TATA POWER

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COVER STORY 1

Water: Every drop counts!


Mr. Mukesh Singh

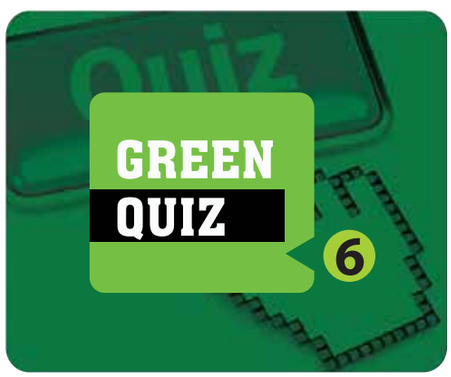

Mr. Ajay Ram


Mr. Pawan Kumar


Mr. Nandkishor Dahule


Mr. Z.H. Mulani


Mr. Kandapandy K.



A TATA POWER initiative
Greenolution
Powering A Greener World

W www.greenolution.co.in
B www.tatapowergreenolution.blogspot.in
E greenolution@tatapower.com

Lighting up Lives!

COVER STORY

Water: Every drop counts!

1. WATER – STATS & IMPORTANCE OF CONSERVATION

Water conservation includes policies, strategies and activities to manage fresh water as a sustainable resource, to protect the water environment, and to meet current and future human demand. Population, household size and growth and affluence all affect how much water is used. Factors such as climate change will increase pressures on natural water resources especially in manufacturing and agricultural irrigation.

The goals of water conservation efforts include as follows:

To ensure availability for future generations, the withdrawal of fresh water from an ecosystem should not exceed its natural replacement rate.

- **Energy conservation** - Water pumping, delivery and waste water treatment facilities consume a significant amount of energy. In some regions of the world over 15% of total electricity consumption is devoted to water management.

- **Habitat conservation** - Minimizing human water use helps to preserve fresh water habitats for local wildlife and migrating waterfowl, as well as reducing the need to build new dams and other water diversion infrastructures.

According to the World Health Organization (WHO) of the United Nations, people have a minimum water requirement of about 5 gal (20 l) per person per day. This is the minimum amount needed for physiological rehydration, cooking, washing, and other subsistence requirements. However, the WHO estimates that nearly two billion people consume contaminated water. This carries a significant risk of developing such water-borne diseases as cholera, dysentery, polio, or typhoid, which kill about 25 million people per year. Both conservation and sanitation are obvious necessities in meeting the huge demand for freshwater.

Because irrigation accounts for 70% of the water used by humans worldwide, achieving a better efficiency of agricultural use is a logical step in advancing water conservation. This can be accomplished by lining water delivery systems with concrete or other impervious materials to minimize loss by leaking during transport, and by using drip-irrigation systems to minimize losses by evaporation. Drip-irrigation systems have been successfully used on fruit trees, certain row-crops, and horticultural plants. Conservation can also be accomplished by improving the efficiency of utilization of water by crops, including the cultivation of plants that are less demanding of moisture.

Another way to conserve the freshwater supply is to desalinize seawater. Desalinization is the removal of salts and other impurities from seawater by either distillation or reverse osmosis (RO), and this method is being increasingly used to provide high-quality water for drinking, cooking, and other domestic uses. In 2004, the world production of desalinated water was at least 40 billion gallons per day (150 billion liters), most of which was produced in Saudi Arabia and other nations of the Gulf of Arabia, where energy costs are relatively low (the cost of desalinated water is highly sensitive to the cost of

COVER STORY

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energy). The largest desalination plant in the world (Shoaiba Desalination Plant) is located in Saudi Arabia, and it uses reverse osmosis to produce half of its country's drinking water. Saudi Arabia is the largest producer of desalinated water in the world with desalination providing 70% of the country's drinking water. Desalinization is also practiced in California and Florida, where the cost is about three dollars per thousand gallons, which is four to five times the cost paid for domestic water by typical urban consumers in the United States, and more than 100 times the cost paid by farmers for water for irrigation. The process is also gaining popularity in Spain, Australia, and China.

2. TIPS FOR CONSERVING WATER IN DAY-TO-DAY LIFE

- All of those flushes can add up to nearly 20 gallons a day down the toilet. If you still have a standard toilet, which uses close to 3.5 gallons a flush, you can save by retrofitting or filling your tank with something that will displace some of that water, such as a brick
- Nearly 22% of indoor home water use comes from doing laundry. Save water by making sure to adjust the settings on your machine to the proper load size
- Check all faucets, pipes and toilets for leaks.
- Install water saving showerheads and ultra-low-flush toilets.
- Take shorter showers.
- Never use your toilet as a wastebasket.
- Turn off the water while brushing your teeth or shaving.
- Defrost frozen food in the refrigerator.
- Rinse vegetables in a full sink or pan of water.
- Fully load your dishwasher.
- Rinse dishes in a full sink or pan of water.
- Wash full loads of clothes.

COVER STORY

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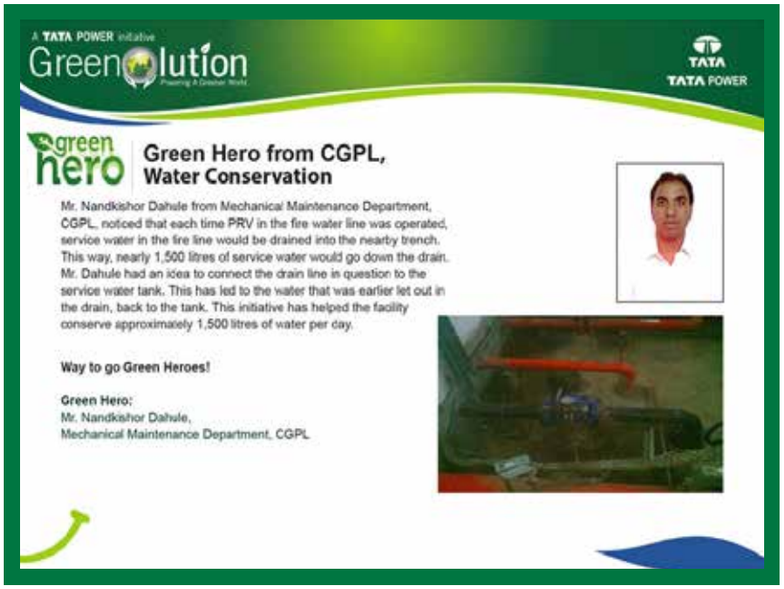
3. WATER CONSERVATION @TATA POWER – SHINING EXAMPLES!

Converting waste water into a resource!

Recycle & Reuse - The Green Mantra

CGPL, Water Conservation



Creating magic out of waste!

- If all of the water vapor in the Earth's atmosphere fell at once, distributed evenly, it would only cover the earth with about an inch of water.
- Only 3% of Earth's water is fresh water. 97% of the water on Earth is salt water.
- The water found at the Earth's surface in lakes, rivers, streams, ponds, and swamps makes up only 0.3% of the world's fresh water.
- 68.7% of the fresh water on Earth is trapped in glaciers; 30% is in the ground.
- 1.7% of the world's water is frozen and therefore unusable.
- Water can dissolve more substances than any other liquid including sulfuric acid.
- There is more fresh water in the atmosphere than in all of the rivers on the planet combined.
- Residents of sub-Saharan Africa use only 2-5 gallons of water per day.
- The average faucet flows at a rate of 2 gallons per minute. You can save up to four gallons of water every morning by turning off the faucet while you brush your teeth.
- Taking a bath requires up to 70 gallons of water. A five-minute shower uses only 10 to 25 gallons.
- At 1 drip per second, a faucet can leak 3,000 gallons per year.
- Water makes up between 55-78% of a human's body weight.

NATURE VERSES

Yeh Swachhata Swachhata Kya Hai?
Swachhata, Prakruti ka Aabhushan Hai!!

Bimari ka jad hai Aswachhata;
Bahut hi accha, har pal Swachhata.

Hamari Raksha Karte Hain, Desh ke Jawaan;
Kya hum nahi kar sakte, Paryawaran ka Maan?

Pyar se kare, Gandhagi ki Burai;
Dil se kare, Aas Paas ki Safai.

Ghar Ghar mey ho, Safai ka Misaal;
Kabhi na ho, Iss Duniya ka Bura Haal.

Swasth Sharir aur Swachh Mann;
Zindagi ka Sabse Bada Dhan.

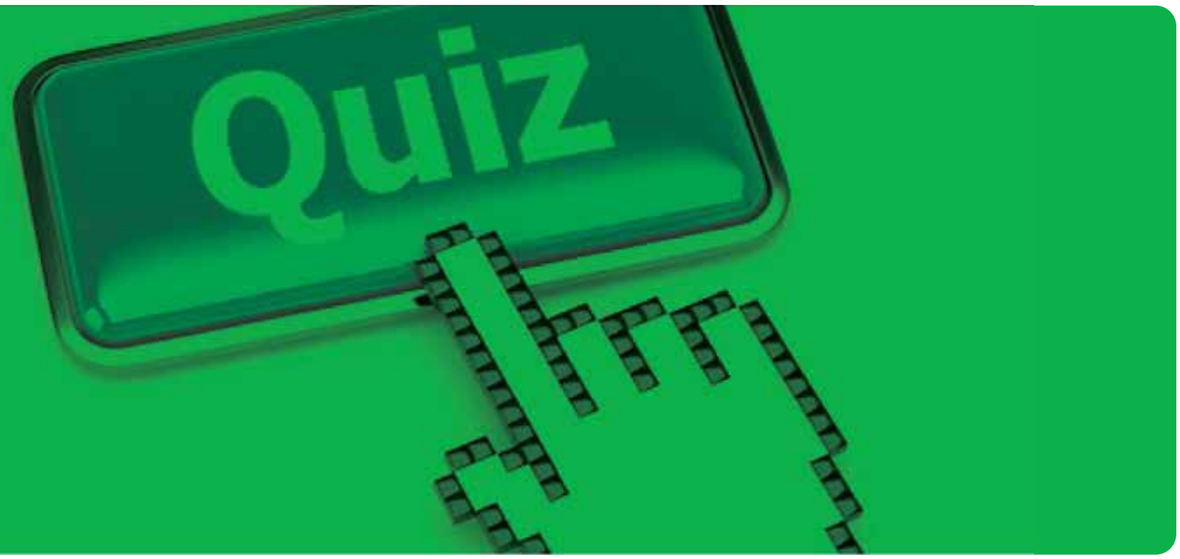
Roti, Kapda aur Makaan;
Swachh Duniya ka Amulya Daan.

Yeh Pahad, Samundar , Nadiyan aur Haryali ka Sach;
Kudrat ka Karishma hai, Seekhate hai Hamen Rehne ko Har Pal Swachh.

Shram Daan aur Gyan Daan poore karte hai Dhan ka Daan;
India ka har Nagrikh ko Mile Swachhta, Swaasth, Suraksha aur Sanmaan.

Ashok Rao, Lead Engineer - O & M Training
Dharavi

GREEN QUIZ



1 Nimbus, cumulus and stratus are types of what?

A. Clouds
B. Chemicals
C. Water bodies
D. None of the above

2 True or False: Water is easy to compress.

A. True
B. False

3 When water is cooled, does it contract or expand?

A. Contract
B. Expand

4 Pure water has a pH level of a around what number?

A. 7
B. 9
C. 12
D. 15

To know the winner for last issue

visit ***www.greenolution.com***

GREEN CLICK

Amaresh Kasalkar, CENTEC

Avishek Saha, Operations, CGPL

Prabhakar Kale, Khopoli Generating Station

Anuradha Shetty, Corporate Communications, Bombay House