

EZPack Portable Water Storage & Distribution System (PWSDS)
For Refugee Camps

Introduction

In today's worlds, with disasters and civil wars the number of refugees is constantly increasing and so is the need to supply drinking water to the refugees.

Very often the drinking water supply is functioning partially (or not at all) and/or also water is contaminated. Water crisis and emergencies can also occur due to:

- Poisoning of the water; sabotage of water facilities
- Vandalism and prohibited entrance
- System malfunction

People can survive days without food, but only hours without water. Lack of drinking water needs to be addressed immediately, and it is one of the first issues authorities need to deal with in any disaster or emergency. Water needs to be supplied to the population and to the first responders and rescue teams.

Water Emergency Guidelines – The Israel Experience

Based on extensive experience of dealing with emergency situations, the Israel Water Authority has developed the following guidelines for water crises:

- The system should be based on portable water storage distribution systems, which can be easily and quickly deployed.
- The water distribution station should be arranged so an individual will not have to walk more than 400 meters (450 yards) to get water.
- Crises duration expected to last up to 10 days (until normal water supply is renewed).
- Minimum drinking water per day per person is 4 liters (1 gallon water).

Based on those guidelines EZPack Water has developed its Portable Water Storage & Distribution System (PWSDS).

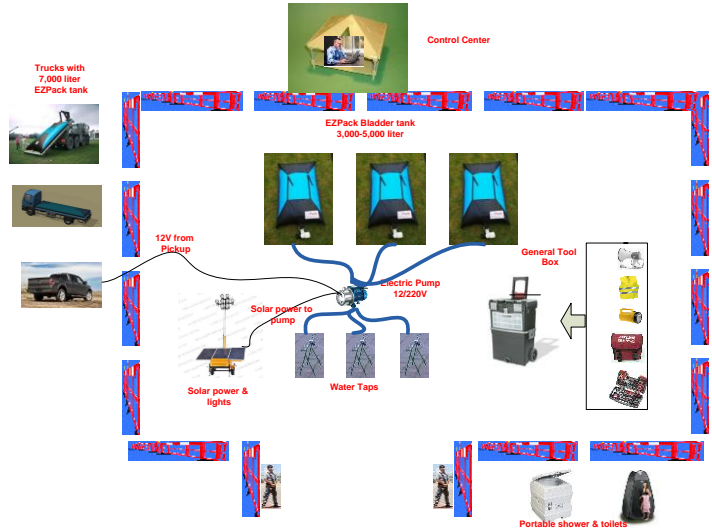
PWSDS Description

Based on the above assumptions, EZPack the PWSDS – Portable Water Storage & Distribution System – for refugee camps. The PWSDS is built on LEGO concept – a building block for 10,000 refugees is defined; the number of blocks used is according to the actual number of refugees. The EZPack PWSDS building block for 10,000 refugees is:

1. Main water reservoir:
 - a. Based on 10,000 liter EZPack bladders.
 - b. Based on 4 liter per day, and water supply every three days, a total capacity of 120,000 liters (or 12 bladders of 10,000 liters).
 - c. Isolated location (out of the camp) with easy access to water trucks.
 - d. Water Purification system if needed.
 - e. Pumps and piping.

2. Distribution Station:

- a. Capacity of 2000 – 4000 liter.
- b. Based on 2000 liter bladders.
- c. Each station can serve 1000 people.
- d. Total number of stations per building block is 10.



3. Piping and Pumping:

- a. Regular irrigation pipes between the main water reservoir and the stations.
- b. Ideally, the location should be planned in a way that will allow the water distribution by gravity.
- c. If this is not possible, pumping units can be integrated.

4. Flexup – Personal Water Bag:

- a. FLEXUPTM is a collapsible, 4 to 6 L (1 to 1.5 gallon) container having near-zero volume when empty. This allows efficient storing and forwarding in massive quantities.
- b. FLEXUPsTM occupy at least 20 times less storage place than rigid container. One truck can carry as much as 120,000 FLEXUPsTM to emergency area, enough to distribute 480,000 L of water.
- c. The similar capacity would require at least 20 trucks to deliver 4L plastic rigid containers or bottles. Besides the effective aspects on storing and transportation, that's also a substantial relief on the infrastructure.
- d. The FLEXUPTM is the optimal method for personal use, and it is used by individuals to carry water.



The main advantages

- EZPack water storage and distribution system is a comprehensive water solution for refugee camps following emergency and disaster situations. It includes an advanced water bladder, with the integral food-graded inner layer, equipped with all the required accessories.
- The system is easy to operate and compact to store, and can be assembled very quickly.
- The EZPack water bladder provides clean and fresh water in any environment. The proprietary food-graded inner layer keeps the water fresh and at drinking condition for many months.
- The PWSDS requires very small area for storage; can be transported easily on any vehicle – pickup, truck, trailer, etc. and can be placed directly on any type of ground (rocky, mud, etc.).
- Water can be delivered by gravitation, or by using manual or electrical pump.
- The PWSDS provide solution for storing water (large and small volume), water distribution. And water transport.
- The system is easy to operate.
- Compact to store and can be assembled very quickly;
- No maintenance is required.

- The EZPack system includes all the accessories required for operation.

EZPack Water Tanker Module for Flatbed Trucks

Water transportation heavily relies on a fleet of tankers and water trailers. Owning such a fleet is both expensive with significant maintenance cost attached to it. There is no alternative use for water tanker, and therefore tankers fleet is designed based on the level of average water consumption and budget constraints. There is no way to respond to peak demand or sudden emergency needs and convert standard trucks to tankers without considerable investment in money and time.

EZPack offers a relatively simple solution that transforms regular flatbed truck to water tanker – the F3DPack. The company developed a module that allows easy conversion of flatbed truck (or trailer) into a tanker. Within less than two hours a team of two persons can transfer a truck or trailer into a water tanker. No heavy tools are required.



The F3DPack Models

Model	Description
F3DPack-12-MV	Double decker water storage module for standard flat-bed truck with all accessories and parts – manual bladders valves. Total water volume – 14,000 liters Total weight with full bladders – 14,400 Kg.
F3DPack-12-EV	Double decker water storage module for standard flat-bed truck with all accessories and parts – electric bladders valves. Total water volume – 14,000 liters. Total weight with full bladders – 14,400 Kg.
F3DPack-28-MV	Double decker water storage module for semi-trailer flat-bed truck or standard flat-bed truck with trailer, with all accessories and parts – manual bladders valves. Total water volume – 28,000 liters Total weight with full bladders – 29,800 Kg
F3DPack-28-EV	Double decker water storage module for semi-trailer flat-bed truck or standard flat-bed truck with trailer, with all accessories and parts – electric bladders valves. Total water volume – 28,000 liters Total weight with full bladders – 28,800 Kg