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هيئة الكهرباء والماء  
Electricity & Water Authority  
وزير الدولة لشئون الكهرباء والماء  
Minister of Electricity and Water Affairs

**United Nations Development Programme**  
**Country: Kingdom of Bahrain**  
**Project Document**

**Project Title**

**Bahrain Unit for Sustainable Energy**

**UNDAF Outcome(s):**

NA

**Expected CP Outcome(s):**

*(Those linked to the project and extracted from the Bahrain Country Programme (CP) 2012-2016 which was approved by UNDP Executive Board)*

Inclusive Sustainable Development: more women empowered, youth unemployment reduced and national environmental protection actively pursued.

**Expected Output(s):**

*(Those that will result from the project)*

Establishing and staffing Bahrain Unit for Sustainable Energy

Capacity Building of Bahrain Unit for Sustainable Energy  
National energy policy paper and a framework for National Energy Strategy produced

Enhanced energy efficiency in key sectors and end-uses  
Expanded use of decentralized renewable energy solutions

**Implementing Agency:**

Office of the Minister of Electricity and Water Affairs



### Brief Description

The Sustainable Energy for All (SE4All) Initiative was launched by the United Nations to support universal access to modern energy services; increasing the rate of improvement in energy efficiency; and increasing use of renewable energy in the energy mix. Meanwhile, Bahrain's Economic Vision 2030 places top priority on the need for more effective use of energy for development, including through energy efficiency and renewable energy activities. To take action on both fronts, EWA and UNDP launch this new initiative to establish a new Bahrain Centre for Sustainable Energy for country actions to achieve sustainable use of energy.

The Kingdom of Bahrain remains highly reliant upon the petroleum and gas sector, despite successful Government initiatives to diversify the economy towards finance, tourism and industry. Oil reserves in the country are limited. Meanwhile, Bahrain's electricity demand is growing by 7% per year and the country may have to start importing energy from neighbouring countries as feedstock for its expanding industries. Energy intensity for Bahrain is currently approximately 0.54 tonnes of oil equivalent (toe)/\$1,000; which is amongst the highest in the world.

There is considerable potential for undertaking energy efficiency and renewable energy initiatives in Bahrain to extend the lifetime of oil and gas reserves and enable long-term planning and implementation. The precise potential remains unclear, in part for various reasons such as lack of reliable data that provide complete and standardised information for different sectors of the economy as stated by the Initial National Communication of Bahrain to the UNFCCC (2005).

This project aims to enhance the national capacity to manage energy efficiently and address current gaps in the energy sector including use of renewable energy. The following results are to be delivered by the project:

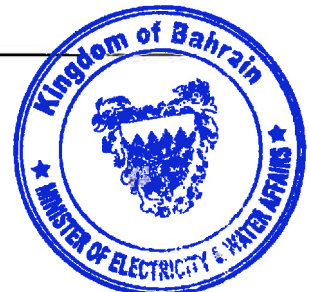
- Formulation of policies for Integrated Energy Planning, Conservation, Efficiency and renewable energy;
- Establishment of a unit for Sustainable Energy;
- Capacity building of the Centre for Sustainable Energy
- Enhanced energy efficiency in key sectors and end-uses
- Expanded use of decentralized renewable energy solutions

Programme Period:	2012-2016	Total resources required	\$6,700,000
Key Result Area (Strategic Plan)	Energy	Total allocated resources:	\$6,700,000
Atlas Award ID:	00079213	• Regular	NA
Start Date:	January 2015	• Other:	
End Date:	December 2019	○ UNDP	\$3,350,000
PAC Meeting Date	November 2011	○ EWA	\$3,350,000
Management Arrangements	NIM	Including 3% GMS	

Agreed by Minister of Electricity and Water Affairs  \_\_\_\_\_

Agreed by Resident Representative of UNDP  \_\_\_\_\_

Date: 26 November 2014



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## I. SITUATION ANALYSIS

The Sustainable Energy for All (SE4All) Initiative was launched by the United Nations to support universal access to modern energy services; increasing the rate of improvement in energy efficiency; and increasing use of renewable energy in the energy mix. Meanwhile, Bahrain's Economic Vision 2030 places top priority on the need for more effective use of energy for development, including through energy efficiency and renewable energy activities. To take action on both fronts, EWA and UNDP launch this new initiative to establish a new Bahrain Centre for Sustainable Energy for country actions to achieve sustainable use of energy.

The energy sector in Bahrain has been playing a leading role in the country's socio-economic development. Oil export revenues exceeding 80% of the total government budget have been the main driver of developing Bahrain's modern infrastructure. Energy pricing policies have resulted in improved access to electricity that reaches nearly 100% of the population. This has contributed to improvement of social services such as education, health, and communication resulting in a high level of human development. In 2012, Bahrain ranked 48 on Human Development with a Human Development Index (HDI) of 0.796. The on-going economic reform measures such as corporatization and privatization of government businesses, removal of impediments to foreign investments, reforms in the labour market, liberalization of the telecommunications sector, and improvements to public education all aim to help Bahrain move from a mainly oil based towards a more diversified economy with higher participation of the finance, tourism, services, and industry sectors.

Despite the above, Bahrain's economy is still nearly 100% dependent on fossil fuels to meet its growing energy demand. Bahrain's growing demand for power is likely to cause it to become a net natural gas importer by as early as 2024. With gas demand growing world-wide, driven by rapidly growing energy requirements in China, India and other developing countries, and by declining domestic reserves in many regions of the world; by the coming decades, the global gas market will experience dramatic price increases that would adversely impact Bahrain's economy.

The escalating energy demand is currently being met with the typical supply-oriented approach, through building more power stations. This usually accelerates the depletion of local hydrocarbon reserves, erodes export revenues, deteriorates environmental quality, and exhausts most of the investments for energy supply expansion.

The major issues of the energy sector in Bahrain are limited Natural Gas resources, unutilized renewable resources, high energy and carbon intensity, high growth rate of energy demand, and distorted energy prices. Another alarming energy issue in Bahrain has been the poor level of energy efficiency in the key consuming sectors, such as the industrial sector, which has led to a significant demand growth. The energy intensity is currently approximately 0.54 tonnes of oil equivalent (toe) / 1000 US\$, which is higher than both the GCC average (0.32 toe / 1000 US\$) and the world average (0.19 toe / 1000 US\$). In addition to the relatively low level of energy efficiency, the high-energy intensity is largely attributed to energy intensive industries such as aluminium smelting and the petrochemicals sector, the water scarcity and desalination plants, climate harshness and the excessive use of air-conditioning. Investments now in energy efficiency and renewable energy actually make economic sense and will propel new areas of economic growth.

This situation will make it difficult for Bahrain to meet its future energy needs. Instead of a balanced supply/demand strategies are urgently needed and the policies of the energy sector have to be developed to adopt energy efficiency and renewable energy as effective strategies to enhance economic efficiency and achieve sustainability.



Sector strategies of the National Oil and Gas Authority (NOGA), Electricity and Water Authority (EWA), Ministry of Municipalities and Agricultural Affairs and the Supreme Council for Environment have all included some measures to lessen the dependency on fossil fuel energy production and promote Renewable Energy (RE) technologies. Currently, some pilot projects have been or are being implemented by different entities. These fragmented activities are not being implemented within an integrated policy and institutional framework.

There is considerable potential for undertaking energy efficiency and renewable energy initiatives in Bahrain to extend the lifetime of oil and gas reserves and enable long-term planning and implementation. In addition, recent market drivers such as restructuring the energy sector to attract private investment, corporatization of some state-owned enterprises, environmental concerns and the need for de-carbonization of economic development, and the outlook of gas supply, have set a precedent for more rational energy use and effective demand side management.

Thus, energy efficiency has become a national necessity for Bahrain's sustainable economic development. The numerous benefits of energy efficiency to the Bahraini economy include increasing oil products surplus available for export, extending the lifetime of indigenous gas resources, enhancing profitability of industry and competitiveness in the world market in line with Bahrain's Economic Vision 2030, creating new jobs, improving environmental quality and reducing greenhouse gas (GHG) emissions.

Energy Efficiency also ties in with the United Nations Millennium Development Goal of ensuring environmental sustainability and is likely to become a key element of the future United Nations Post-2015 Development Agenda and its Sustainable Development Goals.

### **Institutional Set-up and Legislation**

Bahrain follows a defined process for passing legislations. The highest legislation level being the Constitution is then followed by laws and Royal, Prime Minister and Ministerial decrees. A draft for legislation is usually initiated by one or more stakeholders (government entities). Depending on the target of the proposed legislation and its scope, the required level of legislation is determined to be either a law or a Royal, Prime Minister or Ministerial decree.

A law is issued after being discussed and ratified by the two houses of the parliament; then a Royal decree is issued to start the enforcement of the law. The major players in the energy sector of Bahrain, NOGA, NOGA holding, and EWA were established by three different laws, which outlined their legal mandates.

The National Oil and Gas Authority (NOGA) was established in 2005 by the Royal decree No. (63) of 2005. The Decree stipulates that NOGA shall substitute the Ministry of Oil in handling all its functions. The same decree established NOGA's Board of Directors under the chairmanship of the Minister of State for Oil and Gas, who was appointed by the Royal Decree No. (64) of 2005.

The Royal Decree, No. (78) of 2005 defines in details the roles and responsibilities of NOGA. The Decree provides that NOGA shall be the entity responsible for all matters related to oil and gas in the Kingdom of Bahrain. NOGA should aim at conserving the Kingdom's oil and natural gas resources, finding out alternatives for the optimum development of such resources and for maximizing Bahrain return. Among the many roles of NOGA mandated by that decree is developing institutional and human technical capacity in the field of energy at the national level.



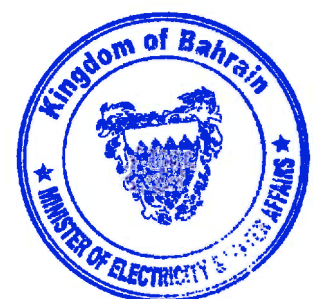
The Royal Decree No. 98 of 2007 also established EWA. It stipulates that the Electricity and Water Authority (EWA) shall substitute the Ministry of Electricity and Water and shall have all its rights and obligations. The roles and responsibilities of the Ministry of Electricity and Water, which were transferred to EWA, were stipulated in the Royal decree No. (1) of 1996. The Ministry is responsible for electricity production, transmission, distribution, and sales of electricity. In addition, the ministry is responsible for production, transportation, storage, and sales of water for the residential, commercial, and industrial use. EWA is also responsible for promoting and putting in place measures for the conservation of electricity and water in Bahrain.

Realizing of the need for a national energy-planning scheme, and to address the institutional gap, a High Energy Committee was established through Royal Decree No. 1 of 2011; under the chairmanship of the Crown Prince, set-up the High Energy Committee chaired by His Royal Highness the Crown Prince. Through the Committee; Bahrain aimed at moving towards a holistic approach to the formulation of its energy policy.

Based on the current situation analysis, existing gaps in the energy sector include lack of an energy legislative framework conducive to improving energy efficiency and scaling up renewable energy, lack of an energy “entity” capable to undertake national integrated energy planning, lack of an electricity and water regulatory agency to secure fair market competition and lack of policy coordination between the energy sector, the major contributor of GHG emissions, and Bahrain’s climate policy.

Vision 2030 acknowledged the need for assessing alternative energy resources. Energy efficiency directives are available in various sectors and agencies, however there is no national strategy in place to drive and coordinate policy and decision making in the energy sector.

As aforementioned; investing in energy efficiency and renewable energy will ensure sustainable economic dividends. When a State rationalises it can save resources. Subsidies in the oil sector can be complemented and strengthened if renewable energy are subsidised and incentives are given for energy efficiency. A balanced approach to the subsidy system, increased awareness raising and dissemination of information and tools and a coordination and policy formulation entity can go a long way towards achieving the Vision 2030, the Sustainable Energy for All goals, the MDGs, Rio+20, SDGs and anticipated post-2015 agenda which has already identified energy and environment as pivotal to national and regional development. From post-2015 and SDG processes it is also clear that the nexus of sustainable energy and development will be an issue that is placed high on the agenda for the next decade, as expressed by the UN General Assembly declaration of 2014-2024 as the Decade of Sustainable Energy for All.



## II. STRATEGY

United Nations efforts on energy are intensifying under the umbrella of the Secretary General's "Sustainable Energy for All" initiative. The initiative has been launched to bring all actors to the table to make sustainable energy a reality by 2030 by achieving the following objectives: ensure universal access to modern energy services, double the rate of improvement in energy efficiency and double the share of renewable energy in the global energy mix. UNDP is a key member of the Sustainable Energy for All initiative globally and plays a specific role in catalyzing decentralized local solutions to renewable energy and energy efficiency challenges. Through its global Sustainable Energy Hub, UNDP supports national partners for:

- (1) Scaling up sustainable energy solutions at national and subnational level: Actions to scale up energy solutions at national and subnational level will focus on accelerating access to energy services and promoting the adoption of renewable and energy efficient technologies. Key interventions will include promoting innovative financial and business models, removal of market barriers, implementing enabling policy and institutional frameworks, including at the community level, as well as developing capacities and skills taking into account gender specific needs. Services will focus on building coalitions and momentum for scaled-up action, bringing key partners together and actively promoting a nexus approach that links energy to other development sectors such as health, education, agriculture and water including creation of new job opportunities.
- (2) Gender, Social sectors response: A gender-differentiated approach and a focus on social sector institutions such as schools and health centres will be promoted. Lessons from across the world are available such as rolling out social and economic protection programs combined with provision of sustainable energy services.
- (3) Integration in national strategies: Energy issues need to be addressed as part of national strategies on economic growth, climate risk management, poverty reduction, and the Millennium Development Goals. UNDP's global Sustainable Energy Hub provides guidance and technical support to partners for decentralized energy solutions, analysis, action agenda and investment frameworks as well as broader national strategies and policies. Services focus on building political support for development and implementation of national and subnational sustainable development and energy programs that include decentralized, bottom-up energy solutions in particular.

Cutting across these three areas UNDP's global Sustainable Energy Hub also supports partners in terms of advocacy, outreach, information sharing, communication and knowledge management. Through an integrated development approach, UNDP works to help create enabling policy frameworks, develop local capacity and provide knowledge-based advisory services for expanding access to sustainable energy services for all. Cooperation builds on UNDP's network of partners in the area of sustainable energy around the world, bringing to partners models and best practices. Over the last 20 years, UNDP has supported over 2,500 sustainable energy projects (valued at US\$4 billion) in over 120 developing and middle income countries with comprehensive energy programs focusing on energy access, renewable energy, and energy efficiency.

Bahrain's Economic Vision 2030 highlights the importance of the energy sector and especially underpins the implementation of energy-efficiency regulations (e.g., for buildings and electrical appliances) and directing investments to renewable energy technologies that reduce carbon emissions, minimize pollution and promote the sourcing of more sustainable energy. Given Bahrain's status as a small island state, the lack of available land for large-scale renewable energy farms calls for an approach focused on decentralized local solutions such as roof-top solar and solar water heaters, energy efficient air conditioning and other off grid decentralized solutions.



Furthermore, and to meet the above objective of adopting clean energy and moving toward low carbon economic growth, the Unit will create opportunities to enhance Bahrain's ability to develop and harness climate friendly technologies and attract environmentally and economically sound carbon financing projects and programmes

UNDP Bahrain, in its 2012-2016 Country Programme, emphasizes the importance of enhancing capacities to implement environment and energy plans. Within this context, and in the light of the efforts of the Kingdom of Bahrain to strengthen the energy sector, UNDP has responded by elaborating a gap analysis titled Energy Situation in Bahrain and a feasibility study titled "Feasibility Report on Bahrain Energy Centre", with the latter becoming the basis for the current project.

The gap analysis and feasibility study were undertaken by UNDP in partnership with the National Oil and Gas Authority. A key conclusion of the gap analysis was the need to establish a national energy entity that can undertake holistic energy planning and formulation of policies for energy efficiency and conservation. The energy entity needs to be strategically placed to oversee the overall energy situation in Bahrain on both the supply and demand sides as well as ensure energy policy coherence with the development strategy, Bahrain Economic Vision 2030.

The findings of the gap analysis and feasibility study were presented in a high level stakeholders' workshop on 14<sup>th</sup> June 2011. Representatives from NOGA, EWA, Economic Development Board, Public Commission for the Protection of Marine Resources, Environment and Wildlife, Ministry of Works, Ministry of Finance, Foreign Affairs and others attended the meeting. Based on the findings of the feasibility study and the consensus of the stakeholders, the process for setting-up the Unit for Sustainable Energy has been initiated.

As the issue of energy bridges various sectors, the proposed strategy follows a cross-sectorial and multi-disciplinary approach. UNDP and EWA will partner with both NOGA and the Ministry of Finance's Resource Efficiency Committee, on this important Project.

The Project aims at strengthening the overall national energy planning and policy setting with focus on sustainable energy production and use. The objectives of the project are to support the energy sector to effectively mainstream energy concerns into national and local policies, plans, programmes and strategies; to build the capacity of the sector to mainstream energy considerations into other sectors and evaluate their linkages with economic and social development; to empower local municipalities/communities to sustainably manage and use energy; to ensure effective management of the available energy resources; to promote the use of energy efficient technologies to reduce energy consumption and demand; to strengthen government capacity to manage, maintain and conserve energy; to attain the goals of Economic Vision 2030 and MDG 7 in Bahrain. In order to correspond to differences in the ways that women and men use energy and control consumption, gender sensitive approaches and policies will be introduced throughout the project to cater to different needs and concerns.

**The Project**

The project's main objective is to support the consolidation of the energy sector in Bahrain through the establishment of a unit for energy planning and national sustainable energy policy formulation and implementation. The project will support the establishment of the Unit through a number of activities as outlined in section III Results and Resources Framework.

UNDP's contribution to this project includes the provision of technical expertise and capacity building support for the establishment of the unit. Project implementation will follow the



implementation modality, i.e. EWA is responsible for the implementation of the project activities with the support of the UNDP Bahrain Country Office.

In order to ensure smooth implementation of the project activities and the achievement of results as set out in this document, the project will establish, for the duration of the project, a Project Implementation Unit which will comprise a Project Manager, a Project Secretary as well as a Procurement Associate to handle the procurement of goods and services in line with UNDP procedures and financial rules and regulations.

UNDP will draw on its Climate Change and Energy team in UNDP Headquarters, in UNDPs Regional Centre for Arab States and from its global network of experts to provide qualified technical and policy advice. UNDP may collaborate with other international agencies, academia, professional associations and private sector towards the achievement of results set out in this project document. UNDP will also draw on the expertise of other UN agencies, in particular UNEP, and through the UN Secretary General's Sustainable Energy for All Initiative. Capacity building will be an overarching objective in this project and UNDP will provide support in identifying training experts to train the staff in energy planning and other energy related topics. UNDP will also facilitate the access to international experiences through the participation in international training programs and visits to international energy agencies.

The Project is mainly comprised of the following components:

1. Establish the Bahrain Unit for Sustainable Energy
2. Build the Institutional Capacity of the Bahrain Unit for Sustainable Energy
3. Formulate a National Energy Policy Paper and Framework for National Energy Strategy
4. Promote Energy Efficiency, including in decentralized solutions like energy efficient air conditioning.
5. Promote Renewable Energy Resources, including decentralized solutions like roof top solar and solar water heating.

The unit will be initially staffed with a core group of national experts. IT and Administrative Support will initially be provided by EWA. Depending on the progress made, the need for recruiting Administrative Support including IT support staff and an office assistant will be assessed.

UNDP will provide support to EWA to hire highly qualified staff with international and national energy planning and management expertise. Efforts will be made to ensure gender parity in the hiring and training of staff at all levels. It is proposed that the Bahrain Unit for Sustainable Energy ultimately includes 28 staff with various skill sets as outlined in the job descriptions in the Annex.

Cost of operational and preparatory activities of the unit will be covered using EWA's 50% financial contribution into the project budget.

Bahrain Unit for Sustainable Energy is proposed to be an overarching entity akin to a national energy authority that looks at energy at a holistic level in the Kingdom of Bahrain, with a view to secure sustained supply of energy through a sustainable mix of energy sources that meet the existing and future requirements of the country. The Unit shall be set-up as an autonomous entity under the chairmanship of the Minister of Electricity and Water. The Bahrain Unit for Sustainable Energy will work in-line with Bahrain's Economic Vision 2030 and relevant national strategies, aiming at ensuring energy security and sustainability of Bahrain.





Towards that end, project activities will be implemented to establish the Bahrain Unit for Sustainable Energy and will provide technical and operational support towards key achievements of the unit in the first 5 years.

Once established, the Bahrain Unit for Sustainable Energy will be capable of undertaking energy planning and policy by executing a variety of tasks such as data analysis, policy advocacy and formulation, and the identification of investments required for developing new initiatives in energy sector. The unit will also promote renewable energy sources including priority on decentralized off-grid solutions like rooftop solar and solar water heaters and energy conservation and propose energy efficiency and conservation programs for major energy consumers including priority on decentralized solutions like energy efficiency air conditioning as well as more macro-results in key industry sectors to be determined, including the elaboration of incentive schemes. It will also lead research and applications on energy-water nexus issues. The unit will offer training and capacity building and will be engaging in R&D in energy through leading universities and scientific institutions in Bahrain. It will raise public awareness on energy conservation and provide evidence on the tangible results of successfully implemented energy policies.

One of the key responsibilities of the Bahrain Unit for Sustainable Energy will be to manage energy efficiently in Bahrain to meet the future demand and supply. It is proposed that based on the National Energy Policy the Bahrain Unit for Sustainable Energy will prepare an integrated National Energy Strategy for Bahrain to meet the goals of Economic Vision 2030. It is envisaged that the Bahrain Unit for Sustainable Energy will be set-up through legislation preferably by the enactment of Law.

#### South-South Cooperation

UNDP will draw on its sustainable energy related programmes and activities in other countries in the Arab Gulf such as Saudi Arabia, and countries in other regions, to share models and lessons learned for the benefit of the establishment of the Bahrain Unit for Sustainable Energy. UNDP places top priority on South-South Cooperation as a means of facilitating knowledge sharing and strategic partnerships among countries in the South.

#### One-UN Partnerships

Building on the advantage of having the United Nations Environmental Programme (UNEP)'s regional office in Bahrain, UNEP will support the implementation of the Project with specific expertise in fields of comparative advantage in the following project activities:

- Expert support to the identification and deployment of experts in the areas specified in section III Results and Resources Framework
- Expert support to conducting studies for the formulation of policies and plans
- Reviewing technical reports as needed
- Engaging with stakeholders to promote policy change
- Support for technical training and study tours

Specific inputs from UNEP will be identified during the development of the project work plans. Costs related to UNEP's support will be agreed upon and results-based.



### III. RESULTS AND RESOURCES FRAMEWORK



#### Intended Outcome as stated in the Country Programme Results and Resource Framework:

Outcome 3 – Enhanced environment for equitable, job creating and sustainable economic growth

#### Outcome indicators as stated in the Country Programme Results and Resources Framework, including baseline and targets:

Establishing a national entity in Bahrain for Energy Planning and Energy Efficiency

Promoting gender parity in hiring and training while staffing Bahrain Unit for Sustainable Energy

#### Applicable Key Result Area (from 2012-2016 Strategic Plan):

Inclusive development and sustainable development

**Partnership Strategy:** UNDP and the Office of the Minister of Electricity and Water Affairs will be working together towards the achievements of the objectives of the project


**Project title and ID (ATLAS Award ID):** Promotion of Integrated Energy Planning: Energy Efficiency & Renewable Energy & Establishment of Bahrain Unit for Sustainable Energy

**Outcome:** National energy planning improved

INTENDED OUTPUTS	OUTPUT TARGETS FOR (YEARS)	INDICATIVE ACTIVITIES	RESPONSIBLE PARTIES	INPUTS
<p><b>Output 1</b>  <b>Bahrain Unit for Sustainable Energy established</b>  <b>Baseline:</b>                      Responsibilities for Energy sector fragmented in Bahrain.                      Currently no such entity exists in Bahrain.  <b>Indicators:</b>                      Bahrain Unit for Sustainable Energy established and operational                      Gender sensitive policies/ bylaws and operational guidelines</p>	<p><b>Targets</b></p> <p>1.1 Core staff of the energy unit in place (year 1)                      1.2 Procurement and installation of the basic equipment (year 1)                      1.3 Develop policies, bylaws, and operational guidelines of the energy unit (year 1)                      1.4 Awareness of sustainable energy goals raised (year 1 &amp; 2)                      1.5 Bahrain Unit for Sustainable Energy fully staffed (year 3)</p>	<p>1.1 Conduct stakeholders' consultation                      1.2 Recruit Project Manager and Chief Technical Advisor                      1.3 Design and facilitate enactment of Law – establishing Bahrain Unit for Sustainable Energy and defining its mandate and structure.                      1.4 Develop policies, bylaws, and operational guidelines of the energy Unit                      1.5 Recruit core staff                      1.6 Allocate adequate office space for the Unit                      1.7 Procure and install basic equipment in designated office space.                      1.8 Recruit staff for Bahrain Unit for Sustainable Energy – 28 people to lead all activities under Outputs of the project below                      1.9 Communication and Outreach Activities for the International Decade of Sustainable Energy for</p>	<p>UNDP, EWA                      UNEP</p>	<p>Two Annual Steering Committee and stakeholder Meetings                      Project Manager and CTA                      Project staff salaries                      Rental and Equipment (Rent for first 3 years and one time equipment cost and maintenance cost)                      International expert on institutional development (1.3 and 1.4) (6 months work over a period of one year, two missions)                      Bahrain Unit for Sustainable Energy fully staffed people to constitute teams for energy information</p>



<p><b>Output 2</b>  <b>Institutional capacity of Bahrain Unit for Sustainable Energy built</b>  <b>Baseline:</b> The Unit is newly established.  <b>Indicators:</b>  The Institution able to deliver on set objectives.</p>	<p><b>Targets</b>  2.1 South-south exchanges and study tours organized (year 1 and 2)  2.2 Two national training programs for staff (year 2)  2.3 Core staff attend two relevant international training programs (year 2)  2.4 Training needs assessment including potential training opportunities (year 3)</p>	<p>All (2014-2024) including hosting international sustainable energy conferences in Bahrain and participating in UN/UNDP sustainable energy conferences globally</p>	<p>management, energy efficiency, and renewable energy (year 3,4,5)  <ul style="list-style-type: none"> <li>▪ Travel and workshop costs</li> <li>▪ Consultation and communication activities</li> </ul> <b>Total: \$5,214,105</b></p>
<p><b>Output 3</b>  <b>National energy policy paper, and a framework for National Energy Strategy produced</b>  <b>Baseline:</b> There is no integrated National Sustainable Energy strategy in Bahrain.  <b>Indicators:</b>  <ul style="list-style-type: none"> <li>▪ national energy strategy developed with consideration to</li> </ul></p>	<p><b>Targets</b>  3.1 Design a national energy information management system (year 1)  3.2 Design and launch State of Energy Report with trends and scenarios to 2030 (year 1 &amp; 2)  3.3 MOU with CIO on energy data collection and management signed (year 2)</p>	<p>2.1 Identify training opportunities locally and internationally  2.2 Conduct international and local training programs on energy planning, energy efficiency, and renewable energy technologies.  2.3 Conduct south-south exchanges with energy centres in China, India, Saudi Arabia, etc and study tour to other Energy Planning centres and Energy Conservation Centres - California Energy Commission, Department of Energy, USA, Energy Conservation Centre Japan, etc  2.4 Undertake training needs assessment for the fully staffed unit</p>	<p>UNDP, EWA, UNEP</p> <p>International consultant on energy training (training needs assessment) (1month)  <ul style="list-style-type: none"> <li>▪ ST Consultant on energy modelling (2.2) (1 month for training)</li> <li>▪ ST consultant on energy economics (2.2), (1 month for training)</li> <li>▪ Training and travel cost (for 5 years)</li> </ul> <b>Total: \$309,800</b></p>
<p><b>Output 3</b>  <b>National energy policy paper, and a framework for National Energy Strategy produced</b>  <b>Baseline:</b> There is no integrated National Sustainable Energy strategy in Bahrain.  <b>Indicators:</b>  <ul style="list-style-type: none"> <li>▪ national energy strategy developed with consideration to</li> </ul></p>	<p><b>Targets</b>  3.1 Design a national energy information management system (year 1)  3.2 Design and launch State of Energy Report with trends and scenarios to 2030 (year 1 &amp; 2)  3.3 MOU with CIO on energy data collection and management signed (year 2)</p>	<p>3.1 Prepare MOU between CIO and the Unit for Sustainable Energy on energy data collection and management  3.2 Work with CIO to understand the data availability, identifying gaps, requesting additional data.  3.3 Perform data analysis and design initial State of Energy Report  3.4 Hold Stakeholder consultations including the legislative body, women machineries, environmental entities and youth organisations</p>	<p>Bahrain Unit for Sustainable Energy, EWA, UNDP, UNEP</p> <p>International Consultant on energy modelling (8 months over two years and two missions)  <ul style="list-style-type: none"> <li>▪ International consultant on energy economics (2.2), (8 months over two years and two missions)</li> <li>▪ Consultants to develop</li> </ul></p>

<p>gender and other social dimensions</p>	<p>3.4 Data collection (year 2 onwards)  3.5 Energy Balance produced (year 2 onwards)  3.6 Analysis of energy supply options (year 2 onwards)  3.7 Analysis of energy demand (year 2 onwards)  3.8 National Energy Forecasting policy brief (year 3)  3.9 Framework for National Sustainable Energy strategy developed (year 2-3)</p>	<p>3.5 Assessment of energy supply trends and options  3.6 Analysis of energy demand trends and scenarios  3.7 Preparing Energy Balance  3.8 Drafting of a national energy forecast and scenario policy brief  3.9 Drafting of National Sustainable Energy Strategy core umbrella framework including indicators system, with energy efficiency and renewable energy sections developed under Outputs 4/5 below  3.10 Develop Communication and Outreach component to the National SE Strategy including links to International Decade of Sustainable Energy for All (2014-2024)  3.11 Develop public-private partnership component to the National SE Strategy  3.12 Implement initial Communication and Outreach activities linked to International Decade of Sustainable Energy for All (2014-2024)</p>		<p>State of Energy Report</p> <ul style="list-style-type: none"> <li>Communication activities</li> </ul> <p><b>Total: \$374,400</b></p>
<p><b>Output 4</b>  <b>Expanded use of Energy Efficiency solutions</b>  <b>Baseline:</b> Fragmented energy conservation activities and no enforceable policies for Energy Conservation / Efficiency.  <b>Limited</b>  <b>Indicators:</b></p>	<p>Target</p> <p>4.1 Energy efficiency components to the National Sustainable Energy Strategy (Year 2-3)  4.2 Projects and partnerships for scaling up energy efficiency solutions including decentralized solutions such as energy efficient air conditioning (Year 1-2 for pilots and Years 4-5 for implementation of EE solutions identified under</p>	<p>4.1 Assess policy, institutional and market barriers of improving Energy Efficiency  4.2 Identify potential for energy efficiency improvement in key sectors such as oil/gas, buildings, aluminium, air conditioning, etc  4.3 Identify national / sectoral energy efficiency targets for specific sectors for 2030  4.4 Assess policies and measures to overcome policy, institutional and market barriers in key sectors  5.1 Develop energy efficiency component for integration in National Sustainable Energy Strategy in Output 3 above  4.5 Implement early actions likely to be identified</p>	<p>Bahrain Unit for Sustainable Energy, EWA, UNDP, UNEP</p>	<p>Senior EE International Expert (1 year over two years - 4 missions)  Consultation and communication activities</p> <p><b>Total: \$286,400</b></p>

<p><b>Output 5</b>  <b>Expanded use of Renewable energy solutions</b>  <b>Baseline:</b> Fragmented energy conservation activities and no enforceable policies for Energy Conservation / Efficiency.  Limited  <b>Indicators:</b></p>	<p><b>National Strategy)</b></p> <p><b>Target</b>  5.1 Renewable energy components for the National Renewable Energy Strategy (Years 2-3)  5.2 Projects and partnerships for scaling up renewable energy solutions including decentralized off-grid solutions like roof top solar and solar water heating (Year 1-2 for pilots and Years 4-5 for implementation of RE solutions identified under National Strategy)</p>	<p>in the strategy, particularly decentralized solutions like energy efficient air conditioning as well as broader sectoral approaches  4.6 Implement measures to scale-up EE measures identified in the National SE Strategy, particularly decentralized solutions like energy efficient air conditioning as well as broader sectoral approaches  4.7 Communication and Outreach activities</p> <p>5.2 Assess policy, institutional and market barriers for expanding use of RE  5.3 Identify RE targets for 2030  5.4 Develop renewable energy components to the National Sustainable Energy Strategy in Output 3 above  5.5 Implement early actions likely to be identified in the strategy, particularly decentralized off-grid solutions like roof top solar and solar water heating  5.6 Implement measures to scale-up RE measures identified in the National SE Strategy, particularly decentralized solutions like energy efficient air conditioning as well as broader sectoral approaches  5.7 Communication and Outreach Activities</p>	<p>Bahrain Unit for Sustainable Energy, EWA, UNDP, UNEP</p>	<p>Senior Renewable Energy international expert (1 year over two year period - 4 missions)  Consultation and communication activities  <b>Total: \$ 286,400</b></p>
<b>Audit and Evaluation</b>				
				<p><b>Total:</b>  <b>\$ 30,000</b></p>
				<p><b>Total with GMS:</b>  <b>\$ 6,504,824</b>  <b>\$ 6,700,000</b></p>



# I. ANNUAL WORK PLAN

Year: 2015

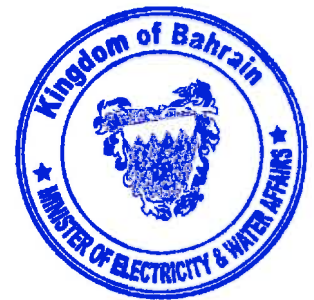
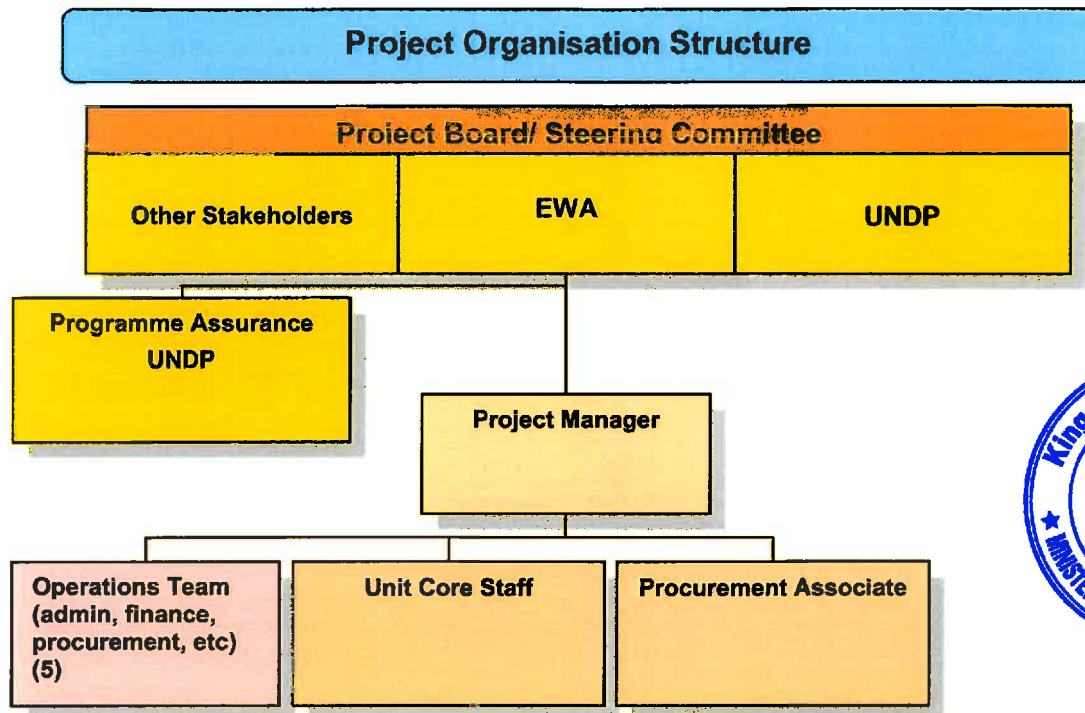
EXPECTED OUTPUTS <i>And baseline, indicators including annual targets</i>	PLANNED ACTIVITIES <i>List activity results and associated actions</i>	TIMEFRAME				RESPONSIBLE PARTY	PLANNED BUDGET	
		Q1	Q2	Q3	Q4		Funding Source	Amount
<b>Output 1</b> Establishing the National Sustainable Energy Unit <i>Baseline:</i> <i>Indicators:</i> <i>Targets:</i> <i>Related CP outcome:</i>	1. Recruitment of Project Manager and/or Chief Technical Advisor	X	X			UNDP, EWA		
	2. Develop TORs for 5-8 core staff of the unit and recruit staff and procurement and installation of basic equipment	X	X			UNDP, EWA		
	3. Design initial structure and mandate of the National SE Unit and develop policies, bylaws and operational guidelines	X	X	X		UNDP, EWA		
	4. Undertake high profile launch event for the project	X	X					
	5. Conduct stakeholders' consultation to engage relevant institutions in the process of establishing the National SE Unit		X	X		UNDP, EWA		
	6. Awareness of sustainable energy goals raised			X	X			
<b>Output 2</b> Capacity Development for the National Sustainable Energy Unit <i>Baseline:</i> <i>Indicators:</i> <i>Targets:</i> <i>Related CP outcome:</i>	1. Recruit international energy training expert and develop training needs assessment		X	X		UNDP, EWA		
	2. Undertake initial south-south exchanges to share models and lessons from energy centers in Saudi Arabia, China and India	X		X		UNDP, EWA		
	3. Identify leading international institutions for supporting future trainings needs of the National SE Unit		X	X	X	UNDP, EWA		
	4. Undertake project management training of EWA and initial project office staff in UNDPs rules and regulations		X	X	X	UNDP, EWA		
	5. Staff attend at least one relevant training programme			X	X			



<b>Output 3 Energy Information Management Systems</b> <i>Baseline:</i> <i>Indicators:</i> <i>Targets:</i> <i>Related CP outcome:</i>	1. Recruit international experts				X	X	UNDP, EWA		
	2. Design initial frameworks for the EIMS				X	X	UNDP, EWA		
	3. Design outline for initial 2015 State of Energy Report		X		X	X	UNDP, EWA		
	4. Design Communication activities linked to International Decade of Sustainable Energy for All (2014-2024)		X		X	X	UNDP, EWA		
<b>Output 4 Energy Efficiency Solutions</b> <i>Baseline:</i> <i>Indicators:</i> <i>Targets:</i> <i>Related CP outcome:</i>	5. Sign MOU with CIO on energy data collection and management						UNDP, EWA		
	1. Identify early actions and partnerships to undertake pilot initiatives on decentralized EE solutions like energy efficient air conditioning				X	X			
<b>Output 5 Renewable Energy Solutions</b> <i>Baseline:</i> <i>Indicators:</i> <i>Targets:</i> <i>Related CP outcome:</i>	1. Identify early actions and partnerships to undertake pilot initiatives on decentralized RE solutions like rooftop solar and solar water heaters				X	X	UNDP, EWA		
<b>TOTAL</b>									



## II. MANAGEMENT ARRANGEMENTS



The Project will be implemented by the Office of the Minister of Electricity and Water Affairs with support from UNDP. The project will establish a Project Board/Steering Committee mainly comprising of representatives from EWA, Minister of Electricity and Water Affairs office and UNDP. Other stakeholders may also be invited to join the board. The Project Board will be responsible for providing strategic guidance for the project and making management decisions whenever required. The Project Board would meet once a quarter to review the progress of the project.

As mentioned in section II. Strategy, the project will establish, for the duration of the project, a Project Implementation Unit which will comprise a Project Manager, a Project Secretary as well as a Procurement Associate to handle the procurement of goods and services in line with UNDP procedures and financial rules and regulations.

The Project Manager will be responsible for the day to day management of the Project. He/she will ensure that the Bahrain Unit for Sustainable Energy is successfully established and staffed with highly qualified staff, within the required standards of quality and the specified costs and time frame. The Project Manager is expected to monitor results and risk logs, introduce quality management methodologies and develop Annual Work Plans for the project. The Project Manager will report to the Project Board every quarter on project progress. The Project Manager will work closely with short term international and national consultants as well as the EWA technical team on the implementation of project activities.

UNDP will assign the Project Assurance role to a Program Analyst. The Project Assurance supports the Project Board by carrying out objective and independent project oversight and monitoring functions. It also ensures reporting on project outputs to the relevant UNDP country office outcomes.



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### III. MONITORING FRAMEWORK AND EVALUATION

In accordance with the programming policies and procedures outlined in the UNDP User Guide, the project will be monitored through the following:

#### Within the annual cycle

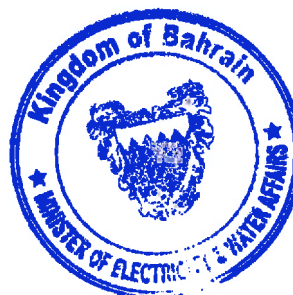
- On a quarterly basis, a quality assessment shall record progress towards the completion of key results, based on quality criteria and methods captured in the Quality Management table below.
- An Issue Log shall be activated in Atlas and updated by the Project Manager to facilitate tracking and resolution of potential problems or requests for change.
- Based on the initial risk analysis submitted (see annex 1), a risk log shall be activated in Atlas and regularly updated by reviewing the external environment that may affect the project implementation.
- Based on the above information recorded in Atlas, a Project Progress Reports (PPR) shall be submitted by the Project Manager to the Project Board through Project Assurance, using the standard report format available in the Executive Snapshot.
- A project Lesson-learned log shall be activated and regularly updated to ensure on-going learning and adaptation within the organization, and to facilitate the preparation of the Lessons-learned Report at the end of the project
- A Monitoring Schedule Plan shall be activated in Atlas and updated to track key management actions/events

#### Annually

- **Annual Review Report.** An Annual Review Report shall be prepared by the Project Manager and shared with the Project Board and the Outcome Board. As minimum requirement, the Annual Review Report shall consist of the Atlas standard format for the QPR covering the whole year with updated information for each above element of the QPR as well as a summary of results achieved against pre-defined annual targets at the output level.
- **Annual Project Review.** Based on the above report, an annual project review shall be conducted during the fourth quarter of the year or soon after, to assess the performance of the project and appraise the Annual Work Plan (AWP) for the following year. In the last year, this review will be a final assessment. This review is driven by the Project Board and may involve other stakeholders as required. It shall focus on the extent to which progress is being made towards outputs, and that these remain aligned to appropriate outcomes.

#### Evaluation

*Towards year 4 of the life of the project, an Evaluation will be conducted due to the complexity and innovative aspects of the project.*



## Quality Management for Project Activity Results

OUTPUT 1:		
<b>Activity Result 1 (Atlas Activity ID)</b>	<i>Short title to be used for Atlas Activity ID</i> Enhanced capacity of the staff of Bahrain Unit for Sustainable Energy	Start Date: End Date:
<b>Purpose</b>	<i>What is the purpose of the activity?</i> Strengthen the task execution capacity of Bahrain Unit for Sustainable Energy	
<b>Description</b>	<i>Planned actions to produce the activity result.</i> Training from International Experts / International study tours (participating in training programs and visits to similar International institutions).	
<b>Quality Criteria</b> <i>how/with what indicators the quality of the activity result will be measured?</i>	<b>Quality Method</b> <i>Means of verification. what method will be used to determine if quality criteria has been met?</i>	<b>Date of Assessment</b> <i>When will the assessment of quality be performed?</i>
Increased knowledge of staff	Evaluation questionnaire	
Enhanced technical skill sets of staff	Certificates from training programs	
Practical application of the knowledge		
Successful execution of task.		



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#### **IV. LEGAL CONTEXT**

This project document shall be the instrument referred to as such in Article 1 of the Agreement between the Government of Bahrain and UNDP, signed on August 3, 1978.

Consistent with the Article III of the Standard Basic Assistance Agreement (SBAA), the responsibility for the safety and security of the Implementing Partner and its personnel and property, and of UNDP's property in the Implementing Partner's custody, rests with the Implementing Partner. To this end, the Implementing Partner shall:

- a) put in place an appropriate security plan and maintain the security plan, taking into account the security situation in the country where the project is being carried;
- b) assume all risks and liabilities related to the implementing partner's security, and the full implementation of the security plan.

UNDP reserves the right to verify whether such a plan is in place, and to suggest modifications to the plan when necessary. Failure to maintain and implement an appropriate security plan as required hereunder shall be deemed a breach of the Implementing Partner's obligations under this Project Document.

The Implementing Partner agrees to undertake all reasonable efforts to ensure that none of the UNDP funds received pursuant to the Project Document are used to provide support to individuals or entities associated with terrorism and that the recipients of any amounts provided by UNDP hereunder do not appear on the list maintained by the Security Council Committee established pursuant to resolution 1267 (1999). The list can be accessed via [http://www.un.org/sc/committees/1267/aq\\_sanctions\\_list.shtml](http://www.un.org/sc/committees/1267/aq_sanctions_list.shtml). This provision must be included in all sub-contracts or sub-agreements entered into under/further to this Project Document.



## V. RISK LOG

Project Title: Establishment of Bahrain Unit for Sustainable Energy and Promotion of Integrated Energy Planning					Award ID: 00079213		Date:		
#	Description	Date Identified	Type	Impact & Probability	Countermeasures / Mngt response	Owner	Submitted, updated by	Last Update	Status
1	Lack of political support for establishing the Bahrain Unit for Sustainable Energy	June 2014	Political	Energy planning for the country cannot be undertaken by one single national entity  P = 2 I = 4	Support from Minister of Electricity and Water Affairs  Stakeholder consultation workshop and stakeholder buy-in.	Project Management team	Project consultant		
2	No committed source of funding for Bahrain Unit for Sustainable Energy for operation and program execution	June 2014	Operational	Hindered program execution  P = 2 I = 3	Political will and Stakeholder buy-in  Energy planning and energy conservation is essential for energy security and sustainability of the country.	Project Management team	Project consultant		
3	Non-availability of required resources/ staff	June 2014	Operational	Hinders timely program execution  P = 2 I = 3	Ensure ToR for positions at Bahrain Unit for Sustainable Energy are clear  Widely advertise for the required consultancies/posts	Project Management team	Project consultant		

