

LPG: A Primary Source of Energy in Disaster Relief



Natural disasters are a tragic reality. Earthquakes, tsunami, hurricanes, droughts and floods strike frequently and often with very little warning. Not only causing terrible devastation and loss of life but also life threatening disruption to power and energy networks.

This can directly affect hundreds of thousands of people who are often forced to seek temporary accommodation. These survivors need fuel for warmth and for cooking. The unique benefits of LPG mean that it can be transported, stored and used virtually anywhere and this exceptional energy offers swift solutions in times of emergency.

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1. LPG an Exceptional Energy

LPG has found to be invaluable in times of crisis. Recent natural disasters in Japan, Australia and New Zealand have demonstrated this. There are very distinct benefits of using LPG which help the many people affected by natural disasters making it a lifesaving solution. As a portable, efficient and safe fuel, LPG can be used for heating, cooking and refrigeration, with a minimum of equipment and, crucially, in any location.

Several recent cases have highlighted how LPG has helped disaster victims in both the developing and developed world. LPG was a primary source of support after the Japan earthquake and tsunami of 2011, the New Zealand earthquakes of 2010 and 2011, and more recently following the tragic earthquake in Nepal in 2015.

With over 200 members covering over 125 countries, the WLGPA is available and ready to help establish contact between aid agencies and the LPG industry whenever needed.

2. LPG Providing Relief to those Affected by Natural Disasters

When natural disasters strike, lifeline infrastructures are often damaged. Lifelines are highly interconnected and dependent on one another. For example, when the electricity supply is cut off, a local emergency communications network in the affected area due to a power cut can be disrupted.

Lifelines provide essential goods and services that support every home, business and social activity and disruption of the services has the potential to develop life-threatening situations.

Natural disasters can directly affect millions of people with the result that many are forced to seek temporary accommodation.

This often adversely affects women and children. The United Nations Refugee Agency (www.unhcr.org) alone helps millions of people each year. In the aftermath of these tragic events survivors need fuel for warmth and for cooking. They desperately need fresh water to survive and electricity to communicate with.

A disaster is a major ecological and psychosocial event that impairs social systems to the extent that society and its infrastructure breaks down. In a refugee camp environment, setting up community LPG kitchens can allow many people to prepare their meals with only very limited equipment. If LPG is available in the refugee camps electricity can be generated with gas engine generators. LPG is also suitable for institutional cooking in schools and hospitals.

Key Uses of LPG in Times of Disaster

- Boiling water
- Heating
- Refrigeration
- Fuelling temporary kitchens
- Power generation
- Powering wireless communications
- LPG-air (SNG) systems



Image shows Repsol's Emergency Kits

3. Why LPG Works in Disaster Situations

Centralised energy distribution networks are more prone to failure disasters. As an off-grid energy source, LPG is a peerless fuel in times of hardship. LPG can be moved easily to the suffering areas, it effectively and completely supports the primary needs of the affected population and fully supports emergency and recovery backup activities and systems.

What are the key benefits of LPG?

Portable

LPG can be transported, stored and used virtually anywhere in the world. It does not require a fixed network and its energy content does not deteriorate over time. Thanks to the portability of LPG, facilities using the fuel can promptly recover from disasters and this same portability means that evacuation services can be easily provided with an efficient energy. The portability of LPG can also help prevent secondary disasters, since grid or pipeline infrastructures are susceptible to fire if they become damaged in the event of an earthquake, hurricane, or flood. LPG cylinders can be transported by helicopter in case road transportation is not possible.

Safe

Compared to other fuels, LPG has an excellent safety record when handled properly. It is also non-toxic and burns cleaner than traditional fuels.

Clean

LPG is very clean burning and has lower greenhouse gas emissions than any other fossil fuel when measured on a total fuel cycle. Originating mainly from natural gas production, it is also non-toxic and will not contaminate soil or aquifers in the event of a leak.



Image shows the collapsed Christchurch Cathedral, New Zealand

Accessible

LPG can be accessible to everyone everywhere today without major infrastructure investment and particularly when the infrastructure has been destroyed. Effort and investment to restore the LPG infrastructures can be comparatively easy and inexpensive. Nothing needs to be invented and there are enough reserves to last many decades.

Versatile

LPG is versatile source of energy. LPG can generate electricity using a portable generator in addition to providing heat and light. By mixing LPG with air synthetic natural gas (SNG) can provide a substitute to natural gas to keep supply lines open, feeding natural gas appliances in areas where the natural gas supply network is broken. Gasoline and diesel supply lines may be cut but Autogas vehicles can transport emergency.

Efficient

LPG is cost-effective, since a high proportion of its energy content is converted into heat. Even though it too is an open-flame fuel, LPG can be up to five times more efficient than traditional fuels such as wood.



Image shows the power of the Japanese tsunami in 2011

Hurricane Katrina, USA 2005

Even though Hurricane Katrina struck some ten years ago this remains as one of the most tragic hurricanes in recent history. Hurricane Katrina caused catastrophic damage along the coastlines of Louisiana, Mississippi and Alabama and is one of the worst hurricanes ever to have struck the USA. In the wake of Hurricane Katrina, LPG was used for cooking, heating, refrigeration and to boil drinking water in the 122,000 temporary housing caravans set up for evacuees. Power companies used LPG to run generators and it also ran forklifts and provided laundry services.



Image shows the aftermath of Hurricane Katrina



Image shows residents of Christchurch waiting to fill their LPG cylinders after the earthquake of 2011

4. Read More

WLPGA has produced a suite of case studies on specific natural disaster recovery. The following stories can be downloaded freely from the WLPGA website www.wlpga.org:

- Elgas Helicopter Story
- Repsol Emergency Kits
- Japan Tsunami Rescue
- New Zealand Earthquake Rescue

5. The World LPG Association

The World LPG Association (WLPGA) is the global voice of the LPG industry. The primary goal of the association is to add value to the sector by driving premium demand for LPG, while also promoting compliance to good business and safety practices. The WLPGA brings together private and public companies involved in one, several or all activities of the industry ; develops long-term partnerships with international organisations ; and implements projects on local and global scales.

6. Acknowledgements

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