IRENA
International Renewable Energy Agency

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Proposed Work Programme and Budget for 2013

Report of the Director-General

1. The proposed Work Programme and Budget for 2013 has been prepared in accordance with Articles XI.E.1. and XII.B. of the IRENA Statute.

2. In accordance with Article X.F.2., the document will be considered by the Council before submission to the Assembly.

Proposed Programme of Work and Budget for 2013

Contents

Introduction

1. The rapid programmatic and institutional growth of IRENA over the past two years attests to the fact that high levels of interest and commitment to renewable energy exist worldwide. Out of 193 United Nations Member Countries, some 160 are currently participating in the work of IRENA, of which 102 countries and the European Union have already completed the legal ratification process through their respective legislatures. At least 118 countries have some type of national renewables support policy target – an increase of 65 countries since 2005.

2. In 2011, a global record of 83.5 gigawatts of new renewable energy (RE) capacity was installed, and the total global investment in renewables grew 17% to a record US$ 257 billion. Ambitious policy targets appear increasingly attainable due to the great strides forward in technology and the cost-effectiveness of renewables, plus the fact that the need for an institutional framework that supports countries in their transition to a clean energy future has never been greater.

3. Globally, political momentum for renewables grew in terms of international attention and action in the course of 2012 – the International Year of Sustainable Energy for All – which helped place renewables high on the world's agenda. The Rio+20 Outcome Document recognised that renewables are an essential part of the solution to the sustainability of energy systems and to the broader context of sustainable development and climate change. The United Nations Secretary-General's initiative, "Sustainable Energy for All" (SE4ALL), rallied countries, international organisations, the private sector and civil society around the aspirational goals of ensuring access to modern energy for all, increasing the rate of energy efficiency and doubling the share of renewables in the global energy mix by 2030. IRENA Members also espoused this notion and asked the Agency to seek pathways and identify milestones that would help achieve this goal.

4. Cooperation with countries, regional and international organisations and the private sector is embedded in every aspect of IRENA's programmatic activities. In the coming year, IRENA will strengthen its relationship with the private sector and civil society through effective participatory mechanisms. It will also employ both traditional means of outreach and more innovative techniques of communication, including the use of new media tools to inform and inspire action on all fronts.

5. An effective IRENA and a results-oriented approach is essential if the Agency is to attain its long-term objective of accelerating the deployment of renewables to address the new set of 21st century energy challenges that confront all its Members. The Council, at its third session, requested the Secretariat to review its programmatic and delivery

structure in view of its experiences to date and to ensure that the organisational structures, work processes and staff are optimally configured to meet the challenges ahead.

6. The Agency is making explicit efforts to modernise its processes, introduce cost-effective measures and encourage excellence and achievement. It is also striving to ensure that its component parts work well together, leveraging each other's respective strengths and avoiding duplications. As part of this effort, and pursuant to the request of the Council, the Agency formulated its Work Programme for 2013 along a new organisational structure that will enable more effective delivery and optimal use of the available resources.

7. The three pillars of the proposed IRENA Medium-Term Strategy – voice-advisory resource-network hub – provide a clear focus for the future work of the Agency and are embedded in the proposed Work Programme and Budget. The new structure reflects IRENA's strategic vision for the coming years – to be the principal platform for international cooperation a centre of excellence on renewable energy and a repository of policy, technology, resource and financial knowledge, and support to countries in their transition to a renewable energy future.

8. The programmatic structure remains distributed among three divisions, but their functions have been streamlined and clustered in a manner that provides clarity, internally and externally, regarding their respective responsibilities and mandates. The Knowledge, Policy and Finance Centre (KPFC) division will be IRENA's central knowledge repository and a centre of excellence for renewables policy and finance issues. KPFC's information collection and analysis will enable IRENA to inform and advise its Members and to disseminate information to the public. It will also be a central repository of IRENA's internal knowledge to inform and support the work of all divisions, as well as to provide critical knowledge products to IRENA's Members.

9. IRENA's Innovation and Technology Centre (IITC) will continue to provide cutting-edge information on renewable energy technology and innovation, and seek new pathways for transition to a sustainable energy future. In these times of economic austerity, an objective and authoritative source of advice on renewables costs and cost trends, technology options, mid- and long-term objectives and roadmaps for achieving them is urgently needed. IITC, as a centre of excellence for renewable energy technology and innovation, will also stay abreast of the latest developments and translate them into practical, policy-friendly tools for IRENA's Members.

10. The primary focus of the Country Support and Partnerships (CSP) division will be to support countries in the development and implementation of national and regional renewable energy strategies. Upon request, CSP will assist countries with their Renewables Readiness Assessments, advise on follow-up actions and support key capacity-building efforts using an effective needs assessment process. It will provide a platform for cooperation between countries, regions, organisations and institutions. Having one point of entry for country support, IRENA will bring coherence to the work of different divisions undertaken in support of countries and regions. CSP will develop a systematic overview of country and regional needs, experiences and trends, which will help facilitate cross-pollination of best practices between countries and regions. It will also help shape future programmatic priorities and strengthen IRENA as a change agent and partner of choice for the renewables agenda.

11. The future of the Agency will depend in part on its ability to forge strong working relationships with a variety of stakeholders. From the outset, IRENA's Members highlighted the importance of such coordination. Thus, forging strategic partnerships and cooperation has been IRENA's priority. Drawing upon the resources and legitimacy of country, regional and global institutions is critical if the Agency is to benefit from comparative advantages and avoid wasteful duplication of effort. More structured relationships have been formed through practical means, such as formalised cooperation agreements.

12. As the renewables agenda gains prominence, the Agency's participation in important global debates and coordination efforts will become ever more pertinent. While its new internal structure rectifies the risk and perception of overlaps within the Agency, special efforts will also be made to ensure added value in the work with external partners. In this year's Work Programme, it is proposed that a modest presence be established in New York to serve as a link to the major entities and the current debates on renewables, as well as to ensure effective collaboration with SE4ALL and Members not represented at the Agency's Headquarters.

13. The 2013 Work Programme and Budget envisages an increase in resources for the assessed core budget from US$ 16 million to US$ 18 million to support the continued capacity growth required to serve Members' needs. As several new Members will be contributing to the core budget, the existing Members will not be affected in a substantial way despite this growth in the proposed budget.

14. As the case for renewables improves, IRENA must take action to leverage this force for positive change to accelerate progress. Looking to the coming year and beyond, the Agency and its Members should remain ambitious despite the difficult circumstances

currently facing the global economy. IRENA is still in its growth phase and needs to be further strengthened to reach its full potential as the hub for multilateral action and a catalytic driver of change for renewables. The challenges are immense, but experience has shown that when strong commitments are backed by the right policies and adequate resources, needs can be met and real progress can be achieved.

Table 1: Estimates of expenditure (in USD thousand)

	2012 Approved Budget	**2013 Proposed Budget**	**% Variance**
Assessed Contributions (Core Budget)	**16,000**	**18,000**	**13%**
Voluntary Contributions from the UAE:			
Operations	2,900	2,900	0%
Research	2,900	2,900	0%
Governing Bodies	1,600	1,600	0%
Subtotal UAE Contributions	7,400	7,400	0%
Voluntary Contributions from Germany:			
Innovation and Technology	4,000	4,300	8%
Subtotal German Contributions	4,000	4,300	8%
Total Voluntary Contributions	**11,400**	**11,700**	**3%**
Additional Voluntary Contribution from the UAE (Capacity Building)	500	-	-100%
Additional Voluntary Contribution from Germany (Capacity Building)	500	-	-100%
Grand Total	**28,400**	**29,700**	**5%**

Table 2: 2013 Resource requirements by component (in USD thousand)

Component	Core Budget	Voluntary Contributions	Total	Proportion of Total
A. Strategic Management	4,600	1,180	5,780	19%
Governing Bodies	-	1,600	1,600	5%
B. Programme of Work				
Country Support and Partnerships	4,600	2,000	6,600	22%
Knowledge, Policy and Finance	4,600	1,500	6,100	21%
Innovation and Technology	-	4,300	4,300	14%
Subtotal	9,200	7,800	17,000	57%
C. Administration and Management Services	4,200	1,120	5,320	18%
Total Estimated Requirements	**18,000**	**11,700**	**29,700**	**100%**

Table 3: 2013 Post requirements

Level	Approved 2012	Proposed 2013	Increase
ASG	1	1	0
D-2	1	1	0
D-1	4	4	0
P-5	17	17	0
P-4	7	12	5
P-3	20	21	1
P-2/1	2	2	0
Sub-total Professional and above	*52*	*58*	*6*
General Services	**20**	**23**	**3**
Total	**72**	**81**	**9**

Table 4: 2013 Budget Resource requirements by object of expenditure (in USD thousand)

Object of Expenditure	Core	Voluntary	Total	Proportion of Total
Total Staff Costs	**13,480**	**2,210**	**15,690**	**53%**
Total Non-Staff Costs	**4,520**	**9,490**	**14,010**	**47%**
- **Consultants, Interns, Project & Seconded Personnel**	1740	3,170	4,910	17%
- **Programme and Expert Meetings**	1,210	3,260	4,470	15%
- **Travel of Staff**	250	440	690	2%
- **Contractual Services**	840	1,450	2,290	8%
- **General Operating Expenses**	430	1,140	1,570	5%
- **Furniture and Equipment**	50	30	80	0%[1]
Total	**18,000**	**11,700**	**29,700**	**100%**

[1] Proportion is less than 1%

A. Strategic Management and Executive Direction

Management of the Agency

15. The Director-General has overall responsibility for providing leadership to carry out the Agency's mandate and for the efficient and effective management of the Agency and its Work Programme. Strategic Management and Executive Direction (SMED) provides direct and immediate support to the Director-General in the execution of his strategic and management responsibilities. The Director-General is supported by a Deputy Director-General in strategic management and programme design, formulation and implementation and provides substantive leadership to the coordination and collaboration between programmatic divisions and service areas. The Office of the Director-General provides support for the timely discharge of the executive direction and management of all activities of the Agency. It oversees the implementation of the Work Programme and acts as the focal point for information on all aspects of the work of the Office.

16. SMED also comprises the Governance Support Office and Communications, Publications and Outreach, described in detail below, as well as the oversight and legal functions. An internal audit function ensures that internal control and risk management measures are in place to enable rapid response and reaction as required or appropriate. A Legal Advisor, *inter alia*, prepares and reviews agreements, Memoranda of Understanding (MoUs) and contracts to ensure requisite compliance and to protect the interests of IRENA.

17. In 2013, SMED, in coordination with programmatic and administrative divisions, will continue to refine and implement a structured delivery framework and reporting process to monitor programme implementation and measure performance at the project level. This mechanism will deliver a central repository of projects, which will simplify coordination across divisions and facilitate knowledge management. It will support the Agency's ability to track a project's progress against time, cost and deliverables, thereby enabling better reporting on successes, issues and risks, as well as corrective actions.

18. SMED will act as the focal point for IRENA's annual policy-oriented publication as a key instrument to fulfil the Agency's advocacy role as the global voice for renewable energy. This publication will serve to unify and articulate the Agency's strategic messages and to disseminate accurate and unbiased knowledge, data and analysis on emerging trends and issues in the field of renewable energy. The messaging, communication and dissemination of key findings will be crucial for the success of this publication.

19. In accordance with its Statute, IRENA is mandated to initiate discussion and ensure interaction with other governmental and non-governmental organisations and networks in the field of renewable energy. Within this framework, SMED will oversee engagement, both with the private sector through the Business Advisory Council and with civil society, to strengthen the advocacy role of the Agency, refine the way in which it represents renewable energy and obtain input from the private sector and civil society to support IRENA's activities.

20. SMED will also oversee the administration of the first project cycle of the Abu Dhabi Fund for Development (ADFD) for renewable energy projects in developing countries and will assist in the implementation of the second call for proposals. With the guidance of an Advisory Committee, as well as a Panel of Experts, IRENA will seek to integrate the project selection process for the first funding cycle and to introduce improvements to the second funding cycle.

Outputs 2013:

i) Direction, guidance and policy leadership of all programmatic and administrative actions;
ii) Facilitation of audits, written management responses and implementation of audit recommendations;
iii) Substantive, technical and administrative assistance for the first two project cycles of ADFD renewable energy projects; and
iv) Leadership in the engagement with the private sector and civil society.

Strategic Partnerships

21. The key drivers of success for IRENA are connectivity and the ability to galvanise critical partnerships with all key players in the renewable energy field. Selecting strategic collaborating partners is central to IRENA's work, fostering a wide array of opportunities to pursue the Agency's mission. The Director-General is responsible for forging major long-term relationships with key players in the field of renewable energy to enhance cooperation and alliances for programme implementation and to strengthen partnerships related to defined activities.

22. In 2013, IRENA will continue to engage global renewable energy initiatives, such as the International Renewable Energy Conference (IREC) and the World Future Energy Summit (WFES), the latter of which has evolved to become the world's foremost annual meeting committed to promoting the advancement of future energy, as well as the Clean

Energy Ministerial (CEM). Currently, the 23 governments participating in CEM initiatives collectively account for about two-thirds of projected global growth in energy demand over the next decade. The CEM is therefore an important forum to engage high-level policy makers to scale up the deployment of renewable energy technology in the context of more reflective energy pricing and ambitious international collaboration. IRENA will participate in the fourth CEM meeting in April 2013 in India.

23. Furthermore, IRENA will continue, upon invitation, to contribute to high-level regional fora focusing on renewable energy, such as the Conference of Energy Ministers of Energy Africa (CEMA), the Latin American Energy Organisation (OLADE) Ministerial Conference, the Pacific Islands Forum (PIF), the Caribbean Community and Common Market (CARICOM), the Association of Southeast Asian Nations (ASEAN), European Commission (EC) and others.

24. As the universal intergovernmental framework dedicated to the promotion of renewable energy, IRENA will continue to participate actively in the global renewable energy dialogue, disseminate information and increase awareness. As part of this responsibility, IRENA has been actively engaged in advancing the renewables agenda within the UN Secretary-General's SE4ALL initiative and will continue to play a key role as the renewables hub in SE4ALL in line with its mandate to act as the focal point/global hub for renewable energy cooperation.

25. In this context, and in pursuance of UN General Assembly resolution A/Res/66/110 that gave IRENA Permanent Observer status at the UN General Assembly, IRENA proposes to establish an Office of the Permanent Observer for the International Renewable Energy Agency to the United Nations in New York. The Agency would benefit from continuous direct coordination with the Office of the UN Secretary-General, the SE4ALL initiative and UN agencies, funds and programmes headquartered or represented in New York to help ensure systemic coherence, avoid duplication of work and position IRENA as the main agency entrusted with the promotion of the sustainable use of all forms of renewable energy worldwide. This Office would also facilitate strategic engagement of Washington-based international organisations, such as the World Bank (WB), the International Finance Corporation (IFC) and the Inter-American Development Bank (IADB), that are relevant to IRENA's work, as well as key private sector and other initiatives, such as the annual Bloomberg New Energy Finance (BNEF) forum, the World Research Institute (WRI) conference and the American Council on Renewable Energy (ACORE).

26. Importantly, IRENA's active presence in New York will facilitate outreach to, and direct contacts with, all UN Member Countries, in particular with over 80 countries that do not

have representation in the United Arab Emirates (UAE), including a number of island states and some less developed countries that have limited representation abroad but are represented through their Permanent Missions in New York.

Outputs 2013:

v) Promotion of effective participation in international and regional fora;
vi) Position as the hub for renewables in the SE4ALL initiative; and
vii) Establishment of IRENA's Office of the Permanent Observer to the UN in New York.

Governance Support Office

27. At present, IRENA's membership comprises 103 Members and 56 signatories and applicants for membership. The Assembly is the supreme organ of the Agency. It is composed of all Members of the Agency and meets in regular annual sessions. The Council carries out the functions entrusted to it under the Statute and delegated to it by the Assembly. At present there are two subsidiary organs of the Council, the Policy and Strategy Committee (PSC) and the Administration and Finance Committee (AFC), which hold their meetings in conjunction with the Council.

28. The Secretariat provides substantive, institutional and organisational support to the Assembly, the Council and its subsidiary organs. It also ensures effective support to, and communication with, the membership, formal and informal. The Governance Support Office (GSO) is the Secretariat's focal point for these activities.

29. GSO will continue to support IRENA's governing bodies in an accountable and transparent manner, with a view to meeting the needs of the entire membership and to ensuring their effective performance in fulfilling their statutory responsibilities and mandated functions. It will also support, as necessary, the organisation of other meetings with high-level representation from Members at the ministerial level and above.

30. GSO will also continue to serve as IRENA's focal point in communication with the membership, as well as engaging in outreach to non-Member countries and providing substantive support to Members on non-programmatic issues. The Office will furthermore ensure the availability and timely dissemination of information on IRENA activities to Members.

31. GSO's support and communication with Members will take place regularly using the following means, *inter alia*:

- The network of Focal Points in capitals and representatives of Member States at Headquarters;
- Regular bilateral and group meetings with Members and non-Member countries;
- The web-based communication platform "REmember" for delegates; and
- Other communications tools, such as IRENA bulletins.

32. In order to operationalise the Headquarters Agreement between IRENA and the UAE signed in June 2012, GSO will coordinate its implementation, including the establishment of a regime of Permanent Representatives/Missions.

33. GSO will also remain abreast of the developments with respect to the continuous commitment of the Government of Austria to fund the IRENA Liaison Office to International Agencies and UN-Energy in Vienna.

34. The organisational resource requirements associated with convening IRENA's governing bodies meetings, including conference services, venue, logistics and related arrangements, are covered through voluntary contributions from the UAE. Travel of eligible delegates is supported through voluntary contributions of the IRENA membership to the Fund for Developing Countries Representatives (FDCR).

Outputs 2013:

viii) Support for the Assembly and Council meetings (three meetings), meetings of the subsidiary organs (up to six per year) and other high level meetings as required;
ix) Provision of information and regular communication with Members and non-Member countries;
x) Launch of "REmember", the interactive, web-based communication and cooperation platform; and
xi) Establishment of the Permanent Representatives/Missions' regime.

Communications, Publications and Outreach

35. Within the context of IRENA's broad communications framework and with a view to developing a robust and resilient institutional message for the Agency that will enable it to build a clear case for the widespread use of renewable energy sources worldwide, an elaborate communications project was launched in 2012, entitled "Voice of Renewables". The project aims at branding and raising awareness about IRENA, along with disseminating the key message that renewable energy technologies are feasible and

cost-effective, thus advancing the Agency's core mandate to promote renewables worldwide.

36. The project will continue in 2013 with a view to creating strong, flexible communications capacity within IRENA to disseminate the results of its reports and publications, in particular the annual IRENA institutional publication and others as a key instrument to fulfil IRENA's advocacy role as the global voice for renewable energy. In addition, core activities will also continue to strengthen publications branding and dissemination and raise the profile of IRENA. Communications activities will be funded through both the core budget and voluntary funding from Member States.

37. Parallel to the "Voice of Renewables" and other communications activities, the Communications Unit will work with the Information and Communication Technology Office and GSO to expand and enrich the content of the IRENA website, with a view to eventually making the website a "one-stop shop" for all relevant renewable energy information. The website will be linked to social media platforms with the aim of expanding IRENA's visibility. Website innovations will continue to ensure that the content and applications are relevant in the broader context of the renewable energy industry. The Communications Unit will be responsible for ongoing web content development, with the Senior Editor acting as the focal point for website content.

38. In order to underline IRENA's role as the primary intergovernmental agency for renewable energy, the Communications Unit will place extra emphasis on expanding the visibility of IRENA within relevant networks of strategic importance. Key international events and fora that offer the opportunity of targeting audiences of importance will be identified with a view to giving the Agency higher global visibility. The Communications Unit will continue working to expand the Agency's media and public relations capacity and set up the necessary mechanisms for effective future communications and outreach.

Outputs 2013:

xii) Systematic and targeted dissemination of key IRENA messages, slogans and visual images;
xiii) Systematic and targeted dissemination of IRENA publications;
xiv) Intensified global and local media outreach;
xv) Development of IRENA's social media strategy;
xvi) A video documentary for TV broadcasting and the Internet;
xvii) Up-to-date website content; and
xviii) Global outreach at high-profile events and meetings.

Resource Requirements: Strategic Management and Executive Direction & Governing Bodies

Staff: USD 4.270 million
Non-staff: USD 3.110 million

Core Resource Requirements	USD 4.600 million
Voluntary Contributions	USD 2.780 million
Total Requirements	**USD 7.380 million**

Category	**Resources (in USD thousand)**	**Posts**
	2013 Estimate	2013
Core Post	4,270	21
Core Non-post	330	-
UAE Government Bid	2,780	-
Total	**7,380**	**21**

Object of Expenditure	**2013 Estimate (in USD thousand)**
Total Staff Costs	**4,270**
Total Non-Staff Costs	**3,110**
- **Consultants, Interns, Project & Seconded Personnel**	410
- **Programme and Expert Meetings**	1970
- **Travel of Staff**	250
- **Contractual Services**	220
- **General Operating Expenses**	260
- **Furniture and Equipment**	-
Total	**7,380**

B. Programme of Work

Sub-programme 1: Knowledge, Policy and Finance Centre

Strategic Objectives and Context

39. 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 will collect and analyse data and assess policies, with a focus on finance and socio-economic and environmental aspects, to enable IRENA to be the voice of renewables and 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 is also a platform for engagement for the private sector and civil society.

Component 1: Global Knowledge on Renewable Energy

40. IRENA aims to become a primary source of data and information on renewable energy. Through its universal membership, IRENA has the unique country buy-in necessary to gather detailed data from its Members. The Agency is developing a global knowledge framework to enable the tracking of renewable energy trends and efforts at the national and global levels. To meet this objective, IRENA is further strengthening its efforts to collect data and information from countries and key regional entities through a consistent methodology while, at the same time, developing a central repository for all data and information generated in the three sub-programmes. This information will increasingly provide the statistical basis for various IRENA analyses and publications. Among them, an annual IRENA publication will be developed as a key tool to strengthen IRENA's global analytical and advocacy role through the dissemination of accurate and unbiased knowledge and in-depth analysis.

41. The collection and harmonisation of data on the potential of solar and wind resources is the most advanced among IRENA's efforts in this area. The Global Atlas initiative will be continuously improved by extending the scope to other RE resources and linked to other types of data collected by IRENA.

42. **Activity 1: Data and Information.** During 2012, IRENA undertook consultations with key stakeholders to identify data gaps, availability of relevant data and the development of efficient RE data collection methodologies at the country level. In 2013, an integrated approach for collecting relevant information on renewables from countries and key

regional entities will be formalised since active participation and engagement with Members is critical to ensuring the success and sustainability of this effort. At the regional and international levels, IRENA will build on agreements and partnerships with key international energy organisations active in the field of energy statistics.

43. ***Renewable Energy Data:*** IRENA will collect, compile and systematise basic renewable energy statistics from primary sources (i.e. production, consumption, capacity), as well as other data relevant to the RE sector (e.g. employment, investment, prices) in collaboration with relevant international organisations, including the International Energy Agency (IEA), the United Nations Environment Programme (UNEP), the United Nations Statistics Division (UNSD), the Food and Agriculture Organizations (FAO), the Global Bioenergy Partnership (GBEP), BNEF and Member States. Members will be asked to provide their data annually through a consolidated questionnaire and process. The IRENA network of data focal points will be expanded and KPFC will support CSP in organising training sessions at regional and country levels on RE data collection and reporting.

44. IRENA will continue to develop an *internal Agency-wide data management system* to organise data in a structured way, including inputs provided by other programmatic divisions, such as RE technology costs gathered by IITC. In order to make the data accessible in a usable format to Members and to the wider public, IRENA will also develop a *web-based data platform* by the end of 2013.

45. ***Recommendations to Improve Data and Methodology*****:** Building on its role in the SE4ALL baseline report steering group, IRENA will undertake detailed consultations with relevant institutions to identify potential improvements in data collection and measurement of the use of biomass and distributed renewable generation. These consultations will generate a set of recommendations to improve existing methods to measure more accurately the share of renewable energy.

46. ***Joint IEA-IRENA Policies and Measures Database:*** RE policies and measures have evolved rapidly in recent years. Since 2012, IRENA has been working jointly with the IEA to provide policy makers and relevant stakeholders with global up-to-date information on renewable energy policies. The database will be updated twice in 2013 to include primary data and will be expanded to comprise 25 additional IRENA Members and signatories. The active participation of IRENA Members will be essential to extend the coverage, accuracy and usefulness of the database. This information will support various IRENA activities, such as policy assessments and IRENA's annual policy-oriented publication.

47. ***Indicators:*** Work initiated in 2012 to develop a conceptual framework and methodology to build renewable energy indicators will continue in 2013. IRENA's Renewable Energy Indicators will serve as a tool for tracking the contribution of renewable energy to the priorities and targets that countries have set in areas, such as economic growth, energy security, energy access and climate mitigation. IRENA will complement, support and unify existing renewable energy indicators, capturing relevant trends and data. The work on indicators is an ongoing, long-term activity that will support the evidence base for IRENA's activities and the annual institutional publication and will also inform SE4All and its assessment of progress towards the achievement of its goal of doubling the share of RE by 2030.

Outputs 2013:

i) Methodology and framework for collecting data on RE statistics and other relevant RE data;
ii) Creation of internal data management system and web-based platform;
iii) Preliminary methodology for collecting data on biomass and distributed generation under the SE4ALL; and
iv) RE indicators.

48. **Activity 2: Global Renewable Energy Atlas.** The Global Atlas for Solar and Wind Energy provides a geographic information system (GIS) platform, showcasing concrete and homogeneous data on solar and wind potentials from a large number of providers. This platform has great utility in supporting policy formulation and spatial planning and in facilitating investments in pre-feasibility studies for wind and solar projects. The Global Renewable Energy Atlas also constitutes a commitment by IRENA to the SE4ALL initiative towards the twin objectives of reaching universal access to sustainable energy services and doubling the share of renewable energy by 2030. The Global Renewable Energy Atlas integrates the efforts of numerous international experts and data providers under the guidance of IRENA Members and in cooperation with the CEM framework. An Intellectual Property Rights Agreement for the data providers is being defined with the intent of recognising the work of the consortium partners and of providing maximum information in the public domain.

49. In 2013, the partnership for the Global Solar and Wind Atlas will be expanded from 12 to 20 countries. The database and tools provided by the solar and wind atlases will be expanded and improved based on the feedback gathered through end-user consultations. IRENA will engage relevant stakeholders around bioenergy, hydropower and geothermal energy resource assessment to constitute dedicated technical groups for each resource. These groups will complement the existing partnership of the Global Atlas. The

development of the technical group on marine energy is envisioned for 2014. To meet the demands of end-users, IRENA will progressively integrate country profiles, technology information, plant simulation tools, economic modules and socio-economic indicators into the platform.

50. To fully address the call for action on resource assessment expressed by IRENA Members in the Africa High-level Communiqué, the Pacific Leaders Communiqué and the Malta Communiqué, two aspects need to be actively developed: capacity building and funding of measurement campaigns. IRENA will mobilise the partners of the Global Atlas to identify and connect the capacity-building and funding initiatives in order to respond to countries' needs and priorities identified through the capacity needs assessment activity coordinated by CSP.

Outputs 2013:

v) Establishment of an Intellectual Property regime for the Global Atlas;
vi) Addition of at least eight countries and data providers joining the Global Atlas;
vii) Expansion of the Global Atlas to include bioenergy, hydropower and geothermal energy; and
viii) Establishment of a network of existing programmes for funding measurement campaigns.

51. **Activity 3: Institutional Publication: *"Prospects for Renewable Energy".*** Strong support for an annual IRENA publication has been voiced by IRENA Members as an important instrument to fulfil the Agency's advocacy and policy advisory role as the global voice for renewable energy and disseminator of accurate and unbiased knowledge, data and analysis on renewable energy. Under the guidance and coordination of SMED, this publication will provide forward-looking analysis to inform policy making and stimulate attention and debate on the key issues, specific regions and emerging trends in renewable energy policy, markets, finance, technology and innovation. It will lay out a short- to medium-term pathway for potential achievements over the next five to ten years, identifying, *inter alia*, major investment opportunities and the scope for more efficient and effective policy intervention. As IRENA's overarching publication, this report would provide an opportunity to showcase and articulate IRENA's work and knowledge products.

Output 2013:

ix) *Launch of IRENA's first institutional publication.*

Component 2: An Enabling Environment for Renewable Energy: Policy and Finance.

52. Deployment of renewable energy will require substantial new investment with significant private sector participation. Private investment, however, depends on favourable investment frameworks and conducive financing policies. In order to develop the enabling conditions to mobilise private investors in a rapidly evolving industry, governments need to develop holistic RE policies and deployment strategies.

53. The sharp reduction in the cost of renewable energy technologies and the integration of increasingly larger shares of renewable energy into the system have opened the debate on the need for more sophisticated policy instruments that can adapt to evolving market conditions. In this context, IRENA carried out an assessment on renewable energy tariff-based support mechanisms in 2012 with a specific focus on tendering schemes. In 2013, IRENA will continue assessing and monitoring best practices in renewable energy policy design and focus on the impact of energy pricing on RE deployment, assess best practices in target setting and analyse adaptation of policy instruments to evolving market conditions and the maturity of RE technologies.

54. **Activity 4: Policy Assessment**. ***Impact of Energy Pricing on RE Deployment*****:** Getting market signals right so that energy prices reflect the true costs of producing and consuming energy and support the development of a well-functioning energy market should be a guiding principle in the pursuit of sustainable development. As such, tackling the distortion in energy pricing is crucial for creating economic incentives to increase renewables in the energy system and encourage private sector development. Given recent reductions in costs and generally increasing costs of conventional electricity, renewable energy is becoming increasingly competitive and is already the cheapest option in many locations and applications. However, renewable technologies would be competitive with fossil fuels in even more locations if prices were to reflect true costs. In 2013, IRENA will analyse the impact of energy pricing on RE deployment with a special focus on North Africa. In this context, the case study on Morocco will be undertaken in response to the MENAREC Declaration where, "IRENA was invited to carry out a study evaluating the economic impacts of current energy policies in the context of RE deployment. This will also include the impact of energy prices reflecting true economic costs."

55. ***Critical Success Factors for RE Target Setting:*** Setting RE targets has emerged as a powerful tool to support policies and send long-term signals to private sector investors, as well as to provide indications on the potential RE market size. In 2011, 118 countries

had RE targets but with very diverse impacts on RE deployment. Often targets lacked the support of appropriately planned strategies, related policies and binding mandates. Based on selected case studies, the context in which targets are set (e.g. regional, national, end-use-specific, resource-specific) will be analysed to assess the reasons for success and failure in meeting them. The study will include recommendations for optimal target setting based on the findings.

56. ***Adaptation of Policy Instruments:*** Policies need to adapt to dynamic market conditions and to the maturity of RE technologies. As renewable energy technologies evolve in the course of their deployment cycle, they require a specific mix of targeted incentives at each stage. Similarly, dynamic global trends, such as changes in the costs of renewable energy technologies and/or in the energy prices, can significantly alter the profitability of renewable energy, thereby requiring re-evaluation of policy measures. Policy makers will need to address such issues and solve them by adapting the policy instruments or by using alternatives. IRENA will analyse and develop advice on how policy makers can best address the challenge of accelerating RE market growth while managing the level of support in a rapidly evolving market environment.

Outputs 2013:

x) Report on the impact of energy pricing on RE deployment in North Africa;
xi) Report on the critical success factors for target setting; and
xii) Working paper on RE policy adaptation to dynamic market conditions.

57. **Activity 5: Renewable Energy Finance.** Annual renewable energy investment has increased from US$ 133 billion in 2007 to US$ 257 billion in 2011. The continued expansion of renewables will require large-scale and sustained investment, the majority of which will come from the private sector.

58. Renewable energy technologies are characterised by high up-front capital expenditure and modest to low operational expenditures. This requires appropriate financing, typically consisting of equity combined with long-term debt. The risk, real or perceived, as well as the limited track record of many renewable energy technologies and of many project developers, constitute barriers to accessing capital for projects. Specifically, off-grid renewable energy systems, ranging from solar lanterns and cook stoves to mini-grids, have proven to be difficult to finance and require that due attention be given to their significance for development. Furthermore, many financial institutions do not have sufficient capacity or experience with renewable energy to carry out an appropriate risk assessment, leading to high or inhibitive financing costs.

59. In 2013, IRENA will systematically engage with financing institutions to provide a platform for dialogue. The network will address risk issues and possible collaboration between lenders with varying degrees of exposure to renewable energy finance. In keeping with its advisory role, IRENA will map and analyse existing public funding for renewables from multilateral and regional development banks, international development finance institutions and relevant bilateral agencies engaged in renewable energy project development. Furthermore, IRENA will map dedicated RE financing opportunities provided by commercial banks and institutional and other investors with a focus on off-grid RE projects in Africa.

Outputs 2013:

xiii) Mapping and analysis of international public financing and potential financing from commercial lenders and institutional and other investors for RE; and
xiv) Prospects for financing off-grid RE in Africa.

Component 3: Socio-economic and Environmental Impacts of Renewable Energy

60. Recent decades have seen an increase in the deployment of renewable energy sources as an essential element supporting the three pillars of sustainable development: social, economic and environmental. Increased income generation, local content, industrial development and job creation have often been cited as potential benefits of deploying renewables. However, more in-depth analysis is needed to fill the knowledge gap in this field and define practical pathways forward. In 2013, IRENA will broaden its impact assessment of RE deployment on socio-economic variables, as well as undertake an analysis of potential environmental impacts of large-scale deployment of renewable energy technologies. In addition, IRENA will start assessing the cross-sectorial impacts of RE and, more specifically, the role it can play in the nexus between water, energy and food supply use.

61. **Activity 6: Socio-economic Value of Renewable Energy**. In 2013, IRENA will complete the analysis of the impact of RE for power generation on job creation by including all renewable energy uses, addressing issues related to methodology in estimating the number of jobs created and further elaborating the work on jobs in the context of energy access.

62. IRENA will also broaden the assessment of the long-term socio-economic impacts of RE deployment along different segments of the value chain for solar and wind and develop its knowledge framework by analysing and disseminating evidence on the subject. Analysing the economic value creation in the context of renewable energy will address

the sector's contribution to overall value added within an economy, such as growth and local content. This approach reflects the overall economic benefits that the RE sector provides. It will support policy makers by providing the set of policy instruments required to foster the emergence of a domestic RE sector comprising certain parts of the RE value chain. KPFC will cooperate with the experts group on socio-economic impacts of renewable energy composed of the Multilateral Working Group on Solar and Wind of the Clean Energy Ministerial (MWGSW), the IEA-Renewable Energy Technology Deployment (IEA-RETD), the UK Energy Research Centre (UKERC), the Kwame Nkrumah University of Science and Technology (KNUST), the National Renewable Energy Laboratory (NREL) and The Energy and Research Institute (TERI).

63. IRENA's mandate for the promotion of renewable energy is closely linked to sustainable development. A debate on the role of renewables across three pillars of sustainability – social, economic and environmental – is becoming increasingly common in many global discussions. This holistic thinking is also reflected in the "nexus" paradigm that promotes consideration of the correlation between the use of land, water and energy by policy makers. In this context, a study on the role that renewable energy can play in this nexus will be undertaken to highlight the broader benefits RE deployment can bring to ensuring long-term sustainability.

Outputs 2013:

xv) Report on RE and Employment: Analysis, Trends and Markets leading to a conference on RE and employment generation;
xvi) Policy recommendations on the value creation of solar and wind deployment; and
xvii) Report on RE and the water, energy and food nexus.

64. **Activity 7: Environmental Impact of Renewable Energy**. Even though RE technologies can mitigate the adverse environmental impacts of energy production, their large-scale deployment can potentially create negative externalities. During 2012, IRENA started creating an overview of the potential environmental impact of different RE technologies. In 2013, IRENA will carry out an in-depth analysis of these impacts with regard to off-grid RE applications.

65. ***Environmental Impact of Off-grid RE Applications.*** Off-grid applications based on renewable energy are projected to account for the majority of investments aiming to increase access to electricity in rural areas in the coming decades. Given the foreseen deployment of these decentralised systems, it is necessary to analyse their environmental impact from a life cycle perspective, including the end-of-life treatment of individual

components. IRENA will identify best practices and will provide recommendations aimed at reducing the environmental impact related to the deployment of off-grid systems based on renewable energy.

66. ***Debunking the Myths on RE Technologies.*** Misconceptions exist regarding the potential negative impacts of RE technologies. IRENA will elaborate state-of-the-art communication material clarifying the "myths" around RE technologies by presenting the most reliable evidence and unbiased view on the potential impacts. This work will be undertaken in cooperation with the private sector and civil society to stimulate social acceptance.

Output 2013:

xviii) Working paper on managing the environmental impact of off-grid RE applications; and

xix) Development and dissemination of factual material on "Debunking the Myths around RE Technologies".

Component 4: The Leveraging of Knowledge from Industry and other Stakeholders

67. The engagement of industry, civil society, academia and other stakeholders will clarify and strengthen IRENA's mission by enabling the Agency and its Members to benefit from their expertise and perspectives, which can also be disseminated to the renewable energy community at large. This engagement will also allow IRENA to identify opportunities, discuss emerging issues and explore further areas of work.

68. **Activity 8: Business Advisory Council**. In consideration of the private sector's role as the principal source of technology, investment and innovation in promoting renewable energy, there is wide consensus among IRENA Members that the Agency's engagement with the private sector is an essential requirement to further its mission. During the second session of the Assembly, a Ministerial Roundtable on this topic recognised the crucial role of the private sector and encouraged the establishment of a Business Advisory Council (BAC) that would contribute to IRENA's development of a business case for renewable energy, allow for the inclusion of private sector stakeholders in the IRENA process and ensure broader support for IRENA's mandate. A gradual approach was recommended to ensure a clear purpose. Accordingly, an Interim Business Council was formed for a temporary period to lay the foundations of the proposed Business Advisory Council and make recommendations for its operationalisation.

Outputs 2013:

xx) Establishment of the IRENA Business Advisory Council with clear terms of reference and work programme aligned with the work of the Agency.

69. **Activity 9: Civil Society**. The engagement of civil society organisations provides a venue for the broader perspective of how the future of renewable energy fits into society, a forum to articulate RE's sustainable development component and a framework to link stakeholders from different backgrounds. Civil society's engagement is vital to understanding and promoting the social acceptance of renewable energy. In 2013, IRENA will lay the foundations for cooperation with civil society by developing mechanisms for the engagement with civil society that will, *inter alia*, identify relevant actors, modalities of engagement, key topics and areas of work. The social acceptance of renewable energy will be used as an initial topic to launch consultations in 2013.

Outputs 2013:

xxi) Framework for engagement with civil society; and
xxii) Consultation with civil society on the social acceptance of RE.

Expected Accomplishments	Activities	Outputs	Indicators of achievement	Delivery timeframe
Component 1: Global Knowledge on Renewable Energy - Policy makers, private sector and civil society have access to key RE data and information to support decision making and policy design and IRENA is established as the global authoritative voice on RE	Activity 1: Data and Information	Methodology and framework for collecting RE statistics and other relevant RE data	Tools and capacity to collect RE data from countries	Q2
		Creation of internal data management system and web-based platform	Functioning platform accessed by multiple users	Q2
		Preliminary methodology for collecting data on biomass and distributed renewable generation under the SE4ALL	Stakeholder consultation to develop accurate methodology to gather renewable energy data completed	Q4
		Renewable Energy Indicators	Stakeholder consultation and agreement on RE indicators.	Q3
	Activity 2: Global Renewable Energy Atlas	Establish IPR regime for the Global Atlas	Signed IPR agreements for the data providers	Q2
		At least eight additional countries and data providers joining the Global Atlas	Statement of Agreement with 8 additional countries and other providers	Q4
		Expanded Global Atlas to include bioenergy, hydropower and geothermal energy	Methodology for including bioenergy, hydropower and geothermal energy data in Global Atlas tested	Q4
		Establishment of a network of existing programmes for funding measurement campaigns	At least one successfully funded measurement campaign in the framework of the Global Atlas Partnership	Q4
	Activity 3: Institutional Publication: Prospects for Renewable Energy	Launch of the first IRENA institutional publication	Substantial reference to the institutional publication in the international renewable energy policy debate	Q1-2014
Component 2: An Enabling Environment for Renewable Energy: Policy and Finance - National and local policy makers have access to information critical for policy design and decision making. Better understanding of financial mechanisms, flows, trends and accessibility of funds for RE projects	Activity 4: Policy Assessment	Report on the impact of energy pricing on RE deployment in North Africa	Contribution of report in debate on energy pricing reflected in regional media and multiple downloads of the report	Q2
		Report on the critical success factors for RE target setting	Reference to the report in the national and regional renewable energy policy debate	Q4
		Working paper on RE policy adaptation to dynamic market conditions	Reference to the working paper in the national and regional renewable energy policy debate	Q4
	Activity 5: RE Finance	Mapping and analysis of international public financing and potential financing from commercial lenders and institutional and other investors for RE	Mapping and analysis used by multiple stakeholders from a diversified geographical background; Increased number of visits to IRENA homepage for information on funding for RE	Q4
		Prospects for financing off-grid RE in Africa	Findings used by governments and businesses, reflected by at least 10,000 downloads of the report	Q4
Component 3: Socio-economic and Environmental Impacts of Renewable Energy - IRENA is recognised as an authoritative source of information for socio-economic and environmental impacts of RE deployment	Activity 6: Socio-economic value of Renewable Energy	Report on RE and employment – analysis, trends and markets and conference on RE and employment generation	Substantial reference to the report in the international renewable energy policy debate	Q2
		Policy recommendations on the value creation of solar and wind deployment	Clear recommendations to governments and use of the findings in national policy making in several countries (three country case studies)	Q4
		Report on RE and the water, energy and food nexus	Reference to the report in the sustainable development policy debate	Q4
	Activity 7: Environmental impact of RE	Working paper on managing the environmental impact of off-grid RE applications	Recommendations for implementation of best practices in at least five countries	Q4
		Development and dissemination of factual material on Debunking the Myths around RE Technologies	Increased awareness among decision makers about popular misunderstandings around RE technologies	Q4
Component 4: Leveraging Knowledge from Industry and other Stakeholders - Structured and meaningful engagement of the private sector and civil society with IRENA	Activity 8: Business Advisory Council	Establishment of the IRENA Business Advisory Council with clear terms of reference and work programme aligned with the work of IRENA	At least two concrete joint activities with the private sector and private sector interaction with the IRENA Assembly	Q1
	Activity 9: Civil society	Framework for engagement with civil society	Definition of selection criteria for partner organisations and terms of reference for engagement with civil society	Q2
		Consultation on social acceptance of RE with civil society	First consultation on social acceptance of RE with civil society held	Q4

Resource Requirements: Knowledge, Policy and Finance

Staff: USD 2.550 million
Non-staff: USD 3.550 million

Core Resource Requirements	USD 4.600 million
Voluntary Contributions	USD 1.500 million
Total Requirements	**USD 6.100 million**

Category	Resources (in USD thousand)	Posts
	2013 Estimate	2013
Core Post	2,550	12
Core Non-post	2,050	-
UAE Government Bid	1,500	-
Total	**6,100**	**12**

Object of Expenditure	2013 Estimate (in USD thousand)
Total Staff Costs	**2,550**
Total Non-Staff Costs	**3,550**
- **Consultants, Interns, Project & Seconded Personnel**	1,450
- **Programme and Expert Meetings**	700
- **Travel of Staff**	100
- **Contractual Services**	1,000
- **General Operating Expenses**	300
- **Furniture and Equipment**	-
Total	**6,100**

Sub-programme 2: Innovation and Technology

Strategic Objectives and Context

70. IRENA's 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.

Component 1: Technology Integration Planning

71. To assist governments gain a better understanding of how renewable energy technologies can help them meet their medium- and long-term energy policy goals, IITC will continue with its strategic and analytical work on renewable energy technology integration. Building on the work completed in 2012, four activities are planned 2013:

72. **Activity 1: Global Renewable Energy Roadmap 2030.** In the context of the UN Secretary-General's initiative on Sustainable Energy for All (SE4ALL), IRENA is developing a global Renewable Energy Roadmap 2030 (REMAP 2030). The aim of REMAP is to operationalise a number of different pathways through which renewable energy and renewable energy-enabling technologies can contribute to the achievement of the SE4ALL objectives of universal access to modern energy services by 2030, increasing the rate of improvement of energy efficiency and doubling the share of renewable energy in the global energy mix by 2030. In this context, REMAP will reflect a common understanding of the milestones for renewable technology development and deployment and highlight opportunities for international cooperation for renewable energy technology development and deployment in end-use sectors.

73. In 2012, IRENA, in close collaboration with countries and other stakeholders, developed a draft roadmap that examined the elements necessary to reach the aspirational target of doubling the share of renewables in the global energy mix by 2030. In 2013, REMAP will be further refined to ascertain how different sectoral activities can be combined to meet the renewables target and the implications of different pathways on regional and national levels. It will also identify priority actions to help accelerate uptake of

renewable energy to achieve the 2030 target in the context of the broader agenda of sustainable development.

74. It is envisaged that, in the coming years, REMAP will remain an evolving roadmap that will help guide overall IRENA programmatic activities and continue to be updated and refined in close cooperation and consultation with governments, technical experts and other relevant stakeholders. In this context, cooperation with the UN system, the World Bank and other parties to ensure consistency and synergies of the three SE4ALL targets will be further deepened.

Output 2013:

i) Global Renewable Energy Roadmap 2030 (REMAP2030).

75. **Activity 2: Development of Technology Roadmaps.** To inform REMAP, IRENA will continue to develop and disseminate regional and sectoral roadmaps with the aim of advancing development and uptake of renewable energy technologies. In response to the request by the Pacific Leaders made in 2012, IRENA will develop a regional roadmap for the Pacific. Particular attention will be paid to power sector transitions, but solutions for the transport sector, energy-water-food nexus issues and stationary applications will be also considered. Furthermore, building upon the outcome of Renewables Readiness Assessments and upon request, IITC will assist with the development and implementation of national technology roadmaps with priority being given to those with replicability potential.

76. Grid and storage technologies are critical for the successful integration of high shares of variable renewables. Rapid technology progress in this field, such as the concept of smart grids, opens up new opportunities. The work on a *Grids and Storage Roadmap* that commenced in 2012 will be further refined and expanded to two separate roadmaps, one focusing on transmission and distribution and the other focusing on various types of electricity storage technologies.

77. Affordable and efficient electricity storage is a prerequisite for a complete transition to renewable power. Storage technologies can provide a range of services in a power system and both centralised large-scale systems and decentralised storage options are needed. The range of technologies available today was reflected in IRENA's first report on the status of storage technologies issued in 2012. In 2013, the *Outlook for Future Technologies* will be elaborated, together with their economics. This roadmap will elaborate market trends, development needs, future demand projections, pros and cons of

various storage options, natural resource requirements and enabling policies to accelerate a transition to high shares of renewable power.

78. The grid paradigm changes as higher shares of decentralised and variable renewables are integrated and long-range electricity transportation enables the development of high-quality, low-cost RE resources. Grid adjustments and changes are necessary to deal with these changes, and information technology increasingly plays a role in grid design and management. Smart grids have opened up new possibilities for deployment of high shares of variable renewable power. A number of national smart grid roadmaps have been developed in recent years, but none has focused exclusively on the accelerated deployment of renewables. Moreover, the potential of these technologies to allow leap-frogging in developing countries and a paradigm shift in power system design is not yet well-understood. IRENA, in collaboration with countries, power utilities, regional power associations and other stakeholders, will elaborate these two aspects in *the Grids Roadmap Assessments.*

Outputs 2013:

ii) Pacific RE roadmap;
iii) National technology roadmaps, upon request,
iv) Technology roadmap on storage for enhanced integration of variable renewable energy; and
v) Technology roadmap on grid improvements for integration of renewables.

79. **Activity 3: Assessment of Technology Solutions.** In an effort to ensure that the most current, reliable and factual information on renewable energy is available to wide audiences, IRENA will develop consolidated information on different aspect of six sources of renewable energy. The *"Renewables Perspectives"* will provide the most essential, pertinent and up-to date information with content targeting general audiences and contributing to branding IRENA as a recognisable source of objective information on renewables. *"Renewables Perspectives"* will also help clarify the conflicting messages and misconceptions on renewables that currently exist.

80. In 2011 and 2012, IRENA, in cooperation with ETSAP/IEA, started the development of a technology repository with a set of technology briefs that contain concise, policy-relevant and objective information on best practice renewable energy technology solutions. The technology briefs assist policy makers in the development of national renewable energy strategies and the evaluation of related project proposals. They also form a technical depository for IRENA programmatic activities and inform the work on roadmaps, scenarios and strategies. In 2013, the repository will be expanded by a set of

additional *Technology Briefs*. Based on the feedback received from Member States, it is envisaged that the briefs will address the areas of relevance to specific regions and end-use sectors, including algae production, renewable energy for shipping, biomass waste to energy, global logistics for biomass and mini-grids.

81. At the request of Member States, IRENA is assisting with technology systems transition and operating strategies, which also include model analysis, such as dynamic grid stability. Pilot assessments of the feasibility of operating the Pacific Island power systems with high shares of variable renewables were undertaken in 2012. Based on that experience, IRENA has developed a methodology and a tool for assessing grid stability. In 2013, these will be disseminated and further tested in islands and mini-grids with the aim of establishing in-house and Member State capacity for *dynamic modelling of grids* with high shares of variable renewables. This work will be expanded within the Pacific Region and extended to the Caribbean Region. It is envisaged that the experience from these cases will also help in the design of robust, larger power systems.

Outputs 2013:

vi) A "Renewables Perspectives" overview for all six forms of renewable energy;

vii) A compilation of technology briefs, including briefs on algae production, renewable energy for shipping, biomass waste to energy, global logistics for biomass and mini-grids; and

viii) Dynamic modelling and grid stability studies for up to five mini-grids in the Caribbean and Pacific islands.

82. **Activity 4: Scenarios and Strategies.** In 2011 and in 2012, IITC, together with IEA's Implementing Agreement Renewable Energy Technology Deployment Programme (IEA-RETD), held one-day expert workshops to assess how changing factors and recent emerging trends in the global energy industry and the economy in general affect the prospects for renewables. These workshops helped formulate new challenges and opportunities and assisted policy makers in devising strategies to accelerate the deployment of renewable technologies. This cooperation will continue in 2013 with a global renewables scenarios workshop, projected to be held in subsequent years as well. Discussions in this forum will also contribute to IRENA's annual publication.

83. In the course of 2011 and 2012, IRENA undertook a number of scenario analyses in different regions with a special focus on Africa. This work will continue in 2013 with the completion of the scenario analysis for North and Central Africa and broadening of the analysis for Latin America and the Caribbean. Existing scenarios will be synthesised, harmonised and updated as necessary to reflect the latest insights regarding renewable

energy in supply and end-use technologies. This work will be done in close cooperation with national and international organisations that are active in the region, building on the capacity already existing in the regions. Based on the experiences in Africa, Latin America and the Caribbean, the work with South Asian Members will be initiated to develop or refine existing technology integration scenarios and strategies. Completion of the work on scenarios in different regions in 2013 will help define IRENA's future work in this area.

84. In 2011 and 2012, IRENA modelled scenarios for the eastern, southern and western African power systems and commenced the roll-out of these models and findings to governments, project developers, international financing organisations and other interested parties in the regions. The work in Africa will continue in 2013 and similar tools will be developed for the North and Central African regions. Upon request, the analytical results and the power system models will be used for capacity building and as a basis for a power sector strategy development for IRENA Members and utility sector decision makers.

Outputs 2013:

ix) Global RE scenarios workshop;
x) Dialogue on scenarios and strategies for Latin America and the Caribbean; and
xi) Completion of North and Central Africa scenario analysis.

Component 2: Costs, Technologies and Markets

85. In order to provide governments with objective, up-to-date information on the current status and prospects for the cost, performance, availability and supporting infrastructure needs for renewable energy technologies, three activities are planned:

86. **Activity 5: Cost and Performance of Renewable Energy Technologies.** Comparable, verified data on the costs and performance of renewable energy technologies are often not in the public domain, but they need to be made available if policy makers are to make robust decisions about the role of renewable power generation. In 2012, IITC analysed the cost of renewable solutions for power generation and transportation. In 2013, the emphasis will shift to stationary applications: heating, cooling and feedstocks in the building and industrial sectors. The work will build on and complement IRENA's industry and cities roadmaps and the technology briefs developed in previous years. The continued collection of cost data and the analysis of system costs and co-benefits are critical to developing real world insights and recommendations that take into account existing challenges in the renewable sector.

87. Cost indicators will be developed for equipment costs, project costs and energy services with the focus on the difference between retrofit and new buildings, a critical issue given the long-lived capital investments in buildings. In addition, forecasts of technology costs will be undertaken in this context.

88. Collection of actual data for the IRENA renewable costing database is the foundation of the cost analysis that will allow the Agency to differentiate itself from those relying on generic cost estimates that do not take into account the demonstrated substantial variation in renewable project costs. To help support the collection of real world project data and its analysis, IRENA will establish the *Renewables Costing Alliance* that would also become an important forum for feedback on the direction of IRENA's costing analysis to ensure that it is responsive to accelerating renewables deployment. It is important to highlight that there are limits to a "pure" cost analysis for renewable technology solutions. Given the complex and dynamic nature of energy systems, simple cost indicators, such as levelised cost of electricity, only provide part of the picture and are not sufficient in themselves for investment or policy decisions. IRENA will present in more detail the methodological framework for costing renewables and expand the focus to reflect an investor's perspective.

89. Biomass accounts for the majority of renewable energy use today. It is widely considered a key renewable energy resource for the future, differing from other renewables because of the high share of feedstock cost in total of the energy service cost. Until now, limited work has been done at a global level to determine a supply curve for biomass to enable policy makers to consider the economic viability of potentials. The analysis required is complex and the wide range of projections, coupled with the inadequacy of available data, makes it extremely difficult to make recommendations for biomass' role in the future. IITC, in cooperation with FAO and JIRCAS/MAFF, will commence work on the assessment of costing for biomass resources with the focus on residues.

Outputs 2013:

xii) Reports on the cost of renewables for stationary applications;
xiii) Report on IRENA's costing analysis methodology;
xiv) Creation of an IRENA Renewables Costing Alliance; and
xv) Database of residual biomass economic supply curves.

90. **Activity 6: Facilitation of Markets: Practical Guidelines for Project Development.** As part of the effort to build user-friendly tools to assist countries in the development of

renewable energy technology projects and investments, IITC will continue the development of guidelines for renewable energy technology project development. The guidelines will take into account engineering, environmental, legal, commercial and organisational issues, and include all stages of project development: identification, feasibility, conceptual and detailed design, financial investment decisions, installation, operation and maintenance, and de-commissioning. Established methods for project evaluation, such as those of international financing organisations, will be used as a basis for the guidelines, with emphasis on the specific characteristics of renewable technologies. The guidelines are intended for developers who may have a good understanding of one or more aspects of the project development process but need a more comprehensive overview. Furthermore, governments will acquire a better understanding of the administrative processes and requirements, as well as practical support to realise renewable energy projects. These guidelines will be piloted with up to five projects identified as suitable for validation.

91. To support the use of these guidelines, IRENA will develop the Project Navigator, an interactive software tool that would guide project developers from the basic concept to the completed project proposal. It is envisaged that this will be a practical tool that will assist project developers in identifying gaps and will assist them in finding information to fill these gaps. The Project Navigator will consist of checklists for different stages of the project development chain and account for the specific technology characteristics, such as risk, site selection, technical configuration and the need for hardware and software.

Outputs 2013:

xvi) Guidelines on renewable energy project development and development of the Project Navigator; and

xvii) Piloting of guidelines and the Project Navigator in up to five projects.

Component 3: Promotion of Efficient and Effective Renewable Energy Innovation Strategies

92. This component focuses on the technology supply factors and enabling technology frameworks, including Research, Development and Deployment (RD&D) trend and status information from patents, reduction of technology risk through streamlined standardisation and quality management, local opportunities in the technology value chain and development of an international renewable energy technology cooperation network.

93. **Activity 7: Expansion of Renewable Energy Standardisation.** An important group of instruments to facilitate and promote innovation and technology diffusion relates to standardisation. Standards are voluntary by nature and do not have a full impact until they are adopted by national regulations or codes. Policy makers can benefit from a better understanding of how national regulations for renewable energy can be strengthened by using and adopting sound and appropriate standards. In this context, harmonisation of standards is of key importance as it facilitates market access and reduces transaction cost.

94. In 2012, IRENA commenced work on harmonising standards in the Pacific Island Countries for the installation and interconnection to the electricity grid of PV systems. A task force with the participation of IRENA, SEIAPI and PPA has been established with the aim of disseminating and supporting the implementation of sound technical guidelines, based on international standards, for grid-connected PV systems. This effort will continue with three additional meetings in 2013. The experiences gained in the Pacific will be used to assess how technical guidelines can be used to address issues related to harmonisation of standards for renewable energy in other regions, starting with island nations.

95. In order to ensure that the existing information is readily available, IRENA will commence the development of a web platform that would provide easy access to information on already existing standards, including existing international standards and standards under development for different renewable energy technologies, benefits of standardisation, their use, application and the development process.

96. Standards implementation also involves testing and certification to ensure that renewable energy equipment conforms to specific requirements with minimum levels of performance, safety and inter-operability. Although standards and certificates for grid-connected renewable energy technologies are well-established and used, systems for standardisation and certification of off-grid renewables, although available, are scarcely used. As a first step, IRENA will analyse the barriers to the wider use of testing and certification schemes and complete a pilot study for one selected type of renewable energy equipment. This work will provide the basis for further activities in the facilitation of the wider application of standards in the field of testing and certification of renewable energy equipment.

Outputs 2013:

xviii) Three expert meetings on technical guidelines for grid-connected PV systems in the Pacific Islands;

xix) Development of a standards information platform; and
xx) A study on testing and certification for one type of equipment.

97. **Activity 8: Renewable Energy Technology RD&D and Innovation Strategies.** Research, development and demonstration (RD&D) plays a key role in the improvement and broadening of the technology base and are often recognised as key factors for cost reductions, increased resource potential and a wider range of applications. At present, only limited information is available on the worldwide investment in support of RD&D on renewables. In coordination with KPFC, IRENA will commence with the compilation and analysis of data that will be used to develop an overview of the existing RD&D activities to identify needs and gaps with the focus on the Latin American and Caribbean (LAC) Region.

98. IRENA will commence work on the identification and promotion of renewable energy generation technology opportunities in the agro processing sector in Africa. This will include sharing of successful business case studies where agricultural processing companies have successfully diversified their revenue streams through the development of business models that involve energy from their own wastes for self-use, export to the main/local grid and new productive use opportunities, such as second generation biofuels from bagasse. In particular, the project will focus on appropriate South-South and North-South technology transfer in biomass residues to energy conversion.

99. In addition, building on the work undertaken in 2012 with OLADE on the use of agriculture residues, the agro-industrial waste potential will be assessed in three countries selected in consultation with OLADE according to their agro-industrial waste potential and their replicability potential. The results of these assessments will be used to support feasibility studies for the production of electricity undertaken by CSP.

100. In order to assist Member States to promote renewable energy technology innovation, IRENA has started work on renewables-related Intellectual Property Rights (IPR) with the focus on patents. Based on the concept and prototype developed in 2012, in collaboration with World Intellectual Property Organization (WIPO), European Patent Office (EPO) and other relevant stakeholders, the patent information platform will be further refined, including the acquisition of feedback from policy makers, investors, private sector actors and researchers. Furthermore, in order to better understand the use of patent information and to provide accurate and up-to-date technology information, a patent landscape assessment will be conducted in the field of ocean energy technology. This information can help to identify emerging technologies beyond the R&D stage, before a market has developed and can help Member States in their medium- and long-

term energy technology planning. Upon request, IRENA will also assist in the evaluation and refinement of national innovation policies, based on the framework that has been developed in previous years.

Outputs 2013:

xxi) Overview of renewable energy RD&D status and gap analysis in the LAC region;

xxii) A report on biomass waste-to-energy potentials and deployment strategies in Africa;

xxiii) Assessment of agro-industrial waste potential in three LAC countries;

xxiv) Refined patent information platform; and

xxv) Report on ocean energy technology innovation.

Expected Accomplishments	Activities	Outputs	Indicators of achievement	Delivery timeframe
Component 1: Technology Integration Planning - Stakeholders have access to authoritative, current and objective information and analysis on renewable energy technologies and integration strategies to support decision making and policy design and IRENA is established as the global authoritative voice on RE	Activity 1: Global RE Roadmap 2030	Finalized RE Roadmap 2030 (REMAP2030)	REMAP2030 recognised as an authoritative tool for RE planning	Q2
	Activity 2: Development of technology roadmaps	Pacific RE roadmap	Roadmap used for the development of RE action plans in the Pacific	Q3
		National technology roadmaps, upon request	Governments use IRENA-developed national roadmap for RE action plans	Q4
		Technology roadmap on storage	Roadmap referenced as an authoritative source of information on storage solutions	Q4
		Technology roadmap on grid improvements	Roadmap referenced as an authoritative source of information on grid solutions	Q4
	Activity 3 : Assessment of technology solutions	"Renewables perspectives" overview for six forms of RE	10,000 visits to IRENA homepage to access "Renewables perspectives"	Q3
		A set of technology briefs, including on algae production, biomass waste to energy, etc.	20,000 visits to IRENA homepage to access technology briefs	Q4
		Dynamic modeling and grid stability studies in the Caribbean and Pacific islands	Five assessments of grid stability undertaken	Q4
	Activity 4: Scenarios and strategies	Global RE scenarios workshop	Development of scenarios knowledge and contribution to REMAP2030	Q4
		Dialogue on scenarios and strategies for LAC	Government/stakeholder participation and consensus on scenarios and strategies	Q4
		Completion of North and Central Africa scenario analysis	Rollout of the power pool models for North and Central Africa	Q4
Component 2: Costs, Technologies, and Markets - Provide decision makers increased understanding of technologies, costs and cost reduction potentials	Activity 5: Cost and performance of RE technologies	Reports on the cost of RE for stationary application	Authoritative findings widely disseminated, reflected by at least 5,000 downloads per month of the costing studies	Q4
		Report on IRENA's costing analysis methodology	cross-reference of IRENA methodology	Q2
		Creation on IRENA RE Costing Alliance	Alliance consists of at least 20 members	Q4
		Database of residual biomass supply curve	Framework for the assessment of residual biomass developed	Q4
	Activity 6: facilitation of markets	Guidelines on RE project development and development of the Project Navigator	Guidelines and the Navigator finalized	Q3
		Piloting of guidelines and the Navigator	At least 5 pilots of guidelines and/or navigator executed	Q4
Component 3: Promote Efficient and Effective Renewable Energy Innovation Strategies - Increased understanding of the innovation opportunities and strategies	Activity 7: Expand RE standardization	Three expert meetings on technical guidelines for grid connected PV systems in the Pacific Islands	Action plan for the development of harmonized standards in selected islands	Q4
		Development of a standards information platform	Launch of platform with consolidated information on RE standards	Q4
		A study on testing and certification for one type of equipment	Gaps and barriers for the use of tests and certification identified for one type of equipment	Q4
	Activity 8: RD&D and Innovation strategies	Overview of RE RD&D in the LAC	Stakeholders in the LAC region engaged in the assessment of RD&D	Q4
		A report on biomass waste to energy potential and deployment strategy	Assessment results available to policy makers, reflected by 5,00 downloads of the report from the IRENA website	Q4
		Assessment of agro-industrial waste potential in tree LAC countries	Assessment results available to policy-makers and other stakeholders	Q4
		Refined patent information platform	General release of the patent information platform leading to increased use	Q3
		Report on ocean energy technology information	Authoritative findings widely disseminated, reflected by 5,000 downloads of the report	Q4

Resource Requirements: Innovation and Technology

Staff: USD 2.210 million
Non-staff: USD 2.090 million

Core Resource Requirements	**-**
Voluntary Contributions	USD 4.300 million
Total Requirements	**USD 4.300 million**

Category	**Resources (in USD thousand)**	**Posts**
	2013 Estimate	2013
Post	2,210	12
Non-Post	2,090	**-**
Total	**4,300**	**12**

Object of Expenditure	**2013 Estimate (in USD thousand)**
Total Staff Costs	**2,210**
Total Non-Staff Costs	**2,090**
- **Consultants, Interns, Project & Seconded Personnel**	900
- **Programme and Expert Meetings**	800
- **Travel of Staff**	90
- **Contractual Services**	250
- **General Operating Expenses**	20
- **Furniture and Equipment**	30
Total	**4,300**

Sub-programme 3: Country Support and Partnerships

Strategic Objectives and Context

101. 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 other divisions, 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 provides the programmatic interface with countries and regions to bring coherence to the work of different divisions undertaken in support of countries and regions. Its 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.

Component 1: Country Support

102. In order to support countries, IRENA will, upon request, engage in the RRA process and provide policy, financial and technical advisory services.

103. **Activity 1: Renewables Readiness Assessments**. RRAs are a country-led process facilitating dialogue among stakeholders that feeds into national renewable energy strategies required to develop an enabling environment for investments in renewable energy. An RRA provides a holistic assessment of conditions for renewable energy deployment in a country by identifying the actions necessary to increase readiness and overcome the main barriers to the deployment of renewable energy technologies. It covers all sources of renewable energy and end-user services (i.e. transport, heat, electricity and motive power), with countries selecting those of particular relevance. The process is designed to be initiated and conducted by national governments, thus allowing countries to obtain a comprehensive overview of the conditions for renewable energy from their national perspective.

104. By the end of 2012, 11 countries[2] from Africa, MENA, Latin America and the Caribbean and the Pacific Islands Regions were engaged in the process of RRAs. The process and outcomes of these RRAs have generated significant interest from countries and, in 2013,

[2] Gambia, Ghana, Grenada, Kiribati, Mozambique, Niger, Oman, Peru, Senegal, Swaziland, and Zambia.

IRENA will scale up the RRA process by engaging additional Member States upon request. The engagement with countries during the process of the RRAs and expert workshops has led to the development of an RRA methodology, which will be continuously refined, based on the experience gained and feedback received. As the RRA process reaches maturity, it is envisaged that, though IRENA will continue to assist countries by supporting national consultants and appropriate sector experts, an online tool containing the methodology and best practices will be made available as learning resource for countries that wish to undertake the RRA on their own.

Outputs 2013:

i) RRAs in up to eight new Member States, upon request; and
ii) A web-based tool for the RRA methodology and access to best practices.

105. **Activity 2: National Strategies.** The development of national strategies in key areas is central to enabling countries to achieve a rapid uptake of renewable energies. The RRA process contributes to this effort by identifying a set of actions based on the national priorities, availability of resources and other factors. This has presented an opportunity for IRENA to build its capacity to offer advisory services in key areas identified during the RRAs. The advisory services will be developed in collaboration with KPFC and IITC, with CSP acting as the anchor for this process.

106. Based on the feedback from the countries, the pertinent areas for the provision of advisory services include: capacity needs assessment, resource assessment, technology roadmaps, local content and finance. The advisory services on capacity needs assessment will assist countries identify and take decisions on the appropriate capacity-building interventions. The advisory services on resource assessment will build on the work being done on the Global Atlas and will assist countries to build strategies for resource assessment, including identifying needs for technical assistance and funding. The advisory services on technology roadmaps will build on the work at IITC and assist countries link long-term goals with specific technology options by providing information and insights necessary for policy implementation and monitoring. The advisory services on developing local content/supply chain will enable countries to assess their comparative advantages for supporting the manufacturing/local content of the value chain or part of it. It will also identify issues and actions needed in the areas of policy to stimulate private enterprise and attract financing. The advisory services on finance will enable countries to identify the existing knowledge gaps in the local financial sector regarding the economics and technology of renewable energy projects and how these could be addressed by sound policy and better informed financial solutions.

107. The advisory services will be offered to countries where RRAs have been conducted and upon request. In addition to the repertoire of advisory services that can be provided by IRENA, the RRAs will have also identified actions that would require collaboration with other international organisations and partners. IRENA will facilitate the interaction with such entities, including with international funding agencies and the private sector, in order to further the implementation of the action plan formulated by countries as a result of the RRAs.

Outputs 2013:

iii) Advisory services on capacity needs assessment, resource assessment, local content development, finance and technology road maps; and
iv) Provision of advisory services upon request.

Component 2: Partnerships, Regional and Technical Cooperation

108. IRENA's engagement with regional organisations seeks a balanced distribution in terms of geographical distribution and type of institution, including energy-specific organisations, relevant and active economic cooperation organisations and regional development banks. Activities in this component aim at expanding engagement with regional organisations in substantive areas by focusing on key regional priorities for renewable energies.

109. **Activity 3: Regional Collaboration.** IRENA will continue its engagement with Africa and island countries, identified as areas of focus in the work to date, and broaden its activities in Latin America and the Caribbean, the Pacific, Asia and South Eastern Europe.

110. In partnership with the International Geothermal Association (IGA), OLADE and Member States with significant geothermal experience, such as Iceland and Mexico (i.e. Mentor Countries), IRENA launched an initiative in 2012 on geothermal energy in the Andean region to assess its status through a detailed evaluation of the institutional, regulatory and legal landscape, status of exploration of geothermal areas, status of incentives for investments, capacity-building needs and market structure. Key findings (e.g. institutional, legal and regulatory, investments, capacity building and market structure), as well as best practices from Mentor Countries and participating organisations, will be discussed in 2013 with key stakeholders in a workshop to be held in Morelia, Mexico to build consensus on further steps. A follow-up event will be organised during the Global Geothermal Conference in Iceland with the aim of

translating the results into actions that can contribute to building a medium-term strategy to harness this resource base.

111. IRENA will partner with the East Africa Community (EAC) and the African Rift Geothermal Development Facility (ARGeo) to assist Member States to set up enabling environments for geothermal energy to stimulate investments and to establish regional and interregional practitioner networks. A regional workshop will be held to build a work plan and provide an opportunity of cross-regional learning for practitioners from the LAC.

112. The Economic Research Institute for ASEAN and East Asia (ERIA) has conducted studies on regional energy market integration over the past years and provided high-impact policy advice to the ASEAN Energy Ministerial Meetings, including on energy cooperation and grid interconnections in the ASEAN Region. In 2013, IRENA will collaborate with ERIA to improve the understanding of how renewable energy sources could best be integrated into the context of the ongoing ASEAN Power Grid Expansion. In this context, a study will be undertaken with a focus on assessments of renewable energy resources in relation to centres of demand and the potential transmission corridors.

113. Building on the assessment of agro-industrial waste potential conducted in three countries in the LAC by IITC, CSP will support two feasibility studies for the production of electricity with the strong engagement of financial institutions and the private sector. The results of the two feasibility studies will be presented in the workshop to discuss replicability in the region and consider capacity-building needs.

114. Following the discussions held in 2012, IRENA will engage in the South-East European Region in order to support the countries in finding strategic solutions for renewables and the required enabling framework for investments. In cooperation with the Government of Montenegro, IRENA will organise a regional conference to further explore cooperation on RE technologies deployment essential for sustainable economic growth in the region.

Outputs 2013:

v) Status report and medium-term strategy for development of geothermal energy in the Andean region;
vi) Feasibility studies for two projects for co-generation with agro-industrial waste in Central America and the Caribbean and follow-up work with regard to replication and capacity building;
vii) Workshop on geothermal energy in East Africa;

viii) Report on the integration of renewable energy with the electricity market integration in East Asia, in collaboration with ERIA; and

ix) South-East European regional conference.

115. **Activity 4: Partnerships and Technical Cooperation.** In keeping with its hub/network strategic function, IRENA will provide a platform for cooperation and exchange of knowledge, experience and best practices between regions, countries and experts.

116. At the Renewables and Islands Global High-Level Meeting in Malta in 2012, Island States called upon IRENA to establish a Global Renewable Energy Islands Network (GREIN) to provide a platform to pool knowledge and exchange ideas among relevant institutions and authorities in Island States and Territories, sharing best practices, challenges and lessons learned, and seeking innovative solutions. The services offered by NREL's Clean Energy Solutions Centre will be used and enhanced to address the specific requirements of islands. GREIN's Plan of Action will be developed, in accordance with mandates stipulated in the Pacific Communiqué, the Barbados Declaration and the Malta Communiqué, and consistent with IRENA's programmatic work on islands to date and as envisaged for 2013.

117. The RRAs and regional activities have helped identify relevant renewable energy and sectoral expertise residing in the public and private sector. IRENA will facilitate collaboration in this context to ensure wider collaboration and dialogue. Regional initiatives on geothermal energy will serve as the building block for the network on geothermal energy. Broadening the commitment to contribute experts to this network already made by Iceland and Mexico, IRENA will seek to engage other partners, such as ARGeo. The networks are expected to include a wide range of participants from governments (e.g. policy makers, regulators), industry associations, national research / technical centres, universities and international financial institutions. Two workshops to support country and regional stakeholders engage with global expert networks will be organised to facilitate the sharing of knowledge and best practices.

118. The RRAs have shown that expertise within one country can be utilised, not just within the region, but also across regions. Advice from practitioners is often most relevant to the countries when dealing with implementation challenges. A network comprising practitioners who have been engaged in the RRA process in their own countries would be established to provide assistance in the implementation of the RRAs and to ensure consistency of technical recommendations. They will also assist in synthesising RRA results from different countries into a regional framework that will help to outline priority activities and formulate work plans with regional organisations.

119. There is a great diversity of technology centres globally. Many countries have national energy research centres that specialise in certain technologies and possess expertise and knowledge that could be of great benefit to wider audiences. A network that brings together technology centres, such as the National Renewable Energy Laboratory (United States), DLR (Germany), RISO (Denmark), the University of Cape Town (South Africa) and KNUST (Ghana), can have the dual advantage of giving access to experts from a national institute to global expertise and also open the possibility of bilateral and multilateral collaboration in specific areas like joint demonstrations or research. IRENA will establish a Centres of Excellence Network to facilitate and catalyse such collaboration.

Outputs 2013:

x) Formalisation of the Global Renewable Energy Islands Network (GREIN) and the work plan for the year;
xi) Establishment of the IRENA Centres of Excellence Network;
xii) Establishment of the geothermal expert network; and
xiii) Establishment of an RRA practitioners' network, linked to regional organisations.

Component 3: Capacity Building

120. Many governments have set ambitious targets for the deployment of renewable energy. Achieving them will require that the energy sector in a given country accommodates the specific needs and characteristics of renewable energy. This transition will be successful only if capacities are built at the local level to create an enabling environment for renewable energy investments. In 2012, IRENA actively sought inputs from Members and other stakeholders to identify the gaps and needs for capacity building. As a result of these consultations, areas of intervention for two regions have been ascertained and a framework for implementation designed.

121. **Activity 5: Capacity Needs Assessments.** Through the Renewable Readiness Assessments (RRAs), IRENA has gained first-hand experience on a wide spectrum of issues, including capacities. In addition to identifying the broad areas where gaps in capacity exist, the RRAs highlighted the lack of a systematic and in-depth needs assessment in most countries, often leading to sporadic and one-off efforts in capacity building.

122. Undertaking capacity needs assessments would be an effective way to gather the required information for strategic planning and decision making on the appropriate capacity-building interventions. Capacity needs assessments not only reveal the concrete

impediments but also identify the available institutional capacities from which a country can benefit and upon which it can build. IRENA will, upon request, work with countries to identify areas where key expertise is missing along the supply chain of renewable generation and transmission. These assessments will be conducted within the overall framework of the specific areas that reflect the country's priorities in the renewable energy sector.

123. RRAs and discussions with regional entities have clearly indicated that resource assessment and data collection are areas where systematic capacity needs assessment would be beneficial. These two areas will provide the entry point for IRENA to direct its efforts at providing tailored capacity-building assistance for its Members. Considerable work has been done globally on the development of a methodology for capacity needs assessment and IRENA will adapt a well-defined and tested methodology for renewable energy and assist countries, upon request, to assess their capacity needs.

Output 2013:

xiv) Capacity needs assessments in up to three countries, upon request.

124. **Activity 6: Regional Capacity-Building Initiatives.** In 2012, IRENA identified, through a process of consultation, a range of issues which are high on the agenda of Member States in the Economic Community of West African States (ECOWAS) and the Pacific Region. As a result, two regional capacity-building initiatives were developed to assist countries deploying particular technologies and building a favourable investment climate for renewables. These initiatives will be implemented during 2013 and 2014 with regional entities and active participation from national stakeholders.

125. In ECOWAS, IRENA will partner with ECOWAS Centre for Renewable Energy and Energy Efficiency (ECREEE) to implement the "Promoting a Sustainable Market for PV Systems in the ECOWAS Region" (ProSPER) initiative. ProSPER includes a series of training activities focusing on energy planning, policy design and implementation, financing of PV projects and promotion of renewable energy entrepreneurship. The initiative is aimed at building capacity for energy planners, policy makers, project evaluators in financial institutions, resource persons in education and training institutions and entrepreneurs. Training workshops with energy planners will enable them to develop scenarios that can help analyse the impact of various policy interventions on the deployment of renewables. Training for policy makers would, *inter alia*, allow them to introduce appropriate policy and regulatory support required for independent power producers in the de-regulated electricity markets of West Africa. Capacities of financial institutions would be built to improve their understanding of renewable energy

technologies, industry standards and business models to enhance their capability to assess renewable energy-related project proposals. In order to ensure the sustainability of this effort, IRENA will work, upon request, with the Member States in the region to provide follow-up support. The initiative will commence in 2013 and continue for an additional year.

126. In cooperation with the Secretariat of the Pacific Community (SPC) and stakeholders from utilities, academia and industry associations, IRENA has developed a capacity-building initiative to promote grid-connected renewable power production in the Pacific Small Island Developing States (SIDS). In 2013, training workshops with policy makers, regulators and utilities will be held to build capacities for the development of policy frameworks needed to incentivise renewable energy integration into the island grids. These trainings will also create a better understanding of the cost structure of renewables compared to other energy sources.

127. With support from Japan's New Energy and Industrial Technology Development Organisation (NEDO), training on designing, installing and operating solar PV systems will be provided to installers and entrepreneurs from IRENA Members. Feedback from participants in this training will be used to ascertain possible further activities in this respect.

128. While implementing these two regional initiatives, IRENA will work closely with regional partners and national institutions to identify potential regional reference centres for a specific renewable energy technology or topic. This two-tiered approach of the regional partners being supported at the national level by a strong network of institutions, each specialising in a different aspect of renewable energy, will ensure the sustainability of capacity-building efforts undertaken and also contribute to building regional "turn-to source" for advice for stakeholders at the national level.

Outputs 2013:

xv) Implementation of the ProSPER initiative in the ECOWAS countries; and
xvi) Implementation of the capacity-building initiative targeting Pacific SIDS.

129. **Activity 7: The Upscaling of Efforts by Collaborating with International Organisations and the Private Sector.** A significant number of international organisations (e.g. UNDP, UNEP) is engaged in some aspect of building capacities in the renewable energy sector at the regional and national level. Renewable energy is usually not central to their mandate but is related to programmatic activities that include renewable energy among other issues. IRENA will collaborate with these organisations

to build a common approach for capacity development at a national level. This will be especially beneficial in countries where a systematic capacity needs assessment is being carried out. It is envisaged that, following the needs assessment, IRENA would facilitate dialogue to develop a plan for implementing the country's capacity-building strategy by pooling the resources on offer.

130. IRENA will also explore the possibility of engaging the private sector in the capacity-building efforts at the national and regional level. IRENA will approach large multinational companies that are present in the focus regions to identify possible areas of interest. The purpose is to leverage the wide presence and marketing strength of the private sector and to transfer knowledge to benefit the renewable energy sector in the country/region. This could, for example, lead to the building of capacities for new business models that can make RE more affordable. Further, many developing countries do not have many people seeking RE training and this shows in the lack of institutional capacity of the private sector in this field. IRENA could play the role of facilitator and partner with the private sector in capacity building.

131. In 2013, IRENA will apply the approaches mentioned above to the LAC and Asian regions. Based on the findings of RRAs and further consultations, IRENA will work with OLADE and ASEAN to develop a regional capacity-building strategy to support regional institutions in assuming an advisory role and knowledge centre function.

Outputs 2013:

xvii) Joint capacity-building initiatives designed with at least two major private sector players; and

xviii) Development of a regional capacity-building strategy for the Latin American and Caribbean and the ASEAN regions.

132. **Activity 8: Education and Training Global Database.** Given the number of countries committing to increased renewable energy adoption, RE education and training (E&T) will be in continuous demand. The IRENA Renewable Energy Learning Partnership (IRELP - www.irelp.org) was launched in 2012 to facilitate and increase E&T on renewable energy. Currently, this partnership gathers information from multiple reliable sources, thereby providing global databases with E&T courses, webinars and training materials. These databases will be expanded in 2013 to include lectures from the continued IRENA Scholarship Programme with the Masdar Institute into IRELP.

133. Analysis of the databases gathered on IRELP will be undertaken to help provide a picture of the RE education landscape, including status, gaps and barriers. In addition,

IRENA has started creating a matrix with information on funding and implementing agencies that carry out renewable energy programmes (e.g. capacity building), which will also help identify gaps at the global level.

Outputs 2013:

xix) Report on RE Education: Status, Gaps and Outlook; and
xx) Continuing work on IRELP.

Expected Accomplishments	Activities	Outputs	Indicators of Achievement	Delivery timeframe
Component 1: Country Support - Providing countries with increased capacity to identify gaps and frame actions to accelerate the deployment of renewables and provide access to specific advisory services	Activity 1: Renewable Readiness Assessment	RRAs in up to eight new Member States , upon request	Requested RRAs completed and start of follow-up in each country initiated	Q4
		A web-based tool for the RRA methodology and access to best practices	Cooperation with regional entities to mainstream RRA activity	Q3
	Activity 2: National Strategies	Advisory services on capacity needs assessment, resource assessment, local content development, finance and technology road maps	Start of at least 5 advisory services in different countries	Q4
		Provision of advisory services upon request		Q4
Component 2: Partnerships, Regional and Technical Cooperation - IRENA becomes the network hub for partnerships and technical cooperation with regional national entities	Activity 3: Regional Collaboration	Status report and medium-term strategy for development of geothermal energy in Andean region in LAC	Andean countries start concrete geothermal project preparations	Q3
		Feasibility studies for two projects for co-generation with agro-industrial waste in Central America and the Caribbean and follow-up work with regard to replication and capacity building	Project implementation underway with lessons learnt for replication in additional countries	Q3
		Workshop on geothermal in East Africa	Participation of at least 10 countries in the workshop and identification of key actions for policy, finance and capacity building	Q3
		Report on integration of renewable energy with the electricity market integration in East Asia, in collaboration with ERIA	Clear recommendations to ASEAN member states to inform country's decision making.	Q4
		South-East European regional conference	Development of regional framework on collaboration on RE	Q4
	Activity 4: Partnerships and Technical Cooperation	Formalization of the Global Renewable Energy Islands Network (GREIN) and the work plan for the year	Consensus on structure of network and at least 80% of SIDS sign up to GREIN	Q2
		Establishment of the IRENA Centers of Excellence Network	Establish institutional collaboration with at least 10 Centres of Excellence worldwide in the first year	Q4
		Establishment of the geothermal expert network	Network of key Geothermal Knowledge Institutions and experts on geothermal energy established	Q4
		Establishment of an RRA practitioners network, linked to regional organizations	Network of national and regional experts established and deployed in at least 3 RRA's	Q4
Component 3: Capacity Building - Policy makers have access to a coherent framework for assessing capacity building needs and engagement with regional entities and private sector for building capacities at the country and regional level	Activity 5: Capacity Needs Assessment	Capacity needs assessments in up to 3 countries, upon request	Capacity building activity in these countries	Q4
	Activity 6: Regional Capacity Building Initiatives	Implementation of the ProSPER initiative	Have at least 100 decision makers from the public and private sector attend training sessions	Q3
		Implementation of the capacity building initiative targeting Pacific SIDS	Have at least 50 decision makers from the public and private sector attend training sessions	Q4
	Activity 7: The Up-scaling of efforts by collaborating with international organisations and private sector	Joint capacity building initiatives designed with at least two major private sector players	Joint activities in selected areas with at least two major private sector players launched	Q4
		Development of regional capacity building strategies for the Latin American and Caribbean region as well as ASEAN countries	Agreed strategy document for the LAC and ASEAN regions on capacity building	Q4
	Activity 8: Education and training global database	Report on RE education: status, gaps and outlook	Identification of key gaps, opportunities and recommendations widely disseminated	Q4
		Continuing work on IRELP	Increase the number of IRELP partners to 20 and increase the geographical spread of the users.	Q4

Resource Requirements: Country Support and Partnerships

Staff: USD 2.910 million
Non-staff: USD 3.690 million

Core Resource Requirements	USD 4.600 million
Voluntary Contributions	USD 2.000 million
Total Requirements	**USD 6.600 million**

Category	Resources (in USD thousand)	Posts
	2013 Estimate	2013
Core Post	2,910	14
Core Non-post	1,690	-
UAE Government Bid	2,000	-
Total	**6,600**	**14**

Object of Expenditure	2013 Estimate (in USD thousand)
Total Staff Costs	**2,910**
Total Non-Staff Costs	**3,690**
- **Consultants, Interns, Project & Seconded Personnel**	1,780
- **Programme and Expert Meetings**	1,000
- **Travel of Staff**	150
- **Contractual Services**	390
- **General Operating Expenses**	370
- **Furniture and Equipment**	-
Total	**6,600**

C. Administration and Management Services

134. The Division for Administration and Management Services (AMS) provides IRENA with administration and management services in support of implementing the Agency's mandates. 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. There is general satisfaction from all stakeholders that AMS is well-positioned to realise its strategic objectives in the short, medium and longer term. 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. This approach enables continuous management improvement, effective implementation of management policies and new initiatives to empower staff and enhance its ability to carry out its work more effectively.

135. The Division is composed of the following Offices: Finance, Budget, Human Resources, Information and Communications Technology, Procurement, Travel and General Services. Managerial and financial authority is exercised at the appropriate level through the Delegation of Authorities Manual approved by the Director-General. Through its offices, the Division will ensure that all new or revised management policies, procedures and internal controls, as promulgated in the Policy Manuals and Processes, meet or exceed the expectations of Members, as reflected in the Statute, the decisions of the governing bodies, the relevant regulations and rules and reviews by audit and oversight bodies.

136. The Division will implement and manage an Enterprise Resource Planning system (ERP) to automate the approved policies and procedures of Finance, Human Resources, Procurement and Travel. The ERP will also automate the promulgated delegation of authorities for smooth, efficient, transparent and auditable functioning of the processes. Major functions and workflows will be integrated into IRENA's intranet portal – REsource. The implementation of ERP will result in the smooth and efficient management and functioning of IRENA activities.

137. The Division represents the Director-General, as requested, on administrative and management matters in relation to governing bodies, and monitors emerging management issues throughout the Agency. Within its delegated authority, the Division is responsible for maintaining close liaison with host country authorities and Members on all substantive aspects of financial, budgetary, procurement, personnel and common support service matters. In this function and in close coordination with the host country, the Division will continue to manage the development plans for the Agency's new Headquarters complex in Masdar City.

Human Resources

138. The Office of Human Resources plays a strategic role in ensuring human resources capacity for the Agency's overall management to meet its goals and enable it to deliver its mandate. The Office of Human Resources provides the framework to enable the Agency to attract, develop and retain a wide spectrum of talent, taking into account the necessity of securing the highest standards of efficiency, competence and integrity, with due regard to the importance of recruiting staff primarily from Member States, as well as the adequate representation of developing countries with emphasis on gender balance. It participates in strategic workforce planning in alignment with organisational goals.

139. In accordance with the Staff Regulations and Staff Rules, the Office of Human Resources continues to develop human resources policies and systems that are in line with the UN Common System and global human resources best practices. In addition, the Office provides expert advice to managers and staff on all aspects of human resources and staff administration; monitors performance; administers staff benefits and entitlements; and coordinates with other Offices (i.e. Finance, Information and Communications Technology, Procurement and General Services) to ensure the implementation of related activities.

140. In 2013, as part of the ERP implementation, the deployment of a human resources information system will continue to integrate all aspects of human resources and financial operations. This process will ensure that Human Resources transitions from a largely transactional to a more strategic, dynamic Office.

141. The Office of Human Resources will coordinate and monitor training and development activities across the Agency and ensure the availability of adequate resources for appropriate staff learning and development. The Office plans to expand the provision of training to Agency staff, including ethics training, leadership and management training, project management, language courses and training on International Public Sector Accounting Standards (IPSAS).

Outputs 2013:

i) An enhanced user-friendly Human Resources Policy and Process Manual;
ii) Enhanced induction of new staff;
iii) Administration of contracts for different contractual arrangements;
iv) Provision of staff development opportunities;
v) Internship and junior professional programmes;

vi) Development of more proactive outreach and sourcing strategies;
vii) Administration of performance appraisal system;
viii) Appeals and administration of justice policies; and
ix) Provision of advice to staff on all matters pertaining to health insurance administration.

Procurement

142. The Procurement Office is responsible for procurement of all goods and services, required for the proper functioning of IRENA. The general principles that govern all procurement transactions, as per Financial Regulation 10.1, are fairness, integrity, transparency of the procurement process, best value for money and effective competition.

143. The activities of the Procurement Office are expected to be undertaken within the required timelines in an ethical, legal and systematic manner in order to reduce the operational risk in the procurement of goods and services of appropriate quality.

144. The review of Project Agreements with various expert and research institutions has been maintained within the Procurement Office in order to ensure proper management of the agreements that are governed by the principles set out in Article 10 of the Financial Regulations, Chapter 10 of the Financial Procedures and the Procurement Policy Manual.

Outputs 2013:

x) Effective application of procurement policies, systems and processes; and
xi) Timely and efficient support to the Agency in all areas of procurement, including with submissions of proposals to the Contracts Review Committee (CRC), and contract administration and evaluation of contractors' performance.

Travel and General Services

145. The Travel and General Services (TGS) Office is responsible for facilitating and provisioning smooth and efficient travel services that include staff members' travel on business trips and delegates' travel for IRENA's and global events. TGS also manages all the inventory of the Agency at Headquarters.

146. The TGS Office acts as a focal point for IRENA, building facilities for office security and a hygienic and healthy office environment.

147. As part of ERP implementation, the Office continues to provide services in accordance with IRENA's Rules and Regulations and the deployment of travel services.

Outputs 2013:

xii) Application of IRENA's travel policy and business processes;
xiii) Provision of travel services to IRENA staff, as well as to eligible delegates when required; and
xiv) Management of IRENA's assets and inventory.

Finance

148. The Finance Office is responsible for the administration of, and compliance with, IRENA's Financial Regulations and Procedures, as well as the relevant legislative mandates. The Office will apply the Accounts and Finance Policies to ensure sound financial management of all resources made available to the Agency in accordance with these policies. Appropriate measures and systems will be monitored for improvements to ensure their effective and efficient use, proper and transparent accountability and regular reporting to the appropriate authorities and stakeholders. The Office will contribute to the implementation of the ERP system and continued compliance with the International Public Sector Accounting Standards (IPSAS), including development of procedures to provide for IPSAS' required accounting, reporting and disclosures.

149. The Office's activities will put emphasis on the efficient delivery of support to the client units and other stakeholders. This support would particularly apply to the improvement of processes and systems for the processing of contributions, disbursements and obligations. A relevant and scalable financial information system will be maintained to provide both internal and external stakeholders with reliable information on the allocation and utilisation of resources. This system will be based on the ERP structure that is tailored to record the utilisation of organisational resources in a manner that could be used to provide measurement of achievements and objectives at the organisational and sub-programmatic levels.

Outputs 2013:

xv) Annual IPSAS compliant financial statements from the Agency to the Assembly;

xvi) Issuance of assessment documents, including those for the Working Capital Fund and core budget;

xvii) Timely payment of salaries and related allowances, entitlement and benefits; processing of payments to vendors and other contractors;

xviii) Administration of bank accounts; cash management; management of the Agency's investments; and

xix) Provision of information for, and responses to, the External Auditor and Members, as required.

Information and Communications Technology

150. The Information and Communications Technology (ICT) Office provides a broad range of solutions and services to other IRENA offices by enhancing technology to achieve the work programme targets. In 2013, ICT will strengthen service delivery operations aimed at enabling staff members, Members and other stakeholders to collaborate and share knowledge continuously and improve the high-end secure connectivity to IRENA's remote offices. ICT strives to improve work efficiency with the latest tools, technologies and applications to increase transparency and accountability in the Organisation.

151. Working closely with sub-programmes, technical solutions will be developed to set up frameworks collaboratively to meet the Agency's information technology needs, including suitable web-based applications, managed and secured infrastructure supported by wireless network, printing, voice and audio-video technologies to enable personnel and programme partners to connect, collaborate and share knowledge.

152. ICT manages a single virtual office environment, integrating information and communication of the two offices in Abu Dhabi and Bonn. Connectivity is established via a site-to-site, high-speed secured link in a cost-effective, scalable and secured manner for optimal information and knowledge exchange between the two offices.

153. ICT acts as a focal point for IRENA's basic and strategic information technology requirements and takes an active role in building IT design, specification, branding, installation, implementation and operationalisation. It implements infrastructure, software applications and security health checks, as well as the latest anti-virus tools, patches and upgrades for efficient and secured systems. The Office also provides regular data back-up to ensure that all users and operational data are secured.

Outputs 2013:

xx) Deployment and maintenance of the ERP application;

xxi) Strengthened IRENA internet-based applications, including launching of a dedicated portal for delegates, REmember;

xxii) Provision of internal IT-based business processes and workflows; and

xxiii) Enhanced hardware infrastructure for high-end connectivity to, and security for remote offices.

Resource Requirements: Administration and Management Services

Staff: USD 3.750 million
Non-staff: USD 1.570 million

Core Resource Requirements	USD 4.200 million
Voluntary Contributions	USD 1.120 million
Total Requirements	**USD 5.320 million**

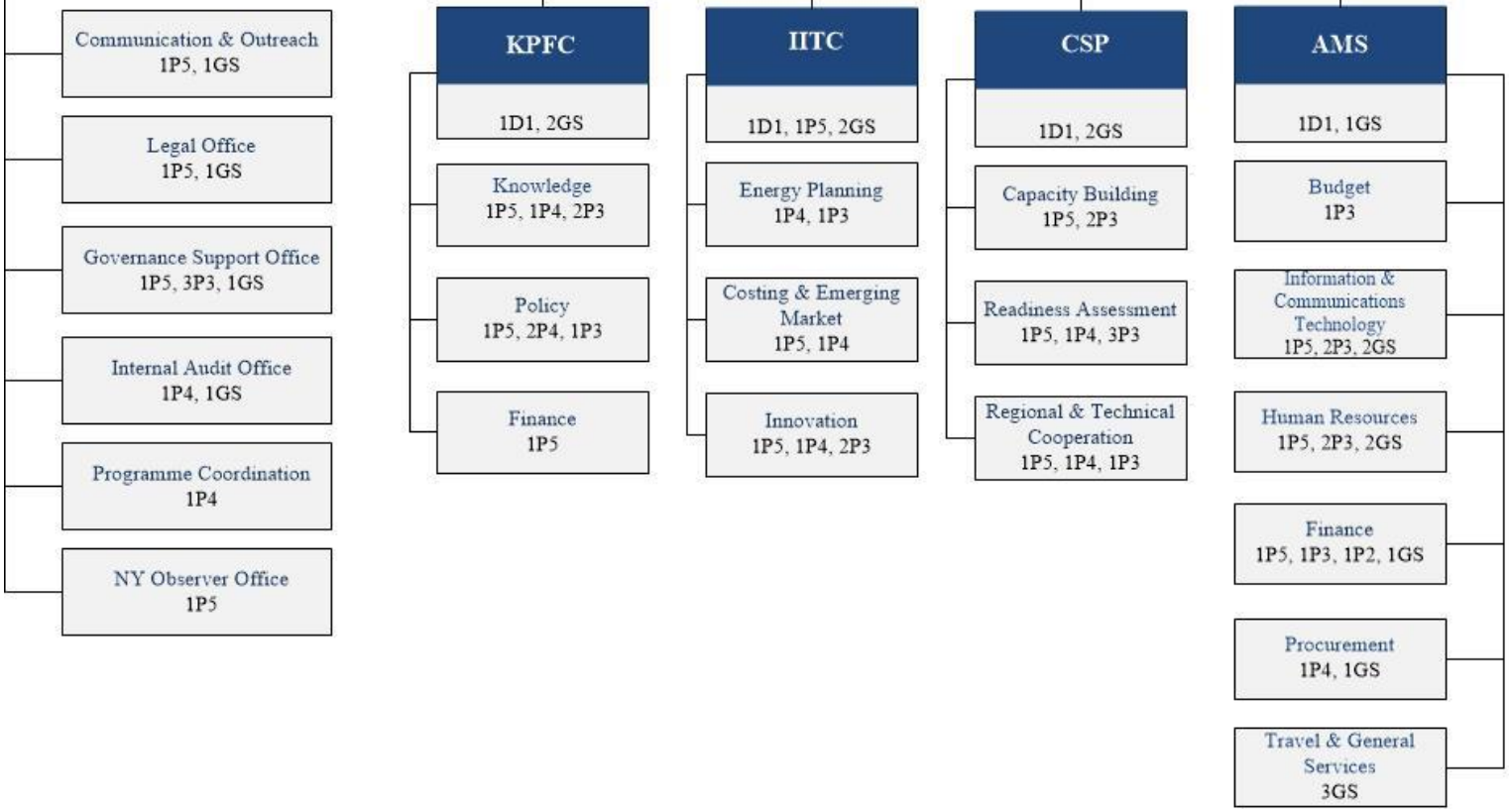
Category	**Resources (in USD thousand)**	**Posts**
	2013 Estimate	2013
Post	3,750	22
Non-post	450	-
UAE Government Bid	1,120	-
Total	**5,320**	**22**

Object of Expenditure	**2013 Estimate (in USD thousand)**
Total Staff Costs	3,750
Total Non-Staff Costs	1,570
- **Consultants, Interns, Project & Seconded Personnel**	370
- **Programme and Expert Meetings**	-
- **Travel of Staff**	100
- **Contractual Services**	430
- **General Operating Expenses**	620
- **Furniture and Equipment**	50
Total	**5,320**

ANNEX I: IRENA Organisational Structure and Post Distribution for 2013

Summary of Posts

Posts	No.
ASG	1
D-2	1
D-1	4
P-5	17
P-4	12
P-3	21
P-2/1	2
GS	23
Total	81



ANNEX II: IRENA Scale of Contributions for 2013

Members	UN Factor	Adjusted Contribution 2012 (in %)	Assessed Contribution to IRENA 2012 (USD)	Adjusted Contribution 2013 (in %)[3]	Assessed Contribution to IRENA 2013 (USD)	Variations
Albania	0.010	0.014%	2,276	0.012%	2,106	(170)
Algeria	0.128			0.160%	28,080	28,080
Angola*	0.010	0.010%	1,600	0.010%	1,755	155
Antigua and Barbuda	0.002	0.003%	455	0.002%	351	(104)
Armenia	0.005	0.007%	1,138	0.006%	1,053	(85)
Australia	1.933	2.750%	440,047	2.418%	424,359	(15,688)
Bahrain	0.039			0.049%	8,599	8,599
Bangladesh*	0.010	0.010%	1,600	0.010%	1,755	155
Belarus	0.042	0.060%	9,561	0.053%	9,301	(260)
Bosnia and Herzegovina	0.014	0.020%	3,187	0.018%	3,159	(28)
Brunei Darussalam	0.028	0.040%	6,374	0.035%	6,142	(232)
Bulgaria	0.038	0.054%	8,651	0.048%	8,424	(227)
Cameroon	0.011	0.016%	2,504	0.014%	2,457	(47)
Cape Verde	0.001	0.001%	228	0.001%	176	(52)
Croatia	0.097	0.138%	22,082	0.121%	21,235	(847)
Cuba	0.071			0.089%	15,619	15,619
Cyprus	0.046	0.065%	10,472	0.058%	10,179	(293)
Czech Republic	0.349	0.497%	79,450	0.437%	76,693	(2,757)
Denmark	0.736	1.047%	167,550	0.921%	161,635	(5,915)
Djibouti	0.001	0.001%	228	0.001%	176	(52)
Dominican Republic	0.042	0.060%	9,561	0.053%	9,301	(260)
Ecuador	0.040	0.057%	9,106	0.050%	8,775	(331)
Egypt	0.094			0.118%	20,709	20,709
Eritrea	0.001	0.001%	228	0.001%	176	(52)
Estonia	0.040			0.050%	8,775	8,775
Ethiopia*	0.008			0.010%	1,755	1,755
Fiji	0.004	0.006%	911	0.005%	877	(34)
Finland	0.566	0.805%	128,850	0.708%	124,254	(4,596)
France	6.123	8.712%	1,393,899	7.659%	1,344,155	(49,744)
Gambia	0.001	0.001%	228	0.001%	176	(52)
Georgia	0.006	0.009%	1,366	0.008%	1,404	38
Germany	8.018	11.408%	1,825,295	10.029%	1,760,090	(65,205)

Members	UN Factor	Adjusted Contribution 2012 (in %)	Assessed Contribution to IRENA 2012 (USD)	Adjusted Contribution 2013 (in %)[3]	Assessed Contribution to IRENA 2013 (USD)	Variations
Greece	0.691			0.864%	151,632	151,632
Grenada	0.001	0.001%	228	0.001%	176	(52)
Iceland	0.042	0.060%	9,561	0.053%	9,301	(260)
India	0.534	0.760%	121,565	0.668%	117,234	(4,331)
Israel	0.384	0.546%	87,417	0.480%	84,240	(3,177)
Italy	4.999			6.253%	1,097,402	1,097,402
Japan	12.530	17.828%	2,852,450	15.673%	2,750,612	(101,838)
Kenya	0.012	0.017%	2,732	0.015%	2,632	(100)
Latvia	0.038	0.054%	8,651	0.048%	8,424	(227)
Lesotho	0.001	0.001%	228	0.001%	176	(52)
Liechtenstein	0.009	0.013%	2,049	0.011%	1,930	(119)
Lithuania	0.065	0.092%	14,797	0.081%	14,215	(582)
Luxembourg	0.090	0.128%	20,488	0.113%	19,831	(657)
Malaysia	0.253	0.360%	57,595	0.316%	55,458	(2,137)
Maldives	0.001	0.001%	228	0.001%	176	(52)
Mali	0.003	0.004%	683	0.004%	702	19
Malta	0.017	0.024%	3,870	0.021%	3,685	(185)
Marshall Islands	0.001	0.001%	228	0.001%	176	(52)
Mauritania	0.001			0.001%	176	176
Mauritius	0.011	0.016%	2,504	0.014%	2,457	(47)
Mexico	2.356	3.352%	536,343	2.947%	517,199	(19,144)
Monaco	0.003	0.004%	683	0.004%	702	19
Mongolia	0.002	0.003%	455	0.002%	351	(104)
Montenegro	0.004	0.006%	911	0.005%	877	(34)
Mozambique	0.003	0.004%	683	0.004%	702	19
Nauru	0.001	0.001%	228	0.001%	176	(52)
Netherlands	1.855	2.639%	422,290	2.320%	407,160	(15,130)
New Zealand	0.273	0.388%	62,148	0.341%	59,845	(2,303)
Nicaragua	0.003	0.004%	683	0.004%	702	19
Niger	0.002	0.003%	455	0.002%	351	(104)
Nigeria	0.078	0.111%	17,757	0.098%	17,199	(558)
Norway	0.871	1.239%	198,283	1.089%	191,119	(7,164)
Oman	0.086	0.122%	19,578	0.108%	18,954	(624)
Palau	0.001	0.001%	228	0.001%	176	(52)
Panama	0.022	0.031%	5,008	0.028%	4,914	(94)

Members	UN Factor	Adjusted Contribution 2012 (in %)	Assessed Contribution to IRENA 2012 (USD)	Adjusted Contribution 2013 (in %)[3]	Assessed Contribution to IRENA 2013 (USD)	Variations
Philippines	0.090	0.128%	20,488	0.113%	19,831	(657)
Poland	0.828	1.178%	188,494	1.036%	181,818	(6,676)
Portugal	0.511	0.727%	116,329	0.639%	112,144	(4,185)
Qatar	0.135	0.192%	30,733	0.169%	29,659	(1,074)
Republic of Korea	2.260	3.216%	514,488	2.827%	496,139	(18,349)
Republic of Moldova	0.002	0.003%	455	0.002%	351	(104)
Romania	0.177	0.252%	40,294	0.221%	38,785	(1,509)
Rwanda	0.001			0.001%	176	176
Samoa	0.001	0.001%	228	0.001%	176	(52)
Saudi Arabia	0.830			1.038%	182,169	182,169
Senegal	0.006	0.009%	1,366	0.008%	1,404	38
Serbia	0.037	0.053%	8,423	0.046%	8,073	(350)
Seychelles	0.002	0.003%	455	0.002%	351	(104)
Sierra Leone	0.001	0.001%	228	0.001%	176	(52)
Slovakia	0.142	0.202%	32,326	0.178%	31,239	(1,087)
Slovenia	0.103	0.147%	23,448	0.129%	22,639	(809)
South Africa	0.385	0.548%	87,645	0.482%	84,591	(3,054)
Spain	3.177	4.520%	723,243	3.974%	697,437	(25,806)
Sri Lanka	0.019	0.027%	4,325	0.024%	4,212	(113)
Sudan*	0.010	0.010%	1,600	0.010%	1,755	155
Swaziland	0.003	0.004%	683	0.004%	702	19
Sweden	1.064	1.514%	242,219	1.331%	233,591	(8,628)
Switzerland	1.130	1.608%	257,244	1.413%	247,982	(9,262)
The former Yugoslav Republic of Macedonia	0.007	0.010%	1,594	0.009%	1,579	(15)
Togo	0.001	0.001%	228	0.001%	176	(52)
Tonga	0.001	0.001%	228	0.001%	176	(52)

Members	UN Factor	Adjusted Contribution 2012 (in %)	Assessed Contribution to IRENA 2012 (USD)	Adjusted Contribution 2013 (in %)[3]	Assessed Contribution to IRENA 2013 (USD)	Variations
Tunisia	0.030	0.043%	6,829	0.038%	6,669	(160)
Turkey	0.617			0.772%	135,486	135,486
Uganda	0.006			0.008%	1,404	1,404
United Arab Emirates	0.391	0.556%	89,011	0.489%	85,819	(3,192)
United Kingdom of Great Britain and Northern Ireland	6.604	9.396%	1,503,398	8.261%	1,449,806	(53,592)
United States of America*	22.000	22.000%	3,520,000	22.000%	3,861,000	341,000
Uruguay	0.027	0.038%	6,147	0.034%	5,967	(180)
Yemen*	0.010			0.010%	1,755	1,755
Total Assessment from States Members of IRENA			**16,000,000**	**100%**	**17,550,000**	**1,550,000.00**
European Union **					450,000	450,000.00
Overall Core Budget			**16,000,000**		**18,000,000**	**2,000,000.00**

* A maximum assessment rate is established at 22 per cent. For Least Developed Countries (LDC), a maximum assessment rate is established at 0.01 per cent.

** 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.

[3] Pursuant to Article XII of the IRENA Statute, this calculation is based on the "Scale of assessments for the apportionment of expenses" as set out in the United Nations General Assembly Resolution 64/248 of 24 December 2009. It has been adjusted to reflect the membership of IRENA. The General Assembly of the United Nations is expected to consider the scale of assessments for the period 2013-2015 at the end of 2012. The IRENA Scale of Contributions for 2013 will be adjusted accordingly.