Project Summary

Project Background
The United Nations Development Programme, in partnership with the Ministry of Energy and Water, the Ministry of Finance and the Council for Development and Reconstruction, has initiated in October 2007 the CEDRO project (country energy efficiency and renewable energy demonstration project for the recovery of Lebanon) which is funded through the Lebanon Recovery Fund by means of a grant from the Government of Spain.

The CEDRO project aims at supporting the greening of Lebanon's recovery, reform and reconstruction activities through the implementation and activation of end-use energy efficiency (EE) and renewable energy (RE) applications.

The project worked on three levels:
- the implementation of model end-use EE and RE demonstration projects for public sector buildings and facilities,
- the set up of an enabling environment for the conversion of other public sector buildings and facilities into energy efficient modalities, and
- the assistance in the development of a national sustainable energy strategy and action plan.

Project Objectives
As part of the CEDRO III’s objective, "assistance in the development of a national sustainable energy strategy and action plan", a hydropower assessment should be conducted to determine the technical and economic feasibility of the upgrade potential of 5 current hydro-power plants in Lebanon (which have a total potential of redeeming approximately 18-20 MW from rehabilitation) and accordingly, develop the bidding specifications for implementation of the upgrades.

Project Activities
The Consultant was responsible for carrying out all the necessary field work and investigations to compile information and data required for the upgrade of the 5 hydro-power plants.

Services Provided
- Literature review and data collection: compilation of related literature and best-practice including detailed approach to be followed for the current assignment.
- Inspection and field data collection: inspection of all 5 specified hydro-power plants in Lebanon, including the current state of their respective turbines, water flow conditions,
- Techno-economic upgrade assessment: assessment of the technical and economic status of current technologies in hydropower that may be optimally selected to replace the current outdated turbines, including their advantages and disadvantages, costs and benefits, environmental considerations, safety, risks, and other criteria.
- Upgrade specifications: preparation of tailored technical specifications for each identified turbine for each respective plant or unit within a plant, and preparation of draft terms of reference/specifications for each plant or unit within a plant separately.

Lebanon

Hydropower Assessment under the CEDRO Project

Client
United Nations Development Programme (UNDP) Lebanon

Duration
12/09/2011 - 11/03/2012

Personnel
• 1 internat. STE (3 PM, hydropower technology expert)