IRENA
International Renewable Energy Agency

Bonn, Germany
31 July 2012

International Renewable Energy Agency (IRENA)
IRENA Innovation and Technology Centre
Robert-Schuman-Platz 3,
53175 Bonn, Germany
Tel : +49 (0) 228 391 79085

Members Technology Executive Committee
UNFCCC secretariat
P.O. Box 260124
D-53153 Bonn, Germany
Email: tec@unfccc.int

Subject: Input to the Public Calls from 18 June to 31 July 2012

Dear Members of the Technology Executive Committee,

We welcome the opportunity to share with you the work undertaken by the International Renewable Energy Agency (IRENA) of relevance to the functions of the Technology Executive Committee (TEC). In response the three calls for public input launched by the TEC the 18th of June 2012, we are pleased to submit the following input annexed to this letter.

Call for inputs on technology road maps and action plans

- Annex 1 - IRENA's Road Mapping Activities

Call for inputs on ways to promote enabling environments and to address barriers to technology development and transfer

- Annex 2 – IRENA's Policy Brief: IRENA and renewable energy technology cooperation

Call for inputs on actions undertaken by accredited observer organizations relevant to the Technology Executive Committee in performing its functions

- Annex 3 - IRENA's Work Programme for 2012
- Annex 4 - IRENA's Renewable Costing Analysis
- Series of five costing analysis papers for renewable energy technology, available at: http://www.irena.org/menu/index.aspx?mnu=cat&PriMenuID=36&CatID=128

Yours sincerely

Dr. Dolf Gielen
Director IRENA Innovation and Technology Centre

IRENA
International Renewable Energy Agency

30 January 2012

INTERNATIONAL RENEWABLE ENERGY AGENCY
Second session of the Assembly
Abu Dhabi, 14 – 15 January 2012

Decision on the

proposed Work Programme and Budget for 2012

The Assembly,

Recalling Article XII of the Statute on the budget of the International Renewable Energy Agency;

Further recalling other relevant provisions of the Statute;

Also recalling the relevant parts of the Assembly decisions regarding the Acceptance of Assets and Liabilities of the Preparatory Commission for IRENA, as contained in document A/1/DC/2, and the Work Programme and Budget for 2011 as contained in document A/1/DC/8;

Further recalling the Interim Financial Regulations for IRENA as contained in document A/1/DC/6;

Reaffirming its determination to strengthen the role, capacity, effectiveness and efficiency of the International Renewable Energy Agency in order to realise its full potential and to respond effectively to the needs of Members, in accordance with the purposes and principles of the IRENA Statute, pursuant to the relevant provisions thereof;

Having considered the report of the Director-General on the Proposed Work Programme and Budget for 2012 pursuant to Article IX.G.2. of the Statute as submitted by the Council pursuant to Article X.F.2 of the Statute and contained in document A/2/1;

Taking note of the considerations of the Council as contained in document C/2/SR/L.1;

1. *Takes note with appreciation* of the report of the Director-General of the Work Programme and Budget for 2012;

2. *Decides* to adopt the proposed Work Programme and Budget for 2012, which totals USD 28.4 million, comprising:

    a. Core budget of USD 16 million to cover the core activities and administrative costs;
    b. Voluntary contributions resulting from the UAE bid implementation agreement of USD 2.9 million for operations, USD 2.9 million for research and USD 1.6 million for workshops and conferences; and
    c. Voluntary contributions for the operations of the IRENA Innovation and Technology Centre (IITC) in Bonn granted by Germany of USD 4 million;
    d. Additional estimated voluntary contributions from Members amounting to USD 1 million;

3. *Resolves* that the scale of assessment for the contributions of Members to the core budget of IRENA for 2012 will be as contained in the revised Annex II of A/2/1 which shall also be applicable to any new Member who joined IRENA during 2011;

4. *Invites* Signatories and other potential Members to contribute to the IRENA budget on a voluntary basis, according to an indicative IRENA scale of contributions, based mutatis mutandis on the applicable scale of assessment to the regular budget of the United Nations;

5. *Decides* that contributions of new Members shall be treated in accordance with Financial Regulation 6.3;

6. *Further decides* that voluntary contributions of others shall be treated in accordance with Financial Regulation 7.1;

7. Also *reaffirms* its decision, as contained in paragraph 4 of Assembly decision A/1/DC/8, that any core budget cash surplus at the close of the financial year 2011, which includes any cash surplus from the liquidation of the Preparatory Commission's assets, shall be apportioned among Members and contributing Signatories, in proportion to their contributions, notwithstanding Financial Regulation 4.5 (a);

8. *Authorises* the Director-General to make transfers between appropriations sub-programmes pursuant to Financial Procedure 104.1 (b) up to the limit of 15 per cent of the amount appropriated for the sub-programme in question;

9. *Requests* the Council to continue to work closely with the Secretariat on the development of the proposed Medium-term Strategy and the 2013 Work Programme and Budget for the purpose of demonstrating clearly how the resources of the Agency support outcomes that advance its mission.

30 January 2012

INTERNATIONAL RENEWABLE ENERGY AGENCY
Second session of the Assembly
Abu Dhabi, 14 and 15 January 2012

Proposed Work Programme and Budget for 2012

Report of the Director-General

* A/2/1 of 30 January 2012 includes a revised Annex II

Proposed Programme of Work and Budget for 2012

Contents

Overview

1. World energy demand is rising as a result of economic growth and population increase. The finite nature of traditional energy sources, and their impact on global markets and the environment require a new sustainable growth strategy that puts renewable sources of energy at the core of efforts to ensure sustainable and reliable energy. Energy is a key prerequisite for socio-economic development, and with many developing countries in Africa, Asia and Latin America poised at the threshold of accelerated economic growth and energy demand, the energy agenda has become a priority for both policymakers and the private sector alike.

2. Renewable energy is playing a rapidly increasing role in global energy supply, and the trends reflect strong growth in all energy sectors and all regions of the world. The latest Renewables Global Status Report shows that renewables delivered close to 20% of global electricity supply in 2010 and that, by early 2011, they comprised one-quarter of global power capacity from all sources. Total global investment in renewable energy broke a new record in 2010, with investment in renewable power and fuels of USD 211 billion, up 32% from USD 160 billion the previous year. In many countries, policymakers, and the public and private sectors are becoming increasingly focused on accelerating the uptake of renewable energy through, inter alia; deployment of technologies, stimulating innovation and expanding related markets. Some 119 countries now have renewable energy policy targets or support policies, and at least half of them are in the developing world.

3. This growing economic and political sensitivity is also reflected in major international events that will take place in 2012, such as the United Nations Conference on Sustainable Development, Rio+20 Summit, and dedication of 2012 as the International Year of Sustainable Energy for All. Strong efforts are being made at the national and regional levels, and by the international community, to pave the way for renewable energies and thus transform existing energy systems. Recent events, such as the impact of natural disasters on the Fukushima plant, also prompted rethinking of the energy policies in different countries. The creation of new entities at national level such as the Japanese Renewable Energy Foundation (JREF), the Green Investment Bank in the UK or the Moroccan Agency for Solar Energy aimed at catalysing large-scale investment in the renewables sector and the change of energy policy in Germany are examples of such efforts.

4. It is against this background that the International Renewable Energy Agency (IRENA) is supporting the transition to sustainable and secure, low-carbon energy systems by further exploring and promoting the vast opportunities offered by renewable energy to address and alleviate current energy and energy-related challenges. IRENA has 85 Members and 70 Signatories and/or countries processing applications for membership, totalling 155 countries actively involved in its activities. Cooperation at the global, regional and national levels, knowledge sharing, enabling policies and enhanced capacity, as well as the encouragement of investment flows and strengthened technology and innovation, are all essential elements in these efforts. IRENA is positioning itself as a platform for all-inclusive cooperation where stakeholders can make a positive

contribution to the common goals. This cooperation and partnerships are essential underpinnings of IRENA's work.

5. The ambitious mandate entrusted to IRENA, positions the Agency at the forefront of the transition to a renewables-based energy future, while ensuring that the benefits of this transition benefit industrialised and developing countries alike. IRENA's principal role is policy innovation and facilitation, and its tools are policy analysis and advice, capacity building, knowledge management, stakeholder convening, and technology cooperation. IRENA's potential can be realised only if it is an inclusive, accountable and innovative organisation.

6. During 2011 significant efforts have been made to strengthen cooperation among IRENA Members, as well as with institutions and organisations committed to renewable energy. In 2011, the Agency was developing its formative institutional managerial structures, transparent and effective administrative procedures, recruiting staff and creating a framework for enhanced programme delivery through its outreach and collaborative initiatives. Drawing on their knowledge, experiences and resources, progress has been made in understanding the political, economic, policy and regulatory environment in which renewable energy competes, as well as the concomitant technological possibilities and business models. IRENA has structured its work within three distinct, but intrinsically connected and inseparable areas: innovation and technology, knowledge management and technology cooperation, and policy advice and capacity building.

7. The Proposed Programme of Work and Budget aims to adapt the framework devised in 2011 to meet IRENA's programmatic and management objectives in order to better serve the needs of Members. The year 2012 is expected be marked by an increase in regional activities particularly in Africa, Latin America and the Caribbean, and the Pacific Islands. 2012 will also be a critically important year for sustainable energy at the international level. The International Year of Sustainable Energy for All and the Rio+20 Conference will provide significant opportunities to advance the mission of IRENA. Building on the institutional and substantive framework set in the course of 2011, and based on the guidance provided by the Members and the experience gained, IRENA's activities have been refined and expanded. They are accompanied by a clear articulation of deliverables and outcomes, as well as the budget allocation required.

8. The organisational structure, as adopted in 2011 and proposed for 2012, reflects the programmatic structure and comprises the following:

   a. Strategic Management and Executive Direction
   b. Knowledge Management and Technology Cooperation
   c. Policy Advisory Services and Capacity Building
   d. Innovation and Technology
   e. Administration and Management Services

Proposed Programme Budget for 2012

Table 1: Estimates of expenditure (in USD thousand)

	2011 Approved Budget	2011 Estimated Expenditure		2012 Estimate
		Amount	Percentage Utilisation	
Assessed Contributions (Core Budget)	**13,260**	**10,820**	**81.6%**	**16,000**
Voluntary Contributions from the UAE				
Operations	2,900	2,900	100.0%	2,900
Research	2,900	1,073	37.0%	2,900
Workshops and Conferences	1,600	1,600	100.0%	1,600
Information Technology Infrastructure	1,148	1,148	100.0%	-
Additional Earmarked contribution (Capacity Building)	-	-	-	*500*
Subtotal UAE Contributions	*8,548*	*6,721*	*78.6%*	*7,900*
Voluntary Contributions from Germany				
Innovation and Technology	3,100	2,731	88.1%	4,000
Additional Earmarked contribution (Capacity Building)	-	-	-	500
Subtotal German Contributions	*3,100*	*2,731*	*88.1%*	*4,500*
Total Voluntary Contributions	**11,648**	**9,452**	**88.1%**	**12,400**
Grand Total	**24,908**	**20,272**	**81.4%**	**28,400**

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

Component	Core Budget		Voluntary Contributions		Total	
	2011 Approved Budget	2012 Budget Proposal	2011 Approved Budget	2012 Budget Proposal	2011 Approved Budget	2012 Budget Proposal
A. Strategic Management	3,743	4,422	1,600	1,180	5,543	5,602
B. Governing Bodies Conference Services	-		1,800	1,600	1,600	1,600
C. Programme of Work						
Sub-programme 1. Knowledge Management and Technology Cooperation	3,759	4,157	2,000	2,000	5,759	6,157
Sub-programme 2. Policy Advisory Services and Capacity Building	2,509	3,719	2,000	2,500[1]	4,509	6,219
Sub-programme 3. Innovation and Technology	-	-	3,100	4,000	3,100	4,000
Subtotal C	6,268	7,876	7,100	8,500	13,368	16,376
D. Administration and Management Services	3,249	3,702	1,148	1,120	4,397	4,822
Of which: Information Technology	-	-	1,148[2]	-	1,148	-
Total Estimated Requirements	**13,260**	**16,000**	**11,648**	**12,400**	**24,908**	**28,400**

[1] This includes the Additional Earmarked contribution of USD 1,000,000 for Capacity Building activities from UAE and Germany (USD 500,000 each).
[2] Provided directly by UAE to build IT infrastructure.

Table 3: Post requirements

	Core Budget		Voluntary Contributions		Total	
	2011	**2012**	**2011**	**2012**	**2011**	**2012**
Professional and above						
ASG	1	1	-	-	1	1
D-2	1	1	-	-	1	1
D-1	3	3	1	1	4	4
P-5	14	14	3	3	17	17
P-4	5	6	1	1	6	7
P-3	17	17	3	3	20	20
P-2/1	3	2	-	-	3	2
Subtotal	*44*	*44*	*8*	*8*	*52*	*52*
General Service	**18**	**18**	**2**	**2**	**20**	**20**
Total	**62**	**62**	**10**	**10**	**72**	**72**

Table 4: Resource requirements by object of expenditure and source of funds (in USD thousand)

(1) Core budget

Object of Expenditure	2011 Approved Budget[3]	Resource Growth		2012 Estimate
		Amount	*Percentage*	
Total Staff Costs	7,974	1,906	24%	9,880
Other Staff Costs[4]	50	-16	-32%	34
Consultants	1,700	-283	-17%	1,417
Seconded Personnel	881	22	2%	903
Ad Hoc Expert Meetings[5]	616	623	101%	1,239
Staff Travel	507	-22	-4%	485
Contractual Services	857	94	11%	951
General Operating Expenses	396	131	33%	527
Hospitality	5	3	60%	8
Supplies and Materials	274	7	3%	281
Furniture and Equipment	-	275	N/A	275
Subtotal	**13,260**	**2,740**	**21%**	**16,000**

(2) Voluntary Contributions

Object of expenditure	2011 Approved Budget	Resource growth		2012 Estimate
		Amount	Percentage	
UAE Contribution	7,400	-	0%	7,400
Information Technology[6]	1,148	-	-100%	-
Additional Earmarked contribution (Capacity Building)	-	500	-	500
German Contribution	3,100	900	29%	4,000
Additional Earmarked contribution (Capacity Building)	-	500	-	500
Subtotal	**11,648**	**752**	**6%**	**12,400**

(3) Core Budget and Voluntary Contributions

Object of expenditure	2011 Approved Budget	Resource growth		2012 Estimate
		Amount	Percentage	
Total (1) and (2)	**24,908**	**3,492**	**14%**	**28,400**

[3] *The expenses of the Preparatory Commission for January to March 2011 have been added to the April to December 2011 appropriations in order to make the comparisons by object of expenditure consistent.*
[4] *Other staff costs include general temporary assistance at the general service level.*
[5] *Ad hoc expert meetings include the cost of participants to IRENA meetings other than those of the Governing Bodies and subsidiary organs.*
[6] *Provided directly by UAE to build IT infrastructure.*

9. The level of resources proposed for 2012 amounts to USD 28,400,000, of which USD 16,000,000 is funded from assessed contributions and USD 12,400,000 from voluntary contributions. A thorough review and extensive consultations with programme managers have been carried out to ensure the optimal utilisation of resources and ensure full, efficient and effective implementation of the objectives and mandates set by Members.

10. The proposed core budget requirements for 2012 total USD 16,000,000, which comprises USD 9,880,000 for 62 core posts[7] and USD 6,120,000 for various non-post requirements including general temporary assistance, consultants, seconded personnel, expert group meetings, travel of staff, contractual services, supplies and materials and information technology. The distribution of the core budget requirements, by component, is as follows:

    a. USD 4,422,000 under strategic management, comprising USD 3,063,300 for 20 posts and USD 1,358,700 for non-post requirements;
    b. USD 7,876,200 under Programme of Work, comprising USD 4,174,000 for 23 posts and USD 3,702,200 for non-post requirements;
    c. USD 3,701,900 under Administration and Management Services, comprising USD 2,641,000 for 19 posts and USD 1,060,900 for non-post requirements.

11. It is proposed that the amount of USD 12,400,000 should be funded from voluntary contributions as follows:

    a. USD 7,400,000 from the UAE bid to provide for operations, research, workshops and conferences. An additional contribution USD 500,000 is earmarked for capacity building, and
    b. USD 4,000,000 from Germany to provide USD 1,586,000 for the continuation of 10 posts in Bonn and USD 2,414,000 for non-post requirements. An additional contribution USD 500,000 is earmarked for capacity building.

[7] *This does not include the 10 posts of IITC.*

A. Strategic Management

Core Resource requirements: ***USD 4,422,000***
Voluntary Contributions: ***USD 1,180,150***

Management of the Agency

12. The Director-General has overall responsibility for providing leadership to carry out the Agency's mandate and is also responsible for the efficient and effective management of the Agency and its Work Programme. The Director-General is supported by a Deputy Director-General both in overall management and in strategic management and programme design, formulation, and implementation, in line with IRENA's mandate, mission, objectives and accountability framework.

13. The Office of the Director-General provides support for the timely discharge of his responsibilities and for the management of his Office. It also monitors the implementation of the Programme of Work and acts as the focal point for information on all aspects of the work of the Office. Strategic Management also includes an internal audit function. The internal auditor will ensure that sub-programmes and activities are executed effectively and 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 and contracts to ensure requisite compliance and to protect the interests of IRENA.

Outputs

i) Overall management: direction, guidance and policy clearance of all programmatic and administrative actions;
ii) Planning and strategic management: Programme of Work and Budget, annual report;
iii) Audits: facilitation of audits and written management responses showing the actions being taken to implement the audit recommendations provided;
iv) Evaluations: coordination and management of the evaluation of sub-programmes and activities. Evaluation reports for completed activities and written management responses to evaluation findings.

Governance Support Office

14. The establishment of the three principal organs of the Agency, namely the Assembly, the Council and the Secretariat, requires that the Secretariat focuses on the institutionalisation of structures and processes. The Secretariat will ensure effective support to Members in an accountable and transparent manner, to meet the needs of the entire membership. The Governance Support Office will ensure a timely and efficient dissemination of documentation and effective support to Members and to intergovernmental meetings.

Outputs

v) Substantive servicing of meetings of the Assembly and the Council (3 meetings), and, as required, subsidiary organs (up to 6 meetings);

vi) Parliamentary documentation: Reports to the Assembly, the Council, and subsidiary organs (approx. 30 reports), delegates' web-site portal.

Communication and Outreach

15. Within the context of a broad communications umbrella for IRENA, the Communications Unit will maintain a continuous focus on communications and marketing, whose complementary but distinct roles should add to and multiply the value of every aspect and activity of the organisation. The 2012 International Year of Sustainable Energy for All and the Rio+20 Summit in June 2012 present a unique opportunity to place renewable energy prominently on the agenda, and IRENA will continue to contribute to this effort by participating in the UN Secretary-General's High-level Group on Sustainable Energy for All; it will serve as a core partner in the initiative, organising side events and taking the lead in issues related to renewable energy. IRENA is a partner at the World Future Energy Summit (WFES) at which the International Year will be launched, ensuring that the messaging for the year will start from a global platform. Outreach will be undertaken at global renewable energy initiatives such as the Interstate Renewable Energy Council (IREC), the Clean Energy Ministerial (CEM), and regional forums, especially in Africa, Asia-Pacific and Latin America and the Caribbean, and at global events such as Rio+20.

16. The communications strategy will also provide support to the implementation of the Programme of Work. The Communications Unit will partner with the Information Communication Technology and Governance Support Office in continuing its efforts to expand the IRENA website towards becoming a one-stop shop for relevant renewable energy information. A new interactive web platform will replace the current delegates' area. This new platform will enhance collaboration and information sharing. Training will be provided to all Members, and a phased approach will be adopted during the transition.

Outputs

vii) Publications: Key publications including newsletters, production of policy and programme documents in support of PACB, KMTC, and IITC's publications outputs, information and representational materials;
viii) Updates to Members in collaboration with the Governance Support Office including quarterly newsletters on IRENA events and activities;
ix) Continuing development of website content;
x) On-going media outreach, and development of additional media contacts and networks to further knowledge about IRENA's work;
xi) Development and implementation of new information portal for Members replacing the current delegates' area in collaboration with the Information Communications Technology and Governance Support Office;
xii) Implementation of IRENA's communications strategy supporting the Programme of Work and the Midterm Strategic Plan;
xiii) Enhanced engagement with current and new partners and collaborative arrangements to facilitate wider outreach;
xiv) As a core partner of the 2012 International Year of Sustainable Energy for All campaign, IRENA will support and participate in regional rollouts throughout the

year. Communications activities will also support the Director-General as a senior advisor to the UN Secretary-General's High-level Group on Sustainable Energy for All. Outreach support includes:

- *World Future Energy Summit, Abu Dhabi Launch of the 2012 International Year of Sustainable Energy for All;*
- *Delhi Sustainable Development Summit, New Delhi – Asian rollout of the 2012 International Year of Sustainable Energy for All;*
- *African rollout of the 2012 International Year of Sustainable Energy for All, Nairobi;*
- *Americas rollout of 2012 International Year of Sustainable Energy for All;*
- *Support to the Director-General in his role as Senior Advisor to the UN Secretary-General on Rio+20, side events at the Rio+20 Summit, Rio de Janeiro, Brazil (June 2012);*
- *Side events at COP 18 /Climate Change Conference.*

Strategic Partnerships

17. 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, while sub-programmes focus on continuous development and strengthening of partnerships related to defined activities.

Table 5: Objective, expected accomplishments and indicators of achievement

Objective: Effectively and efficiently manage the Agency and its Work Programme	
Expected accomplishments	**Indicators of achievement**
(a) Visibility of IRENA as the global voice for renewable energy	i. Growing recognition of IRENA among renewable energy stakeholders. ii. Growing recognition of IRENA as authoritative voice on renewable energy in international forums.
(b) Transparent, responsive and effective management of resources of the organisation	iii. Effective implementation of administrative procedures and mechanisms. iv. Prioritised result oriented implementation of programme of work and budget.
(c) Support to members of the governing bodies of IRENA	v. Timely delivery of documentation. vi. Effective support to inter-governmental meetings. vii. Effective communication with representatives of governments, international/regional organisations and stakeholders.
(d) Effective formulation, prioritisation and implementation of the Programme of Work	viii. Recognition by Member countries of an effective programme formulation, implementation and evaluation. ix. Effective internal budget management and coordination across sub-programmes.
(e) Timely and adequate mobilisation of financial resources	x. Percentage of resources mobilised in a timely manner to implement the Programme of Work.

Table 6: Resource requirements: Strategic Management

Category	**Resources (in USD)**		**Posts**	
	2011 Budget	2012 Estimate	2011	2012
Core Budget				
Post	2,405,300	3,064,000	20	20
Non-post	880,300	1,358,000	-	-
Subtotal	*3,285,600*	*4,422,000*	*20*	*20*
January to March 2011	457,017	-	-	-
Voluntary Contributions				
UAE Government Bid	1,800,000	1,180,150	-	-
Subtotal	*1,800,000*	*1,180,150*	-	-
Total	**5,542,617**	**5,602,150**	**20**	**20**

Table 7: Strategic Management Resource requirements by object of expenditure and source of funds 2012 (in USD)

Core budget	**4,422,000**
Total Staff Costs	3,064,000
Other Staff Costs	-
Consultants	-
Seconded Personnel	208,000
Ad Hoc Expert Meetings	700,000
Staff Travel	
Contractual Services	400,000
General Operating Expenses	
Hospitality	
Supplies and materials	50,000
Furniture and Equipment	-
UAE Bid	**1,180,150**
Research	537,500
Operations	642,650
GRAND TOTAL	**5,602,150**

18. The amount of USD 3,064,000 would provide for the continuation of 20 posts approved in 2011, including the reclassification of 1 P-3 post to P-4 (1 ASG, 1 D-2, 5 P-5, 2 P-4, 3 P-3, 1 P-2 and 7 GS). Resources totalling USD 1,358,000 would provide for non-post requirements including:

    a. Development of renewable energy initiatives and communication strategy for participation in the Rio+20 Conference on Sustainable Development;
    b. Support to the United Nations Secretary-General's High-level Group on Sustainable Energy for All;
    c. Participation in international renewable energy conferences/meetings and initiatives;
    d. Consultants to avail of specialised expertise in policy and substantive areas;
    e. Seconded personnel;
    f. Travel of staff;
    g. Supplies and materials;
    h. Hospitality.

19. Voluntary contributions totalling USD 1,180,150 from the UAE bid will continue to be utilised to assist in strategic stakeholder consultations, experts, outreach, support to IRENA's role as UN observer in particular during the International Year of Sustainable Energy for All and Rio+20 process, and meetings and conferences.

B. Governing Bodies Conference Services

Voluntary Contributions: ***USD 1,600,000***

20. The Assembly is the supreme organ of IRENA and its main decision-making body. It is composed of all Members of IRENA and meets in regular annual sessions. The Assembly considers and approves IRENA's Work Programme and Budget and determines the guiding principles and policies of the Agency. The IRENA core budget does not cover the costs of delegations' participation at the Assembly.

21. The Council carries out functions entrusted to it under the Statute of IRENA and functions delegated to it by the Assembly. The Council has 21 members, elected by the Assembly on a rotating basis for a two-year term; it meets semi-annually. Until its third meeting, the Council has three subsidiary organs: the Policy and Strategy Committee, the Governance and Legal Committee, and the Finance Committee, which meet as required.

22. The Secretariat assists the Assembly, the Council and their subsidiary organs in the performance of their functions. The core resource requirements for this support are included under Strategic Management in Part A above.

Table 8: Resource Requirements: Meetings of the Governing Bodies

Category	**Resources (in USD)**		**Posts**	
	2011	2012	2011	2012
UAE Government Bid	1,600,000	1,600,000	-	-
Total	**1,600,000**	**1,600,000**	**-**	**-**

C. Programme of Work

Table 9: Resource requirements by sub-programme

	Core				Voluntary				Total			
	Resources		Posts		Resources		Posts		Resources		Posts	
	2011 Appropri-ation	2012 Estimate	2011	2012	2011 Appropri-ation	2012 Estimate	2011	2012	2011 Appropri-ation	2012 Estimate	2011	2012
Sub-programme 1 Knowledge Management and Technology Cooperation	3,759,020	4,156,700	14	14	2,000,000	2,000,000	-	-	5,759,020	6,156,700	14	14
Sub-programme 2 Policy Advisory Services and Capacity Building	2,509,545	3,719,500	9	9	2,000,000	2,500,000[8]	-	-	4,509,555	6,219,500	9	9
Sub-programme 3 Innovation and Technology	-	-	-	-	3,100,000	4,000,000	10	10	3,100,000	4,000,000	10	10
Total	**6,268,565**	**7,876,200**	**23**	**23**	**7,100,000**	**8,500,000**	**10**	**10**	**13,368,565**	**16,376,200**	**33**	**33**

[8] *This includes the Additional Earmarked contribution of USD 1,000,000 for Capacity Building activities from UAE and Germany (USD 500,000 each).*

Sub-programme 1: Knowledge Management and Technology Cooperation

Core Resource requirements: ***USD 4,156,700***
Voluntary contributions: ***USD 2,000,000***

Strategic Objectives and Context

23. Recent trends on renewable energy reflect the substantial progress being made in developing and deploying renewable energy resources; as seen in the increased contribution of renewable energy to the energy mix and the growth in global investments in the sector. Positive trends in new investments in emerging economies and developing countries have provided momentum to the markets. A large number of countries have developed policies and measures to stimulate the deployment of renewable energy.

24. There is however considerable room for improvement: out of the nearly 100 countries that have announced national targets for increasing the share of renewable energy in the energy mix, only half have received investment flows of more than USD 10 million. Moving from target-setting and political buy-in to actual deployment of technology requires intermediate steps. This sub-programme focuses on identifying the critical areas of knowledge, and making this knowledge available to IRENA Members and the wider renewable energy community, based on a coherent and integrated framework of knowledge resources. In some areas, i.e. potentials, statistics, indicators, assessments, large gaps were identified, which need to be filled. However, making knowledge available is not a guarantee of success. The transmission and absorption of knowledge depends on the readiness of the country to move towards renewables. The role of KMTC is to develop a systematic approach to renewable energy readiness, designed to support regional partners and Member countries. This work would lead to concrete tailor-made action plans at regional and national level, to be implemented in coordination with PACB.

25. As detailed in Article 2 of its Statute, the mandate of IRENA includes a focus on the widespread and increased adoption and use of renewable energy with a view to sustainable development. In this regard, North-South and South-South technology cooperation will be a central element of any discussion related to knowledge, be it knowledge-sharing, dissemination of knowledge, or readiness to absorb and implement this knowledge. KMTC's role is to assist and catalyse multilateral cooperation in renewable energy technology by providing a platform for dialogue and by fostering technology cooperation. The sub-programme is articulated around three components, described below.

Component 1: Systematise relevant global knowledge on renewable energy

26. Targeted generation and transfer of knowledge are central to promoting and facilitating change. A central aspect of this is the creation of a solid and reliable information base. In 2011, KMTC started to develop a statistical database, which builds on the main global databases (IEA, UN, others) by gathering additional information from countries through partnerships at the country level. Information on potentials is being collected, and an electronic database of studies has been initiated. Partnerships with the Clean Energy Ministerial lead to a concept and prototype for a Global Solar and Wind Atlas, which will be presented to end-users, and expanded to include other renewable energy technologies.

A conceptual framework is under development for energy indicators, which will also seek input from experts and governments. The components and activities proposed in 2012 will build upon these foundations and will develop a knowledge management platform, which will engage stakeholders at the global, regional and local level in the creation, use and dissemination of information and knowledge. Five activities are planned for 2012:

27. **Activity 1: Operationalise IRENA's Knowledge Management (KM) strategy**. Following the mapping of existing sources of knowledge and gap analysis undertaken in 2011, KMTC will develop a Knowledge Management strategy for IRENA. The strategy will establish a Knowledge Management framework that ensures easy access to renewable energy information and knowledge relevant to the needs of Members, academia, civil society, and other stakeholders. It will also provide for the management of knowledge within the Agency, establishing a system to ensure institutional memory as well as a documentation centre. A workshop will present the Knowledge mapping and gap analysis to countries in order to integrate their expectations in the Knowledge Management strategy. A core team will be established within IRENA to monitor and assist in the implementation of the Knowledge Management strategy. This process will include a capacity building component to ensure the application of the strategy internally.

Output

i) IRENA Knowledge Management Strategy document

28. **Activity 2: Renewable Energy Potentials**. Knowledge of energy potentials is the basis for planning the transition to renewable energy systems. In partnership with the Clean Energy Ministerial Multilateral Solar and Wind Working Group (CEM MWG), IRENA is coordinating the development of the Global Solar and Wind Atlas. This initiative will enhance IRENA's ability to provide targeted services to its Members, and will also ensure that it responds to Member countries specific needs and requirements. Building on existing international initiatives to improve data quality IRENA will contribute to assessing renewable energy potentials by carrying out the following tasks:

a. Provide a platform (meta-database) for global data providers such as the National Renewable Energy Laboratory (NREL) of the US Department of Energy, the German Aerospace Centre (DLR), the Danish National Laboratory for Sustainable Energy (Risø), the Spanish Renewable Energy Centre (CENER), and NASA among others. The collaboration with the World Meteorological Organisation (WMO) begun in 2011 will be supported by the network of WMO members in the verification phase of the Global Solar and Wind Atlas. Recommendations will be formulated on the elements and instruments required to densify the measurement network to enhance the level of accuracy in terms of evaluating renewable energy potentials, starting with wind and solar.

b. While the initial phase will focus on wind and solar, work on other renewable energy sources will progressively be initiated. KMTC will start to develop a global biomass dataset, building on datasets from the Food and Agriculture Organisation (FAO) and the International Institute for Applied Systems Analysis (IIASA).

Exchanges of views and information initiated in 2011 will be pursued, resources allowing, in particular on geothermal energy, and hydropower.

c. The Global Atlas will contribute to the upcoming Global Framework for Climate Services (GFCS), by ensuring that end-user recommendations are transmitted to the GFCS programme. Demonstration campaigns within the Global Atlas will be organised jointly with WMO and the GFCS programme.

d. A simplified version of the final system for the Global Solar and Wind Atlas will be made available to a group of end-users gathered on the occasion of the second session of IRENA's Assembly. It will demonstrate the feasibility of delivering adequate data and services at the global level, and will gather recommendations from end-users before developing a more complete system.

e. A strategy paper on developing and exploiting renewable energy potentials for policymaking will be prepared. KMTC will develop a set of case studies focusing on three countries at different stages of resource assessment. In the process, these countries will be assisted in building their methodology to provide critical inputs for decision-making.

Outputs

ii) Advanced demonstration platform, building on open architecture and existing datasets;
iii) Draft publication on architecture, methodology, services, and use of the Atlas submitted for online publication;
iv) Two case studies initiated at national level, illustrating the benefit of resource mapping for policy development;
v) Partnerships to expand datasets on bioenergy, geothermal energy and hydropower will be initiated.

29. **Activity 3: Renewable Energy Statistics**. Consultations with Members have highlighted the need for a continuous coordinated data collection process to develop reliable and consistent data on renewable energy. Current and accurate statistical information is essential for knowledge management and will remain a critical underpinning of KMTC work. To provide better quality of data, KMTC will focus on data collection of the countries not covered by the International Energy Agency (IEA), which are non-OECD countries. In 2011, KMTC started to collect data for a set of countries in Africa through IRENA focal points and this process will be extended to include all countries in Africa and Pacific islands in 2012. This activity will include a capacity building component to be undertaken in collaboration with PACB and will comprise the following tasks:

a. In collaboration with REN21, an expert group will be set up to conceptualise a framework of datasets focusing on national measures to deploy renewable energy. The framework will be based on official statistics, where these exist, and on data provided by IRENA focal points, industry, financial institutions, NGOs and other relevant actors. This exercise will also help to identify additional data sources, major programmes and projects, and highlight the capacity development needs with respect

to gathering renewable energy data. This exercise will be carried out at the regional level.

b. A special series of papers on statistics will be developed – Beyond Energy Balances – which will discuss the analysis required to start discussions on an appropriate statistical methodology.

c. Country profiles for two regions – Asia and Latin America – will be produced following the development of country profiles for the Pacific and Africa. These profiles aim at giving the general audience a brief yet comprehensive picture of renewable energy in each country and provide information on energy supply, energy access, targets, policies and measures, projects and resource endowment. The profiles will be updated when new data become available and after consultation with focal points in each country.

Outputs

vi) Updated renewable energy statistics for Member countries;
vii) Updated Country Profiles for all counties in Latin America and the Caribbean, Asia, Africa and the Pacific;
viii) Reports and working papers on the methodology to build renewable energy datasets.

30. **Activity 4: Renewable Energy Indicators**. In order to monitor renewable energy trends and the effectiveness of policies, in 2011, KMTC conducted a literature review of the methodology used to develop existing indicators on energy and sustainable development. This was an initial step in the development of Renewable Energy indicators. The review will continue in 2012. IRENA will bring together experts and institutions active in the fields of statistics, energy planning, macroeconomics and renewable energy policy to develop a concept paper on the framework for Renewable energy indicators, and will present it for wider discussion among Member countries with a view to finalising the methodology.

Output

ix) Concept note on methodology to build renewable energy indicators.

31. **Activity 5: Global and Regional Reports**. To make a substantive contribution to the production of global and regional assessment reports, cooperation with key actors will continue. In collaboration with PACB and IITC, KMTC will publish an annual renewable energy report on a specific theme. The first edition will focus on African investment trends. A set of country case studies will be prepared to gain a better understanding of how particular policy initiatives impact investments in specific renewable energy technologies.

Outputs

x) Report on renewable energy investment trends in Africa;
xi) Report on the impact of policy initiatives on investments in the renewable energy sector as a whole and in specific technology areas.

Component 2: Promote regional consensus to adopt renewable energy

32. Regional economic and political forums are the primary entry point to discuss policy interventions at the regional and country levels. The work in this respect was initiated in 2011 by engaging with leaders and other stakeholders from Africa and the Pacific Islands. Two activities are envisaged in 2012:

33. **Activity 1: Renewable Energy Readiness Assessments**. Renewable readiness assessments aim to identify the elements necessary to devise an effective policy framework to support market development. Readiness assessments are being designed to provide input to regional renewable energy action plans as well as solutions to energy access by bringing together partners in the implementation of action plans. The renewable energy readiness reports will enable IRENA to structure policy advice by providing detailed guidelines to address specific policy challenges and by promoting innovative policy tools.

34. In 2011, the readiness assessment methodology was developed and tested in two sub-Saharan African countries, Senegal and Mozambique. In 2012, one readiness assessment will be conducted in one Latin America/ Caribbean country and in one Pacific Island country. These countries could subsequently act as a channel for dissemination and engagement across their respective regions. Two regional workshops will be held in ECOWAS and SADC in order to roll-out the methodology. The methodology will be further refined based on feedback received during the workshops and through subsequent consultations with stakeholders. The methodology will be published along with the templates and questionnaires necessary to carry out future readiness assessments.

Outputs

xii) Pilot studies for testing the Renewable Readiness Assessment Methodology in one Latin America/Caribbean country and in one Pacific Island;
xiii) Regional reports on Renewable Energy Readiness Assessment;
xiv) Final report on the Renewable Energy Readiness Assessment methodology.

35. **Activity 2: Forging Partnerships for Action**. The regional and country-level assessments carried out in 2011 enabled IRENA to identify organisations and stakeholders in the Economic Commission of West African States (ECOWAS) and in the Southern African Development Community (SADC) as partners for bridging gaps with concrete action plans. These partnerships will be articulated at the country level and will address the needs identified in the renewable readiness assessments with the added value that specific partnerships can bring.

36. In 2012, cooperation with regional organisations will be further enhanced. This cooperation will be expanded to the Middle East and North Africa region. In this context, a strategic partnership with the Regional Centre for Renewable Energy and Energy Efficiency (RCREEE) will be developed to enable IRENA to implement a joint work plan based on the real needs of these countries.

Outputs

xv) Two regional workshops to help countries prepare their Renewable Readiness Assessments and to initiate partnerships to implement the actions proposed;
xvi) A Memorandum of Understanding (MoU) will be signed with the Regional Centre for Renewable Energy and Energy Efficiency (RCREEE).

Component 3: Catalyse multilateral cooperation in renewable energy technology

37. In an effort to catalyse North-South and South-South technology cooperation, IRENA will continue to provide a platform for dialogue and will develop modalities for fostering technology cooperation. Three activities are planned:

38. **Activity 1: Enhance South-South Technology Cooperation**. During 2011, IRENA convened an entrepreneur workshop in collaboration with E+Co and SELCO. A key result from the workshop was a working paper on South-South technology cooperation. Building on this work and in cooperation with governments, international organisations, the private sector and the academic and scientific community, IRENA will work on the development of a comprehensive, cross-disciplinary strategy to enhance South-South technology cooperation.

Outputs

xvii) Establishment of a network across the regional centres in Africa, Latin America and the Caribbean, and Asia and the Pacific with a view to creating synergies and reinforcing South-South cooperation;
xviii) Strategy paper for promoting South-South technology cooperation.

39. **Activity 2: Policy Dialogue for Technology Cooperation**. In 2011, KMTC conducted a review of renewable energy technology cooperation in order to map best practices. The IRENA-NREL workshop initiated discussions at the expert level. In 2012, two meetings of experts, multilateral and bilateral organisations, and representatives from Member countries will be organised to initiate a dialogue among IRENA Members on technology cooperation. The report being prepared on best practices will provide background information for Members to identify gaps that can be addressed by collaborative action. This forum will also provide a platform to discuss other aspects of technology cooperation, including the environmental impacts of renewable energy technologies and a strategy for regional centres. Both of these topics will be analysed in cooperation with IITC.

Output

xix) Two meetings of the forum for policy dialogue on technology cooperation.

40. **Activity 3: Engaging the Industry in Specific Technology Areas**. KMTC will undertake an assessment of policy frameworks in a specific technology. This activity will build on the work to date for the wind sector and will help design concrete action plans to replicate successful approaches. This work will be complemented by formulation of appropriate policy advice by PACB and will be expanded to two additional technologies.

Output

xx) Assessment of key policy issues in the deployment of two renewable energy technologies in collaboration with industry.

External Factors

41. The KMTC sub-programme is expected to achieve its objectives based on the assumption that countries will be willing to engage with IRENA to build a long-term plan of action to increase the deployment of renewable energy.

Table 10: Objective, expected accomplishments and indicators of achievement

Objective: Support countries in accelerating renewable energy uptake through dissemination and transfer of knowledge, and to facilitate international technology cooperation in the field of renewable energy.	
Expected accomplishment in 2012	**Indicators of achievement**
(a) A shared and inclusive strategy for a systematic approach to knowledge management is adopted, and implemented in specific areas.	i. Number of countries providing input to the Knowledge management strategy, leading to a shared and agreed vision, to be implemented jointly. ii. An inclusive partnership for a Global Solar and Wind Atlas established (number of partners, geographic balance), with prospects for expansion to other resources (number of partners). iii. A network of focal points for renewable energy statistics established (number of partners, geographic balance).
(b) A systematic framework for assessing the concept of 'renewable readiness' is designed and tested in selected countries and regions.	iv. Attendance at the two regional workshops designed to build capacity of countries to carry out their readiness assessments (number of attendants). v. Widespread adoption of the concept: agreement from regional entities and countries to move forward with readiness assessments in the coming years (number).
(c) Mechanisms for technology cooperation are designed and progressively implemented.	vi. Engagement of key stakeholders in discussions on technology cooperation strategies to allow peer to peer interaction and agreement on collaborative plans (number). vii. Policy dialogue on technology cooperation initiated through two workshops (number of attendants, type of organisations, geographic balance). viii. Policy issues in two technology sectors are assessed, laying the ground for action plans to be prepared and implemented by countries (number of involved countries initiating the process).

Table 11: Resource requirements Knowledge Management and Technology Cooperation

Category	Resources (in USD)		Posts	
	2011 Appropriation	2012 Estimate	2011	2012
Core Budget				
Post	1,945,000	2,509,000	14	14
Non-post	1,355,000	1,647,700	-	-
Subtotal	*3,300,000*	*4,156,700*	*14*	*14*
January to March 2011	459,020	-	-	-
Voluntary Contributions				
UAE Government Bid	2,000,000	2,000,000	-	-
Subtotal	*2,000,000*	*2,000,000*	-	-
Total	**5,759,020**	**6,156,700**	**14**	**14**

Table 12: KMTC Resource requirements by object of expenditure and source of funds 2012 (in USD)

Core budget	**4,156,700**
Total Staff Costs	2,509,000
Other Staff Costs	-
Consultants	667,000
Seconded Personnel	288,000
Ad Hoc Expert Meetings	189,000
Staff Travel	285,250
Contractual Services	151,000
General Operating Expenses	10,500
Hospitality	2,500
Supplies and materials	54,450
Furniture and Equipment	-
UAE Bid	**2,000,000**
Research	1,612,500
Operations	387,500
Total	**6,156,700**

42. The amount of USD 4,156,700 would provide USD 2,509,000 for the continuation of 14 posts (1 D-1, 3 P-5, 2 P-4, 6 P-3, 2 GS). Non-post resources totalling USD 1,647,700 would cover the following requirements to allow the anticipated results to be achieved and delivery of the outputs elaborated above:

    a. Specialised expertise not available in IRENA;
    b. Seconded personnel;
    c. Expert meetings;
    d. Travel of staff related to undertaking targeted studies and participating in relevant forums;
    e. Training related to the concept paper and partnership agreements for a renewable energy potentials platform;
    f. External printing of the design process related to engagement with partners in Africa and the Pacific Islands on renewable readiness assessments;
    g. Proprietary software related to the prototype renewable energy statistics database and data collection methodology;
    h. Technical publications and information related to the knowledge mapping report and the renewable readiness assessment.

43. The voluntary contributions resources of USD 2,000,000 to be funded from the UAE bid will contribute to the implementation of the outputs outlined in the paragraphs above.

Sub-programme 2: Policy Advisory Services and Capacity Building

Core resource requirements:	***USD 3,719,450***
Voluntary contributions:	***USD 1,500,000***
Additional earmarked contribution (Capacity Building) from UAE and Germany:	***USD 1,000,000***

Strategic Objectives and Context

44. Article IV of the Statute mandates IRENA to: "a) analyse, monitor and systematise current renewable energy practices, including policy instruments and incentives …; c) provide its Members, upon their request, policy advice and assistance …; and e) offer capacity building including training and education to its Members." Accordingly, IRENA's Policy Advisory Services and Capacity Building (PACB) sub-programme aims to assist countries to foster an enabling policy, financial and human resource framework for the deployment of renewable energy technologies.

Component 1: Strengthen countries' capacity to design long-term enabling renewable energy policy frameworks and maximise socio-economic benefits

45. An increasing number of policies have supported the substantial growth of renewable energy technologies in recent years. While some policies have proven to be more effective than others in rapidly increasing renewable energy deployment, there is no one-size-fits-all policy framework. An important aspect in the design of sustainable renewable energy policy is the assessment of long-term socio-economic benefits, including employment and industry creation, energy security and climate change mitigation.

46. **Activity 1: Policy Assessment**. PACB will monitor best practices in renewable energy policy design and make that information and advice available to national and local policy-makers, civil society and private sector actors.

47. *Best Practices in Policy Design*: (a) PACB, in coordination with IITC, will analyse the role of cities, towns and local governments in enacting renewable energy promotion policies. Given the increasing demand for local governments to integrate renewable energy policies in sustainable urban planning, PACB will cooperate with the International Council for Local Environmental Initiatives (ICLEI) and UN-HABITAT to demonstrate how local policies can be shaped towards a renewable energy future; (b) PACB will conduct an assessment of renewable energy tariff-based support mechanisms, taking into account recent findings from renewable energy auctions (e.g. France, Brazil, and Peru); (c) PACB will analyse options to enhance the role of renewable energy in the implementation of emerging mechanisms in the UNFCCC process, including the Technology Mechanism, the Green Fund, and Nationally Appropriate Mitigation Actions (NAMAs), which have become a key component of the new international climate regime under discussion.

48. *Socio-economic Impact of Renewable Energy*: (a) PACB will be a contributing author to the report on renewable energy and job creation coordinated by the International Labour

Organisation (ILO). PACB will continue to participate in the Project EMPLOY led by the Renewable Energy Technology Deployment Implementing Agreement of the International Energy Agency (IEA-RETD) to develop methodologies for estimating the employment impact of renewable energy use; (b) PACB will initiate, in collaboration with IITC, an analysis of macro-economic framework conditions that determine the impact of national and local industrial policies for the local development of renewable energy technologies.

49. *Joint IRENA-IEA policy database*: PACB, in collaboration with the IEA, will expand the geographical scope of the Global Renewable Energy Policies and Measures Database with primary information from over 100 IRENA Member and Signatory countries currently not covered by the IEA. The Database will be updated on a biennial basis through national focal points. It aims to provide accurate and up-to-date information on national renewable energy policies to policy-makers and academic and private sector actors.

Outputs

i) Three working papers on best practices focusing on:
- *Renewable energy policies for local governments;*
- *Design of renewable energy auctions and;*
- *The role of renewable energy in the Technology Mechanism, the Green Fund, and in Nationally Appropriate Mitigation Actions.*

ii) Participation in relevant intergovernmental initiatives on renewable energy and job creation;

iii) Preliminary report on macro-economic framework conditions for the local development of renewable energy industries;

iv) Joint IRENA-IEA Global Renewable Energy Policies Database

50. **Activity 2: Pilot Project – Technical and Policy Advice for Wind Deployment**. This activity will build on KMTC's work with the Global Wind Energy Council (GWEC) on the design of successful approaches for national action plans for wind energy deployment. PACB will establish an expert group, consisting of policymakers, academia, and the private sector, to provide technical assistance and policy advice to Member countries for the development of the wind sector. A workshop will be organised to define the scope of work and initiate the activities of the Expert Group.

Output

v) Pilot Expert group established to facilitate assistance to Member countries in deploying wind energy.

51. **Activity 3: Contribution to the International Year of Sustainable Energy for All**. In continuation of the work started in 2011 and in the context of the International Year of Sustainable Energy for All, PACB will support The Alliance for Rural Electrification (ARE) and ECOWAS Regional Centre for Renewable Energy and Energy Efficiency (ECREEE) in the organisation of the First International Off-Grid Renewable Electrification Conference. The Conference will aim at raising the profile of investment opportunities in rural electrification projects in Africa by facilitating contact between

African leaders and international renewable energy companies. The Conference will take place in the ECOWAS region in autumn 2012. A similar approach will be designed in consultation with Latin American governments and stakeholders.

Output

vi) Joint organisation of an International Off-Grid Renewable Electrification Conference with the private sector and African governments.

Component 2: Improve understanding of economic and financial conditions to leverage renewable energy investment

52. Although investment in renewable energy reached USD 211 billion in 2010 globally, its share remains limited in developing countries outside China, Brazil, and India. Access to increased finance and investment will be a decisive factor in achieving higher levels of renewable energy uptake in developing countries. However, renewable energy projects in emerging markets and developing countries face a number of challenges. PACB will continue to identify barriers to renewable energy investment, and will provide a basis for understanding necessary conditions for scaling up investment in renewable energy.

53. **Activity 1: Analysis of Renewable Energy Financial Mechanisms and Risk Mitigation**. In continuation of work done in 2011, PACB will carry out the following activities: (a) PACB will conduct five case studies of renewable energy projects in developing countries identifying investment challenges and formulating policy recommendations; (b) Scaling-up of renewable energy through new sources of funding. Building on 2011 work, PACB will convene a workshop to disseminate information and develop a consultative process on new programmatic approaches for scaling up renewable energy investment such as Energy+ and GetFit.

Outputs

vii) Five case studies on renewable energy projects identifying critical issues and investment challenges in developing countries;
viii) Workshop on programmatic approaches to scale-up renewable energy funding.

54. **Activity 2: Business Models for Small and Medium-size Entrepreneurs for Renewable Energy Access Projects**. Building on feedback from local practitioners who participated in the IRENA workshop on enabling local renewable energy entrepreneurship held in Bangalore in November 2011, PACB will prepare a handbook for policy-makers to promote successful business models for small and medium-size entrepreneurs working on renewable energy access schemes in rural areas.

Output

ix) Handbook with recommendations for policy-makers on successful business models for renewable energy based access to energy projects.

55. **Activity 3: Abu Dhabi Fund for Development (ADFD)**. PACB will administer and assist the first project cycle of the ADFD for renewable energy projects in developing

countries. PACB will also participate in preparations for the second call for proposals scheduled for 2013.

Output

x) Technical and administrative assistance for the first project cycle of ADFD renewable energy projects.

Component 3: Enhance governments' understanding of critical gaps and needs for capacity building

56. In continuation of the work carried out in 2011, PACB will facilitate the training and development of qualified human resources to supply the renewable energy sector. This activity will bring together governments and their agencies, educational and training institutions as well as private sector and civil society actors. PACB will assist countries in developing their own capacity building interventions, improve connectivity among relevant actors and enhance the learning environment.

57. PACB will develop analytical processes assisting Governments to identify existing capacity gaps, priority areas, and to design and implement integrated capacity building programmes addressing individual and institutional capacities.

58. **Activity 1: IRENA Capacity Building Strategy**. Based on the analytical work carried out in 2011 and consultation with government representatives, private sector actors and civil society, IRENA's Capacity Building Strategy will be finalised and presented to countries and the wider public. The strategy document will map out clear focus areas and describe the modes of implementation and generate an understanding and subsequently acceptance of the Agency's capacity building services.

Output

xi) IRENA Capacity Building Strategy

59. **Activity 2: Capacity Needs Assessments**. The KMTC sub-programme started in 2011 to develop a methodology to systematically assess the readiness of countries for renewable energy uptake. PACB will work on the skills and capacity component of this activity. Furthermore, since 2011 PACB is collaborating closely with the CEM on the analysis of available methodologies with the aim of providing countries with the means to assess existing capacity assets and challenges of a country, as a basis to develop capacity building responses and monitor progress. PACB will ensure that synergies between these two efforts will be realised. For 2012 one training workshop on how to conduct capacity needs assessments for government officials is planned.

Output

xii) Training workshop on how to conduct capacity needs assessments for government officials.

60. **Activity 3: Supporting Regional Capacity Building Initiatives**. In 2012, two regional capacity building initiatives will translate the consultation work carried out during 2011 into concrete and replicable training activities. In cooperation with KMTC, consultations will start for a third region. The following regional programmes will be initiated:

    a. *Pacific Islands:* Building on the insights gained during the IRENA-Pacific Consultative Meeting, held in October 2011, the activities aim to provide training to governments, utilities and entrepreneurs to enable for a roll-out of both grid-connected and isolated systems in a region with a limited market and low population density. The activity will be implemented in close cooperation with relevant partners as the Secretariat for Pacific Community (SPC) or University of South Pacific (USP). The experiences will also inform future activities in the Caribbean.

    b. *West Africa:* The dialogue initiated with ECREEE in 2011 will be continued with the aim to define a regional capacity building action plan to be carried out jointly. This plan will be elaborated on the basis of ECREEE's knowledge of the capacity gaps in the region and the findings of the pilot readiness assessment conducted by IRENA and with participation of an expert from ECREEE in November 2011 in Senegal.

    c. *Latin America and the Caribbean*: In the framework of the readiness assessment to be carried out in the region, PACB will establish a consultative process with Member countries in the region to identify priority areas of action.

61. **Activity 4: Renewable Energy Training Programme**. Under the auspices of IRENA and funded through voluntary earmarked contributions from Germany and the United Arab Emirates, training programmes will be developed and carried out to enhance the implementation of the regional capacity building initiatives. The implementation of these training programmes is subject to availability of voluntary funds.

Output

xiii) Design and initiation of a modular renewable energy training programme targeting two regions: Pacific Islands; and West Africa

Component 4: Facilitate and increase education and training

62. The renewable energy sector provides increasing income generation and job opportunities. Education and training will be required to support a growing renewable energy sector. Renewable energy technologies are suitable for a wide range of possible applications, from solar home systems to steam from geothermal sources. New skills will also need to be developed as knowledge expands. For example wind resource assessments have become more accurate in recent opening new forecasting applications. PACB will continue its work to build a one-stop-shop for education and training covering all sources and renewable energy technology applications. This will be done in partnership with other international organisations, multilateral forums, academia and associations. Training activities will target three major groups: government agencies; students, trainees and professionals; and education experts and practitioners. PACB education and training activities will also support KMTC and IITC in energy planning

and power sector modeling tools; Renewable Energy Statistics; and Patent information for technology transfer.

63. **Activity 1: IRENA Renewable Energy Learning Partnership (IRELP)**. In 2011 the conceptual and preparatory work for building a common platform to enhance the visibility and accessibility of renewable energy education and training (E&T), and to increase its availability was expedited. A platform for the activities of the partnership will be launched in early 2012 and among its first and core services will be the global E&T database, the library, and the pooling of E&T materials and relevant documentation. Through this partnership IRENA will support the development of curricula for different target groups. Partnership and data exchange are at the core of this activity, with, among others, CEM, E+Co, GIZ, NREL, REEEP, and RETScreen. IRENA will support the initiative "Global Energy Entrepreneurship Programme" in cooperation with E+Co to promote training developing country energy entrepreneurs

Outputs

xiv) Global IRELP database on renewable energy education and training activities and materials;
xv) Curricula on renewable energy access projects and business models for small-scale entrepreneurs.

64. **Activity 2: IRENA Scholarship Programme**. The IRENA Scholarship Programme, established in November 2011 in cooperation with the Masdar Institute (MI), will continue in 2012. IRENA will award full scholarships to 20 promising students and will propose a lecture programme on various renewable energy topics delivered by recognised experts.

Output

xvi) IRENA lecture programme in cooperation with the Masdar Institute.

External Factors

65. The sub-programme will achieve its objectives and expected accomplishments based on governments continuing to make commitments to advance the deployment of renewable energies at national and local levels, and also being willing to provide access to relevant data and information and to participate in assessment processes. The readiness of international organisations, civil society, the private sector, and the academic and scientific communities, to share information and to partner with IRENA is also of equal importance. Furthermore the achievement of objectives and accomplishments will depend on the recruitment of qualified applicants for vacant positions as well as on the availability of qualified individuals for short-term contracts.

Table 13: Objective, expected accomplishments and indicators of achievement

Objective: Strengthen countries' abilities to design and implement appropriate policies and supportive financial frameworks as well as build the human and institutional capacities required to achieve IRENA's vision	
Expected Accomplishments	**Indicators of achievement**
(a) National and local policy makers, civil society and private sector actors have access to relevant information for decision making in key issues renewable energy policy design	i. IRENA information and advice used in stakeholders' renewable energy deployment; ii. Number of visits to and downloads from IRENA webpages for information provided on renewable energy policies; iii. Number of dataset from developing countries included in the joint IRENA IEA policy database.
(b) Countries develop sound policies that lead to deployment of wind energy technology	iv. Policy dialogue on wind deployment initiated through an expert group (number of attendants, type of organisations, geographic balance).
(c) Country and private sector have access to relevant information on financial mechanisms and risk mitigation for renewable energy projects	v. Increased number of visits to and downloads from IRENA webpages for information provided on financial mechanism and risk mitigation for renewable energy projects.
(d) Increased access to finance for renewable energy projects in developing countries	vi. Endorsement by IRENA of renewable energy projects to be financed by the ADFD for a total investment up to USD 50 million.
(e) Strengthened capacity of countries to accelerate renewable energy uptake	vii. roll-out of two regional training programmes (Pacific islands and ECOWAS).
(f) Facilitate education and training in renewable energy	viii. An inclusive partnership for renewable energy education activities (number of partners, geographic balance); ix. Development of learning material for entrepreneurs; x. 40 students at MASDAR institute following IRENA's lecture programme.

Table 14: Resource requirements Policy Advisory Services and Capacity Building

Category	**Resources (in USD)**		**Posts**	
	2011 Appropriation	2012 Estimate	2011	2012
Core Budget				
Post	955,300	1,666,000	9	9
Non-post	1,247,800	2,053,450	-	-
Subtotal	*2,203,100*	*3,719,450*	*9*	*9*
January to March 2011	306,445	-	-	-
Voluntary Contributions				
UAE Government Bid	2,000,000	1,500,000	-	-
Additional Earmarked contribution (Capacity		500,000		

Category	Resources (in USD)		Posts	
Building) from UAE				
Additional Earmarked contribution (Capacity Building) Germany	-	500,000	-	-
Subtotal	*2,000,000*	*2,500,000*	-	-
Total	**4,509,545**	**6,219,450**	**9**	**9**

Table 15: PACB Resource requirements by object of expenditure and source of funds 2012 (in USD)

Core budget	**3,719,450**
Total Staff Costs	1,666,000
Other Staff Costs	-
Consultants	750,000
Seconded Personnel	286,000
Ad Hoc Expert Meetings	350,000
Staff Travel	200,000
Contractual Services	400,000
General Operating Expenses	10,500
Hospitality	2,500
Supplies and materials	54,450
Furniture and Equipment	-
UAE Bid	**1,500,000**
Research	750,000
Operations	750,000
Additional earmarked contributions	**1,000,000**
From the UAE	500,000
From Germany	500,000
Total	**6,219,000**

66. The amount of USD 3,719,450 would provide USD 1,666,000 for the continuation of 9 posts (1 D-1, 3 P-5, 1 P-4, 2 P-3, and 2 GS). USD 2,053,450 for non-post requirements would cover:

a. Specialised expertise of consultants;
b. Seconded personnel;
c. Workshops and expert meetings on policy, macroeconomic aspects of renewable energy, assessment of financial flows and mechanisms, and capacity building;
d. Travel of staff in support of envisaged activities;
e. Specialised services related to information technology for the Renewable Energy Learning Portal;
f. Rental and maintenance of data processing equipment;
g. Books and technical publications.

67. The Voluntary Contribution resources of USD 1,500,000, to be funded from the UAE bid and an additional earmarked contribution of USD 1,000,000 from the UAE and German governments (USD 500,000 each), will be used to implement the outputs outlined in paragraphs above.

Sub-programme 3: Innovation and Technology

Resource requirements from the German voluntary contributions: USD 4,000,000

Strategic Objectives and Context

68. Within IRENA´s overall mission of promoting the increased and widespread adoption of renewable energy, its Innovation and Technology Centre (IITC) is responsible for creating a framework for technology development and deployment support and for the work on renewables competitiveness and markets. IITC performs this work with the view to objectives stipulated in Article II of the IRENA Statute, taking into account, inter alia, priorities and benefits of the deployment of renewable energy that includes consideration of energy efficiency measures, environmental preservation, security of energy supply and economic growth and social cohesion.

69. Building on the progress made in 2011, IITC will continue to pursue its stated goal of "providing the governments the means for an accelerated technological change and the use of innovation to transition to renewable energy based systems". This will be achieved through analysis of renewable energy technology policies; dissemination of information and increased awareness; technologies and equipment overview and assessment of success-failure factors; improved relevant knowledge and technology cooperation, and joint RD&D and provision of information on the development and deployment of national and international technical standards in relation to renewable energy. A major mechanism for dissemination and exchange of technical knowledge will be through the industry and expert networks established under the Knowledge Management and Technology Cooperation sub-programme, complemented by the activities of the Policy Advice Services and Capacity Building sub-programme.

Component 1: Assist governments on request in energy planning for more efficient and effective renewable energy technology and innovation strategies

70. 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 and innovation. Two activities are planned for 2012:

71. **Activity 1: Scenarios and Strategies to Support Renewables Readiness**. Building on the work to date, the development of scenarios and strategies will continue in the context of renewables readiness for African countries. The report on key renewable energy technology issues for Africa will be finalised to assist the countries in identifying technologies that are relevant to them. The power sector modelling tools developed in 2011 will be disseminated, and a combination of energy planning and modelling training will be undertaken, with the support of PACB. In cooperation with the University of Cape Town, a special session on renewables will be held at the 2012 International Energy Workshop. The work on scenarios and strategies will be broadened beyond Africa to the Pacific countries and to Latin America and the Caribbean. This work will support the renewables readiness analysis of KMTC and the Africa results will feed into the annual thematic renewables report.

72. A follow-up workshop on the impact of the existing and emerging factors likely to influence energy scenarios for the period 2015-2050 and their possible implications for renewable energy outlooks and policy needs will also be organised in cooperation with IEA-RETD. As a result of these undertakings, Member Countries will gain a much better understanding not only of the role of technology in meeting their energy goals, but also of the investment needs and the time path for an energy transition. The regional scope with country detail will help identify possible areas for cooperation that would enhance the efficiency and effectiveness of national policies.

Outputs

i) Africa scenarios and strategies final report;
ii) Pacific scenarios and strategies working papers;
iii) Latin America data collection report;
iv) Second IRENA-IEA/RETD workshop renewables outlook.

73. **Activity 2. Strengthening Members' Technology & Innovation Strategies**. In 2011, work began on a technology roadmap for using renewables in manufacturing industries. In 2012, the focus will be on dialogue with stakeholders to assess the viability of the proposed approaches and to develop an effective implementation strategy. Within IRENA's planned work on the use of renewable energy in urban settings, IITC, in coordination with PACB, will develop on roadmap on the use of renewable energy resources. The roadmap will assess not only the use of renewable energy resources, but also the design of city energy systems in a way that is conducive to the use of renewable energy produced elsewhere. This work will be undertaken in cooperation with ICLEI and UN-HABITAT.

74. In 2012, work will commence on the analysis electricity of storage and smart grids to determine how electricity from different renewable sources can be fed into electricity systems. The purpose of this work is to develop strategies for reliable and affordable systems solutions for electricity systems with different supply and demand characteristics. This will offer solutions to different issues such as variability, battery storage, demand side management and dispatch prioritisation. The work on storage and smart grids will help countries increase the share of renewables in their power systems. This work, which will continue beyond 2012, will be carried out in cooperation with system operators, utilities and research centres.

Outputs

v) Two workshops on Industry roadmapping in different regional settings;
vi) Cities roadmapping section at ICLEI conference and workshop.

75. **Activity 3: Support to the 2012 International Year of Sustainable Energy for All**. IRENA will work with the United Nations system and other stakeholders in elaborating and operationalising the doubling renewable energy share by 2030 as a part of the 2012 International Year of Sustainable Energy for All (SE4ALL). In this context, a roadmap that examines the elements necessary to operationalise this target, including a time path, financial planning, and sectoral and country detail will be developed. The interconnectivity between renewable energy and energy efficiency strategies will also be

elaborated. In 2012, IRENA will assist the UN High-level Group on Sustainable Energy for All in formulating an analysis and action plan, which will feed into the Rio+20 process, various UN initiatives and the work of different stakeholders. It is envisaged that the work on pursuing this target will continue in the coming years.

Output

vii) IRENA report on renewables targets as input to UNSG High-level Group and RIO+20.

76. **Activity 4: Technology Applications**. In 2011, IITC analysed the potential for bioenergy technology transfer from Brazil to Africa, to facilitate broader sharing of technologies and related experience. In 2012 emphasis will be placed on South-South technology cooperation as a means of accelerating application of Asian technologies in Africa and the Pacific, with the specific focus on solar water heaters, biogas installations, wind turbines and PV home systems. This work will be done jointly with KMTC.

77. A number of countries have sought assistance from IRENA to help translate their renewable energy potential and strategies into a framework for technology funding. To address this need, the tools to help in project development will be developed for relevant countries. These tools will include an assessment of existing project programming approaches, including those used by the Global Environmental Facility, the Program on Scaling-Up Renewable Energy in Low Income Countries (SREP) and the Climate Technology Fund (CTF) administered by the World Bank. Following an analysis of the available information, key project documentation and project management practices will be outlined including barrier analysis, quality and technology specifications, methodologies for financial evaluation of projects, monitoring, and reporting and verification frameworks.

78. A technology-specific checklist and methodology for project development will be developed to assist governments or project developers in discussions with financing institutions. As the private sector plays a pivotal role in investments, it is essential that the policy framework allows for economically viable business operations by building a business case. In order to support the development of enabling policy frameworks, common obstacles will be identified, along with possible solutions. This activity will help countries to develop effective strategies for accessing investment for accelerated deployment of renewable energy, and will complement PACB activity on business models for rural renewable energy deployment.

Outputs

viii) IRENA report on technology dissemination from Asia to Africa;
ix) Toolbox to facilitate project development and design business models.

79. **Activity 5: Success Criteria for Innovation Policies**. In 2011, work on the assessment of renewable energy innovation policy frameworks started. In 2012, the insights gained will be discussed with policymakers to ascertain their relevance for practical decision making in different regions and countries. A workshop will be held to assess needs and gaps, followed by the design of a strategy with respect to filling these.

80. *Environmental impact assessment of renewables*. Renewable energy solutions are not without environmental impacts. As a first step in ascertaining the best way forward in this context, an inventory of the work done will be compiled. This will serve as a basis for the development of future activities aimed at addressing environmental impacts of renewable energy. Significant data have been gathered in the last two decades for the purpose of environmental life cycle assessment of products and services for environmental labelling and regulation and the greening of industry, including renewable energy. IRENA will analyse data relevant to renewable energy and provide an overview of environmental impacts, recommended data sources, and gaps in knowledge. In addition, material flow data will be collected to enable analysis of whether the massive deployment of renewables could lead to new bottlenecks in materials supply, and provide possible solutions to the problems identified. This work will feed into the KMTC mitigation dialogue platform to help countries better understand the environmental impacts of renewable energy projects and how to mitigate them. Finally, IRENA will continue its work with UNEP/CMS on the impacts of renewable energy projects on migratory species.

Outputs

x) Workshop and recommendations on international innovation policies;
xi) Working paper on identification and mitigation of potential environmental impacts of renewable energy technologies.

81. **Activity 6: Patents and Licensing**. In 2011, as a result of a joint project with WIPO, a new portal concept for access to renewable energy patent information was developed. In 2012, the focus will be on deploying the concept and making this resource accessible to Member Countries. The cooperation will be broadened to include other parties, such as European Patent Office (EPO). Three workshops will be organised to dissemination this information, identify additional needs and possible gaps, and provide training on how to use this information for technology application and development. This work will be carried out with PACB in order to benefit from its networks and expertise.

Output

xii) Three training workshops with Member countries' experts on patent information search and use.

Component 2: Facilitate a better understanding of cost and the potential for cost reductions through technology development and market deployment to accelerate renewables uptake

82. In order to provide governments with objective and current information on the status of, and prospects for, renewable energy technologies in terms of cost, availability and supporting infrastructure needs, four activities are planned:

83. **Activity 1: Competitiveness Status and Outlook**. In 2011, IRENA began collecting country-specific cost data for renewable power generation. In 2012, the information collected will be validated against country-specific data. In addition, cost-specific data on transportation will be added to the set of technologies. For example, transportation will be reviewed not only from the fuel source viewpoint (e.g. biofuels, electricity), but

also a modal shift to transportation means that use electricity from renewable energy. A workshop will be held to assess needs and gaps on competitiveness data for renewable energy and develop a strategy on how to address them. With this information, policy makers will be better able to assess the cost-effectiveness of options and calculate investment and financing needs and priorities. It is envisaged that compilation and analysis of data on cost status and outlook related to different sectors and technologies will continue in the coming years.

Outputs

xiii) Costing renewable power generation final report;
xiv) Costing renewables solutions for transportation report;
xv) Workshop on renewable energy technologies' competitiveness with recommendations for policymakers.

84. **Activity 2: Renewable Energy Standards, Test Procedures and Best Practices**. Development and deployment of national and international technical standards can help accelerate the deployment of renewable energy. Well-functioning markets require transparency which can be facilitated, inter alia, by the introduction of equipment labels and quality standards. Application of standards in turn helps to lower transaction cost and project appraisal needs, as well as optimise the use of renewable energy. In an effort to stimulate progress in this respect, IRENA will aim to obtain the relevant information and influence discussion. Initial contact has been established with international standardisation bodies such as the IEC and ISO in 2011, and in 2012, the cooperation will be further enhanced. This cooperation will be expanded to include regional and national standardisation bodies, as envisaged by Article IV of the IRENA Statute.

Output

xvi) Workshop on gaps and needs for standardisation of renewable energy equipment.

85. **Activity 3: Provision of Objective and Up-to-date Technology Data**. IITC will continue to develop renewable technology factsheets on best-practice renewable energy technology use for different types of end use. This work is undertaken in cooperation with the Energy Technology Systems Analysis Program of the International Energy Agency (IEA-ETSAP). Technology factsheets will provide concise, policy-relevant, objective information able to assist in the development of national renewable energy strategies and the evaluation of related project proposals. Ten factsheets are expected to be completed in 2012.

Output

xvii) Ten IRENA-ETSAP technology factsheets.

86. **Activity 4: Assessment of Early Opportunities and Niche Markets**. In 2012, IITC will continue to contribute to the Agency wide efforts to assist island states in the uptake of renewable energy. In this context, IITC will contribute to the development of a methodology for the assessment of renewable energy power systems in islands. This work will include Pacific Island States, as well as the Mediterranean and the Caribbean. A conference will be held in Malta to discuss the development of renewable energy-

based systems for islands. Members will benefit from a better understanding of early opportunities to achieve high shares of renewables in power generation. The insights gained in the islands-related work could also be used for other mini-grids.

Output

xviii)Renewables and Islands - Global Summit, Malta.

87. **Activity 5: Strengthened Partnerships and Cooperation with Relevant Actors in the Renewable Energy Field**. Cooperation and partnerships with international organisations, the private sector and the academic and scientific community to share information and develop partnerships is of critical importance. IITC will continue to make formal and informal collaborative arrangements with a variety of partners. This will include the assessment of potential for working with technical centres, which will be undertaken in collaboration with KMTC. These arrangements will enable the Agency to have access to wide sources of information and assistance which, in turn, will strengthen its ability to assist countries in their efforts to accelerate the uptake of renewable energy.

Output

xix) Identification and collaboration with broad range of experts and institutions.

External Factors

88. The sub-programme will achieve its objective and expected accomplishments as long as voluntary funding is available. The readiness of international organisations, the private sector and the academic and scientific community to share information and partner with IRENA is of equal importance.

Table 16: Objective, expected accomplishments and indicators of achievement

Objective: Provide governments the means for an accelerated technological change and the use of innovation, to transition to renewable energy based systems.	
Expected accomplishments in 2012	**Indicators of achievement**
(a) Framework for technology policy support to governments for accelerated renewable energy development and deployment designed.	i. Scenario and strategy analysis results used for the development of renewables action plans by governments in Africa and Pacific region. ii. IRENA is recognised as an important source of information on renewable energy technology and innovation for stakeholders including governments, private sector, and academic and research institutions. iii. IRENA tools and advice used in stakeholders' renewable energy technology and innovation strategies.
(b) Increased understanding of cost reduction potential and wider use of standards to accelerate renewable uptake.	iv. IRENA study laying the basis for analysis of current cost of technology widely utilised in national planning. v. IRENA costing study used by countries for informed decision making. vi. Countries engaged in enhancing their renewable energy standards and labels based on IRENA advice.
(c) Strengthened partnerships and cooperation with relevant actors in renewable energy fields.	vii. Convening of and participation in national, regional and global conferences, expert meetings, and discussions on renewable energy related issues. viii. Strategic and institutionalised role in renewable energy related networks ix. Formalised cooperation arrangements with relevant actors. x. Contribution to major inter-governmental renewable energy forums (IEA, CEM, CEMA, SPC, and other regional forums.)

Table 17: Resource requirements from the German voluntary contributions – Innovation and Technology

Category	**Resources (in USD)**		**Posts**	
	2011 Appropriation	2012 estimate	2011	2012
Voluntary Contributions				
German Government Contribution	3,100,000	4,000,000	10	10
Total	**3,100,000**	**4,000,000**	**10**	**10**

Table 18: IITC Resource requirements by object of expenditure and source of funds 2012 (in USD)

German contribution	**4,000,000**
Total Staff Costs	1,586,000
Other Staff Costs	-
Consultants	1,050,000
Seconded Personnel	65,000
Ad Hoc Expert Meetings	-
Staff Travel	300,000
Contractual Services	926,000
General Operating Expenses	4,000
Hospitality	5,000
Supplies and materials	65,000
Furniture and Equipment	-
Total	**4,000,000**

D. Administration and Management Services

Core Resource requirements: ***USD 3,701,850***
Voluntary Contributions: ***USD 1,119,850***

89. The Division for Administration and Management Services (AMS) will continue to provide IRENA with administration and management services in support of implementing its mandates. The core objectives and responsibilities of the Division are to ensure that the Agency has the necessary infrastructural, human and technical assets in place, and is well positioned to realise its strategic objectives in the short, medium and longer term.

90. In 2012, the Division will continue to develop administration strategies, policies and procedures, as well as to enhance their implementation. The Division will define standard levels and ensure that the quality of support services provided by outside contractors is of the highest possible level. It will ensure that there is general satisfaction from all stakeholders, take action on complaints, identify sources of dissatisfaction and take corrective actions.

91. The Division is composed of the following units: Finance and Budget; Human Resources; Information and Communications Technology; Procurement and General Services. Managerial and financial authority is exercised to the level delegated by the Director-General. Through its technical units, the Division will aim to ensure that all new or revised management policies, procedures and internal controls 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.

92. The Division will also closely monitor oversight body recommendations, identify material weaknesses and ensure that remediation plans are developed. As the Division is also responsible for improving management practices throughout the Agency, it will promote accountability and management evaluation, with the aim of improving work processes and procedures. This will enable continuous management improvement, effective implementation of management policies and new initiatives to empower the staff, and enhance the ability of staff to carry out work more effectively.

93. The Division also facilitates the coordination with the host country, for the management and operation of the existing physical facilities; the preservation and servicing of records with continuing value in support of the Organisation's operational, informational, legal and other needs. The Office is also responsible for the management of mail operations.

94. The Division will also provide administrative and/or technical support to the governing, as well as audit and oversight bodies. The Division will provide coordinating and oversight function of the business process and needs analyses, and the preparations for the implementation of an enterprise resource planning system (ERP) to consolidate the management of all financial, human and physical resources under a single integrated system for the entire Agency. This function will be exercised in a manner that minimises the burden on the Agency and its resources, and mitigates organisational and managerial risks.

95. 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 services 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.

Human Resources

96. The Office of Human Resources plays a strategic role in ensuring human resources capacity to the Agency's overall management to meet its goals and enable it to deliver its mandates. 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 and the adequate representation of developing countries with emphasis on gender balance. It participates in strategic workforce planning that aligns with organisational needs.

97. In accordance with the Staff Regulations and Staff Rules, the Office 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 of Human Resources provides expert advice to managers and staff on all aspects of human resources, staff administration; monitors performance; administers staff benefits and entitlements and coordinates with other Offices (i.e. Finance, Information & Communications Technology, Procurement and General Service) to ensure the implementation of related activities.

98. In 2012 as a part of ERP enterprise implementation, the deployment of a human resources information system will integrate all aspects of human resources and financial operations. This will ensure that Human Resources transitions from a transactional to a more strategic, dynamic office. The Office will also establish a cost-effective and administratively efficient social security scheme for all staff.

99. 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 activities.

Outputs

i) A complete and user-friendly Human Resources Policy & Process Manual and issuance of administrative directives as required to reflect the evolving needs of the Agency. Defined conditions for entitlements as established in the Staff Regulations and Rules; assessment and implementation of approved business processes to introduce simplified, more efficient and effective procedures, related forms, templates and standard operating procedures.

ii) Complete package and established process for induction of new staff.

iii) On-line e-recruitment system, including standardised vacancy notices and applicants' profile registration system to announce employment opportunities.

iv) Administration of contracts for different contractual arrangements to meet the short, medium or longer term requirements of the Agency, including fixed-term and temporary appointments; loans, general temporary assistance, consultancy and service contracts.
v) Improved response time to staff members' queries.
vi) Provision of staff development opportunities by coordinating and monitoring training activities across all programmes to ensure integration and consistency of training and staff development activities (as above).
vii) High quality and attractive internship programme.
viii) Formal performance appraisal system in support to managers in effectively managing performance of staff; appeals and administration of justice policies.

Table 19: Objective, expected accomplishments and indicators of achievement

Objective: effective human resources management	
Expected accomplishments	**Indicators of achievement**
(a) Continue the development and implementation of human resources policies and procedures in line with the UN common system and global human resources best practices.	i. Enhanced and updated human resources manual to reflect the evolving requirements of the Agency. ii. Assessment and implementation of approved business processes through a human resources information system.
(b) Standard HR practices and procedures implemented in line with Common System policies and approved business processes.	iii. Unified and consistent HR administration and operations.
(c) Help ensure that IRENA has competent and qualified staff.	iv. Selection process is competitive and transparent.
(d) IRENA maintains gender balance.	v. Gender ratio of staff at organisational and management levels.
(e) IRENA's staff are geographically diverse.	vi. Number and geographical distribution of nationalities represented in Agency.
(f) Effective management of talent by ensuring retention and career development.	vii. A system of performance management that rewards personal and organisational performance and addresses and rectifies under performance.
(g) Accurate and timely day-to-day human resources administration across all offices.	viii. Staff benefits and entitlements are processed accurately and in a timely manner.

Procurement

100. The main objectives of the Procurement Office include: ensuring continued efficient, effective and high quality support in the areas of procurement, facilities management, archives, mail operations and records management.

101. In 2012, the Procurement Office will focus of institutionalising policies, systems and processes that would ensure compliance with the applicable regulations and rules, and the highest standards of efficiency, transparency and accountability.

Outputs

ix) New Procurement Policy and Processes manual;
x) Maintenance of vendor database;
xi) Technical and substantive archives and records management;
xii) Asset and inventory services: efficient and effective management of all non-expendable property and equipment;
xiii) Mail operations services: provision of means of transmitting official correspondence and material through the worldwide pouch and postal service and the messenger service within the Headquarters complex;
xiv) Liaising with host country on building custodial services;
xv) Procurement services: posting of procurement plans and upcoming procurement opportunities; preparation and issuance of tenders.

Table 20: Objective, expected accomplishments and indicators of achievement

Objective: Ensure efficient, effective and high quality support in the areas of procurement and facilities management.	
Expected accomplishments	**Indicators of achievement**
(a) Transparent, effective, and efficient procurement of goods and services.	i. Full compliance with procurement requirements.
(b) Developing an accurate, systematic and timely reporting process and providing users with clear and transparent reporting on a consistent basis.	ii. A positive audit opinion of the Board of Auditors on procurement activities.

Finance

102. The Finance Office is responsible for the administration and insurance of compliance with the IRENA's Financial Regulations and Procedures as well as the relevant legislative mandates. The office will apply accounting policies and procedures will be in accordance with these standards in order to ensure sound financial management of all resources made available to the Agency. Appropriate measures and systems will be instituted for their effective and efficient use, proper and transparent accountability and regular reports to the appropriate authorities and stakeholders. The extensive review and re-engineering of the business processes to be completed in 2011 will prepares the necessary groundwork for the implementation of an Enterprise Resource Planning system and the gradual progression in the adoption of the International Public Sector Accounting Standards (IPSAS); two core component in the successful to the achievement of these objectives.

103. The Office's activities will put emphasis on the efficient delivery of support to the client units and other stakeholders. This would particularly apply in the continuous improvement of process and systems for the processing of contributions, disbursements and obligations. A relevant and scalable financial information system will be established to provide both internal and external stakeholders a reliable basis of informed assessments of the allocation and utilisation of resources. This will be built upon a Chart of Account that is tailored to record the utilisation of organisational resource in a manner that could be used to provide measurement of achievements and objectives at the organisational and sub-programme levels.

104. The Finance Policy Manual will be reviewed and updated. The outcome will serve to provide the robust framework for the effective application of the financial procedures and processes as well as provide a service level that will facilitate the achievement of goals and objectives of IRENA and its sub-programmes.

Outputs

xvi) Establishment and maintenance of an IPSAS-compliant chart of accounts that is appropriate for the organisation's stage of growth as an institution;

xvii) Institution of a client oriented routine reporting schedule that serves the needs of stakeholders. This would be in addition to the mandated reports such as the annual financial statements. These reports would be based on performance indicators for the achievement of organisation's goals and objectives.

xviii) Major review and update of business processes and the implementation of the ERP based on the resulting processes.

xix) Adaptation of the available staffing structure to facilitate the provision of essential support to the sub-programmes

Table 21: Objective, expected accomplishments and indicators of achievement

Objective: The objective of Finance is effective, efficient and transparent financial management	
Expected accomplishments	**Indicators of achievement**
(a) The implementation of ERP system and other automation as is relevant to institute more efficient integration and controls.	i. Migration of majority of the processes into the ERP system ii. Absence of significant adverse audit observations relating to financial management and control as a result of use of an integrated system iii. Real-time access to reliable and relevant information for decision-making on allocation and utilisation of resources
(b) Developing an accurate, systematic and timely reporting process and providing stakeholders with clear and transparent reporting on a consistent basis.	iv. A positive audit opinion of the Board of Auditors that reflects satisfactory compliance with IRENA Financial rules and regulations as well as the relevant accounting standards such as IPSAS to a level that is appropriate for the organisation's stage of growth as an institution.
(c) Ensuring the prudent investment of funds and improving cash management actions.	v. Maintenance of a record that reflects preservation of capital, availability of adequate liquidity to meet all operating requirements and adequate yields or returns on investments
(d) Delegation of authority on administrative actions with financial implications.	vi. A positive audit opinion of the Board of Auditors that reflects satisfactory compliance with IRENA Financial Regulations and Procedures and regulations, the approved Delegation as well as improvements in operational efficiency of the Finance Office.

Information and Communications Technology

105. The Information and Communications Technology (ICT) office provides a broad range of solutions and services to IRENA offices by enhancing technology to achieve the work programme targets. In 2012, ICT will strengthen service delivery operations aimed at enabling staff members, Members and other stakeholders to connect and share knowledge continuously and improve the high-end secure connectivity to IRENA's remote offices. ICT strives to improve work efficiency with the newest tools, technologies and applications to increase transparency and accountability in the Organisation.

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

107. ICT manages one 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.

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

Outputs

xx) Deployment and implementation of ERP application mapping the approved business policies and processes for Human Resources, Finance and Procurement;
xxi) Provision of new features for general public for renewable energy information and improved delegates' area for efficient communication and collaboration among Members;
xxii) Integration of employee self-services for business processes and workflows to intranet portal;
xxiii) Enhanced hardware infrastructure for high-end connectivity and security to and for remote offices.

Table 22: Objective, expected accomplishments and indicators of achievement

Objective: Provide a broad range of solutions and state-of-the-art services that enable personnel to connect and share knowledge effectively and continuously and to build applications frameworks and setups to facilitate software requirements in support of these functions	
Expected accomplishments	**Indicators of achievement**
(a) Automation of Human Resource, Finance and Procurement (ERP Application).	i. Deployment of ERP applications for Human Resource, Finance and Procurement. ii. Mapping and validation of approved business processes into ERP applications. iii. Training of staff members and implementation.
(b) Enhanced and improved website features and upgrade of delegates' area.	iv. Provision of new features for general public to present renewable energy information. v. Upgrade of delegates' area for efficient communication and collaboration among Members.
(c) Improved office productivity, internal communication and automation of business processes.	vi. Provision of new features to intranet portal. vii. Integration of employee self-services for business processes available in ERP and introduction of workflows.
(d) Enhancement to hardware infrastructure and security.	viii. Improvement of hardware infrastructure and security to facilitate the remote offices.

Table 23: Resource requirements: Administration and Management Services

Category	**Resources (in USD)**		**Posts**	
	2011 Appropriation	2012 Estimate	2011	2012
Core Budget				
Post	1,877,600	2,641,000	19	19
Non-post	1,841,850	1,060,900	-	-
Subtotal	*3,719,450*	*3,701,900*	*19*	*19*
Voluntary Contributions				
UAE Government Bid	-	1,119,900	-	-
Subtotal	*3,719,450*	*1,119,900*	-	-
Total	**3,719,450**	**4,821,800**	**19**	**19**

Table 24: AMS Resource requirements by object of expenditure and source of funds 2012 (in USD)

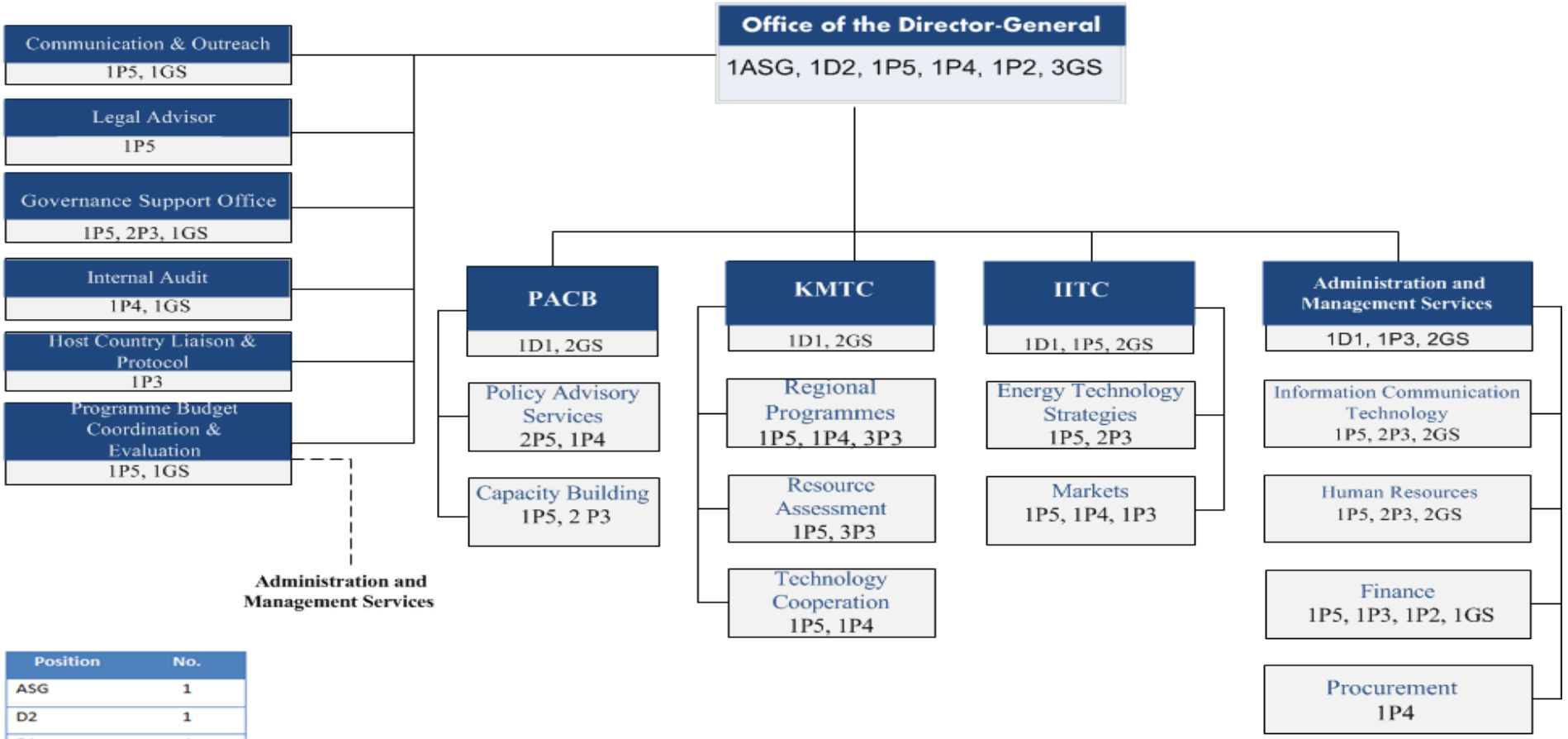
Core budget	**3,701,850**
Total Staff Costs	2,641,000
Other Staff Costs	34,100
Consultants	-
Seconded Personnel	121,000
Ad Hoc Expert Meetings	-
Staff Travel	-
Contractual Services	-
General Operating Expenses	506,300
Hospitality	2,500
Supplies and materials	121,950
Furniture and Equipment	275,000
UAE Bid	**1,119,850**
Research	-
Operations	1,119,850
Total	**4,821,800**

109. The overall level of resources for Administration and Management Services under the core budget amounts to USD 3,701,900, providing USD 2,641,000 for the continuation of 19 posts (1 D-1, 3 P-5, 1 P-4, 6 P-3, 1 P-2 and 7 GS) including the reclassification of 1 P-2 to P-3 and USD 1,060,900 for non-post requirements including:

a. General temporary assistance;
b. Seconded personnel;
c. Specialised expertise not available in IRENA in the areas of finance, human resources and procurement;
d. Travel of staff to attend training programmes and to conduct an assessment of the information technology and financial systems requirements of the Bonn office;
e. Contractual services related to information technology requirements including proprietary software, email security, telecommunications services, equipment warranties and upgrade of hardware infrastructure;
f. Office supplies and materials.

110. Voluntary contributions of the UAE totalling USD 1,119,900 would provide resources, including in-kind contributions, to support the IRENA's information technology requirements including the annual cost of IT support and data centre hosting and internet connectivity.

ANNEX I: IRENA Organisational Structure and Post Distribution for 2012



Position	No.
ASG	1
D2	1
D1	4
P	46
GS	20
Total	**72**

REVISED* ANNEX II: IRENA Scale of Contributions for 2012

Scale of Assessment[9]

Members	UN Factor	Adjusted Contribution	Assessed Contribution to IRENA 2012 (USD)
Albania	0.010	0.014%	2,276
Angola	0.010	0.010%	1,600
Antigua and Barbuda	0.002	0.003%	455
Armenia	0.005	0.007%	1,138
Australia	1.933	2.750%	440,047
Bangladesh	0.010	0.010%	1,600
Belarus	0.042	0.060%	9,561
Bosnia and Herzegovina	0.014	0.020%	3,187
Brunei Darussalam	0.028	0.040%	6,374
Bulgaria	0.038	0.054%	8,651
Cameroon	0.011	0.016%	2,504
Cape Verde	0.001	0.001%	228
Croatia	0.097	0.138%	22,082
Cyprus	0.046	0.065%	10,472
Czech Republic	0.349	0.497%	79,450
Denmark	0.736	1.047%	167,550
Djibouti	0.001	0.001%	228
Dominican Republic	0.042	0.060%	9,561
Ecuador	0.040	0.057%	9,106
Eritrea	0.001	0.001%	228
European Union[10]	-	-	-
Fiji	0.004	0.006%	911
Finland	0.566	0.805%	128,850
France	6.123	8.712%	1,393,899
Gambia	0.001	0.001%	228
Georgia	0.006	0.009%	1,366
Germany	8.018	11.408%	1,825,295
Grenada	0.001	0.001%	228
Iceland	0.042	0.060%	9,561
India	0.534	0.760%	121,565
Israel	0.384	0.546%	87,417
Japan	12.530	17.828%	2,852,450
Kenya	0.012	0.017%	2,732
Latvia	0.038	0.054%	8,651
Lesotho	0.001	0.001%	228
Liechtenstein	0.009	0.013%	2,049

[9] *Pursuant to Article XII.A.1 of the IRENA Statute, this scale includes Members only.*
[10] *Pursuant to the decision 2010/385/EU of the Council of the European Union of 24 June 2010, the European Union as a Member of IRENA shall pay an annual contribution to the Agency. The EU has contributed USD 686,680.97 in 2011.*

* *The revised Annex II includes Angola and Panama who became Members of IRENA on 14 and 15 January 2012 respectively.*

Members	UN Factor	Adjusted Contribution	Assessed Contribution to IRENA 2012 (USD)
Lithuania	0.065	0.092%	14,797
Luxembourg	0.090	0.128%	20,488
Malaysia	0.253	0.360%	57,595
Maldives	0.001	0.001%	228
Mali	0.003	0.004%	683
Malta	0.017	0.024%	3,870
Marshall Islands	0.001	0.001%	228
Mauritius	0.011	0.016%	2,504
Mexico	2.356	3.352%	536,343
Monaco	0.003	0.004%	683
Mongolia	0.002	0.003%	455
Montenegro	0.004	0.006%	911
Mozambique	0.003	0.004%	683
Nauru	0.001	0.001%	228
Netherlands	1.855	2.639%	422,290
New Zealand	0.273	0.388%	62,148
Nicaragua	0.003	0.004%	683
Niger	0.002	0.003%	455
Nigeria	0.078	0.111%	17,757
Norway	0.871	1.239%	198,283
Oman	0.086	0.122%	19,578
Palau	0.001	0.001%	228
Panama	0.022	0.031%	5,008
Philippines	0.090	0.128%	20,488
Poland	0.828	1.178%	188,494
Portugal	0.511	0.727%	116,329
Qatar	0.135	0.192%	30,733
Republic of Korea	2.260	3.216%	514,488
Republic of Moldova	0.002	0.003%	455
Romania	0.177	0.252%	40,294
Samoa	0.001	0.001%	228
Senegal	0.006	0.009%	1,366
Serbia	0.037	0.053%	8,423
Seychelles	0.002	0.003%	455
Sierra Leone	0.001	0.001%	228
Slovakia	0.142	0.202%	32,326
Slovenia	0.103	0.147%	23,448
South Africa	0.385	0.548%	87,645
Spain	3.177	4.520%	723,243
Sri Lanka	0.019	0.027%	4,325
Sudan	0.010	0.010%	1,600
Swaziland	0.003	0.004%	683
Sweden	1.064	1.514%	242,219
Switzerland	1.130	1.608%	257,244
The former Yugoslav Republic of Macedonia	0.007	0.010%	1,594

Members	UN Factor	Adjusted Contribution	Assessed Contribution to IRENA 2012 (USD)
Togo	0.001	0.001%	228
Tonga	0.001	0.001%	228
Tunisia	0.030	0.043%	6,829
United Arab Emirates	0.391	0.556%	89,011
United Kingdom of Great Britain and Northern Ireland[11]	6.604	9.396%	1,503,398
United States of America	22.000	22.000%	3,520,000
Uruguay	0.027	0.038%	6,147
Total IRENA Budget	**76.830**	**100.000%**	**16,000,000**

This calculation is based on the United Nations General Assembly Resolution 64/248 on "Scale of assessments for the apportionment of expenses" of 24 December 2009[12]. It has been adjusted to reflect States Members of IRENA.

[11] *The United Kingdom of Great Britain and Northern Ireland has officially requested to be included in the scale of assessment for 2012 as a Member while affirming that it will have completed the ratification process prior to the second session of the Assembly.*
[12] *In force for the period 2010-2012.*

IRENA's Renewable Costing Analysis

Energy from renewable sources has a key role to play in the transition to a truly sustainable energy sector, particularly in light of the global aspirations of access to sustainable energy for all and a doubling of the share of renewables in the global energy mix by 2030. Renewables face a number of barriers to their deployment, with their contribution to the energy mix being constrained by the high upfront costs faced by some renewable energy technologies in the past being a key barrier. However, renewable power generation technologies are becoming increasingly cost-competitive and are now the most economic option for off-grid electrification in most areas, as well as for centralised grid supply and extension in locations with good resources.

This improved competitiveness is being driven by a virtuous circle whereby the rapid deployment of renewables based on support policies to overcome the barriers renewables face is leading to significant cost declines. These rapid cost reductions for many renewables also implies that policy makers should take note that the cost of supporting renewables with well-designed support packages is declining over time and much less costly than a static analysis of costs would suggest.

Renewable power generation technologies now account for around half of all new power generation capacity additions worldwide. In 2011 41 GW of new wind power capacity was added, 28 GW of solar photovoltaic, 25 GW of hydropower, 6 GW of biomass, 0.5 GW of CSP and 0.2 GW of geothermal power generation capacity.

This rapid deployment of these renewable technologies has a significant impact on costs, because of the high learning rates for renewables, particularly for wind and solar in. For instance, for every doubling of the installed capacity of solar PV, module costs will decrease by as much as 22% and crystalline silicon PV module costs have fallen by over 60% in the last two years to as little as USD 1/watt.

However, without access to reliable information on the relative costs and benefits of renewable energy technologies, it is difficult, if not impossible, for governments to arrive at an accurate assessment of which renewable energy technologies are the most appropriate for their particular circumstances. The absence of accurate and reliable data on the cost and performance of renewable power generation technologies is therefore a significant barrier to the uptake of these technologies. IRENA's work to provide this information will help governments, policy-makers, investors and utilities make informed decisions about the role renewables can play in their power generation mix.

IRENA's five renewable power generation costing papers provide in-depth and up-to-date information on the cost of generating electricity from solar photovoltaics (PV), concentrating solar power (CSP), wind power, hydropower and biomass for power generation.1 These papers are helping to fill an important information gap in the availability of the latest, objective data on the cost and performance of these renewable power generation technologies.

[1] See www.irena.org/publications or contact Michael Taylor mtaylor@irena.org