoption of quality assurance and standards for renewable energy.	Quality assurance and standardisation		✓		
	Environmental and resource information and messages empower policy makers and increased public awareness.	Enhancing environmental and resource sustainability	✓			
	REsource will become the central hub for renewable energy reports, statistics, or charts as a multilingual tool to enlarge IRENA's audience and increase the global awareness on renewable energy status and trends.	Knowledge Hub	✓			
	Improved engagement with a wide range of stakeholders and increased awareness of the renewable energy business case.	Multi-stakeholder engagement	✓	✓		✓

Core assessed and core non-assessed resource requirements 2016-2017 (in USD thousands)	**7,838**	Proportion of IRENA budget	**12%**
Other resource requirements 2016-2017 (in USD thousands)	**3,902**	Proportion of other resources	**15%**

Breakdown of *core assessed* and *core non-assessed* costs (in USD thousands)	
Staff costs	**3,786**
Non-staff costs	**4,052**
Non-staff costs by component	
- RE Statistics	1,075
- The Global Atlas	664
- Quality assurance and standardisation	355
- Enhancing environmental and resource sustainability	-
- Knowledge Hub	893
- Multi-stakeholder engagement	1,065

Breakdown of *other resource* requirements (in USD thousands)	
Non-staff costs	**3,903**
Non-staff costs by component	
- RE Statistics	300
- The Global Atlas	788
- Quality assurance and standardisation	650
- Enhancing environmental and resource sustainability	511
- Knowledge Hub	700
- Multi-stakeholder engagement	954

VII. Enhancing international cooperation, communications and outreach

Objective: Actively engage Members, leverage strategic partnerships and communicate with stakeholders and the public

Introduction

85.   IRENA has been established as a convening platform on renewable energy. Responsive to this mandate, the Agency has developed initiatives, products and services to facilitate international cooperation to accelerate the deployment of renewable energy. Through its governing meetings, the Assembly and Council, IRENA has created a unique venue for Members to engage in high-level, peer-to-peer discussions on the latest developments in the field of renewable energy. In the coming biennium, IRENA will continue to evolve these meetings to convene stakeholders in a central venue, to facilitate discussion on pertinent topics and to leverage its convening power to encourage greater international cooperation in the steps to be taken towards the global energy transition.

86.   IRENA recognises that Members play a critical role in amplifying the voice of the Agency through dissemination of messaging and information that underscore the importance of renewable energy in the global landscape. Its membership is one of the Agency's greatest assets and IRENA will increase its efforts to actively engage with Members, both the permanent representation community in Abu Dhabi and globally.

87.   In its communication, IRENA will continue to share perspective and tailored outreach material and highlight critical facets of the global energy transformation, as well as Members' efforts, as an integral part of its programmatic work. Further, to strengthen institutional structures and accountability, IRENA will enhance cooperation with host countries and continue to evolve its legal and institutional frameworks.

Components

88.   **Facilitating international cooperation.** The Assembly and Council meetings, through their plenary discussions, thematic side events and high-level, ministerial interaction, are unique convening platforms for Members to engage on the global energy agenda. These regular meetings allow delegates from different Member states to meet and interact with each other, to exchange best practices and lessons learned and initiate joint activities and cooperation. The meetings of IRENA's governing bodies will also continue to be the main venue for Members' decision making on all policy, programmatic and governance matters pertaining to the Agency. The governing body meetings also provide a platform for IRENA to showcase its activities and progress.

89.   Information that is not available through IRENA's public website, but may be of specific interest to Members, will be provided to the membership on a regular basis. This will include more frequent updates on Agency activities. One tool through which to transmit this information is REmember, the e-platform with content specifically targeted to IRENA Members to keep them abreast of developments between governing body meetings and sessions. The content of the portal will be regularly updated and expanded, and its technical abilities strengthened.

90.   The Agency will further enhance collaboration among its Members at Headquarters through the system of Permanent Representation. In this respect, IRENA will continue to encourage Members to accredit Permanent Representatives (PRs) to the Agency and facilitate engagement through regular meetings and discussions and by establishing closer links to ongoing activities of the Agency.

91.   Engagement with potential IRENA Members will continue in the coming biennium. As of October 2015, there were 143 Members of IRENA (142 States and the European Union), and 30 States in the process of accession to the Agency. The Agency will continue its outreach to non-Members, including through its liaison presence in New York, to progress further towards universal membership.

92.   To support the dissemination of IRENA messaging and materials and the successful delivery of events and targeted outreach initiatives, IRENA will further develop and activate an IRENA Member Communicator's network. The network will create a forum to link up with Members' communication structures, as well as those of other organisations, thereby maximising established national and international networks to reach target audiences and stakeholders.

> **Activities:** Delivery of Assembly, Council, and other meetings to strengthen international collaboration on renewable energy. Enhanced channels of communication with Members and future Members and channeling of relevant information to Members. Further strengthening of system of Permanent Representation. Establishment of an IRENA Member Communicator's network.
>
> **Impact:** IRENA's activities effectively communicated, increasing the Agency's visibility as the global voice for renewable energy and key messages widely disseminated in support of renewable energy.

---

93.   **Dissemination of knowledge, data and analysis.** As the role that renewable energy plays in meeting growing global energy demand increases, so does its visibility as a viable solution. To further promote this visibility, continued development and refinement of communications strategies are needed to reach key target audiences around the world. Reaching key target audiences with messaging focused on IRENA programmatic activities as well as broader messaging that supports the global deployment of renewable energy are central to IRENA's mandate and the mid-term strategic objective to become an authoritative global voice for renewable energy.

94.   In the years since IRENA's formal establishment, the capacity to effectively communicate the Agency's programmatic activities has grown to keep pace with Agency output. That growth has been borne out in improvement across a range of quantitative and qualitative metrics including media coverage, website traffic, citations of publications, social media reach and strategic engagements. Building on the lessons learned and the capacity gained since its establishment, IRENA will devise and implement communication strategies that effectively support Agency programmatic activities and increase the global visibility of renewable energy.

95.   Given the growing importance of digital communications around the world, the Agency will further improve its web presence via its own digital channels to maximise the reach and impact of IRENA knowledge products and initiatives. This will include taking the comprehensive website audit and architecture analysis conducted in 2015 to the next phase of website development and implementation; further expansion of the Agency's reach on social media platforms; the development of online media toolkits; and the improvement of digital archives to make digital media searchable and user-friendly. In

executing its communication campaigns, the Agency will expand the creation and dissemination of multimedia content geared for its stakeholders to include videos, infographics and other digital media.

96.   To raise the visibility of IRENA and the benefits and impact of renewable energy, the Agency will identify, expand and nurture its international network of media contacts in an effort to ensure that renewable energy issues are featured appropriately in global news media. The Agency will deliver timely, relevant content; publish user-focused content on key issues and work streams; develop timely thought-leadership articles to support IRENA products and initiatives and place them in key international publications. Increased focus will be placed on key markets for IRENA's regional work, especially markets where mature media infrastructure can amplify messaging beyond domestic contexts. IRENA will engage with a network of journalists, media experts and social media influencers around the world to increase, enhance and influence global communications and media reporting and improve the overall public discourse on renewable energy.

97.   An important component of a targeted content strategy is language diversity. In addition to producing publications in multiple languages, IRENA will expand the delivery of multi-language content to include REsource, communications material, press releases, articles and social media. Ensuring high-quality translations includes professional editing and revising in multiple languages. The Agency will seek to partner with Members and forge partnerships with language institutions to ensure that translation work is carried out efficiently, as well as to verify the quality of translated texts. The Agency will also deepen its engagement as a member of the International Annual Meeting on Language Arrangements, Documentation and Publications (IAMLADP), which helps IRENA gain useful information on cost-efficient best practices, including regarding the integration of different languages.

98.   Sustained quality, consistency and accuracy of IRENA's programmatic products are key to its role as the voice for renewable energy. Ensuring the efficacy of IRENA's publications following their substantive completion requires Agency-wide systematic review, closely integrated with communications efforts. In addition to strengthening communications support for key releases, IRENA will ensure that knowledge products are disseminated effectively to intended target audiences. More dynamic formats will be pursued to maximise the impact of key releases. Increased digital publishing capacity for limited-run materials, meanwhile, would provide a more sustainable, flexible alternative to large-scale print runs to support discussions and knowledge dissemination.

99.   Well-organised programmatic events are a key element for the success of IRENA's programmatic effort. To ensure resource efficiency and coordination in the delivery of programmatic events, IRENA will further streamline the event planning and implementation process, with continued focus on the most efficient and cost-effective use of available resources. IRENA will also expand the development of IRENA-owned international events, in partnership with its Members, following the road show model used to support the launch of the first edition of REthinking Energy, in Abu Dhabi, Beijing, New York, Paris and Tokyo. In addition, IRENA will regularly update its Events Calendar, comprising events hosted by IRENA as well as relevant events hosted by other organisations, to give Members a more global view of related events and help them in planning future participation in IRENA and other activities of interest.

> **Activities:** Devise and implement communications strategies. Strengthen digital communications. Expand and nurture network of international media contacts. Ensure efficacy of IRENA publications and dissemination of knowledge products. Expand the delivery of multi-language content. Deliver programmatic events.

> **Impact:** Business case for renewable energy promoted through dissemination of high-quality products and increased access to information.

100.   **Strengthen institutional structures and accountability.** IRENA's ambitious mission requires an institution that meets benchmarks for organisational transparency, accountability and oversight that match or exceed the highest standards and expectations of the membership. A high level of accountability in the Agency's institutional processes and structures, along with the transparent, efficient and effective conduct of IRENA's overall operations in accordance with prevailing rules and procedures are ensured through the legal and internal audit functions.

101.   The Agency will continue to strengthen its legal and institutional framework, as well as ensure the protection of its operational and programmatic interests. The Agency will maintain sustained dialogue with its host countries on the implementation of the respective agreements concerning Headquarters in Abu Dhabi and the Innovation and Technology Centre in Bonn. Furthermore, the Agency will raise Members' awareness on the importance of granting to the Agency the privileges and immunities it requires for the exercise of its functions.   IRENA will also provide information and clarifications in relation to Members' representation in the governing bodies, when required.

102.   Assurance that IRENA activities are conducted effectively and efficiently, and in accordance with the prevailing rules and procedures, will also be provided through continued oversight including the function of the Internal Audit Office.

> **Activities:** Sustained cooperation with host countries. Raise awareness on granting privileges and immunities to IRENA. Strengthen legal and institutional framework.
>
> **Impact:** IRENA's effectiveness increased through sound legal and institutional structures.

Core assessed and core non-assessed resource requirements 2016-2017 (in USD thousands)	17,619	Proportion of IRENA budget	28%

Breakdown of *core assessed* and *core non-assessed* costs (in USD thousands)	
Staff costs	**8,914**
Non-staff costs	**8,705**

VIII.   Administration and management services

Objective: Support the Agency's programmatic work through comprehensive and efficient business processes that foster accountability and transparency.

Introduction

103.   IRENA's ability to deliver its programmatic responsibilities depends on effective, transparent, efficient and accountable administration and management services. IRENA maintains a lean administrative structure with the aim of achieving the highest levels of efficiency, underpinned by strong accountability and effectiveness. IRENA will ensure the efficient, effective and transparent allocation of the human and financial resources and other assets of the Agency to meet its strategic and operational priorities and promote transparent resource management, effective reporting and strong accountability.

104.   To support sound financial management and greater efficiency, IRENA will finalise the deployment of the Enterprise Resource Planning system and continue the administration of financial resources of the Agency in compliance with IRENA's Financial Regulations and Procedures, as well as the relevant legislative mandates, accounting, and finance policies to facilitate sound management of all resources entrusted to the Agency.

105.   Human Resources policies will continue to be modified to respond to the Agency's evolving needs, and will include strategic workforce planning, effective performance management and an active promotion of staff wellbeing. IRENA will also develop a Business Continuity Plan (BCP) to enable the Agency to maintain continuity of highly critical functions during and following a disaster and/or crisis event.

106.   IRENA will strengthen procurement services through strategic planning of activities to ensure effective competition and timely procurement of goods and services with best value for money. Facility management and travel services will also be strengthened with efforts made to find more cost-effective and efficient ways of holding meetings such as through investing in video conferencing facilities at IRENA.

Components

107.   **Finance.** Ensure the efficient, effective and transparent allocation of the human and financial resources of the Agency and other assets to meet its strategic and operational priorities and promote transparent financial management, effective reporting and strong financial accountability. This will include the development of key performance indicators related to monitoring and reporting of financial implementation consistent with approved activities.

> **Activity:** IRENA will provide effective finance support and ensure the receipt of a clean external audit opinion, ensuring 100% IPSAS compliance. It will continuously improve its business process to excel in service. IRENA will liaise with Members on all finance-related matters in a timely fashion, facilitate Voluntary contributions and provide timely reports to donors.
>
> **Impact:** Enhanced accountability and transparency and improved support to business users / clients

108.   **Budget.** Administration of financial resources of the Agency in compliance with IRENA's Financial Regulations and Procedures, as well as the relevant legislative mandates, following accounting and finance policies to facilitate sound management of all resources entrusted to the Agency. Processes and procedures will continue to be closely monitored for further improvement to ensure effectiveness and efficiency, as well as accountability through accurate and regular reporting and adherence to IPSAS. In addition, the management of IRENA's budgetary resources will remain central to facilitate the coherent utilisation of approved budget and monitoring of the budgetary resources, in coordination with programmatic divisions. This function will also support internal and external audit processes; ensure effective follow-up and implementation of all audit recommendations; promote and enforce sound risk management systems and practices aimed at improving the overall performance and accountability of the organisation.

> **Activity**: IRENA's will effectively utilise its resources in accordance with the approved budget across the organisation. IRENA will provide timely and accurate information to Members during the Council and Assembly meetings, as well as support upon request. IRENA will ensure that Budget processes and procedures are efficient in supporting programme implementation and effective in the management of resources.
>
> **Impact:** IRENA's excellence reflected in the high performance rate.

109.   **Information and communication technology.** The deployment of the Enterprise Resource Planning system, to support sound financial management and greater efficiency will remain a priority. Procedures for finance, human resources, procurement, travel and ICT will be updated and training provided to ensure a common understanding and successful utilisation of the new Enterprise Resource Planning (ERP) System. This will include the establishment of ICT disaster recovery and redundancies to enable continuous access to critical applications, including electronic communications and messaging and the ERP systems.

> **Activity**: IRENA will provide effective ICT service to all of its offices and ensure optimal ICT resource utilisation. IRENA will establish an electronic archiving system for all IRENA official documents for easy access and safekeeping. IRENA will support the external and internal communications by maintaining Information and Knowledge Management portals, collaboration tools and conference and meeting facilities
>
> **Impact:** ICT services facilitate effective programme implementation and internal communication.

110.   **Human resources.** Attracting, developing and retaining high-quality staff is key to IRENA's success. To meet this objective, IRENA will focus on strategic workforce planning to meet its needs in a timely fashion.   This will include proactive sourcing of candidates, attrition planning, and staff development.   Human resources policies and procedures will continue to be refined to ensure responsiveness to the needs while safeguarding the Agency's set principles and policies. As the Agency matures, performance management and staff development will be of even greater importance, and will be addressed in a systematic manner.   Human Resources policies will also include an active promotion of staff wellbeing and introduction of policies, where appropriate, to facilitate work-life balance.

Activity: IRENA will proactively attract, develop and retain staff. The performance management system will be strictly applied to ensure excellence and alignment of skills with the needs of the Agency. Staff development and welfare will be strengthened in a systematic way.

Impact: IRENA's performance sustained through staff excellence.

111.   **Procurement.** Ensure that procurement of all goods and services, required for the proper functioning of IRENA are in line with general principles that govern all procurement transactions, in line with the Financial Regulations. These include fairness, integrity, transparency of the procurement process, best value for money and effective competition. Procurement activities are increasing, both in terms of complexity and volume of transactions; therefore, procurement activities will be strategically implemented to benefit from timeliness and economies of scale, while ensuring effective competition and timely procurement of goods and services with best value for money. The existing procurement policies and manual will be reviewed and updated as appropriate.

Activity: IRENA will ensure that all procurement exercises are carried out in line with the Procurement rules and regulations. IRENA will develop an annual master procurement plan to ensure timely provision of services and efficient processes. It will also ensure that all staff are aware of the policies and principles governing IRENA's procurement process.

Impact: Programme implementation facilitated by effective procurement processes.

112.   **General services and Travel.** Provide cost-effective and efficient facility management and travel services, as well as other general services for the Agency. The move to the new Headquarters entails continuous review, updating, remodeling and maintenance of building management systems to ensure IRENA is taking advantage of the modern facilities. Logistical arrangements for IRENA events and workshops worldwide will continue to be provided, including ticketing, venue, hotel bookings, transportation, and other logistical matters. Continuous efforts will be made to continue to find more cost-effective and efficient ways of managing events, including through increased use of video conferencing facilities.

113.   IRENA will also develop a Business Continuity Plan (BCP) to enable the Agency to maintain continuity of highly critical functions during and following a disaster and/or crisis event. The purpose is to protect IRENA's essential facilities, equipment, key records and assets; eliminate or mitigate the impact of disruption to operations; achieve timely and orderly recovery from an emergency and reconstitution of normal operations that allows the resumption of critical processes and operational services; the establishment of an electronic archiving system for all IRENA official documents will be a key component of the BCP.

Activity: IRENA will maintain its premises to ensure a safe and healthy work environment for its staff, while prudently managing the available assets. It will effectively support, in a cost-effective manner, the participation of staff, Members and other stakeholders in relevant events. IRENA's Business

Continuity Plan (BCP) will enable the Agency to maintain critical functions during and following a disaster and/or crisis event.

Impact: Highly cost-effective travel and general services and enhanced organisational resilience.

Core assessed and core non-assessed resource requirements 2016-2017 (in USD thousands)	11,174	Proportion of IRENA budget	17%

Breakdown of *core assessed* and *core non-assessed* costs (in USD thousands)	
Staff costs	**8,692**
Non-staff costs	**2,482**

Thematic Programme Areas

Programme deliverables

Thematic area: Planning for the Global Energy Transition					
Objective: Countries successfully transform their energy systems to meet national targets and strategies to decrease global emissions and improve energy security					
Resources (core assessed, non-assessed and other sources): 12,382 (in USD thousands)					
Component	**Division**	**Deliverables**			**Timeframe***
		Core assessed	**Core non-assessed**	**Other sources**	
REthinking Energy	CSP IITC KPFC	• Global Report: Completion of the Third Edition of Rethinking Energy			Q3 2017
Power system design for RE integration	IITC		• Methodology for grid integration planning	• Deployment of methodology for grid integration planning	Q2 2016 - Q4 2017
			• Workshop on methodology for integration planning	• One additional workshop on integration planning	Q2 2016 - Q2 2017
			• Advice on use of established industry simulation tools for planning	• Simulation tools applied.	Q4 2016
			• Latin America country studies on integration of VRE into long-term planning	• Training programme in the use of long-term planning tool in Africa	Q1 2016 - Q4 2016
			• Indicator system for flexibility assessment of power systems	• Deploy indicator system including two dialogue events for grid planners, transmission and distribution system operators, grid regulators; evaluation of flexibility and adequacy options; two workshops to collect input and feedback on grid integration methodologies	Q2 2016 - Q4 2017
				• Guidelines on EVs, interconnectors and electricity storage as flexibility measures	Q4 2016
				• Country application of innovative grid and market design guidelines and methodologies, upon request	Q1 2016 - Q4 2017
				• Advisory services on the development of power sector transition plans	Q1 2016 - Q4 2017

A/6/L.4

Component	Division	Deliverables			Timeframe*
		Core assessed	**Core non-assessed**	**Other sources**	
Transforming Energy	IITC KPFC		• REmap global technology roadmap analysis - third edition (40 countries)	• REmap - third edition covering an additional 10 countries, five individual country reports; energy efficiency & renewables action team and transport action team; Socio-economic briefs; two national expert workshops; regional and sectoral roadmaps and REmap information platform.	Q1 2017 - Q4 2017
				• Analysis of the impacts of REmap 2030 options on water use in the power sector for different countries	Ongoing
				• Country analysis (5 countries) on policy frameworks, energy sector transformation and market design	Ongoing
				• System for characterisation and selection of bioenergy technology pathways to be deployed for a bioenergy Navigator module.	Q1 2016 - Q4 2017
				• Bioenergy cost-supply report	Q4 2016
				• Data on processing residue availability to support project development	Q2 2016 - Q2 2017
				• A bioenergy assessment tool for Global Atlas to include costs and other parameters	Q4 2016
				• Advisory services on bioenergy technology options, upon request	Q1 2016 - Q4 2017

Component	Division	Deliverables			Timeframe*
		Core assessed	**Core non-assessed**	**Other sources**	
Technology status & outlook	IITC KPFC		• Report: 'The Innovation Landscape for RE Technologies'	• Two preparatory workshops for the Innovation report	Q2 2016 - Q4 2017
			• Status briefs for five technologies	• Additional technology briefs	Q1 2016 - Q4 2017
			• Outlook report for heating and cooling energy storage	• Outlook report for 1) offshore wind and 2) electric vehicles	Q4 2016 - Q4 2017
			• IRENA Energy Week to support Innovation Landscape report	• IRENA Energy Week	Q2 2017
				• Global report on status and trends of hydropower	Q2 2017
				• Country advisory services in designing and implementing renewable energy technology innovation strategies	Q1 2016 - Q4 2017
Global Geothermal Alliance	CSP IITC KPFC	• Establish a GGA platform for communication with one high-level meeting per annum		• Advisory services on enabling frameworks and capacity building workshop to raise awareness and strengthen capacity of public stakeholders in the Pacific	Ongoing for core Q3 2017 for VC
				• Methodology for geothermal capacity needs assessment applied in one region	Q4 2016
				• Additional advisory services and training to GGA member countries to help create necessary enabling frameworks to promote investments	Ongoing
				• Partnerships with expert institutions to deliver targeted capacity building activities related to geothermal energy	Q2 2017
				• Stakeholder outreach to feature geothermal energy prominently at major events of relevance	Ongoing

A/6/L.4

Component	Division	Deliverables			Timeframe*
		Core assessed	Core non-assessed	Other sources	
REpowering Cities	CSP IITC KPFC			• Methodology for and application of building stock assessments for identifying renewable energy potential in cities	Q4 2016
				• Report on renewable integration options and enabling electricity and heat/cold distribution infrastructure in cities	Q4 2016
				• Workshops and outreach, including Habitat III: Disseminate results to build knowledge and share best practice.	Q4 2017
				• Methodology and capacity building to support the monitoring of renewable energy impact on the carbon footprint of cities	Q4 2017
				• Methodology on biomass resource assessment customised to the Latin America context and training for its effective implementation.	Q2 2017
				• Map stakeholders and urban settings for identification of commonalities	Q4 2017
				• Briefs on innovative policy, regulatory and financing approaches to incentivise renewable energy deployment and energy efficiency measures in cities	Q4 2017
				• Outreach to UNFCCC Workstream 2	Q1 2016 - Q4 2017

*NOTE: Timeframe for deliverables under 'other sources' is subject to availability of funds

Thematic area: Enabling investment and growth

Objective: Improving policy frameworks and creating enabling market conditions for accelerated deployment of renewable energy

Resources (core assessed, non-assessed and other sources): 12,762 (in USD thousands)

Component	Division	Deliverables			Timeframe*
		Core assessed	**Core non-assessed**	**Other sources**	
Renewable energy costs	IITC KPFC		• Expanded and refined IRENA Renewable Costing Alliance	• One report on grid parity in the power sector	Q1 2016 - Q4 2017
			• Costing report on Biofuels for Transport	• One renewable energy investment volume report	Q4 2016
			• Papers on cost or competitiveness topics including power generation updates in 2016 and 2017, renewable energy finance costs, wind learning curve decomposition, energy storage and self-consumption	• Renewable energy competiveness indicators by country and application	Q4 2016 - Q4 2017
				• Global Atlas on economic solar PV applications	Q4 2017
			• Quarterly PV Parity Indicator tool applied	• Regional analysis on cost reduction opportunities for solar and wind technologies	Ongoing
				• Cost data collection methodology developed and applied for renewable energy in China and other countries	Q4 2016

A/6/L.4

Component	Division	Deliverables			Timeframe*
		Core assessed	**Core non-assessed**	**Other sources**	
Renewable energy benefits	CSP IITC KPFC	• Global report on Renewable Energy and Jobs - Annual Review 2016 and 2017			Q2 2016 and 2017
		• Report on maximizing value creation from off-shore wind		• Global report on maximising value creation from geothermal deployment (web-based)	Q4 2017
				• Guide for policy makers to disseminate lessons learnt on maximising value creation from other renewable energy technologies and applications	Q4 2017
				• Global report on maximising value creation for renewables-based heating and cooling applications (web-based)	Q4 2016
		• Global report on the structural and distributional economic dimension of renewable energy deployment			Q4 2017
				• Regional report on socio-economic impacts of renewable energy deployment (web-based)	Q4 2016
				• Analysis of the socio-economic impacts from renewable energy deployment by 2030 in selected countries.	Ongoing
				• Report: the potential role of RE for energy security and resilience, including the impact of renewables on electricity security	Q4 2017

Component	Division	Deliverables			Timeframe*
		Core assessed	Core non-assessed	Other sources	
Policy options to accelerate deployment	CSP IITC KPFC	• Global report on state-of-the-art analysis of innovative policy design and practice		• Policy guide on analysis of growth in decentralised generation on decision-making in the power sector	Q4 2017
				• Country analysis (4 countries) of policy and institutional frameworks, selected socio-economic impacts, the nexus of water-food and energy	Q4 2017
		• Update of the Policy and measures database		• Regional report on policy status and trends based on policy and measures database	Q4 2017
		• Regional report on market analysis of policies and trends for renewable energy in Southeast Asia		• Report on good practices in policy design	Q4 2017
				• Two thematic briefs providing in-depth analysis of emerging regional policy themes	Q4 2017
Financing renewables	CSP IITC KPFC	• IRENA's country-level public-sector investment statistics as an authoritative dataset and basis for analytical work.		• Analysis of financial structures for RE projects	Ongoing, Q2 2017
		• Analysis of the linkages between policies, incentives, public investments and achievement of renewable energy targets.		• Two high level expert meetings to feed into the process of the report writing/study	Ongoing, Q2 2017
		• Global report on the state-of-play of financial instruments and structures to mobilise institutional investors in the RE sector		• Conference and working papers on financial risk mitigation instruments	Q4 2017
		• Collaboration with the GCF		• Expert meetings on public finance for RE	Ongoing

A/6/L.4

Component	Division	Deliverables			Timeframe*
		Core assessed	Core non-assessed	Other sources	
Project facilitation	CSP IITC KPFC SMED	• Regional marketplace portals: virtual marketplace for RE projects in Africa, LAC region and SIDS, adding energy efficiency projects to the marketplace, and develop facilitation tools		• Renewable energy project facilitation activities expanded to include considerable part of the developing world.	Ongoing
			• At least six events focused on capacity building	• Capacity building workshops and webinars to support project preparation and capturing results	Ongoing
				• Selection of projects for the 4th and 5th cycle of the IRENA/ADFD Project Facility[1]	Q4 2016 and 2017
			• Two technical concepts for Project Navigator	• Two additional technical concepts for Project Navigator	Q4 2017
			• Project development assistance through Project Navigator	• Additional Project development assistance through Project Navigator	Q4 2017

1. To be funded by ADFD

*NOTE: Timeframe for deliverables under 'other sources' is subject to availability of funds

Thematic area: Renewable energy access for sustainable livelihoods					
Objective: Improved livelihoods through access to renewable energy					
Resources (core assessed, non-assessed and other sources): 4,387 (in USD thousands)					
Component	**Division**	**Deliverables**			**Timeframe***
		Core assessed	**Core non-assessed**	**Other sources**	
Decentralised solutions for access	CSP IITC KPFC	• Third International Off-grid Renewable Energy Conference and Exhibition and associated follow-up activities to promote an enabling environment		• Regional thematic workshops on specific deployment barriers and issues identified during IORECs	Q4 2017
		• Development of the framework for the Off-Grid Renewable Energy Policies database		• Inclusion of off-grid policies from at least 20 countries in the Off-Grid Renewable Energy Policies database	Q4 2017
		• Global report on policies to maximise socio-economic benefits of off-grid applications		• Working papers on innovative business models to accelerate financing of off-grid solutions.	Q2 2017
			• Develop and apply methodologies on decentralised renewable energy system planning		Q4 2017
			• In-depth technical guide for minigrids and their characteristics	• Briefs on policies and regulatory measures to support renewable energy-based mini-grid deployment	Q4 2016

A/6/L.4

| Component | Division | Deliverables | | | Timeframe* |
		Core assessed	Core non-assessed	Other sources	
Applied decentralised solutions	CSP IITC KPFC			• Technical reports to assess resource data on decentralised potentials within the Africa Clean Energy Corridor RE Zoning work	Q4 2017
		• Advisory services to develop customised regional and country-specific approaches in terms of policy frameworks, business models and technology solutions on decentralised electrification solutions.		• Additional advisory services to develop customised regional and country-specific approaches on decentralised electrification solutions.	Ongoing
		• Advisory services to identify capacity needs and develop a regional action plan on RE mini-grids in the ECOWAS region.		• Additional advisory services in the ECOWAS region to identify capacity needs and develop a regional action plan on RE mini-grids.	Q1 2017
		• Advisory services to strengthen RE enterprises to develop bankable projects under the ECOWAS Renewable Energy Entrepreneurship Support Facility		• Additional advisory services to explore the replication of the ECOWAS Renewable Energy Entrepreneurship Support Facility in other regions	Ongoing for core Q4 2017 for VC
		• Training for small and medium scale entrepreneurs and financial institutions on renewables-based electrification solutions in sub-regions of Africa and in Asia.		• Additional training for small and medium scale entrepreneurs and financial institutions on renewables-based electrification solutions in sub-regions of Africa and in Asia.	Q1 2017 for core Q4 2017 for VC

*NOTE: Timeframe for deliverables under 'other sources' is subject to availability of funds

Thematic area: Regional action agenda					
Objective: Regional integration with increased shares of renewables to meet energy needs					
Resources (core assessed, non-assessed and other sources): 16,992 (in USD thousands)					
Component	**Division**	**Deliverables**			**Timeframe***
		Core assessed	**Core non-assessed**	**Other sources**	
Africa Clean Energy Corridor	CSP IITC KPFC	• Workshop to validate identified wind, solar PV and CSP zones		• Additional workshops and partnerships to validate identified wind, solar PV and CSP zones and enable incorporation into national and regional energy planning processes.	Ongoing for core and VC
				• Advisory services to enable ACEC countries independently develop the identified zones	Ongoing
				• Regional technical guide of good practice for calculating cost reflective tariffs and establishing sufficient investment incentives into renewables	Q1 2017
		• Advisory services on policy and legislative support through Renewables Readiness Assessments		• Additional advisory services on policy and legislative support through Renewables Readiness Assessments	Ongoing for core and VC
		• Workshop for stakeholder consultation to update the zoning study		• Additional workshops for stakeholder consultation to update the zoning study	Q4 2016 for core and Q4 2017 for VC
		• Training for regulators on power systems operating with higher shares of VRE.		• Additional training for regulators on power systems operating with higher shares of VRE.	Q4 2017
		• The ACEC Consultative Forum to facilitate partnerships and dialogue		• Regional guide of good practice for power system development and technical report for application in a pilot country	Ongoing for core Q1 2017 for VC
		• Partnerships and advisory services for ACEC action agenda development and implementation in West Africa		• Additional advisory services to implement the action agenda for ACEC West Africa	Q2 2016 for core Ongoing for VC
				• Training in the areas related to the implementation of the action agenda for ACEC West Africa	Q3 2016 for VC

A/6/L.4

Component	Division	Deliverables			Timeframe*
		Core assessed	Core non-assessed	Other sources	
Central America Clean Energy Corridor	CSP IITC KPFC	• Advisory services to finalise the action agenda by the governments			Q2 2016
		• Platform to establish partnerships and operationalise dialogue		• Advisory services to support SICA/SIEPAC	Q2 2016 for core Q4 2017 for VC
		• Training for national and regional system operators on RE grid integration.		• Technical report on the identification of maximum penetration levels of variable renewable energy under secure conditions in the regional system	Q3 2017 for core Q4 2017 for VC
		• Technical report for an assessment of the monitoring and control system, control room tools and operating practices currently in place		• Training for national and regional regulators on regulatory governance frameworks for RE grid integration	Q4 2016 for core Q3 2017 for VC
		• Advisory services for the implementation of regulatory governance frameworks for RE grid integration.		• Additional advisory services for the implementation of regulatory governance frameworks for RE grid integration.	Q4 2016 for core Q4 2017 for VC
				• Workshop for scoping of activities in line with the CECCA strategy	Q4 2017
Emerging Clean Energy Corridors	CSP IITC KPFC	• Advisory services to develop and implement the action agenda for ASEAN Clean Energy Corridor by the governments		• Additional advisory services to implement the action agenda for ASEAN Clean Energy Corridor by the governments	Q2 2016 for core Ongoing for VC
		• Platform to establish and operationalise dialogue, cooperation and coordination among the key ASEAN regional and national stakeholders		• Trainings in the areas related to the implementation of the action agenda for ASEAN Clean Energy Corridor	Ongoing

Component	Division	Deliverables			Timeframe*
		Core assessed	Core non-assessed	Other sources	
Enabling regional action	CSP IITC KPFC	• Advisory services to develop the PACE action agenda by the governments		• Additional advisory services to implement the PACE action agenda	Q4 2016 for core Q4 2017 for VC
		• Platform for dialogue, cooperation and coordination among the key PACE regional and national stakeholders		• Additional training to help key stakeholders in PACE countries advance the action agenda	Q2 2017 for core Q4 2017 for VC
		• Action plan for IRENA's engagement in the South-eastern Europe		• Workshops for stakeholder engagement and technical reports on potential for RE integration in national plans in South-eastern Europe	Q4 2016 for core Q1 2017 for VC
		• Develop an action agenda for a regional approach for RE development in Central Asia			Q4 2016
		• Platform for dialogue, cooperation and coordination among the key Central Asia regional and national stakeholders		• Advisory services in the areas related to the implementation of the action agenda for Central Asia	Q4 2016 for core Q4 2017 for VC

A/6/L.4

Component	Division	Deliverables			Timeframe*
		Core assessed	**Core non-assessed**	**Other sources**	
Country support and advisory services	CSP IITC KPFC	• 6 RRA Country Reports.		• Additional RRA Country Reports	Ongoing
				• Incorporate the integrated resource approach in IRENA's Renewables Readiness Assessment methodology and country reports	Ongoing
		• Advisory service for the implementation of RRA recommendations including technical advice on statistics, energy planning, resource assessment, finance, etc.		• Advisory services for Indonesia REmap/RRA pilot	Ongoing for core Q1 2017 for VC
		• Advisory services and training for post-RRA implementation upon country requests.		• Additional post RRA services	Ongoing
		• Advisory services for the development of an implementation plan based on the recommendations from the RE manufacturing report for three North African countries.		• Methodology of renewables manufacturing potential applied in additional countries	Q1 2017 for core Q4 2017 for VC
				• Advisory services in support of the design and implementation of power system governance structures	Q2 2017
				• Technical assistance and training to the key stakeholders in the formulation of ASEAN renewables target implementation plans	Q4 2017
				• Additional advisory services upon request	Q1 2017
				• Technical report and support for MENAREC 6	Q2 2016

*NOTE: Timeframe for deliverables under 'other sources' is subject to availability of funds

Thematic area: Islands: lighthouses for renewable energy deployment					
Objective: Island energy systems transformed through renewable energy					
Resources (core assessed, non-assessed and other sources): 3,743 (in USD thousands)					
Component	**Division**	**Deliverables**			**Timeframe***
		Core assessed	**Core non-assessed**	**Other sources**	
SIDS Lighthouses	CSP IITC KPFC		• Grid studies support (2 island studies)	• Support to and management of the SIDS Lighthouses Initiative	Q1 2016 - Q4 2017
				• Advisory services including Quickscans, Renewable Readiness Assessments, Roadmaps, Resource Assessments, Grid Integration Studies and Transition Plans	Q1 2016 - Q4 2017
				• Training workshops to address legal, regulatory, institutional, human resource and other constraints supported	Q4 2017
				• Tools for monitoring, evaluating, communicating progress of the initiative, and sharing knowledge developed	Q4 2016
Global Renewable Energy Islands Networks (GREIN)	CSP IITC KPFC			• GREIN platform continuously updated for the sharing of best practices and case studies related to the GREIN cluster areas.	Ongoing
				• Dissemination of information through cluster-specific webinars, newsletters, etc.	Ongoing
				• Regional workshops and other meetings to facilitate dialogue across and among regions and islands	Ongoing
Enabling projects in islands	IITC KPFC			• Development and execution of at least 3 bankable RE projects in partner countries	Q4 2017
				• Partnerships developed with expert institutions to provide targeted support in planning, identifying, structuring, and executing viable renewable energy projects in SIDS	Q1 2016 - Q4 2017

*NOTE: Timeframe for deliverables under 'other sources' is subject to availability of funds

A/6/L.4

<table>
<tr><td colspan="6">Thematic area: Gateway to knowledge on renewable energy</td></tr>
<tr><td colspan="6">Objective: Renewable energy knowledge accessible to all</td></tr>
<tr><td colspan="6">Resources (core assessed, non-assessed and other sources): 11,741 (in USD thousands)</td></tr>
<tr><td rowspan="2">Component</td><td rowspan="2">Division</td><td colspan="3">Deliverables</td><td rowspan="2">Timeframe*</td></tr>
<tr><td>Core assessed</td><td>Core non-assessed</td><td>Other sources</td></tr>
<tr>
<td rowspan="2">RE Statistics</td>
<td rowspan="2">CSP
KPFC</td>
<td>• RE Statistics Database: Provisional estimates of RE capacity on REsource six months after year-end, with final figures for capacity and energy balances within 18 months.</td>
<td></td>
<td>• Working paper: lessons learned from case studies in renewable energy data collection</td>
<td>Q4 2017</td>
</tr>
<tr>
<td>• Statistics training: Four training courses held in countries and regions where renewable energy data is relatively weak, leading to improved response rate to IRENA annual statistics questionnaire.</td>
<td></td>
<td></td>
<td>Q4 2017</td>
</tr>
<tr>
<td rowspan="4">The Global Atlas</td>
<td rowspan="4">CSP
ICT
IITC
KPFC</td>
<td>• Maintenance of solar and wind Atlas, including demonstration for measurement data collected by governments, donors and public finance entities.</td>
<td></td>
<td>• Technical infrastructure assessments, e.g. cities, highly-populated areas in developing countries, etc.</td>
<td>Ongoing / Q4 2016</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Refinement and completion of new data set of marine & hydro, including zoning tools and working papers.</td>
<td>Ongoing</td>
</tr>
<tr>
<td>• Completion of bioenergy and geothermal, including zoning methodology and tools.</td>
<td></td>
<td>• Global Atlas training sessions (webinars and workshops) and constantly updated training module on how to use maps and data in the policy formulation process.</td>
<td>Ongoing</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Preliminary high potential renewable energy zones identified based on zoning methodology</td>
<td>Q4 2017</td>
</tr>
</table>

Component	Division	Deliverables			Timeframe*
		Core assessed	Core non-assessed	Other sources	
Quality infrastructure, standards and patents	IITC		• INSPIRE platform refinement, outreach and dissemination		Q1 2016 - Q4 2017
			• Technical QI analysis report for 1) utility scale PV and 2) smart-grids or mini-grids	• QI analysis reports for additional technologies upon request	Q4 2016 - Q4 2017
				• Advisory services and two workshops on the development and implementation of Q1 frameworks for renewable energy technologies for two countries/regions	Q4 2017
				• Advisory services and workshop on Accreditation and Certification of training institutions and their programmes based on established and new regional certification schemes	Q2 2016 - Q3 2017
		• Workshops with selected training institutions for the implementation of a regional certification scheme for solar PV installers		• Advisory services and workshop on the international accreditation of selected training institutions and their programmes	Q2 2017 for core Q4 2017 for VC
		• Advisory services and workshop for the international accreditation of the certification scheme		• Advisory services and workshop for the establishment of the regional certification scheme	Q4 2017 for core Q4 2016 for VC
				• Advisory services and workshop for the creation of the administrative structure of the programme	Q4 2016

A/6/L.4

Component	Division	Deliverables			Timeframe*
		Core assessed	**Core non-assessed**	**Other sources**	
Enhancing environmental and resource sustainability	KPFC	• Policy guide on best practices to enable a sustainable scale-up of renewable energy applications that positively impact water and food security		• Reports on environmental impacts of solar, wind and geothermal technologies	Q4 2017 / Q4 2016
				• Working paper quantifying the environmental impacts and benefits relative to other energy technologies	Q4 2016
				• Public guidelines for renewable energy environmental impact assessment for public financial institutions. Workshop with financial institutions	Q2 2017
				• Eight briefs (case studies) to showcase the benefits of renewable energy in the water, energy and food nexus	Ongoing
Knowledge Hub	KPFC	• Maintenance and expansion of the REsource platform.		• Creating "specialised" mini-REsource platforms for other IRENA projects.	Ongoing
		• Further expansion of REsource by validating and integrating reliable external content of third parties.		• Making REsource multi-lingual, *i.e.* making the platform available and searchable in several languages.	Ongoing / Q4 2016
				• Advisory services to countries and public entities seeking to develop similar knowledge platforms.	Ongoing

Component	Division	Deliverables			Timeframe*
		Core assessed	**Core non-assessed**	**Other sources**	
Multi-stakeholder engagement	CSP ICT IITC KPFC SMED	• Expand and operationalise the IRENA Coalition for Action.		• Support work to develop a consumer label in cooperation with industry and civil society organisations	Ongoing. Q2 2016.
				• Organise an annual high-level meeting of the Coalition	Q2 2016 - Q1 2017
		• Maintain and expand the four databases of the IRENA Learning Platform	-	• Maintain and moderate the public debate on the IRENA Community	Ongoing
			-	• Two 'Model IRENA' simulations, including extensive preparatory trainings	Ongoing
			-	• Regular university and school visits in the Host Country	Q4 2017
				• Design, maintain, coordinate and launch the IRENA renewable energy e-learning initiative	Q2 2016
			• Hosting of legislators' meeting on the side-lines of the Sixth Assembly	• Outreach to legislators and other parliamentary stakeholders and dissemination of tailored RE information	Ongoing

*NOTE: Timeframe for deliverables under 'other sources' is subject to availability of funds

A/6/L.4

Thematic area: Enhancing international cooperation and communications and outreach					
Objective: Actively engage Members, leverage strategic partnerships and communicate with stakeholders and the public					
Resources (core assessed, non-assessed and other sources): 17,619 (in USD thousands)					
Component	**Division**	**Deliverables**			**Timeframe***
		Core assessed	**Core non-assessed**	**Other sources**	
Facilitating international cooperation	SMED	• Ongoing support to Members	• Two Assembly meetings and related events		Ongoing
		• Increased number of IRENA Members	• Four Council meetings and related events		Ongoing
			• Meetings of subsidiary bodies, as necessary		Ongoing
			• IRENA booth at WFES		Ongoing
			• Increased programme-related communication to Member States		Ongoing
			• Further development of content and functionalities of online portal for Members		Ongoing
			• Facilitate engagement of Permanent Representatives in the Agency and heightened outreach to other Permanent Missions at Headquarters		Ongoing
		• Development of a Member communication network			Ongoing

Component	Division	Deliverables			Timeframe*
		Core assessed	Core non-assessed	Other sources	
Dissemination of knowledge, data and analysis.	SMED	• Communications strategies	• Social media campaigns and digital platforms to support IRENA's initiatives and expand knowledge on renewable energy	• Educational videos and infographics to simplify complex renewable energy concepts	Ongoing
		• Editorial maintenance of IRENA web properties and digital media	• Digital media production and distribution		Ongoing
		• Press conferences, webinars			Ongoing
		• Strengthened media and stakeholder lists		• Increase language-specific capacity and production of language-specific communications materials	Ongoing
		• Agency-wide publications coordination, planning, production and communications support	• Editing, translation, proofreading and graphic design to support programmatic publishing outputs		Ongoing
			• Planning and implementation of programmatic events in support of the Work Programme		Ongoing
				• Conduct RE training programmes for journalists, media organisations and spokespersons	Ongoing
				• Develop strategic media partnerships and engagements to expand coverage of IRENA activities	Ongoing
				• Conduct media relations events in target markets	Ongoing
Strengthen institutional structures and accountability	SMED	• Facilitating the full implementation of the Headquarters Agreement and the Agreement on the IITC Seat			Ongoing
		• Outreach to increase the number of Members granting privileges and immunities to IRENA			Ongoing
		• Further enhancing the protection of IRENA and its interests			Ongoing

*NOTE: Timeframe for deliverables under 'other sources' is subject to availability of funds

A/6/L.4

Thematic area: Administration and Management Services					
Objective: Support the Agency's programmatic work through comprehensive and efficient business processes that foster accountability and transparency.					
Resources (core assessed, non-assessed and other sources): 11,174 (in USD thousands)					
Component	**Division**	**Deliverables**			**Timeframe***
		Core assessed	**Core non-assessed**	**Other sources**	
Finance	AMS	• Comprehensive finance support to the Agency		• Voluntary Contribution Reporting	Ongoing
		• Audited IPSAS compliant Financial Statements			Q2 2016 - Q2 2017
		• Streamlined, efficient and accurate business process			Ongoing
Budget	AMS	• Comprehensive budgetary support to the Agency			Ongoing
		•Streamlined, efficient and accurate budgetary process			Ongoing
Information and Communication Technology	AMS	• Comprehensive IT services to the Agency in all of its physical locations	• Comprehensive IT services to the Agency in all of its physical locations		Ongoing
		• ERP for IRENA in supports of integrated resources management and controls			Ongoing
		• Streamlined, efficient and accurate business process	• Streamlined, efficient and accurate business process		Ongoing
Human Resources	AMS	• Comprehensive HR support services			Ongoing
		• Development of the workforce planning strategy			Q2 2016
		• Facilitate work-life balance			Ongoing
		• Systematic induction programme designed and implemented in all IRENA offices, including ethics training			Ongoing
		• Periodic staff training and development programs, including on performance management			Ongoing
		• Streamlined, efficient and accurate human resource process			Ongoing

Component	Division	Deliverables			Timeframe*
		Core assessed	**Core non-assessed**	**Other sources**	
Procurement	AMS	• Comprehensive procurement support			Ongoing
		• Master Procurement plan for increased efficiency			Q1 2016 - Q1 2017
		• Streamlined, efficient and accurate procurement process			Ongoing
General Services & Travel	AMS	• Comprehensive travel processes and support including for governing body meetings, programmatic events and staff travel	• Comprehensive travel processes and support including for governing body meetings, programmatic events and staff travel		Quarterly
		• Key asset management system			Ongoing
		• Health and safety plans in all IRENA offices	• Health and safety plans in all IRENA offices		Q2 2016
		• Streamlined, efficient and accurate business process	• Streamlined, efficient and accurate business process		Ongoing

*NOTE: Timeframe for deliverables under 'other sources' is subject to availability of funds

2016-2017 Biennium Budget Proposal

Table 1a: 2016-2017 Biennium core assessed and core non-assessed resource requirements (in USD thousands)

	2014-2015 Approved Budget	2016-2017 Biennium Proposed Budget	2016 Proposed Budget	2017 Proposed Budget
Assessed Contributions (Core Budget)	**40,000**	**46,000**	**23,000**	**23,000**
Core Non-Assessed UAE Contributions:				
UAE Support	11,600	5,000	2,500	2,500
Governing Body Meetings	3,200	3,200	1,600	1,600
Subtotal UAE Contributions	**14,800**	**8,200**	**4,100**	**4,100**
Core Non-Assessed Germany Contributions:				
Innovation and Technology	9,200	10,000	4,900	5,100
Subtotal Germany Contributions	**9,200**	**10,000**	**4,900**	**5,100**
Total Core Non-Assessed	**24,000**	**18,200**	**9,000**	**9,200**
Grand Total	**64,000**	**64,200**	**32,000**	**32,200**

Table 1b: Additional voluntary resources to be mobilised (in USD thousands)

	2016	2017	2016-2017
Voluntary Contributions	**14,300**	**12,300**	**26,600**

Table 2a: 2016-2017 Biennium core assessed and core non-assessed resource requirements by Thematic Area (in USD thousands)

THEMATIC AREA	Approved 2014-2015	(%)	Core Assessed and Non-Assessed 2016-2017	(%)
A. Strategic Management and Executive Direction	12,270	*19%*	14,419	*23%*
Governing Body Meetings	3,200	*5%*	*3,200*	*5%*
Subtotal	***15,470***	***24%***	***17,619***	***28%***
B. Thematic Programme Area				
Planning for the renewable energy transition	10,816	*17%*	*6,052*	*9%*
Enabling investment and growth	8,252	*13%*	9,291	*14%*
Renewable energy access for sustainable livelihoods	3,393	*5%*	2,364	*4%*
Regional action agenda	4,244	*7%*	8,851	*14%*
Islands: lighthouses for renewable energy deployment	2,972	*5%*	*1,011*	*2%*
Gateway to knowledge on renewable energy	7,624	*12%*	*7,838*	*12%*
Subtotal	**37,301**	*59%*	**35,407**	*55%*
Administration and Management Services	**11,229**	*17%*	**11,174**	*17%*
Total Estimated Requirements	**64,000**	**100%**	**64,200**	**100%**

Table 2b: Additional voluntary resources to be mobilised (in USD thousands)

Thematic Programme Area		
Planning for the renewable energy transition	6,330	*24%*
Enabling investment and growth	3,471	*13%*
Renewable energy access for sustainable livelihoods	2,023	*8%*
Regional action agenda	8,141	*30%*
Islands: lighthouses for renewable energy deployment	2,732	*10%*
Gateway to knowledge on renewable energy	3,903	*15%*
Total	**26,600**	**100%**

Table 3: 2016-2017 Biennium Post requirements

Level	2014-2015	Proposed 2016-2017	Increase
ASG	1	1	-
D-2	1	1	-
D-1	5	5	-
P-5	18	18	-
P-3/4	37	39	2
P-2/1	3	3	-
Sub-total Professional and above	65	67	2
General Services	24	26	2
Total	**89**	**93**	**4**

Table 4a: 2016-2017 Biennium core assessed and core non-assessed resource requirements by object of expenditure (in USD thousands)

Object of Expenditure	Core	Core Non-Assessed	Total Core Assessed and Non-Assessed	Proportion of Total
Total Staff Costs	**30,156**	**4,332**	**34,488**	**54%**
Total Non-Staff Costs	**15,844**	**13,868**	**29,712**	**46%**
Consultants, Interns, Project & Seconded Personnel	8,882	5,755	14,638	23%
Programme and Expert Meetings	1,567	491	2,059	3%
Travel of Staff	790	1,394	2,184	3%
Contractual Services	2,401	4,713	7,115	11%
General Operating Expenses	1,989	980	2,969	5%
Furniture and Equipment	214	535	749	1%
Total	**46,000**	**18,200**	**64,200**	**100%**

Note:
*: The Core Non-Assessed at this stage include USD 10m from Germany, and USD 3.2m for Governing Body Meetings and USD 5m from the UAE

Table 4b: Additional voluntary resources to be mobilised (in USD thousands):

Object of Expenditure	2016	2017	2016-2017	(%)
Consultants, Interns, Project & Seconded Personnel	5,293	4,963	10,256	39%
Programme and Expert Meetings	3,692	3,182	6,874	26%
Travel of Staff	704	629	1,333	5%
Contractual Services	4,601	3,526	8,127	30%
General Operating Expenses	10	0	10	0%
Total	**14,300**	**12,300**	**26,600**	**100%**

114. **The Strategic Management and Executive Direction (SMED) division** provides direct and immediate support to the Director-General in the execution of his strategic and management responsibilities. A Deputy Director-General supports the Director-General in programme design, formulation and implementation and the coordination between programmatic divisions and service areas, including through the PMO. SMED also comprises the Governance Support Office responsible for the Agency's governing body meetings and the Agency's engagement with Members and the Communications and Outreach Unit which coordinates the Agency's communication activities. An internal audit function ensures that internal control and risk management measures are in place and the Legal Advisor provides legal support to the Director-General and the Agency. The liaison presence in New York supports IRENA's collaboration with the UN system organisations, global initiatives, partners and other US-based stakeholders.

Resource Requirements: Strategic Management and Executive Direction

	Resources (in USD thousands)
Core Assessed	10,919
Core Non-Assessed	6,700
Total Requirements	**17,619**

Category	Resources (in USD thousands)	Posts
	2016-2017 Biennium Estimate	2016-2017 Biennium
Core Assessed Staff	8,914	23
Core Assessed Non-staff	2,005	-
Core Non-Assessed	-	-
UAE Government	6,700	-
Total	**17,619**	**23**

Object of Expenditure	2016-2017 Biennium Estimate
	(in USD thousands)
Total Staff Costs	**8,914**
Total Non-Staff Costs	**8,705**
Consultants, Interns, Project & Seconded Personnel	3,127
Programme and Expert Meetings	352
Travel of Staff	705
Contractual Services	3,921
General Operating Expenses	600
Total	**17,619**

115.   **The Knowledge, Policy and Finance Centre (KPFC)** is IRENA's central knowledge repository and a centre of excellence for renewables policy and finance issues. KPFC collects and analyses data and assesses policies, with a focus on finance and socio-economic and environmental aspects, to enable IRENA to be the advisory resource for its Members, and to disseminate information to the public. It is a central repository of IRENA's internal knowledge to support the work of all divisions and provide critical knowledge products to IRENA's Members. KPFC also coordinates IRENA's engagement with the private sector and civil society, as well as the institutional publication development.

Resource Requirements: Knowledge, Policy and Finance Centre

	Resources (in USD thousands)
Core Assessed	14,092
Core Non-Assessed	-
Total Requirements	**14,092**

Category	Resources (in USD thousands)	Posts
	2016-2017 Biennium Estimate	2016-2017 Biennium
Core Assessed Staff	6,112	15
Core Assessed Non-staff	7,980	-
Total	**14,092**	**15**

Object of Expenditure	2016-2017 Biennium Estimate (in USD thousands)
Total Staff Costs	**6,112**
Total Non-Staff Costs	**7,980**
Consultants, Interns, Project & Seconded Personnel	4,922
Programme and Expert Meetings	450
Travel of Staff	355
Contractual Services	1,279
General Operating Expenses	869
Furniture and Equipment	106
Total	**14,092**

116.   **The IRENA Innovation and Technology Centre (IITC)** provides cutting-edge information on renewable energy technology and innovation, and seeks new pathways for transition to a sustainable energy future. It is an objective and authoritative source of information and advice on renewables costs and cost trends, technology options, mid- and long-term objectives and roadmaps for achieving them. IITC, as a centre of excellence for renewable energy technology and innovation, stays abreast of the latest developments. It translates them into practical, policy- friendly tools to help IRENA's Members adopt renewable technologies, and to use innovation policy to accelerate change and transition to energy systems based predominantly on renewables. IITC is based in Bonn, Germany.

Resource Requirements: IRENA Innovation and Technology Centre

	Resources (in USD thousands)
Core Assessed	200
Core Non-Assessed	10,000
Total Requirements	**10,200**

Category	**Resources (in USD thousands)**	**Posts**
	2016-2017 Biennium Estimate	2016-2017 Biennium
Core Assessed Staff	4,332	14
Core Assessed Non-staff	5,868	-
Total	**10,200**	**14**

Object of Expenditure	**2016-2017 Biennium Estimate (in USD thousands)**
Total Staff Costs	**4,332**
Total Non-Staff Costs	**5,868**
Consultants, Interns, Project & Seconded Personnel	2,760
Programme and Expert Meetings	278
Travel of Staff	947
Contractual Services	878
General Operating Expenses	473
Furniture and Equipment	532
Total	**10,200**

117.   **The Country Support and Partnerships (CSP) division** supports countries in the development and implementation of national and regional renewable energy strategies. It complements the analytical and knowledge work being done by KPFC and IITC, and engages with countries and other partners to translate it into concrete actions. Upon request, CSP assists countries with their Renewables Readiness Assessments (RRAs), advises on follow-up actions and supports key capacity building efforts using effective needs assessment processes. It is a network hub for cooperation between countries, regions, organisations and institutions. CSP activities enable a systematic overview of country and regional needs, experiences and trends to help facilitate cross-pollination of best practices between countries and regions, and shape IRENA's future programmatic priorities.

Resource Requirements: Country Support and Partnerships

	Resources (in USD thousands)
Core Assessed	11,115
Total Requirements	**11,115**

Category	Resources (in USD thousands)	Posts
	2016-2017 Biennium Estimate	2016-2017 Biennium
Core Assessed Staff	6,438	15
Core Assessed Non-staff	4,677	-
Total	**11,115**	**15**

Object of Expenditure	2016-2017 Biennium Estimate (in USD thousands)
Total Staff Costs	**6,438**
Total Non-Staff Costs	**4,677**
Consultants, Interns, Project & Seconded Personnel	1,835
Programme and Expert Meetings	952
Travel of Staff	91
Contractual Services	944
General Operating Expenses	749
Furniture and Equipment	106
Total	**11,115**

118. **The Administration and Management Services (AMS) division** provides IRENA with administration and management services in support of implementing the Agency's mandate. The core objectives and responsibilities of the Division are to ensure that the Agency has the necessary infrastructural, human, finance and technical assets in place. The Division is also responsible for improving management practices throughout the Agency and for promoting accountability and management evaluation with the aim of improving work processes and procedures.

Resource Requirements: Administration and Management Services

	Resources (in USD thousands)
Core Assessed	9,674
Core Non-Assessed	1,500
Total Requirements	**11,174**

Category	Resources (in USD thousands)	Posts
	2016-2017 Biennium Estimate	2016-2017 Biennium
Core Assessed Staff	8,692	26
Core Assessed Non-staff	982	-
Core Non-Assessed	-	
UAE Government	1,500	-
Total	**11,174**	**26**

Object of Expenditure	2016-2017 Biennium Estimate (in USD thousands)
Total Staff Costs	**8,692**
Total Non-Staff Costs	**2,482**
Consultants, Interns, Project & Seconded Personnel	1,993
Programme and Expert Meetings	26
Travel of Staff	85
Contractual Services	94
General Operating Expenses	279
Furniture and Equipment	5
Total	**11,174**

Annex I: IRENA Organisational Chart

IRENA Organisational Structure and Post
Distribution for 2016 – 2017 Biennium

Summary of Posts
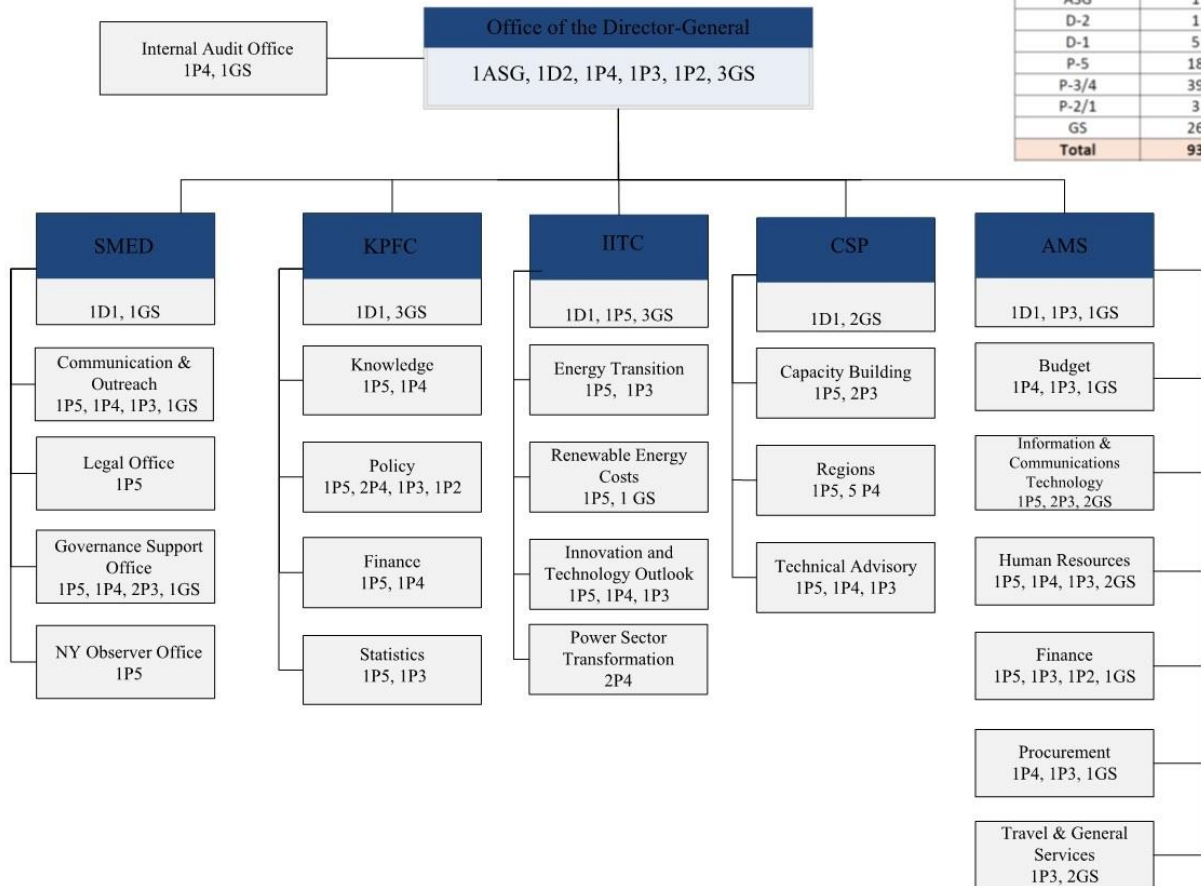
Posts	No.
ASG	1
D-2	1
D-1	5
P-5	18
P-3/4	39
P-2/1	3
GS	26
Total	**93**

Internal Audit Office
1P4, 1GS

Office of the Director-General
1ASG, 1D2, 1P4, 1P3, 1P2, 3GS

SMED
1D1, 1GS

- Communication & Outreach
1P5, 1P4, 1P3, 1GS
- Legal Office
1P5
- Governance Support Office
1P5, 1P4, 2P3, 1GS
- NY Observer Office
1P5

KPFC
1D1, 3GS

- Knowledge
1P5, 1P4
- Policy
1P5, 2P4, 1P3, 1P2
- Finance
1P5, 1P4
- Statistics
1P5, 1P3

IITC
1D1, 1P5, 3GS

- Energy Transition
1P5, 1P3
- Renewable Energy Costs
1P5, 1 GS
- Innovation and Technology Outlook
1P5, 1P4, 1P3
- Power Sector Transformation
2P4

CSP
1D1, 2GS

- Capacity Building
1P5, 2P3
- Regions
1P5, 5 P4
- Technical Advisory
1P5, 1P4, 1P3

AMS
1D1, 1P3, 1GS

- Budget
1P4, 1P3, 1GS
- Information & Communications Technology
1P5, 2P3, 2GS
- Human Resources
1P5, 1P4, 1P3, 2GS
- Finance
1P5, 1P3, 1P2, 1GS
- Procurement
1P4, 1P3, 1GS
- Travel & General Services
1P3, 2GS

Annex II: Indicative Scale of Contributions for 2016

Members	UN Factor	Indicative IRENA Adjusted Scale of Assessment 2016 (%)*	Approved Assessed Contribution to IRENA 2014 (USD)	Indicative Assessed Contribution to IRENA in 2016 (USD)	Variance (USD)
Albania	0.010	0.011%	2,340	2,467	127
Algeria	0.137	0.154%	32,175	34,535	2,360
Angola***	0.010	0.010%	1,950	2,243	293
Antigua and Barbuda	0.002	0.003%	390	673	283
Argentina	0.432	0.485%	101,595	108,761	7,166
Armenia	0.007	0.008%	1,560	1,794	234
Australia	2.074	2.329%	487,305	522,278	34,973
Azerbaijan**	0.040	0.045%	-	10,091	10,091
Bahamas**	0.017	0.019%	-	4,261	4,261
Bahrain	0.039	0.044%	9,165	9,867	702
Bangladesh***	0.010	0.010%	1,950	2,243	293
Barbados**	0.008	0.009%	-	2,018	2,018
Belarus	0.056	0.063%	13,260	14,128	868
Belgium	0.998	1.121%	234,390	251,384	16,994
Belize	0.001	0.001%	195	224	29
Benin	0.003	0.003%	780	673	(107)
Bosnia and Herzegovina	0.017	0.019%	4,095	4,261	166
Brunei Darussalam	0.026	0.029%	6,045	6,503	458
Bulgaria	0.047	0.053%	11,115	11,885	770
Burkina Faso	0.003	0.003%	780	673	(107)
Cameroon	0.012	0.013%	2,925	2,915	(10)
Cabo Verde	0.001	0.001%	195	224	29
China	5.148	5.781%	1,100,775	1,296,389	195,614
Colombia**	0.259	0.291%	-	65,257	65,257
Comoros**	0.001	0.001%	-	224	224
Côte D'Ivoire	0.011	0.012%	2,535	2,691	156
Croatia	0.126	0.142%	29,640	31,844	2,204
Cuba	0.069	0.077%	16,185	17,267	1,082
Cyprus	0.047	0.053%	11,115	11,885	770
Czech Republic	0.386	0.433%	90,675	97,100	6,425
Denmark	0.675	0.758%	158,535	169,982	11,447
Djibouti	0.001	0.001%	195	224	29
Dominican Republic	0.045	0.051%	10,530	11,437	907
Ecuador	0.044	0.049%	10,335	10,988	653
Egypt	0.134	0.150%	31,395	33,638	2,243

* Pursuant to Article XII of the IRENA Statute, mandatory contributions of Members shall be based on the scale of assessment of the United Nations, as determined by the Assembly. This scale of assessment was prepared in accordance with the UN General Assembly Resolution A/RES/67/238 for the period 2013-2015.
** States that became Members of IRENA after the adoption of the 2014-2015 Work Programme and Budget on 18 January 2014.
*** Least Developed Countries (LDC) that have reached a maximum assessment rate established at 0.01 percent.

Members	UN Factor	Indicative IRENA Adjusted Scale of Assessment 2016 (%)*	Approved Assessed Contribution to IRENA 2014 (USD)	Indicative Assessed Contribution to IRENA in 2016 (USD)	Variance (USD)
Eritrea	0.001	0.001%	195	224	29
Estonia	0.040	0.045%	9,360	10,091	731
Ethiopia***	0.010	0.010%	1,950	2,243	293
Fiji	0.003	0.003%	780	673	(107)
Finland	0.519	0.583%	121,875	130,738	8,863
France	5.593	6.281%	1,314,105	1,408,514	94,409
Gabon**	0.020	0.023%	-	5,158	5,158
Gambia	0.001	0.001%	195	224	29
Georgia	0.007	0.008%	1,560	1,794	234
Germany	7.141	8.020%	1,677,780	1,798,477	120,697
Ghana**	0.014	0.016%	-	3,588	3,588
Greece	0.638	0.717%	149,955	160,787	10,832
Grenada	0.001	0.001%	195	224	29
Guyana**	0.001	0.001%	-	224	224
Hungary**	0.266	0.299%	-	67,051	67,051
Iceland	0.027	0.030%	6,435	6,728	293
India	0.666	0.748%	156,390	167,739	11,349
Indonesia**	0.346	0.389%	-	87,233	87,233
Iran	0.356	0.400%	83,655	89,700	6,045
Iraq	0.068	0.076%	15,990	17,043	1,053
Ireland**	0.418	0.470%	-	105,398	105,398
Israel	0.396	0.445%	93,015	99,791	6,776
Italy	4.448	4.995%	1,045,005	1,120,129	75,124
Jamaica**	0.011	0.012%	-	2,691	2,691
Japan	10.833	12.166%	2,545,140	2,728,226	183,086
Jordan**	0.022	0.025%	-	5,606	5,606
Kazakhstan	0.121	0.136%	28,470	30,498	2,028
Kenya	0.013	0.015%	3,120	3,364	244
Kiribati	0.001	0.001%	195	224	29
Kuwait**	0.273	0.307%	-	68,845	68,845
Latvia	0.047	0.053%	11,115	11,885	770
Lesotho	0.001	0.001%	195	224	29
Liechtenstein	0.009	0.011%	2,145	2,467	322
Lithuania	0.073	0.082%	17,160	18,389	1,229
Luxembourg	0.081	0.091%	19,110	20,407	1,297
Malaysia	0.281	0.316%	66,105	70,863	4,758

* Pursuant to Article XII of the IRENA Statute, mandatory contributions of Members shall be based on the scale of assessment of the United Nations, as determined by the Assembly. This scale of assessment was prepared in accordance with the UN General Assembly Resolution A/RES/67/238 for the period 2013-2015.
** States that became Members of IRENA after the adoption of the 2014-2015 Work Programme and Budget on 18 January 2014.
*** Least Developed Countries (LDC) that have reached a maximum assessment rate established at 0.01 percent.

Members	UN Factor	Indicative IRENA Adjusted Scale of Assessment 2016 (%)*	Approved Assessed Contribution to IRENA 2014 (USD)	Indicative Assessed Contribution to IRENA in 2016 (USD)	Variance (USD)
Maldives	0.001	0.001%	195	224	29
Mali	0.004	0.005%	975	1,121	146
Malta	0.016	0.018%	3,705	4,037	332
Marshall Islands	0.001	0.001%	195	224	29
Mauritania	0.002	0.003%	390	673	283
Mauritius	0.013	0.015%	3,120	3,364	244
Mexico	1.842	2.069%	432,705	463,973	31,268
Micronesia**	0.001	0.001%	-	224	224
Monaco	0.012	0.013%	2,730	2,915	185
Mongolia	0.003	0.003%	780	673	(107)
Montenegro	0.005	0.006%	1,170	1,346	176
Morocco**	0.062	0.070%	-	15,698	15,698
Mozambique	0.003	0.003%	780	673	(107)
Namibia	0.010	0.011%	2,340	2,467	127
Nauru	0.001	0.001%	195	224	29
Netherlands	1.654	1.858%	388,635	416,657	28,022
New Zealand	0.253	0.284%	59,475	63,687	4,212
Nicaragua	0.003	0.003%	780	673	(107)
Niger	0.002	0.003%	390	673	283
Nigeria	0.090	0.101%	21,060	22,649	1,589
Norway	0.851	0.956%	199,875	214,383	14,508
Oman	0.102	0.115%	23,985	25,789	1,804
Pakistan	0.085	0.095%	19,890	21,304	1,414
Palau	0.001	0.001%	195	224	29
Panama	0.026	0.029%	6,045	6,503	458
Peru	0.117	0.131%	27,495	29,377	1,882
Philippines	0.154	0.173%	36,270	38,795	2,525
Poland	0.921	1.034%	216,450	231,875	15,425
Portugal	0.474	0.532%	111,345	119,301	7,956
Qatar	0.209	0.235%	49,140	52,699	3,559
Republic of Korea	1.994	2.239%	468,390	502,096	33,706
Republic of Moldova	0.003	0.003%	780	673	(107)
Romania	0.226	0.254%	53,040	56,960	3,920
Russian Federation**	2.438	2.739%	-	614,221	614,221
Rwanda	0.002	0.003%	390	673	283
Saint Kitts and Nevis	0.001	0.001%	195	224	29

* Pursuant to Article XII of the IRENA Statute, mandatory contributions of Members shall be based on the scale of assessment of the United Nations, as determined by the Assembly. This scale of assessment was prepared in accordance with the UN General Assembly Resolution A/RES/67/238 for the period 2013-2015.
** States that became Members of IRENA after the adoption of the 2014-2015 Work Programme and Budget on 18 January 2014.
*** Least Developed Countries (LDC) that have reached a maximum assessment rate established at 0.01 percent.

Members	UN Factor	Indicative IRENA Adjusted Scale of Assessment 2016 (%)*	Approved Assessed Contribution to IRENA 2014 (USD)	Indicative Assessed Contribution to IRENA in 2016 (USD)	Variance (USD)
Saint Vincent and the Grenadines	0.001	0.001%	195	224	29
Samoa	0.001	0.001%	195	224	29
Sao Tome and Principe**	0.001	0.001%	-	224	224
Saudi Arabia	0.864	0.970%	202,995	217,523	14,528
Senegal	0.006	0.007%	1,365	1,570	205
Serbia	0.040	0.045%	9,360	10,091	731
Seychelles	0.001	0.001%	195	224	29
Sierra Leone	0.001	0.001%	195	224	29
Singapore	0.384	0.431%	90,285	96,652	6,367
Slovakia	0.171	0.192%	40,170	43,056	2,886
Slovenia	0.100	0.112%	23,595	25,116	1,716
Solomon Islands	0.001	0.001%	195	224	29
Somalia	0.001	0.001%	195	224	29
South Africa	0.372	0.418%	87,360	93,737	6,377
Spain	2.973	3.339%	698,490	748,771	50,281
Sri Lanka	0.025	0.028%	5,850	6,279	429
Sudan***	0.010	0.010%	1,950	2,243	293
Swaziland	0.003	0.003%	780	673	(107)
Sweden	0.960	1.078%	225,615	241,742	16,127
Switzerland	1.047	1.176%	245,895	263,718	17,823
Tajikistan[9]	0.003	0.003%	-	673	673
The former Yugoslav Republic of Macedonia	0.008	0.009%	1,950	2,018	68
Togo	0.001	0.001%	195	224	29
Tonga	0.001	0.001%	195	224	29
Trinidad and Tobago**	0.044	0.049%	-	10,988	10,988
Tunisia	0.036	0.040%	8,385	8,970	585
Turkey	1.328	1.491%	312,000	334,357	22,357
Tuvalu	0.001	0.001%	195	224	29
Uganda	0.006	0.007%	1,365	1,570	205
United Arab Emirates	0.595	0.668%	139,815	149,799	9,984
United Kingdom of Great Britain and Northern Ireland	5.179	5.816%	1,216,800	1,304,238	87,438

[9] The State was a Member at the time of fourth Assembly, however, it was not included in the Indicative IRENA Scale of Contributions for 2014 as information on its membership was not received in time for inclusion.

* Pursuant to Article XII of the IRENA Statute, mandatory contributions of Members shall be based on the scale of assessment of the United Nations, as determined by the Assembly. This scale of assessment was prepared in accordance with the UN General Assembly Resolution A/RES/67/238 for the period 2013-2015.

** States that became Members of IRENA after the adoption of the 2014-2015 Work Programme and Budget on 18 January 2014.

*** Least Developed Countries (LDC) that have reached a maximum assessment rate established at 0.01 percent.

Members	UN Factor	Indicative IRENA Adjusted Scale of Assessment 2016 (%)*	Approved Assessed Contribution to IRENA 2014 (USD)	Indicative Assessed Contribution to IRENA in 2016 (USD)	Variance (USD)
United States of America[10]	22.000	22.000%	4,290,000	4,933,500	643,500
Uruguay	0.052	0.058%	12,285	13,007	722
Vanuatu	0.001	0.001%	195	224	29
Yemen***	0.010	0.010%	1,950	2,243	293
Zambia	0.006	0.007%	1,365	1,570	10
Zimbabwe**	0.002	0.003%	-	673	673
Total Assessment from State Members of IRENA			**19,500,000**	**22,425,000**	**2,925,000**
European Union[11]		2.500%	500,000	575,000	75,000
Overall Core Assessed Budget			**20,000,000**	**23,000,000**	**3,000,000**

---

[10] A maximum assessment rate is established at 22 percent

[11] As of 2012, the European Union has committed to paying an annual contribution at the fixed rate of 2.5% of the overall Core Budget.

* Pursuant to Article XII of the IRENA Statute, mandatory contributions of Members shall be based on the scale of assessment of the United Nations, as determined by the Assembly. This scale of assessment was prepared in accordance with the UN General Assembly Resolution A/RES/67/238 for the period 2013-2015.

** States that became Members of IRENA after the adoption of the 2014-2015 Work Programme and Budget on 18 January 2014.

*** Least Developed Countries (LDC) that have reached a maximum assessment rate established at 0.01 percent.