

## **Energy Dimension of Disaster Management** **Executive Summary of Study report**

**September 2006**

Disasters of one description or the other have been striking the world with an increased frequency over the recent years. Increase in natural disasters due to floods, cyclones, droughts and land slides are attributed to climate change, a direct consequence of increasing GHGs. The global population has now reconciled that they have to live with the natural disasters, and they have to learn to live with these disasters and find ways of mitigating adverse impacts. When compared to developed world, the impacts of Natural disasters have been more devastating in developing and the poor countries. Though the impact of Katrina demonstrated that the human life is as much at risk even in the developed countries, the fact remains that the human and economic loss due to natural disasters is much more pronounced in developing countries than in the developed world.

In India about 60% of the land mass is prone to earthquake of various intensities: over 40 million hectare land is prone to floods; about 8% of the total area is prone to cyclones; about 68% of the area is susceptible to droughts and the whole sub-Himalayan and Western Ghat is vulnerable to landslides.

Adverse impact of tsunami on the east coast of India resulted in unprecedented loss of human lives. Rescue and relief took long time in our coastal areas, especially the Andaman and Nicobar Islands, which brought forth the issue that many of the rescue as well as the relief operations suffered on account of scarcity of energy resources. This obviously caught the attention of the global energy community.

Realising that the energy dimension of disasters needs to be focused as a specialized subject, the Indian Member Committee of the World Energy Council launched a study in July 2005, to consider various steps necessary for effective preparedness mode. The aim of the study was decided to focus on energy issues as described below as:

- Documenting how the energy dimension of the relief effort was handled and what problems were encountered
- Drawing best practice conclusions for future reference
- Developing adequate preparedness

The objectives were decided as:

- To understand the energy needs during: (a) The first 24 hours; (b) The first week; and ©The first month.
- To identify required measures to improve energy management during disasters
- To develop strategies to fulfill the identified needs.

The biggest challenge was that being the pioneering study, the parameters had to be conceptualized to create a framework. The Key issues as finalized by the Expert Group for developing the report included the following:

- Role of energy crucial for disaster management
- Emergency energy support required for all services
- Importance of transportation and power in all phases
- Issues of mobilization of resources

- Importance of mock drills
- Need of unified command at organizational level
- Reliability and safety of energy use
- Guidelines for efficient use of scarce energy
- Energy needs to be identified in a site-specific nature

The draft report was presented at the executive assembly of WEC at Colombo in September 2005. This report was prepared more in the form of a Discussion Paper to seek opinions, comments and feedback from experts worldwide.

Thus, another one year's work was put in by the expert group. Inputs, feedback and views from different sources were analyzed. The cases of Mumbai floods, fire on the ONGC platform at Bombay High near Mumbai, J&K earthquake and the Katrina Hurricane were also considered for analysis of data.

The Study presents that the following issues be focused to ensure appropriate energy intervention in the disaster management cycle:

- Any approach for ensuring 'availability' and 'accessibility' of energy resource has to be carefully and strategically planned
- Observations from earthquake at Bhuj on the west coast of India and Tsunami on the east coast of India and other major disasters can be utilized and a number of inferences can be drawn that may suggest measures during preparedness phase, rescue and relief phase and rehabilitation phase
- Power, in forms usable for continuing day to day activities, can be made available immediately after a disaster by preparing a checklist of items that may be required in case of a disaster and ensuring that the spare parts for electrical installations are made available on site for rehabilitation of power supply system
- The checklist should also be prepared for storable liquid and gaseous fuels and their supply should be made available (items such as status of fuel supplies like kerosene, LPG, petrol and diesel)
- Detailed plans of transportation arrangement and the needed fuel supplies should be made and the same should be ensured by wing of the departments responsible for transport
- Availability of decentralized and local power generation facilities such as gensets should be ensured.
- Regular mock drill by the departments involved in power/fuel supply would help in quick response

Finally the recommendations of this report have been categorized broadly under the following six sub-heads.

- Defining 'Categories of Activities' for which energy is required
- Classifying 'Sources of Energy' appropriate for disaster management
- Listing Precautions to be taken in use of specific energy service
- Defining 'Institutional Arrangement' for adequate energy support in disaster and rescue network
- Establishing 'Linkage with International Relief Measures'
- Collaborating with bodies like WEC for 'Global Networking'