



# dynamic

ENERGY & WATER SOLUTIONS

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# Raffles International School

## **Bottled Drinking Water & Recycling**





# Presentation Outline

- ❑ Who is Bassem?
- ❑ Did You Know?
- ❑ Why Should We Care?
- ❑ The 3 R's: Reduce, Re-use, Recycle
- ❑ How Recycling Helps
- ❑ Recycling Plastic Bottles
- ❑ What Can You Do?
- ❑ What Else Can You Do?



# Who is Bassem?

- Have my own company called DEWS
- Solar energy, Water treatment, Energy conservation
- When I was your age, solid waste was a much smaller problem and recycling *hardly* mattered
- Now, I like to talk about the issue and maybe help others reduce waste and our Carbon footprint

***Making a difference and feeling  
good about it***



# Did you know?

## Fresh Water

- ✓ More than 97% of all water on Earth is salt water
- ✓ That leaves less than 3% fresh water
- ✓ But 70% of that fresh water is frozen
- ✓ ***Less than 1%*** of all water on Earth is fit for all living things (except sea life), which includes human use and consumption!!

***Fresh water is very rare and must be conserved***





# Did you know?

## Plastic

- ✓ Plastic is made from oil
- ✓ While most plastics used to make bottles are recyclable, most of the time they are not recycled
- ✓ To fill a 1-liter bottle, as much as 3 liters of water are consumed
- ✓ Transporting bottles to/from your home or school consumes fuel
- ✓ Plastic bottles dumped in a landfill take up lots of space and can also take as long as 1,000 years to completely degrade
- ✓ If incinerated, trash again consumes energy (burning oil or gas)

***Bottled water has a BIG environmental impact***



# Why should we care?

Here are some more interesting stats from the U.S.:

- 8 out of 10 plastic bottles end up in a landfill (not recycled or incinerated).
- Only about 20-30% of plastic bottles are recycled, higher in some states than others.
- Less than 1 percent of all plastics is actually recycled.
- It is estimated that the production of plastics accounts for 4% of total U.S. energy consumption.
- Producing new plastic products from recycled materials uses approx. 67% less energy than required to make products from raw (virgin) materials.
- It takes approx. 2,000 times more energy to produce bottled water than tap water.

*Sources: Container Recycling Institute, International Bottled Water Association, Environmental Working Group, The Economist, others.*



# Why should we care?

(*cont'd.*)



Number of beverage cans and bottles that have  
been landfilled, littered and incinerated  
in the U.S. so far this year: **11,050,590,228**

As of February 1, 2012 @ 8:10 a.m. (local U.A.E. time)

That's more than **350 Million** containers a day  
... almost 15 million containers **per hour** !!!

U.A.E. equivalent... more than **5 Million** a day





**That's a lot of plastic !! ... & that's just the U.S.**

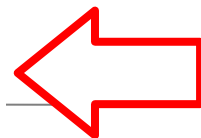
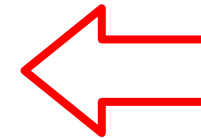
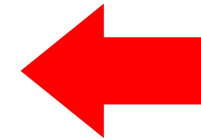


*But that's in America, so ...*

# Why should we care?

GLOBAL BOTTLED WATER MARKET			
Per Capita Consumption by Leading Countries			
2004 – 2009			
2009		Gallons Per Capita	
Rank	Countries	2004	2009
1	Mexico	44.5	61.9
2	Italy	48.5	50.7
3	United Arab Emirates	27.9	40.1
4	Belgium-Luxembourg	39.1	36.7
5	Germany	33.0	34.5
6	France	37.4	33.8
7	Lebanon	26.8	31.8
8	Spain	36.1	31.4
9	Hungary	20.1	29.3
10	United States	23.2	27.6
11	Slovenia	21.2	27.1
12	Thailand	20.2	26.4
13	Saudi Arabia	23.2	26.4
14	Switzerland	26.3	26.0
15	Croatia	18.1	25.6
16	Qatar	20.6	25.5
17	Cyprus	24.3	24.5
18	Austria	21.7	23.5
19	Czech Republic	23.0	23.3
20	Hong Kong	15.4	21.9
	GLOBAL AVERAGE	6.4	7.9
Source: Beverage Marketing Corporation			

That's **5 times** the  
global average  
& 50% more  
than the U.S. !!





# More reasons why we should care...

At many homes and offices in the U.A.E., drinking water is supplied in re-usable hard plastic bottles made from Polycarbonate (PCB), also known as Lexan.®



While the water is treated and tested to make sure it's safe and good for you, just remember that there are some health and hygiene factors or risks associated with the use of water coolers with 5-gallon refillable bottles (or smaller disposable bottles), the regular handling and replacing of bottles, possible contamination, etc.





# The 3 R's: Reduce, Reuse, Recycle



You've all heard this catchy phrase. The last R, ***Recycling***, tends to get all the credit.

However, ***Reducing*** and ***Reusing*** are even more important.

If you can reduce the materials you consume you will not only create less waste, you also won't need to worry about what to do with all the things that you buy when you are done with them.

Reuse is a great way to make the most of the things that you do buy.

Once you no longer need or want something, pass it on! **One kid's trash is another kid's treasure.**



# How recycling helps



- If everyone on Earth used as much "stuff" as people do in the U.S., there would need to be three to five times more space on Earth just to hold and sustain everybody.
- The 40 billion soft drink cans and bottles thrown away in America every year, if placed end to end, would reach the moon and back nearly 20 times.
- Producing new plastic products from recycled material uses approx. 67% less energy than required to make products from raw (new) materials
- Recycling a single plastic bottle can conserve enough energy to light a 60-watt light bulb for up to six hours
- Every glass bottle recycled saves enough energy to light a 100-watt bulb for 4 hours.
- Recycling an aluminum soda can saves 96% of the energy used to make a can from ore, and produces 95% less air pollution and 97% less water pollution

Sources: *The Green Guide for Kids* <http://greenguideforkids.blogspot.com>



# How recycling helps



- If everyone on Earth used as much "stuff" as people do in the U.S., there would need to be 4.5 Earths just to hold and sustain it.
- The 40 billion soft drink cans used every year, if placed end to end, would nearly 20 times.
- Producing new plastic products uses approx. 67% less energy than raw (new) materials
- Recycling a single plastic bottle can light a 60-watt light bulb for 4 hours.
- Every glass bottle recycled saves 3 watt bulb for 4 hours.
- Recycling an aluminum soda can to make a can from ore, and prevents 97% less water pollution



Sources: *The Green Guide for Kids* <http://greenguideforkids.blogspot.com>





# Recycling plastic bottles

There are three types of recyclable plastic bottles. They are all recycled separately:

## PET Bottles



PET bottles have this symbol on the side or on the bottom:

## HDPE Bottles



HDPE bottles have this symbol:

## PVC Bottles



PVC bottles have this symbol:



Sources: Ollie Recycles [www.olierecycles.com/uk](http://www.olierecycles.com/uk) [www.recyclelogos.org/](http://www.recyclelogos.org/)



# What can you do?

You can do quite a lot actually !!

- *Always* **Reduce, Re-use, Recycle**
- Buy & bring a re-usable / refillable bottle to school every day
- Switch to a ***bottle-free*** dispenser at home
- But when you have to buy bottled water:
  - ✓ Always choose local water from the closest source... saves a lot of fuel (also saves you money)
  - ✓ Choose recyclable plastic (Code 1, 2, or 3) whenever available
  - ✓ And of course... *Re-use & Recycle* the empty bottles

***Please spread the word and tell your parents, brothers and sisters what you learned today***





# What else can you do?

**Become an active and informed *3R-er* ... here are just a few resources to help you:**

The Story of Bottled Water

<http://storyofstuff.org/bottledwater/>

Water.org

<http://www.water.org>

Container Recycling Institute

<http://container-recycling.org>

The Pacific Institute

<http://pacinst.org>



# What else can you do?

## Want to Become a “Young RRR Champion” ?

- Sign a pledge to Reduce / Re-Use / Recycle
- Get a Membership Card & T-shirt
- Live the pledge by:
  - Using less water !! (you don't have to drink less)
  - Get a Re-usable bottle & use it !!
  - Recycle empty PET bottles, glass bottles, cans, & other recyclable material
- Ask your friends & family to join the campaign
- Have fun !!



**What else can you do?**








**I'd Like to Hear Your Ideas**





# Appendix 1

## Plastic Types & Recycling Codes

 <b>PETE</b>	<b>Polyethylene Terephthalate Ethylene</b>  PETE goes into soft drink, juice, water, detergent, and cleaner bottles. Also used for cooking and peanut butter jars.	 <b>PP</b>	<b>Polypropylene</b>  PP goes into caps, disks, syrup bottles, yogurt tubs, straws, and film packaging.
 <b>HDPE</b>	<b>High Density Polyethylene</b>  High Density Polyethylene HDPE goes into milk and water jugs, bleach bottles, detergent bottles, shampoo bottles, plastic bags and grocery sacks, motor oil bottles, household cleaners, and butter tubs.	 <b>PS</b>	<b>Polystyrene</b>  PS goes into meat trays, egg cartons, plates, cutlery, carry-out containers, and clear trays.
 <b>PVC</b>	<b>Polyvinyl Chloride</b>  PVC goes into window cleaner, cooking oils, and detergent bottles. Also used for peanut butter jars and water jugs.	 <b>OTHER</b>	<b>Other</b>  Includes resins not mentioned above or combinations of plastics.
 <b>LDPE</b>	<b>Low Density Polyethylene</b>  LDPE goes into plastic bags and grocery sacks, dry cleaning bags, flexible film packaging, and some bottles.		





# About DEWS

- **Dynamic Energy & Water Solutions (DEWS)** is a licensed *Enpark Free Zone* company based in Dubai.
- We are a future-looking company that has the will and desire to advance the use of solar energy and water purification / recycling, not only because they are essential ingredients of a *Greener*, more sustainable environment, but also out of conviction that they can provide all participants with better living conditions and meaningful work in the process.
- Our unique value proposition is providing products, turn-key solutions and other services to *underserved niches with special needs* – new solar and renewable energy technology / applications, solar to water, solar cooling, water purification, re-use & recycling, drinking water dispensers, equipment sale & rental / leasing, project advisory services & execution support.
- DEWS caters to the needs of a number of target market segments in the Middle East & North Africa, offering innovative products & services to a variety of sectors, including commercial, residential, industrial, utilities, marine, oil & gas.
- DEWS markets and sells technology-based products of high quality and unique function or features supplied by reputable vendors / manufacturers.

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