



PROGRESS REPORT

Reporting UN Organization	: United Nations Development Programme (UNDP)
Country	: Lebanon
Award ID	: 00047251
Award Title	: CEDRO II & III – “Country energy efficiency and renewable energy demonstration project for the recovery of Lebanon”
Award Timeframe	: Oct 2009 – Oct 2013
Award Components	: CEDRO 2 – 00060150 CEDRO 3 – 00071261
Reporting Period	: 1 April 2011 – 31 June 2011

List of Acronyms

CAS	Central Administration for Statistics
CDR	Council for Development and Reconstruction
CO	Country Office
GDP	Gross Domestic Product
EDL	Electricity of Lebanon
EE	Energy Efficiency
EIA	Environmental Impact Assessment
GSHP	Ground Source Heat Pump
ITB	Invitation to Bid
LCEC	Lebanese Centre for Energy Conservation
LED	Light Emitting Diodes
LRF	Lebanon Recovery Fund
MoET	Ministry of Economy and Trade
MoEW	Ministry of Energy and Water
MoF	Ministry of Finance
MoU	Memorandum of Understanding
PV	Photovoltaic
RE	Renewable energy
SHW	Solar hot water
UNDP	United Nations Development Program
WWTP	Waste Water Treatment Plants

I. PURPOSE

Project Summary:

The aim of the CEDRO project is to support Lebanon's recovery, reconstruction and reform activities and to complement the national power sector reform strategy through the implementation of end-use energy efficiency and renewable energy projects and through the removal of barriers for the promotion of sustainable energy applications in Lebanon. To achieve this, the project will work on three levels: the first involves the establishment of a demonstrative model addressing public sector building and facilities, the second involves the activation of the replication process, and the third involves the triggering of a national sustainable energy strategy and action plan. The CEDRO project is financed through the Lebanon Recovery Fund, and is in-line with Lebanon's ongoing efforts to improve national patterns of energy consumption and cost.

Project Phases and Outputs:

CEDRO 2 3.50 million USD	<ul style="list-style-type: none">➔ Implementation of end-use energy efficiency and renewable energy applications for public sector buildings and facilities (app. 60 sites across Lebanon)➔ Technology transfer to enable the conversion of other public sector buildings and facilities into energy efficient modalities
CEDRO 3 3.50 million USD	<ul style="list-style-type: none">➔ Implementation of end-use energy efficiency and renewable energy applications for public sector buildings and facilities (app. 60 sites across Lebanon)➔ Technology transfer to enable the conversion of other public sector buildings and facilities into energy efficient modalities➔ Research and development to enable the formulation of a national sustainable energy strategy and action plan

Project Linkages to National Priorities and Reconstruction Goals:

Lebanon imports around 97% of its energy needs in the form of fossil fuel. In 2004, the national energy bill amounted to around 1.6 billion USD (around 20% of the annual public expenditure and around 7.8% of the national GDP), and in 2005 it reached 2.1 billion USD (around 26% of the annual public expenditure and around 10% of the national GDP).

The government of Lebanon has placed the reform of the power sector among its highest national priorities, as outlined in the recovery, reconstruction and reform paper submitted to the Paris 3 conference after the 2006 conflict. However, given the enormity of the challenges faced by the power sector, the power sector reform strategy has concentrated on addressing the energy supply side, without extending the scope to the demand side of energy management.

Knowing that reform on the supply side needs to be accompanied by reform on the demand side, the proposed CEDRO program has sought to complement the national power sector reform strategy by targeting end-use energy conservation and renewable energy demonstrations which will assist in the above categories of demand-supply imbalance, security of supply, diversification of energy sources, economic cost and the environment.

Moreover, the current Lebanese government has set itself a goal of achieving 12% of its total energy needs from renewable energy sources. CEDRO is seeking to assist in achieving this goal through its demonstration projects of various zero carbon to low carbon technologies and its analysis of renewable energy resources.

This project is an initiative by the Government of Spain to assist the Government of Lebanon in its recovery and reconstruction efforts with a clear focus on promoting sustainable energy services and concentrating on public sector buildings and facilities.

This project is in line with Lebanon's recovery, reconstruction and reform objectives, and falls within the Ministry of Energy and Water's main priority to meet national demand for electricity.

Project Implementation Partners:

The UNDP-CEDRO partners and their respective role is indicated to in the Table below;

Institution	Role
Spanish Agency for International Cooperation	Donor agency through the LRF..
Ministry of Energy and Water (MoEW) and Lebanese Center for Energy Conservation Project (LCEC)	CEDRO's works closely with the Ministry of Energy and Water and the LCEC as they are the main players in the energy sector. CEDRO's work complements that of the Ministry and the LCEC, particularly in terms of policy advisory support in the energy sector and knowledge-sharing through research activities for the energy sector.
Ministry of Finance	A stakeholder of the project and part of the Steering Committee particularly in relation to fiscal implications of renewable energy policies.
Ministry of Economy and Trade	A stakeholder of the project and part of the Steering Committee particular in relation to economic impact of renewable energy policies.
Council for Development and Reconstruction	The Council for Development and Reconstruction is the financial partner of the UN and a stakeholder of the project.

International Partners: - Spanish Agency for International Cooperation

National Partners: - Ministry of Energy and Water (MoEW) and Lebanese Center for Energy Conservation Project (LCEC)
 ✓ Ministry of Finance
 ✓ Ministry of Economy and Trade
 ✓ Council for Development and Reconstruction

1. Project Management

- Coordination and follow-up on a regular basis with the Technical Backstopping Agency, TTA, on all technical assessments for the selection of new sites, installation designs, supervision and monitoring of works;
- Preparation of regular progress reports and financial management of expenditures;
- Organization of stakeholder meetings (regular meetings with the Ministry of Energy and Water (MoEW) and with EDL) – leading to several projects to be implemented on hydropower assessment, bioenergy from wastewater treatment plants, and potential geothermal assessment, among others.
- Daily follow-up with site engineers and project staff;
- Providing technical and policy advice to decision-makers (MoEW) and UNDP CO on renewable energy issues.
- An international consultant has been selected based on an international recruitment process to undertake the final evaluation of the CEDRO Phase I project. The mission to Lebanon is expected during the first week of September 2011.

2. Implementation of end-use energy efficiency and renewable energy demonstration projects for public sector buildings and facilities

In the second quarter of 2011, the focus has been to get new projects signed (endorsed by the government and beneficiaries) and initiated so that they can be completed this year, and working on developing new projects to be implemented in the near future, in particular;

The Light-emitting diode (LED) street lighting project for 8 new sites (see Annex 1.1)) is under implementation with the winning bidder awarded. A lighting protection system 'invitation to bid' is being prepared for all these new LED street lighting fixtures given that the distribution network on the Lebanese grid is unprotected from lightning surges. LED fixtures save 30-40% on the lighting load of municipalities, and live longer than normal lighting high-pressure sodium fixtures

- The ITB for 16 new PV sites is under implementation and should be completed within 2 months. The last progress report contains the names of these sites under implementation). PV will generate renewable electricity for the above institutions, benefiting them directly through removing the need for back-up generators with a few exception in winter, and lowering their EDL electricity bill.
- 20 new PV sites have also been launched by CEDRO after an invitation to bid was prepared and the winning contractor notified. The new sites are listed below;

Institution Name	Region
Al Mafadel Public School	Akkar
Jwar El Hashish Public School	Akkar
Al Nour Public School- Mina	North
Gebayel Municipality	Akkar
Ijdabra Municipality	North
Ibreen Municipality	North
Khaybet El Metn Public School	Metn
Mayfouq Municipality	Mount Lebanon
Akoura Municipality	Mount Lebanon
Jeb Jennine Secondary School	Bekaa
Manara Secondary School	Bekaa
Hermel Municipality	Bekaa
Ain Deleb Public School	South
Ayta El Shaeb Municipality	South
Bouday Municipality	South
Nabatieh Public School	South
Al Ein Municipality	South
Al Taybeh Municipality	South
Kabrikha Public School	South
Kantara Municipality	South

- A dimming street lighting project with the Municipality of Beirut and Solidere in down-town Beirut has been prepared and yet project launching is pending Municipality of Beirut approval (as cost-sharing arrangement are being followed between CEDRO and Solidere in this project).
- 4 new public hospitals are being implemented by CEDRO (Contractor awarded in Q2 of 2011. The four hospitals are;

Institution Name
Qartaba governmental hospital
Bsharre governmental hospital
Dahr El Beshiq governmental hospital
Bent Jbeil governmental hospital

- 'Madinati Khadraa competition' (MKC) has been posted online. MKC allows the municipalities, or any private or non-governmental agency official representative of municipalities to apply for 1 of 3 grants of 60,000,000 LBP each for a unique renewable energy or energy efficiency. Kindly see Annex 2 for the application form and further details on MKC.
- Ground source heat pump (GSHP); the highly innovative project for a GSHP in Bejji Municipality has been tendered and the evaluation of the bids are underway.

Kindly refer to Annex 1 for a geographical representation of the projects of CEDRO in Lebanon.

3. Setting an enabling environment for the conversion of public sector buildings and facilities into energy efficient modalities

- The CEDRO website (www.cedro-undp.org) is running and is being continuously updated with new events and projects as they happen.
- Newsletter 1 for 2011 is under preparation and should be out in early Q3 of 2011.
- Three large events that launched the PV applications of CEDRO occurred in Kfour, the South, and repeated for Akkar and the Bekaa. The event saw all the school children from ages 5 to 11 (totally 900 students) attend a play on renewable energy and then a workshop for building a Lego house that runs on renewable energy. CEDRO also distributed lunch boxes, hats, pencil cases and various stationaries, and school bags to all the students as part of the awareness raising activities.



Government school students building their own RE house

- The bidding documents for a large theater event are posted online by CEDRO in coordination with other UNDP (and LRF funded) projects. This event targets ALL school children in Lebanon on issues related to climate change, renewable energy, water conservation, and energy efficiency.

4. Assisting the establishment of a sustainable Energy Strategy for Lebanon

- The consultants implementing the National Bioenergy Assessment Study for Lebanon have delivered their first draft in Q2 of 2011, and comments from CEDRO, local and international consultants on this draft have been delivered. Final report should be out in Q3 of 2011.

- A study for energy from sewage sludge from wastewater treatment plants (WWTP) has been agreed upon in consultation the Ministry of Energy and Water and the Council for Development and Reconstruction.
- A workshop for Environmental Impact Assessment (EIA) of Wind Farms, including an EIA guideline report to be used as a reference for future wind farms in Lebanon, has been awarded to a French specialist company in EIAs for wind farms. The workshop will be carried out in Q3 of 2011.

All in all, CEDRO aims to assist the government in Lebanon in deciding which energy source to utilize to reach its objective of 12% of its electricity mix to come from renewable energy sources by 2020 – an objective approved by the Council of Ministers and asserted in the Copenhagen Summit¹.

II. RESOURCES

		CEDRO 2	CEDRO 3
Total budget approved	:	USD 3,500,000	USD 3,500,000
Total disbursements as for 31 Jun 2011	:	USD 1,922,283	USD 217,441
Available Balance	:	USD 1,577,717	USD 3,282,559
Commitments for next quarter	:	USD 250,000	USD 100,000

Budget and Expenditure Breakdown per LRF Category:

CATEGORY	CEDRO2		CEDRO3	
	Total Budget (USD)	Total Exp. to date (USD)	Total Budget (USD)	Total Exp. to date (USD)
1. Personnel (Incl. staff and consultants)	220,000	417,850*	170,000	
2. Contracts (Incl. companies, professional services)	440,000	200,275	440,000	2,450
3. Training (incl. AV printing / production)	40,000	0	40,000	
4. Transport (local)	10,000	10,327	10,000	414
5. Supplies and commodities (Incl. IT equip and rental & maintenance)	50,000	207,188**	50,000	
6. Equipment (including installation)	2,450,000	802,352	2,500,000	198,719
7. Travel	15,000	30,114	15,000	3,931
8. Miscellaneous	46,000	72,734	30,000	
9. Agency Management Support (7%)	186,048	121,859	245,000	14,386
TOTAL	2,843,880.00	1,862,698	3,500,000	219,901

* total expenditure for staff and consultants exceeds the total allocated budget because most of the technical design and supervision of works is being implemented by project personnel and not sub-contracted to third-party companies as originally planned. A budget revision is therefore being requested should this be necessary.

** The expenditures being reported under this budget account not is only related to the "supplies and commodities" for project running costs but mostly for the installation of equipment; i.e. implementation activities. However, given the difference in budget line description between UNDP and the LRF accounts, the expenditure appears in this budget line

CEDRO Project	CEDRO 2 3.50 million USD	CEDRO 3 3.50 million USD
<i>Activity Results</i>	<i>Indicators</i>	
1 - Implementation of end-use energy efficiency and renewable energy demonstration projects for public sector buildings and facilities	<ul style="list-style-type: none"> ➔ Identification and Implementation of 60-80 EE/RE demonstration projects the remaining regions of Lebanon 	<ul style="list-style-type: none"> ➔ Identification and Implementation of 60-80 EE/RE demonstration projects across Lebanon
2 – Outreach and technology transfer to enable the conversion of other public sector buildings and facilities into energy efficient modalities	<ul style="list-style-type: none"> ➔ Development and implementation of technical workshops and awareness tools ➔ Development of GIS energy data base and EE/RE procurement specs 	<ul style="list-style-type: none"> ➔ Development and implementation of technical workshops and awareness tools ➔ Development of GIS energy data base and EE/RE procurement specs ➔ Validation of project results and development of replication schemes
3 – Research and development to enable the formulation of a national sustainable energy strategy and action plan	-	<ul style="list-style-type: none"> ➔ Assessment of national renewable energy resources ➔ Assessment of national energy efficiency potential ➔ Development of national EE/RE strategy & action plan

Progress in Project Implementation:

Activity Results	Activity Actions	Targets for 2011	Status for 2011
1 – Project Management	1.1 Technical Management	✓ Organization of 3 conferences and/or events and end of year project board meeting	✓ 1 conference (wind atlas) has occurred
	1.2 Financial Management	✓ Organization of 3 international backstopping missions;	✓ 3 opening events and workshop for 900 students have occurred in the South, Bekaa and Akkar, respectively
	1.3 Operational Management	✓ Issue a report on the status and results of the CEDRO 1 pilot projects that were already implemented	✓ 2 backstopping mission has occurred
		✓ Provide advisory support services on EE/RE policies and legislations	✓ Pending auditing of CEDRO 1 task, international consultant has been hired.
		✓ Attendance of capacity building workshops for CEDRO team	✓ Advisory services for MoEW and EDL on net metering on-going
		✓ Preparation of regular progress reports;	✓ Two CEDRO engineers are going to China in Q2 of 2011 to be trained on PV systems from the world leader, Suntech ✓ Preparation for attending workshop on life-cycle assessment, graphic design, and other related issues to CEDRO will be done in Q2-Q4 2011.
			✓ Q1 progress report prepared ✓ Q2 progress report prepared ✓ CEDRO 1 completion report being prepared. ✓ CEDRO 1 final evaluation in process
Activity Results	Activity Actions	Targets for 2011	Status for 2011
2 - Implementation of end-use energy efficiency and renewable energy demonstration projects for public sector buildings and facilities	2.1 Undertake targeted assessment and identification of project beneficiary sites;	✓ Implementation of 50 demonstration projects; ✓ 16 PV projects to begin and finish in 2011 ✓ 20 PV projects to begin in 2011 (finish 2012) ✓ 4 new SHW hospitals to begin and finish in 2011 ✓ 1 Ground source heat pumps (GSHP) to begin and finish in 2011	✓ Works on 16 PV sites well underway ✓ Works on 20 new PV sites have already begun ✓ Works on 4 public hospitals underway ✓ GSHP project bidding documents have been received ✓ Dimming bidding documents prepared, awaiting confirmation from Municipality of Beirut
	2.2 Develop tender documents and undertake bidding & procurement of goods/services;	✓ 8 sites for LED street lighting across Lebanon ✓ 1 street lighting project with Solidere (dimming) ✓ Launch 10 sites for micro-wind	✓ Implementation of 8 LED street lighting sites underway ✓ Works in Baalbeck continuing with final touches ✓ Works on Roumieh on-going and have sped up after the signing of the MOU.
	2.3 Undertake commissioning of works and supervision and monitoring of sites;	✓ Complete work on Baalbeck Army Institute ✓ Complete work on Roumieh Prison ✓ Undertaking third EOI for RE/EE suppliers end of 2011 ✓ Continuous cooperation between CEDRO, the MoEW and the LCEC for on-going projects	✓ No work on micro-wind sites can begin before the wind speed data project which is on-going is completed. Data from this latter project is a pre-requisite for launching ITB for micro-wind.

	2.4 Undertake testing of performance & data collection;		
Activity Results	Activity Actions	Targets for 2011	Status for 2011
3 – Outreach and technology transfer to enable the conversion of other public sector buildings and facilities into energy efficient modalities	3.1 Develop and implement technical workshops and awareness activities;	<ul style="list-style-type: none"> ✓ Development and implementation of 2 technical workshops 	<ul style="list-style-type: none"> ✓ Micro-wind wind-speed anemometer workshop for specialists will be prepared in Q3 of 2011 ✓ Other workshop on GSHP would be prepared if ready in 2011, otherwise in 2012.
	3.2 Develop GIS energy data base and EE/RE procurement specs;	<ul style="list-style-type: none"> ✓ Continuation and expansion of CEDRO outreach and visibility; ✓ 2 newsletters to be produced in 2011 ✓ Documentary on CEDRO in english and arabic to be prepared 	<ul style="list-style-type: none"> ✓ Updating project website: www.cedro-undp.org (En/Ar); ✓ Article on CEDRO in (1) Beyond magazine ✓ Full press coverage for the wind atlas event in all local newspapers and magazines ✓ Full press coverage on the PV opening events ✓ Documentary has been prepared for CEDRO. ✓ 1st newsletter of 2011 will be out early 2011.
	3.3 Validate project results and enable replication schemes;	<ul style="list-style-type: none"> ✓ Set-up of GIS database for 200 public sector sites; 	<ul style="list-style-type: none"> ✓ Set-up of GIS database for 109 public sector sites completed;
4 – Research and development to enable the formulation of a national sustainable energy strategy and action plan	4.1 Asses national renewable energy resources;	<ul style="list-style-type: none"> ✓ Complete Wind ATLAS for Lebanon and disseminate results ✓ Complete study and disseminate results of the national bioenergy assessment of Lebanon 	<ul style="list-style-type: none"> ✓ Wind atlas completed and disseminated in a conference on January 2011. ✓ Bioenergy draft report submitted and comments have been returned to consultant for final corrections
	4.2 Assess national energy efficiency potential;	<ul style="list-style-type: none"> ✓ Completion of a microwind potential assessmet in 10 different sites ✓ Launch study on energy from wastewater treatment plants (WWTP), including specificaiton documents 	<ul style="list-style-type: none"> ✓ Microwind potential assessment project on-going ✓ WWTP study to begin on-ground in Q3.
	4.3 Develop national EE/RE strategy & action plan;	<ul style="list-style-type: none"> ✓ Launch study on wind power integration into the grid ✓ Launch study on small to micro-hydro power ✓ Hire international consultant to study hydro-power plants rehabilitation in Lebanon and specification documents ✓ Work on the TOR for the energy use survery for the domestic and commercial sectors in Lebanon. 	<ul style="list-style-type: none"> ✓ TOR for wind power integration prepared and yet study is cancelled (see implementation constraints below). ✓ TOR for small to micro-hydro being prepared ✓ TOR for international hydro-power consultant posted online ✓ The study with the Lebanese Central Administration for Statistics (CAS) has been cancelled (see implementation constraints below).

* EE/RE = Energy Efficiency and Renewable Energy

Implementation Constraints and Lessons Learned during this quarter:

- ▶▶ In this last quarter of 2011 (i.e., Q2), CEDRO has experienced the following;
 - The cancellation of two major studies that were to be part of CEDRO III. The studies cancelled and the reason why are indicated below;
 - Wind integration study; The Ministry of Energy and Water have indicated that Electricity of France (EDF) are doing a similar study and therefore this would duplicate work. To this end the study has been cancelled, although CEDRO has worked closely with EDL and advisors to the MoEW on this study. However miscommunication has occurred between the different government agencies working on this issue.
 - The energy use survey study that was supposed to be launched with CAS was cancelled also due to advice from the MoEW. The advice has been well-received as they pointed out to the fact that the current blackouts skew the results of the energy use surveys towards the times when the back-up generators are working, and therefore we should carry out the survey only when 24 hour electricity is provided by the government, in order that behaviour is measured under normal circumstances.

IV. FUTURE WORK PLAN

Outputs and Activities	2011			
	Q1	Q2	Q3	Q4
<p>1. Implementation of end-use EE/RE demonstration projects</p> <ul style="list-style-type: none"> – Identification of beneficiary sites – Development of tender documents – Procurement of goods / services – Site Supervision and hand-over – Monitoring of system performance 	<p>Prepare 20 new PV sites</p> <p>Launch PV 20 new sites</p> <p>Launch 8 new LED sites</p> <p>Prepare new SHW ITB</p> <p>Prepare GSHP ITB</p>	<p>Launch PV tender – 20 sites</p> <p>Monitor PV sites implementation</p> <p>Launch SHW ITB</p> <p>Monitor LED sites implementation</p> <p>Launch ITB for GSHP</p>	<p>Monitor PV sites implementation</p> <p>Monitor LED site implementation</p> <p>Identify new PV sites</p> <p>Prepare microwind ITB</p> <p>Launch Lighting protection for LED street lights ITB</p>	<p>Write microwind ITB</p> <p>Commission all PV sites</p> <p>Write bioenergy project ITB</p> <p>Prepare project proposals to launch in Q1-Q2 of 2012</p> <p>Launch Street Lighting dimming project</p>
<p>2. Outreach and Technology transfer for the activation of EE/RE applications</p> <ul style="list-style-type: none"> – Establishment of energy saving data base for public sector facilities – Development & Implementation of capacity building & awareness programs – Development of relevant EE/RE policies and procedures – Validation of project results 	<p>Launch of national wind atlas event</p>	<p>Launch of awareness campaign for school children</p> <p>Prepare theatre awareness ITB</p>	<p>Launch Theatre event</p> <p>Launch workshop on EIA for wind farm developments</p>	<p>Launch bioenergy assessment event</p> <p>Launch Baalbeck army institute SHW project</p> <p>Launch technical workshop on microwind and GSHP</p>

<p>3. Research and development for the formulation of a national EE/RE strategy and action plan</p> <ul style="list-style-type: none"> - Assessment of national RE potential - Assessment of national EE potential - Identification of viable EE/RE actions - Identification of Implementation tools and funding mechanisms 	<p>Monitor implementation of bioenergy national study</p>	<p>Write bidding document for energy use guideline report for hospital sector</p>	<p>Hire international consultant for current hydro power rehabilitation assessment</p> <p>Launch ITB for small scale hydropower assessment</p>	<p>Launch bioenergy from WWTP assessment study/project</p> <p>Investigate national geothermal study possibility</p> <p>Write bidding document for energy efficiency at the Lebanese Central Bank premises with green roof possibility</p>
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	2012			
Outputs and Activities	Q1	Q2	Q3	Q4
<p>1. Implementation of end-use EE/RE demonstration projects</p> <ul style="list-style-type: none"> - Identification of beneficiary sites - Development of tender documents - Procurement of goods / services - Supervision and hand-over - Monitoring of system performance 	<p>Launch microwind ITB</p> <p>Launch bioenergy proposal</p> <p>Prepare new PV project ITB</p> <p>Prepare ITB for green roof thermal insulation project</p>	<p>Monitor implementation of microwind project</p> <p>Monitor implementation of bioenergy sites</p> <p>Launch new ITB for PV</p> <p>Launch green roof thermal insulation project</p>	<p>Monitor implementation of works</p> <p>Prepare projects in EE and RE for 10 new beneficiary sites</p>	<p>Monitor implementation of works</p> <p>Record all data collected from sites</p> <p>Monitor all installations</p>
<p>2. Outreach and Technology transfer for the activation of EE/RE applications</p> <ul style="list-style-type: none"> - Establishment of energy saving data base for public sector facilities - Development & Implementation of capacity building & awareness programs - Development of relevant EE/RE policies and procedures - Validation of project results 	<p>Launch Roumieh Prison SHW event</p>	<p>Awareness activity to be determined</p>	<p>Technical workshop - to be determined</p>	<p>Technical workshop - to be determined</p>
<p>3. Research and development for the formulation of a national EE/RE strategy and action plan</p> <ul style="list-style-type: none"> - Assessment of national RE potential - Assessment of national EE potential - Identification of viable EE/RE actions - Identification of Implementation tools and funding mechanisms 	<p>Launch new batch of studies</p>	<p>Launch new batch of studies</p>	<p>Launch new batch of studies</p>	<p>Launch new batch of studies</p>

Outputs and Activities	2013			
	Q1	Q2	Q3	Q4
1. Implementation of end-use EE/RE demonstration projects <ul style="list-style-type: none"> - Identification of beneficiary sites - Development of tender documents - Procurement of goods / services - Supervision and hand-over - Monitoring of system performance 	<p>Monitor implementation of works</p> <p>Record all data collected from sites</p> <p>Monitor all installations</p> <p>Prepare Operation and maintenance plan post-CEDRO</p>	<p>Monitor implementation of works</p> <p>Record all data collected from sites</p> <p>Monitor all installations</p> <p>Prepare Operation and maintenance plan post-CEDRO</p>	<p>Terminate project</p> <p>Prepare Operation and maintenance plan post-CEDRO</p> <p>Prepare Operation and maintenance plan post-CEDRO</p>	
2. Outreach and Technology transfer for the activation of EE/RE applications <ul style="list-style-type: none"> - Establishment of energy saving data base for public sector facilities - Development & Implementation of capacity building & awareness programs - Development of relevant EE/RE policies and procedures - Validation of project results 	<p>Awareness activity to be determined</p>	<p>Awareness activity to be determined</p>		
3. Research and development for the formulation of a national EE/RE strategy and action plan <ul style="list-style-type: none"> - Assessment of national RE potential - Assessment of national EE potential - Identification of viable EE/RE actions - Identification of Implementation tools and funding mechanisms 	<p>No new studies possible</p> <p>Put together all CEDRO's work on RE and EE in one document; a national document for RE and EE</p>	<p>Put together all CEDRO's work on RE and EE in one document; a national document for RE and EE</p>	<p>Put together all CEDRO's work on RE and EE in one document; a national document for RE and EE</p>	

CEDRO

CEDRO 2

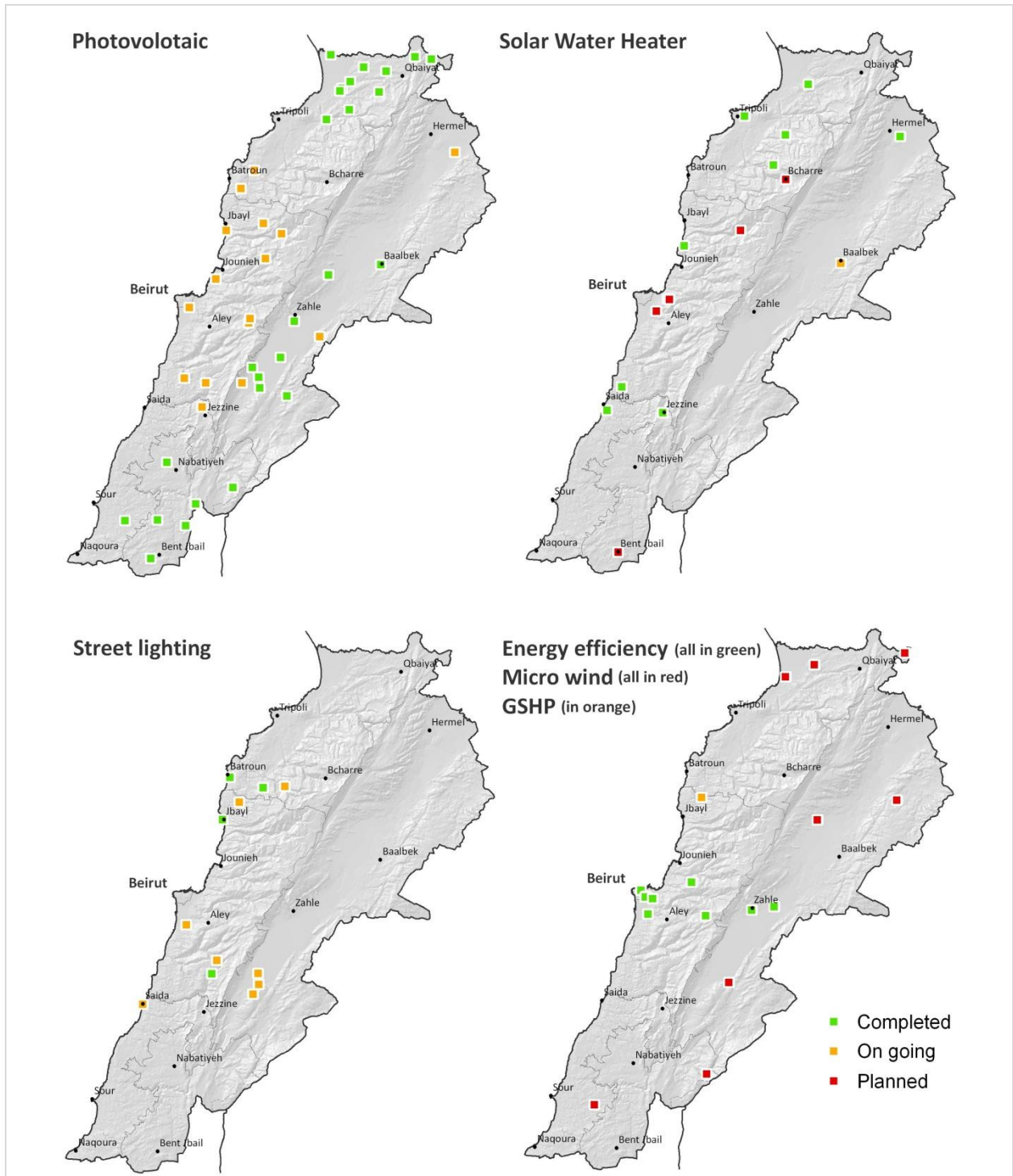
- ➔ Implementation of end-use energy efficiency and renewable energy applications for public sector buildings and facilities (60sites across Lebanon)
- ➔ Technology transfer to enable the conversion of other public sector buildings and facilities into energy efficient modalities

CEDRO 3

- ➔ Implementation of end-use energy efficiency and renewable energy applications for public sector buildings and facilities (60-80 sites across Lebanon)
- ➔ Technology transfer to enable the conversion of other public sector buildings and facilities into energy efficient modalities
- ➔ Research and development to enable the formulation of a national sustainable energy strategy and action plan

Annex 1. Map of CEDRO's installations

Distribution MAP of CEDRO's installation



Annex 1.1. CEDRO implemented LED Street lighting sites in 2011

Table A1.1. LED Street Lighting to be implemented in 2011

| Village name

| Area

1	Ghalboun	Mount Lebanon
2	Kfour Aarbeh	Mount Lebanon
3	Saida	South
4	Shoueifat	Aley
5	Kfarnabrakh	Chouf
6	Jeb Jennine	Bekaa
7	Lala	Bekaa
8	Tell Znoub	Bekaa

Annex 2. Madinati Khardra competition application form

Please send this application by email or fax to the following address, before September 30, 2011

Tel/Fax: +961-1-981944
E :
jessica.obeid@undp-lebprojects.org

UNDP CEDRO project
Beirut, Maarad Street,
Building 287 B

Application Form

CEDRO | Country Energy Efficiency and Renewable Energy
CEDRO, with energy efficiency on our mind Demonstration Project for the Recovery of Lebanon



The Minister of Municipal Affairs in the Youth Shadow Government 5, Jessica Obeid, through “Madinati Khadra” Competition, in collaboration with UNDP- CEDRO project, is pleased to invite all Lebanese Municipalities to submit a Renewable Energy or Energy Efficiency project proposal before September 30, 2011 at 4:00pm for a chance to win one of 3 project implementation prizes of 40,000\$ each.

To enter “Madinati Khadra” competition, please fill the application below and submit it with the following documents:

- Certificate of ownership of the building (*if the project is to be implemented in a building, than the latter should be public- owned*)
- Letter of authorization signed by the council of the corresponding municipality
- Detailed description of the project (*as specified below*)

The municipality should have a bank account for the municipality (*bank accounts for municipality members will not be approved*)

Please note that members of “CEDRO” project and Youth Shadow Government are contributors to the competition, and therefore, are not eligible applicants. In addition, only one project submittal is allowed per municipality.

Reference	Name of Municipality	
	Address	
	Name of Municipality's President	

	Telephone/ Fax of Municipality		Email:
	Name of Applicant		
	Relationship to Municipality		
	Telephone/ Fax of Applicant		Email:

Project	Type of Natural Resource	
	Renewable Energy or Energy Efficiency Technology Used	
	Project Location	Location: GPS coordinates:
	Project Description	1. Introduction 2. Objectives 3. Project Details 4. Cost breakdown <i>(please attach it to this application)</i>
	Replication	<input type="checkbox"/> This project is replicable in all Lebanese regions <input type="checkbox"/> This project is replicable in most Lebanese regions <input type="checkbox"/> This project is replicable in nearby locations <input type="checkbox"/> This project is not replicable
	Percentage of Energy Saving	-----%
	Potential Saving in Energy Consumption	----- kWh
	Potential Saving in Greenhouse Gas Emissions	----- CO2/ kWh
	Pay-back Period	----- years
	Innovation and Creativity	Innovation in the implementation of an idea or a new project in the region: <input type="checkbox"/> Technology is cost- effective <input type="checkbox"/> Advanced and innovative technology <input type="checkbox"/> Specified financing mechanisms <input type="checkbox"/> Technology leads to a change in behavior for users <input type="checkbox"/> Innovative way to use technology for capacity building

	Project Risks	<p>What are the potential risks to the successful implementation of the project?</p> <p>What is the proposed risk mitigation strategy?</p>
	Sustainability	<p>To what extent does the project address the organizational capacity?</p> <p>To what extent does the project get local support?</p> <p>What's the environmental impact of the project?</p> <p>Commitment of the municipal beneficiary to repeat and maintain the project?</p>
	Capacity building	To what extent does the project increase awareness on alternative energy?
	Maintenance	
	Contribution	Potential in-kind contribution**

Remarks	Please indicate any other comments
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**in-kind contributions: contributions that are done in goods and services rather than money

Signature of Applicant ----- Date-----

Signature of Municipality's President ----- Date-----
