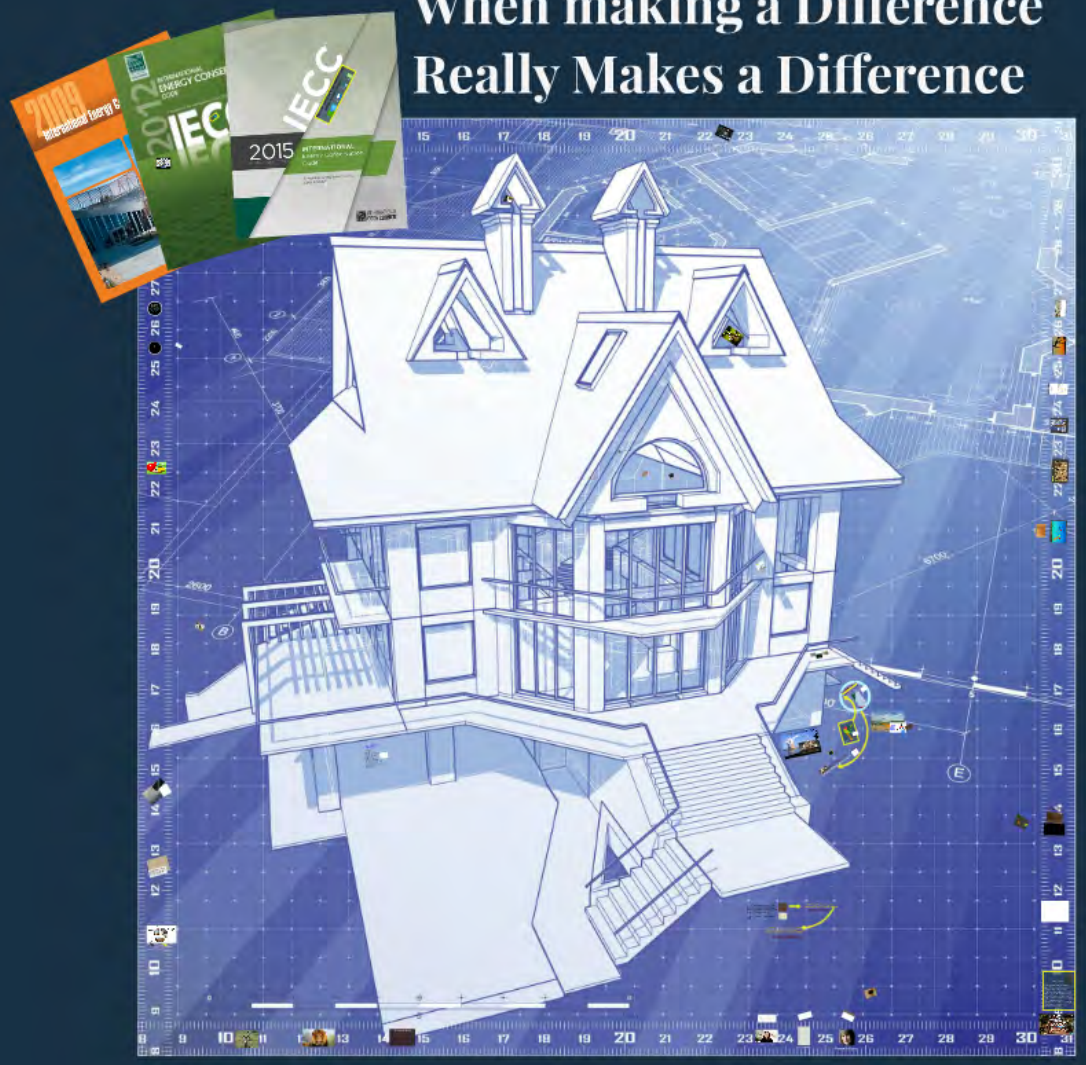
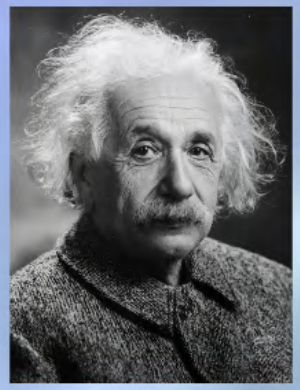
When making a Difference Really Makes a Difference



When making a Difference Really Makes a Difference



“Try not to become a man of success. Rather become a man of value.”

-Albert Einstein

Annie Leonard

THE STORY OF STUFF PROJECT

ABOUT RESOURCES GET INVOLVED BLOG DONATE

What's Your Type?

Change comes in all sorts of forms, and so do changemakers! Take this personality quiz to find out where you fit in to the Story of Change!

TAKE THE QUIZ!

From a Movie to a Movement

We have a problem with Stuff. We use too much, too much of it is toxic and we don't share it very well. But that's not the way things have to be. Together, we can build a society based on better not more, sharing not selfishness, community not division.

Clarence Ditlow

Contact CAS | About CAS | Privacy Policy | Search

The Center for Auto Safety

CAS Campaigns | Lemon Laws | Complaints | Fuel Economy | Lawyers & Experts | Media | Support CAS

Latest News

NHTSA Urged to Warn Parents of Seat Back Failure Dangers to Children in Rear Seats

March 9, 2016 (202) 328-7700 The Center for Auto Safety (CAS) today petitioned the National ...

Read More »

- CAS Sues Transportation Secretary Foxx For Violating Safety Act Mandate to Post Dealer Technical Service Bulletins & Index on DOT Website
- Volkswagen Emissions Defeat Devices Violate EPA Emissions Rules
- CAS Statement on GM Criminal Settlement with Justice Department
- CAS Statement on DOT and Automakers Commitment to Automatic Emergency Braking
- TIPM Class Action Settlement Approved With Rental Car & Full Repair Reimbursment
- Takata Airbag Homepage
- General Motors Ignition Switch Recalls Homepage

Learn everything about your car in moments.

Select a Make

Select a Model

Select a Year

Go!

Recalls, Service Bulletins, Complaints & More

Support CAS

Make a Donation

Wenonah Hauter

Don't let Monsanto ban GMO labels.

What Are We Up Against?

Explore all problems

Broken Democracy

Moneyed interests like the Koch Brothers have too much influence over government officials who are supposed to serve the public good – not corporate profits.

Corporate Control

A handful of powerful corporations like Monsanto make most of the decisions that affect the food we eat and the water we drink.

Profit Over People

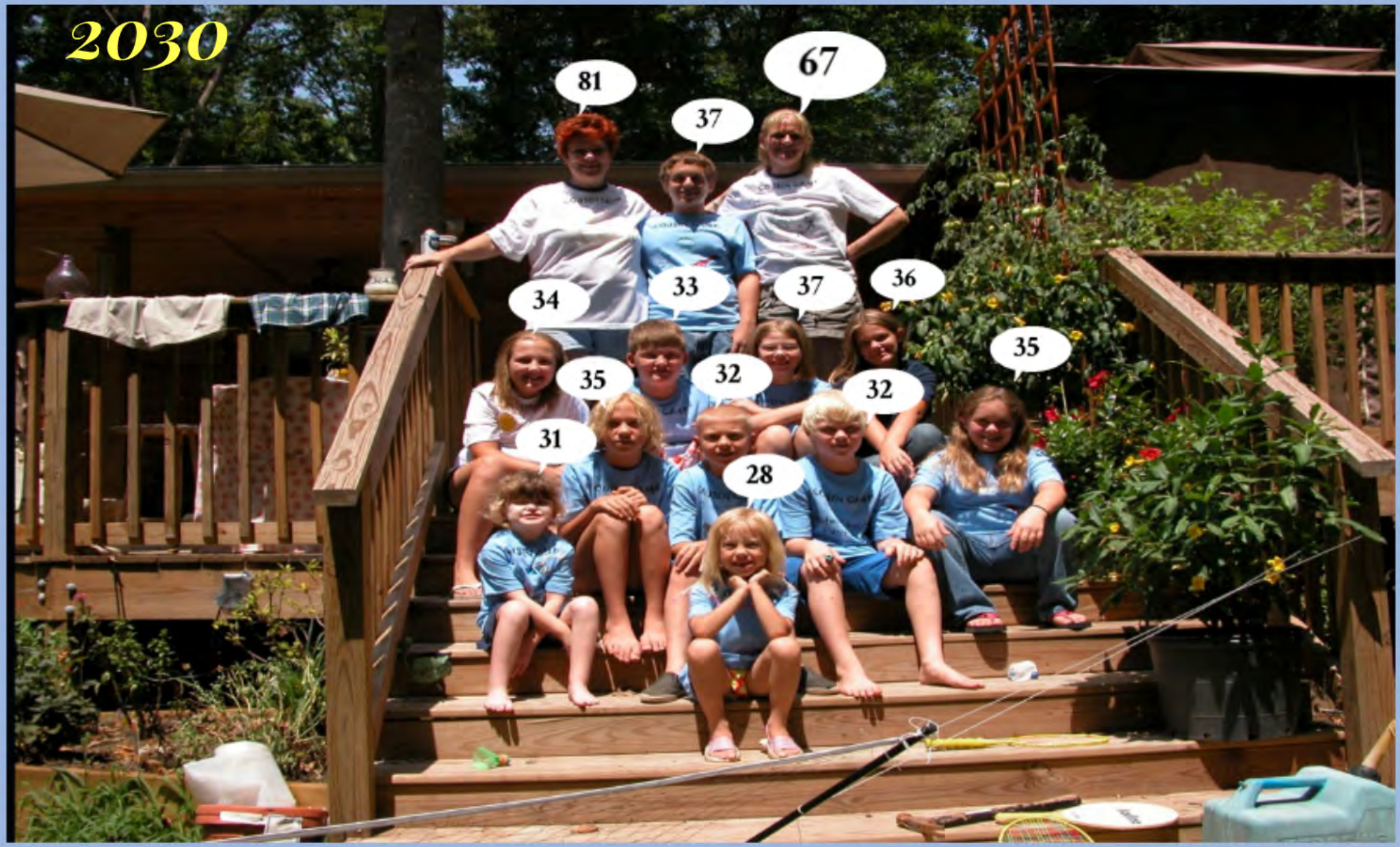
Profit – not what's right for our communities, our health, or the environment – drives too many decisions about the things that matter most.

You can make a difference!

Your work
gives a ripple of hope

How many of us have children?

Our greatest value lies in what we leave our children and their children's children


2030
81
37
67
34
33
37
36
35
35
32
32
31
28

IECC®

The value you bring to our nation is large and the benefits are great...

1. E = H2O
2.
3.
4.

The value you bring to our nation is large and the benefits are great...

1.

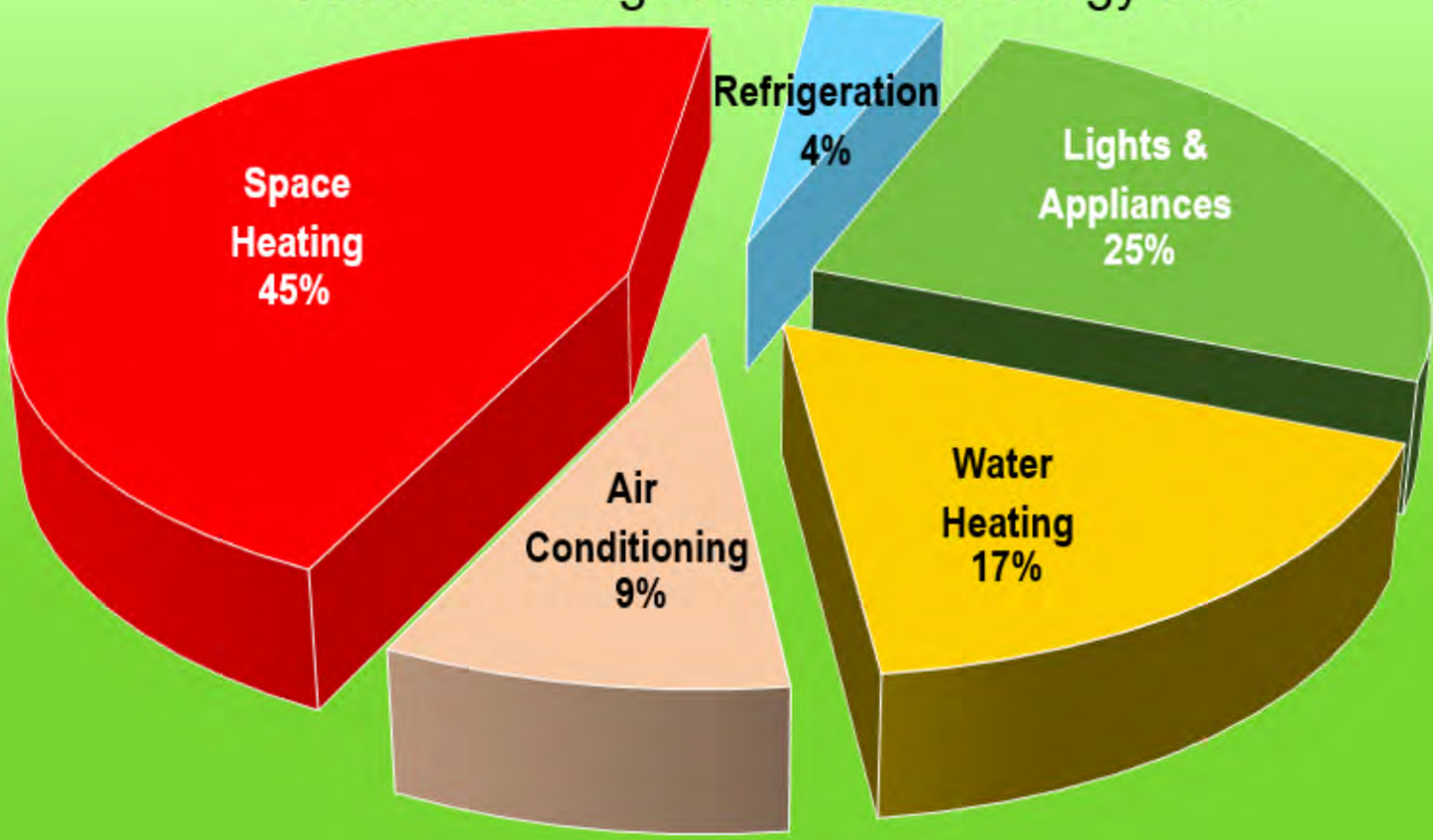
2.
3.
4.

U.S. Energy Use

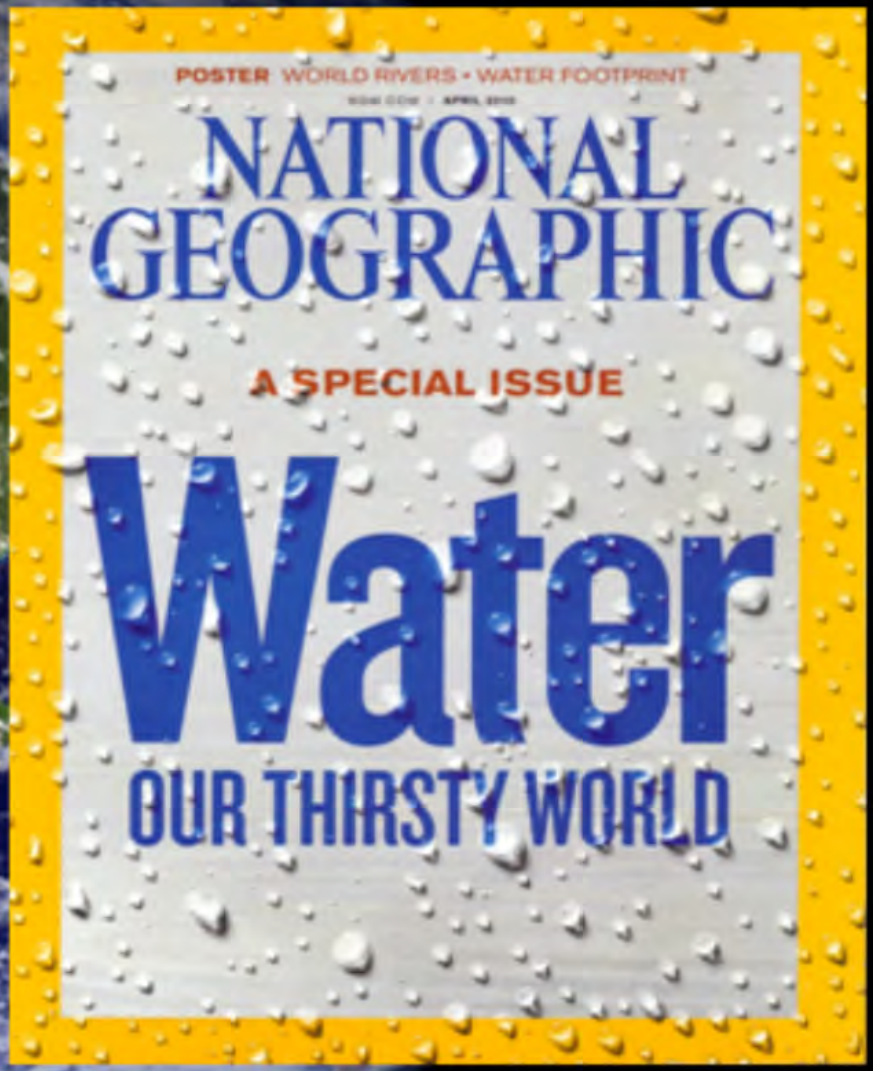
Residential and commercial buildings account for near 40% of all energy use and 76% of all electricity used in the United States

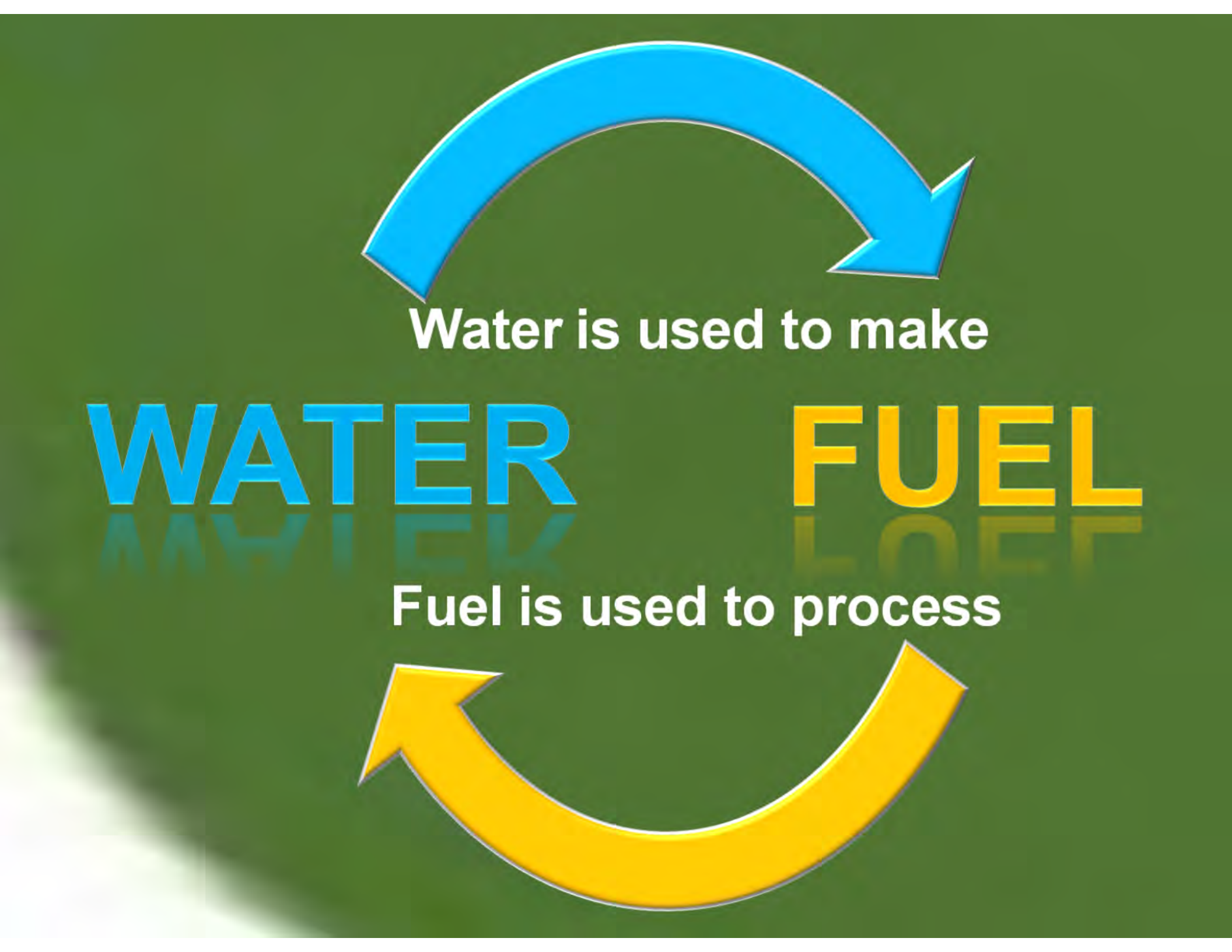
Sources: 2013, 2014 EIA Annual Energy Outlook; 2010 Manufacturing Energy Consumption Survey

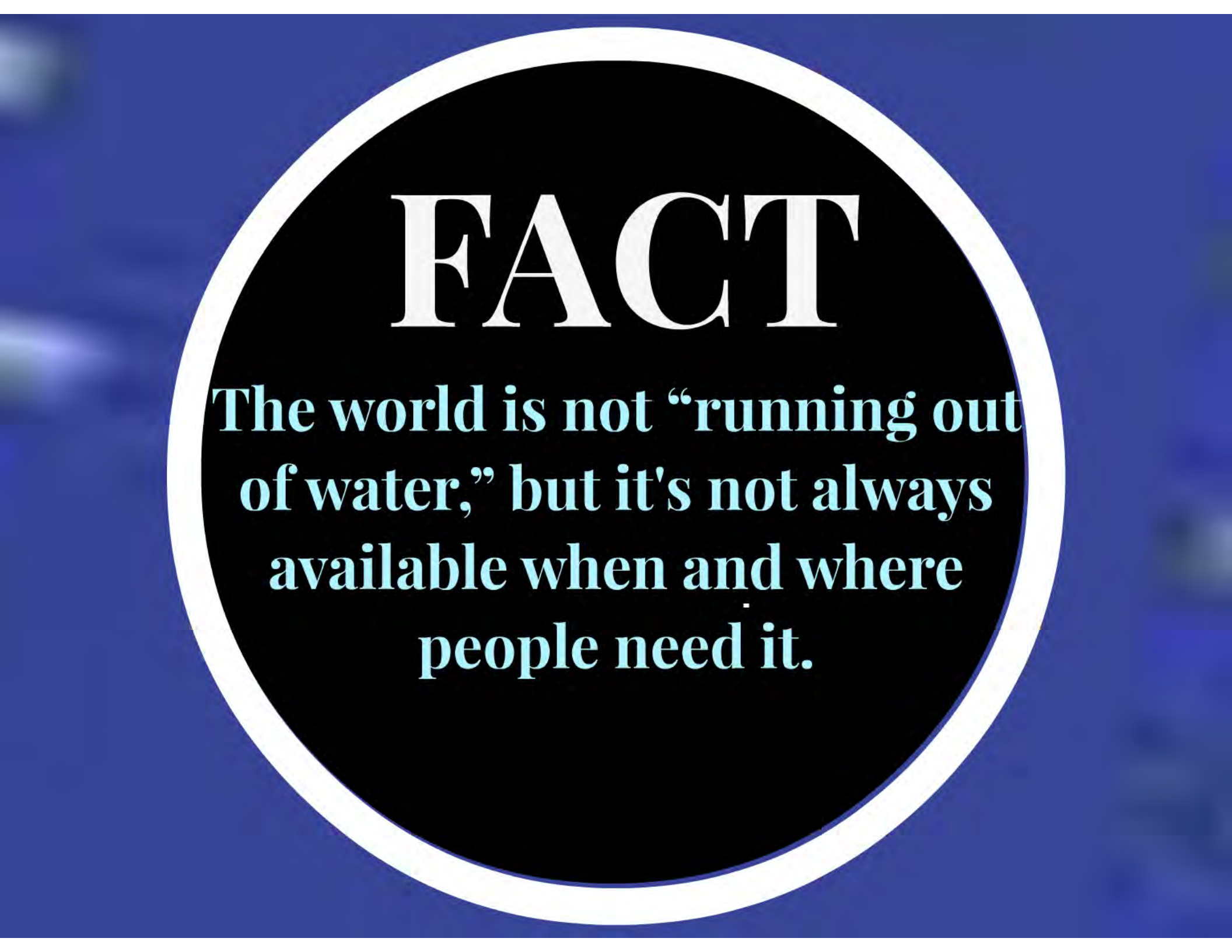
Annual Average Residential Energy Use

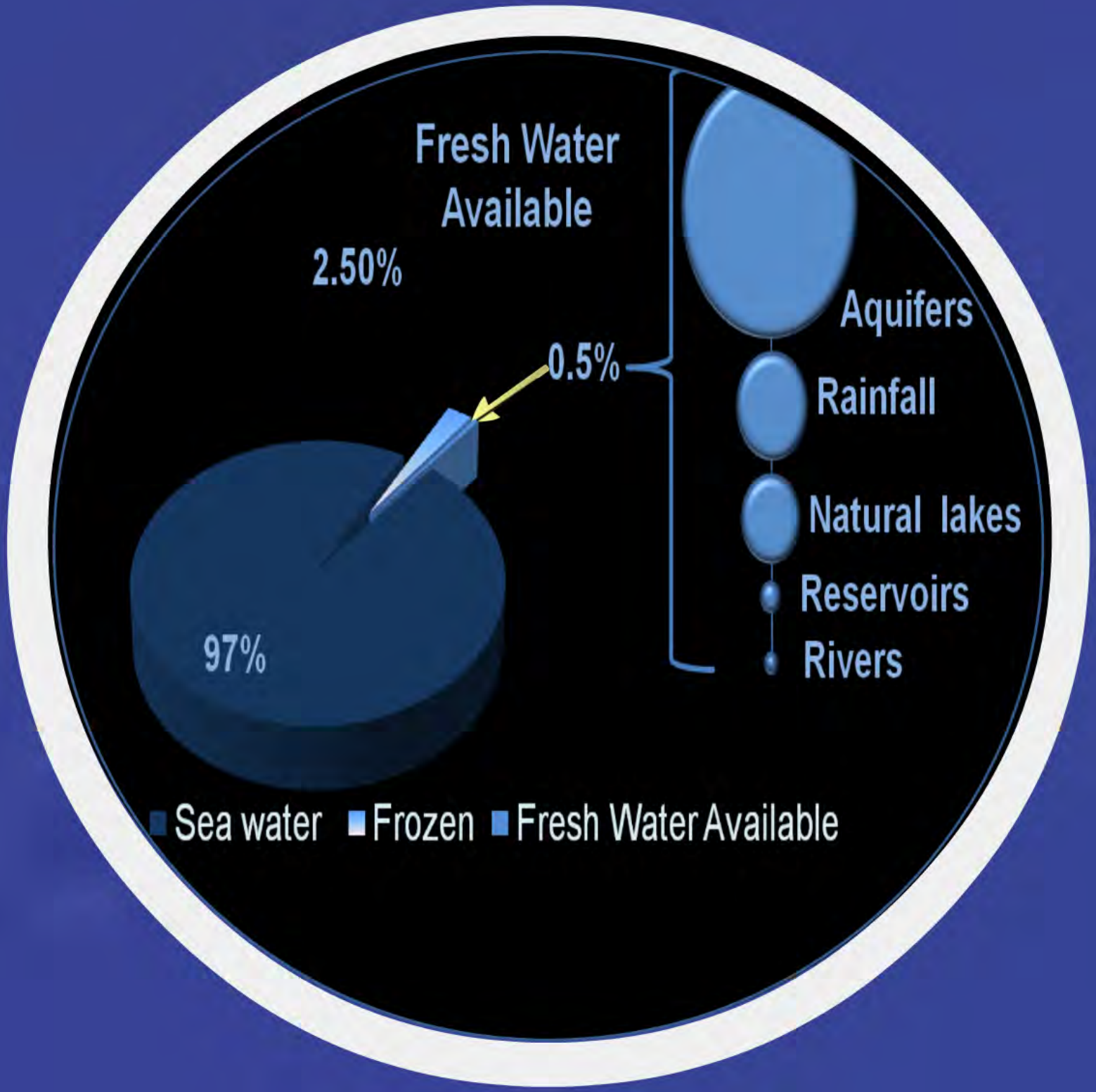


The Energy & Water Connection




Water is used to make
WATER
FUEL
Fuel is used to process


FACT
The world is not “running out of water,” but it's not always available when and where people need it.


Fresh Water Available
2.50%
0.5%
97%
Aquifers
Rainfall
Natural lakes
Reservoirs
Rivers
Sea water
Frozen
Fresh Water Available

4 Types of water

Blue - Water extracted from nature and ground water

Green - Water that falls directly on crops

Gray - Water that goes back into nature but could be polluted

Black - Water that cannot be cleaned due to industrial waste

WATER

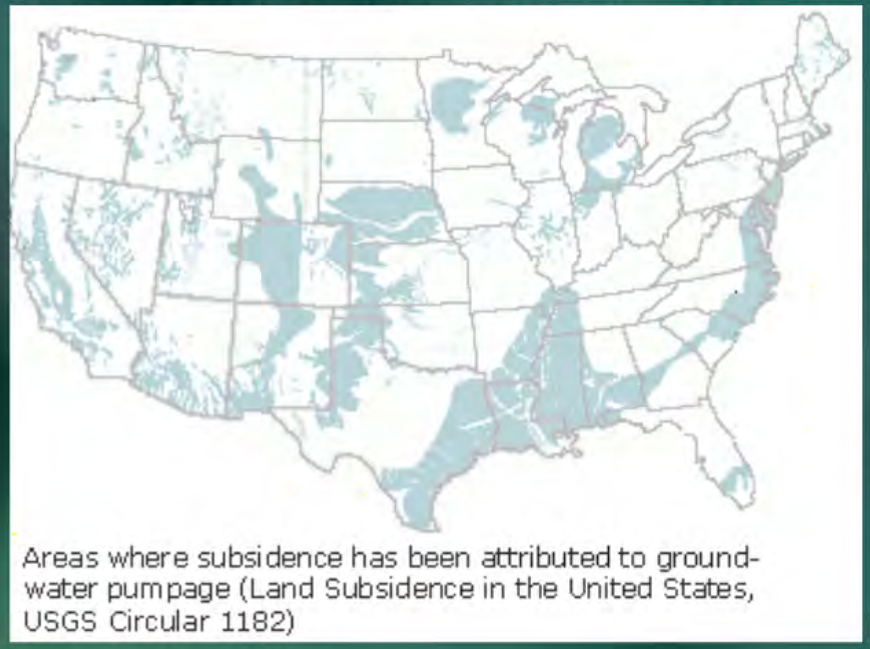
1. Land Subsidence*
2. Water Rights*
3. Salting of Crop Land*
4. State Tension Over Water
5. Waste Water Treatment
6. Pumping Power
7. Free Flowing Rivers*
8. Global Water Distribution
9. Population Shift To the Coast
10. Historic Water levels in Lakes
11. Damage from Dams and Reservoirs
12. Industrial Waste

1925
1955
SAN JOAQUIN VALLEY
CALIFORNIA
BM 5681
SUBSIDENCE BM
1925-1977
1977

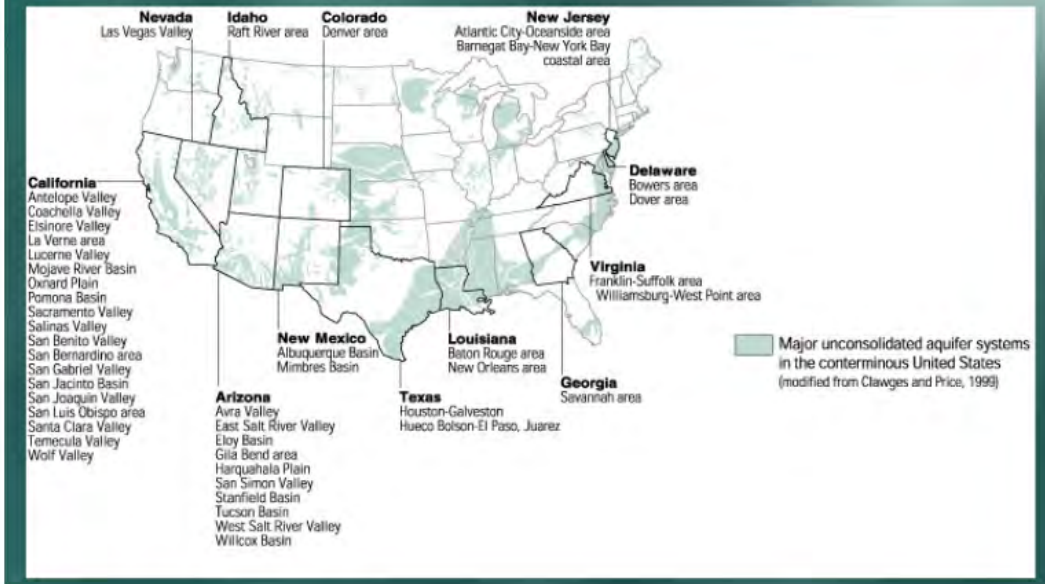
1925
1955
1977

Subsidence
around a
well

Areas where subsidence has been attributed to groundwater pumping



Areas where subsidence has been attributed to groundwater pumpage (Land Subsidence in the United States, USGS Circular 1182)



http://water.usgs.gov/ogw/pubs/fs00165/

WATER

1. Land Subsidence*
2. Water Rights*
3. Salting of Crop Land*
4. State Tension Over Water
5. Waste Water Treatment
6. Pumping Power
7. Free Flowing Rivers*
8. Global Water Distribution
9. Population Shift To the Coast
10. Historic Water levels in Lakes
11. Damage from Dams and Reservoirs
12. Industrial Waste

AK
WA
OR
CA
ID
NV
MT
WY
UT
AZ
CO
NM
ND
SD
NE
KS
OK
TX
MN
IA
MO
AR
LA
WI
IL
MS
MI
IN
KY
TN
AL
OH
WV
GA
FL
SC
NC
VA
PA
NY
VT
NH
ME
MA
RI
CT
NJ
DE
MD
DC
HI
AS
GU
MP
PR
VI
States with Rainwater Harvesting
http://www.ncsl.org/research/environment-and-natural-resources/rainwater-harvesting.aspx#nc

WATER

1. Land Subsidence*
2. Water Rights*
3. Salting of Crop Land*
4. State Tension Over Water
5. Waste Water Treatment
6. Pumping Power
7. Free Flowing Rivers*
8. Global Water Distribution
9. Population Shift To the Coast
10. Historic Water levels in Lakes
11. Damage from Dams and Reservoirs
12. Industrial Waste

WATER

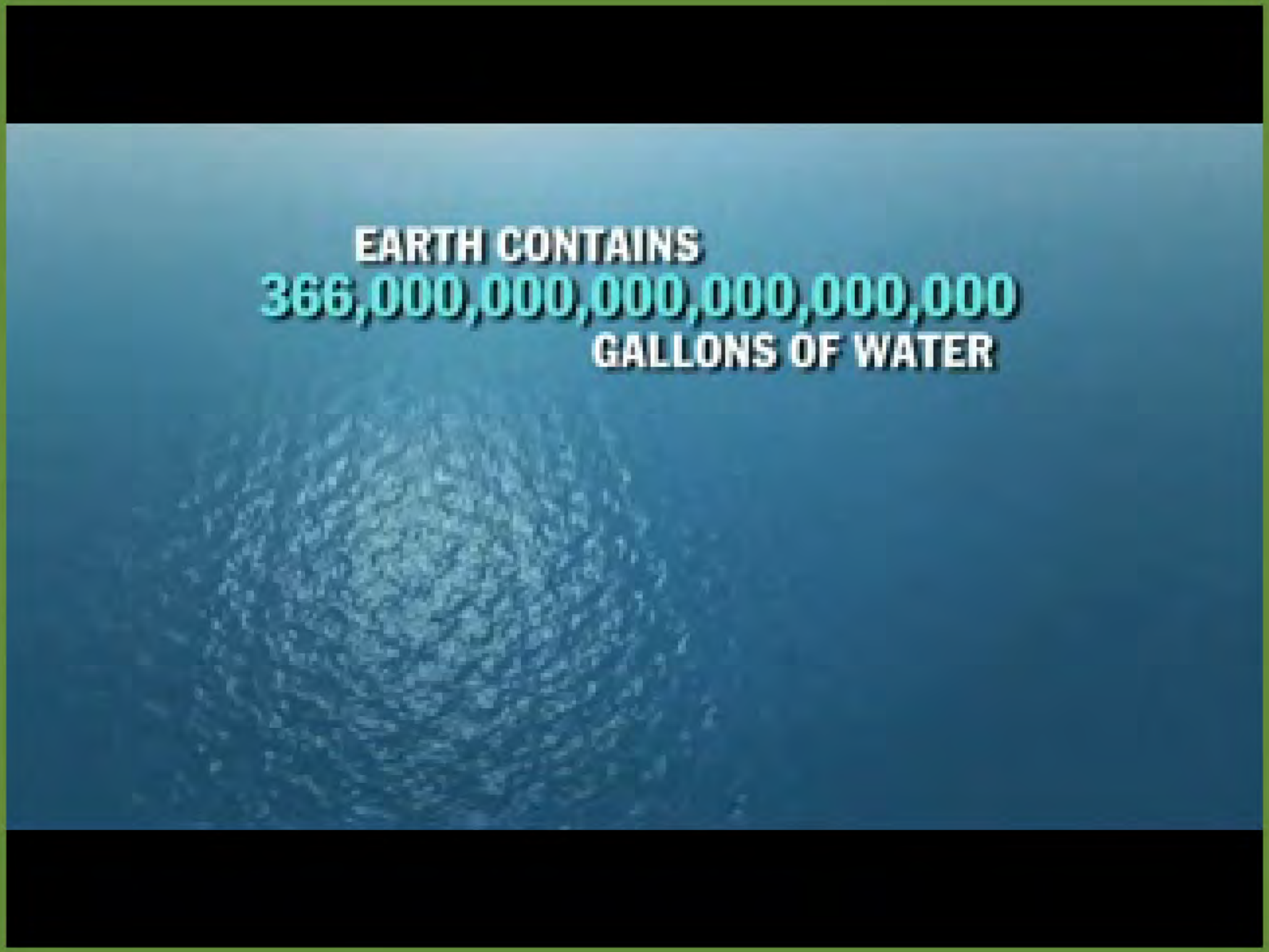
1. Land Subsidence*
2. Water Rights*
3. Salting of Crop Land*
4. State Tension Over Water
5. Waste Water Treatment
6. Pumping Power
7. Free Flowing Rivers*
8. Global Water Distribution
9. Population Shift To the Coast
10. Historic Water levels in Lakes
11. Damage from Dams and Reservoirs
12. Industrial Waste

PROHIBIDO
CAZAR Y
SACAR LEÑA

MONEY

& Flow in the same direction

WATER


EARTH CONTAINS
366,000,000,000,000,000,000
GALLONS OF WATER

When making a Difference Really Makes a Difference

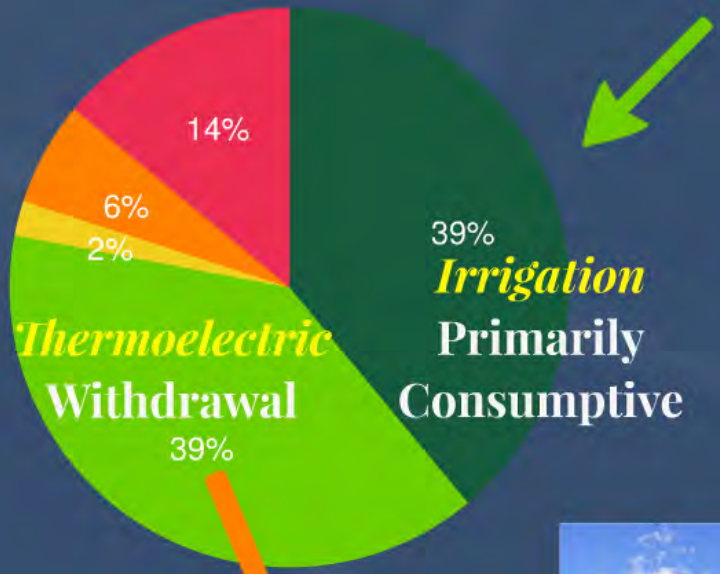
- It takes large amounts of water to create energy.
- Water is used to cool thermoelectric power plants – fueled by
  - coal
  - oil
  - natural gas and
  - nuclear power
  - hydropower

Thermoelectric Power Plants

Consumptive
Evaporation (use)

Withdrawal

Water Withdrawals



Thermoelectric withdrawals are 136 Bgal/day or equivalent to, *25 gallons per kWH* of electricity produced

Hightower, Energy-Water Roadmap Report (2006)

Withdrawal

25 Gallons per kWH Saved

Thermoelectric withdra
or equivalent to, 25 gallon
of electricity produced

Hightower, Energy-Water Roadmap Re

Evaporation - Use

For every kWH your work saves =

2 quarts

Source: Consumptive Water Use for U.S. Power Production.. NREL TP-550-33905 December 2003

Withdrawal

TRIANGLE BUSINESS JOURNAL

RALEIGH - North Carolina's electric utilities, among the largest water customers in the state, are dusting off contingency plans to manage their power plants if lake levels continue to drop due to the ongoing drought - plans that could lead to higher costs for consumers.

Both Progress Energy and Duke Energy say that if they don't

Drought could shut down nuclear power plan

Southeast water shortage a factor in huge cooling

msnb

A man fishes next to the outflows of the McGuire N Station near Lake Norman on Monday. Lake Norman dropped to about a foot minimum level needed for system at the plant.

Jason E. Miczek / AP

Water Shortage Could Dry Up Nuclear Power Plants in Southeast

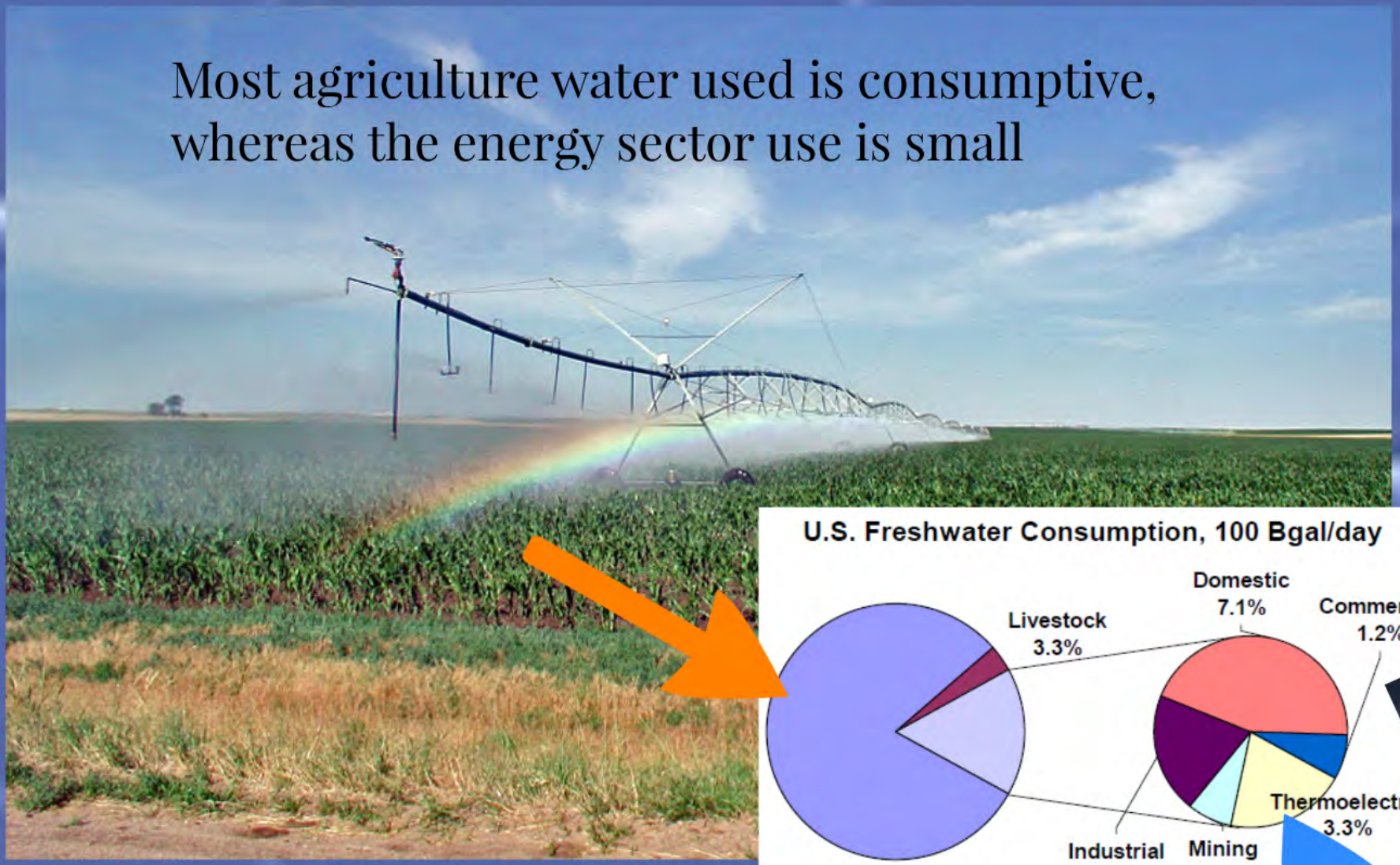
6 Comments

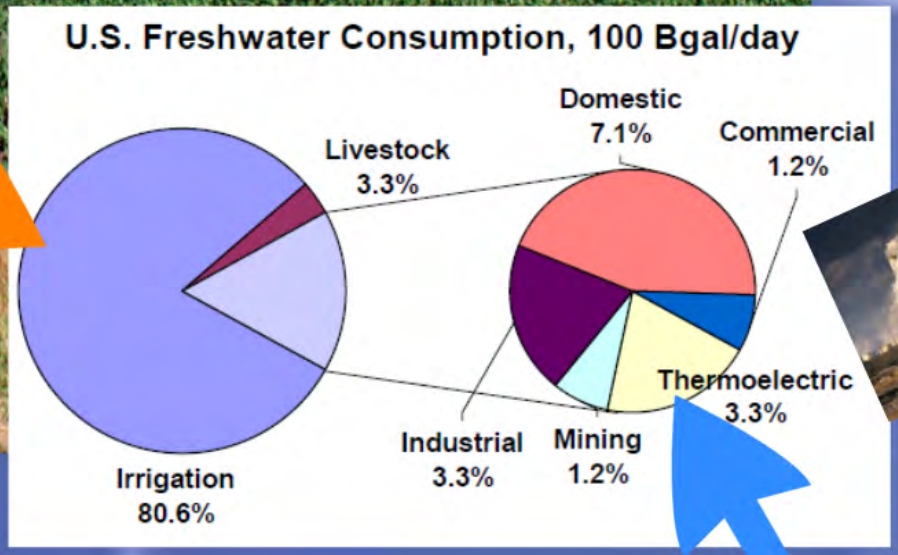
Written by **Max Lindberg**
Published on January 23rd, 2008 in Environmental & Climate Science

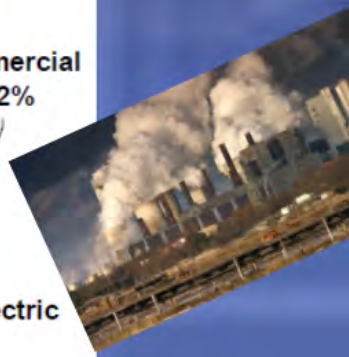
We've all read about the drought in America's Southeast, and if it doesn't let up very quickly, some nuclear power stations may have to either cut back operations or shut down temporarily because of a lack of water.

An Alabama reactor had to shutdown for a brief period in the summer, and officials in the Southeast now say it is becoming a crisis.

Most agriculture water used is consumptive, whereas the energy sector use is small







DOE report to Congress 2006

YOUR WORK IS VALUABLE

Every kWH reduced in a building also reduces a 1/2 gallon evaporation (use) at thermoelectric power plants.

Hydroelectric plants equal 18 gallons per kWH

NREL/TP-550-33905 Consumptive Water Use for U.S. Power Production

1000 kWH we saved = we save 500 gallons evaporation (use) and 25,000 gallons withdrawal

25,500 Gallons

NREL/TP-550-33905 Consumptive Water Use for U.S. Power Production

Use for U.S. Power Production

1000 kWH we save = we save 18,000 gallons evaporation (use) at the hydroelectric power plant and body of water and 25,000 gallons withdrawal

43,000 Gallons

NREL/TP-550-33905 Consumptive Water Use for U.S. Power Production

Hoover Dam

THE HOOVER DAM SUPPLIES ELECTRICITY TO
29 MILLION PEOPLE

designed capacity **2,080** MEGAWATTS
current capacity **1,[illegible]** MEGAWATTS
1931

20% chance Lake Mead will go below **1,050 feet** BY 2025, which could halt generation

10 YEAR Dry Spell

33% REDUCTION in generating **CAPACITY** since the late **1990s**

Every **FOOT** of elevation loss **REDUCES** the power potential by **5.7** mega watts

LAKE MEAD IS ONLY **41% FULL**

The lake has **DROPPED 130 ft.** since 1999

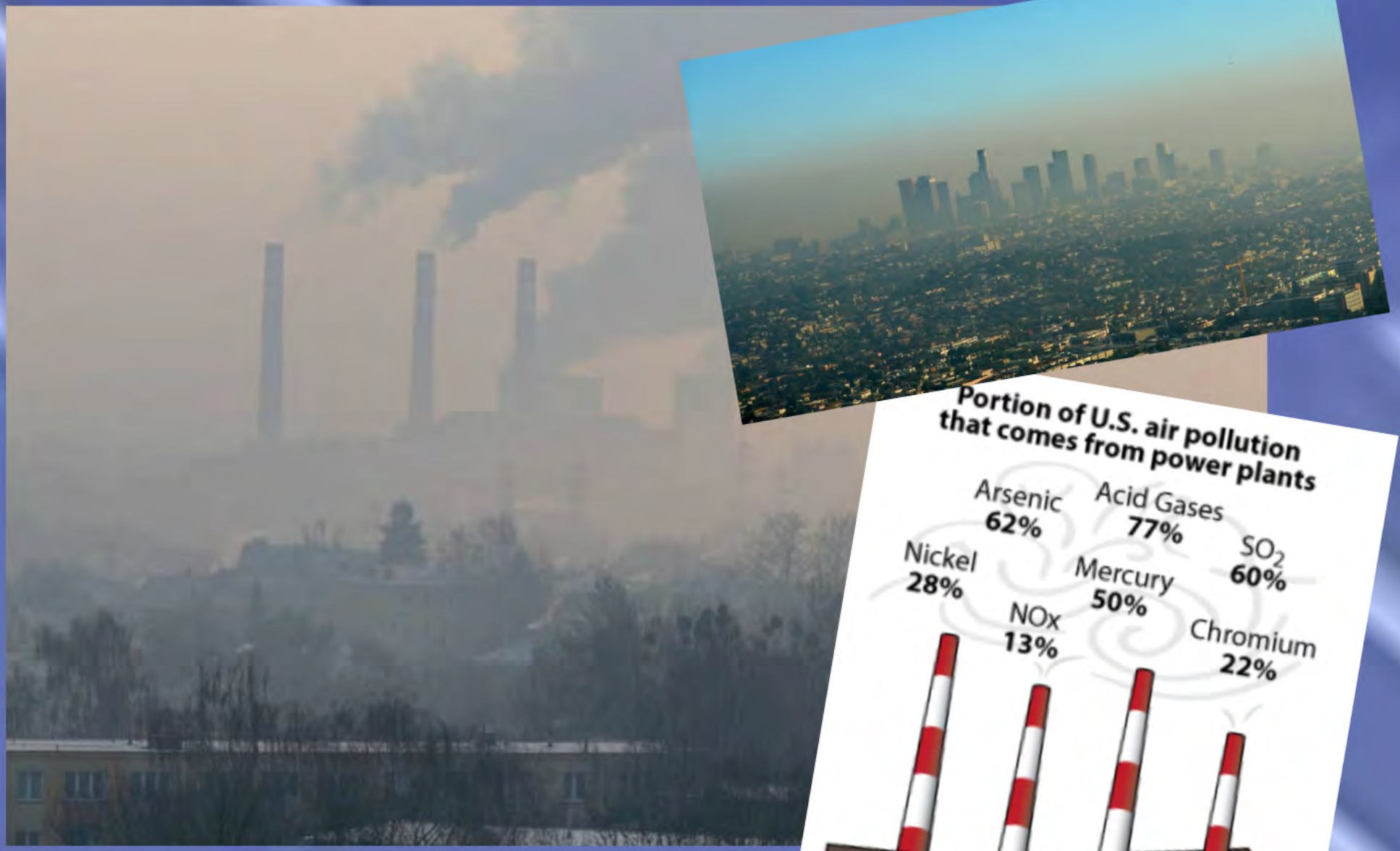
A year's worth of new residential and commercial construction up to full compliance is 2.8-7.9 quadrillion Btu annually, or $63-$174 million in annual energy cost savings.

879,213,000,000 kWH to 2,344,570,000,000 kWH

Billion Trillion

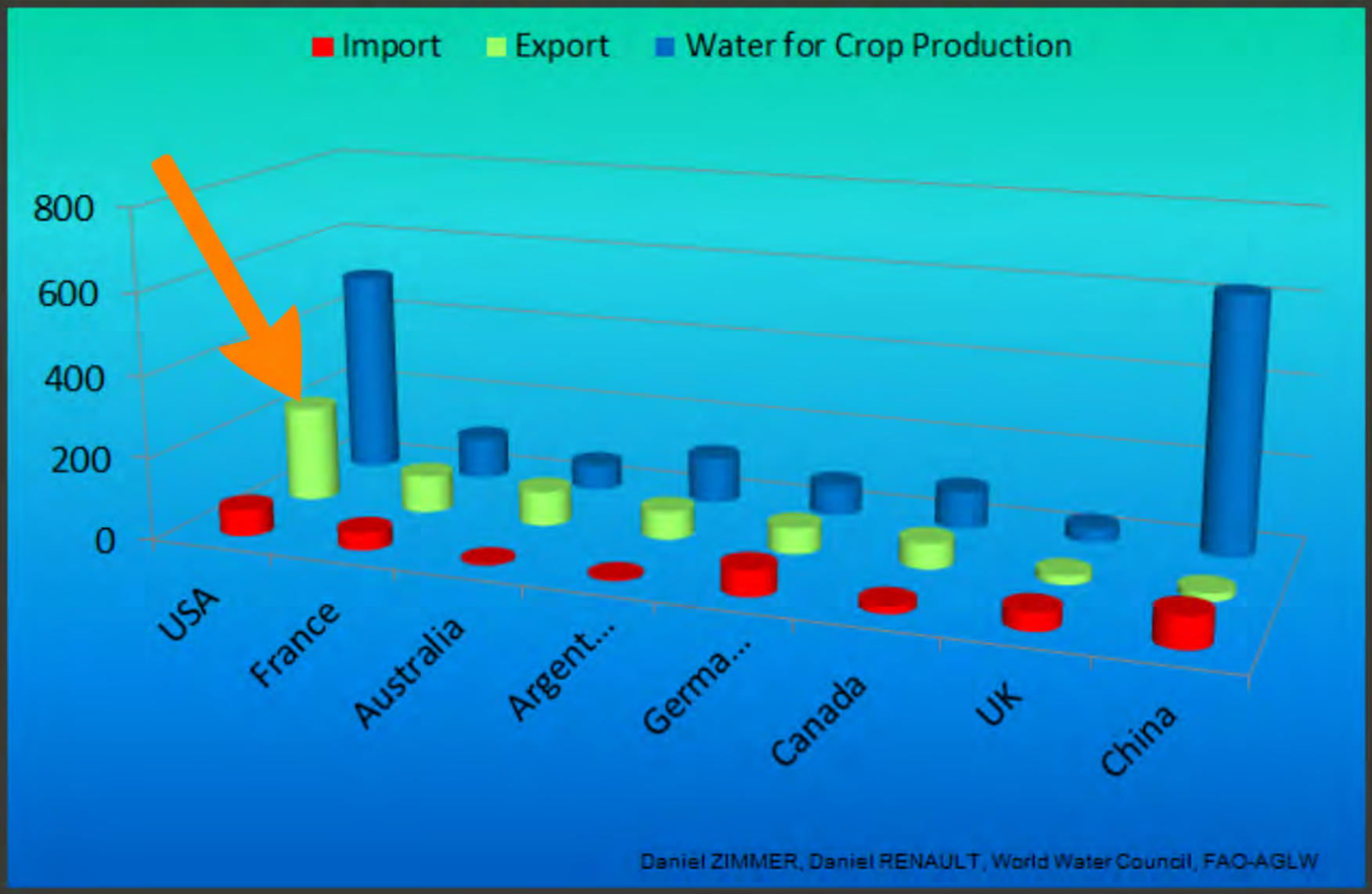
THAT'S YOUR VALUE AND.....

Your work is securing the future

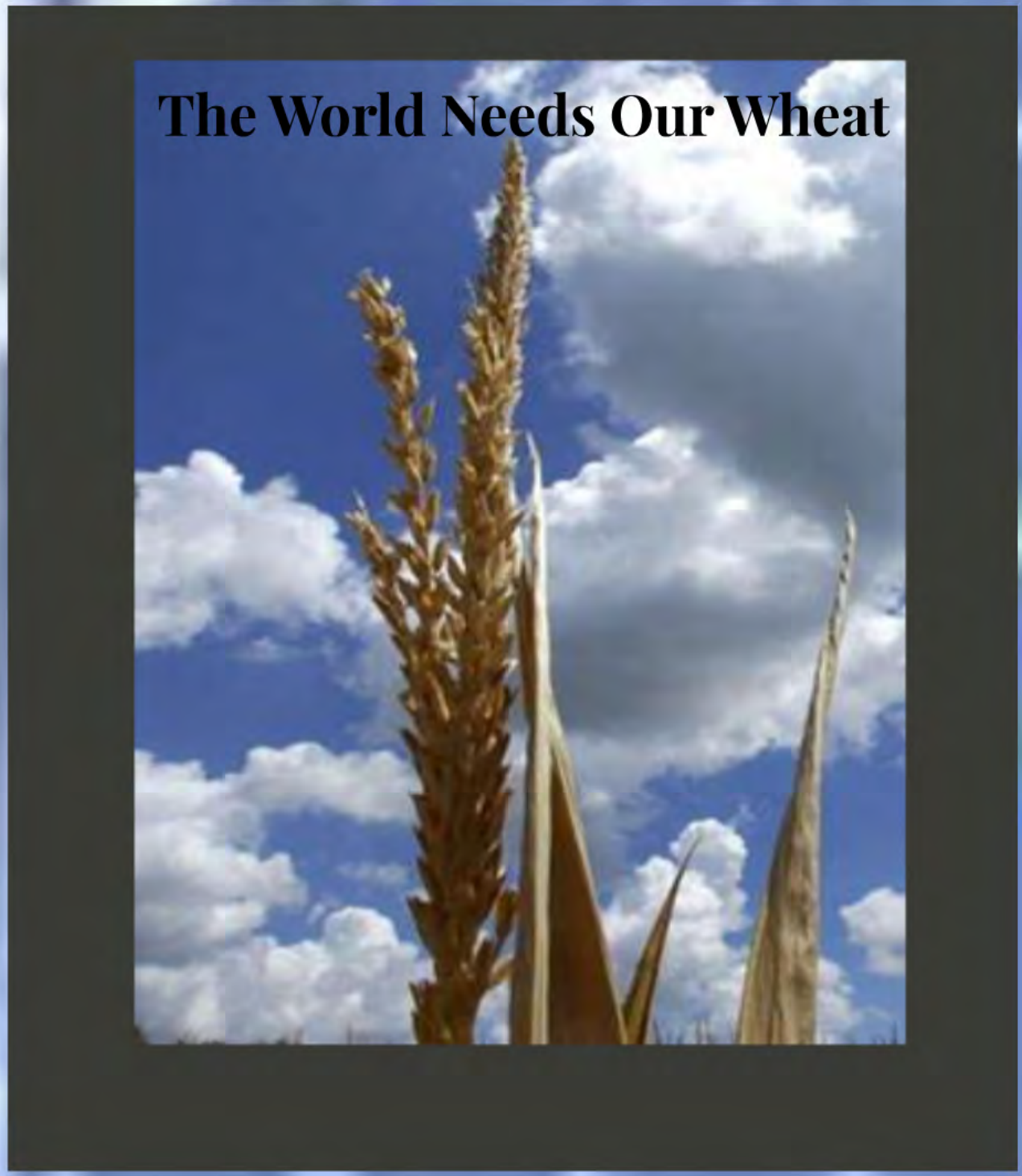

Portion of U.S. air pollution
that comes from power plants
Arsenic
62%
Acid Gases
77%
SO_2
60%
Nickel
28%
Mercury
50%
NOx
13%
Chromium
22%

FOOD

VIRTUAL WATER IN FOOD PRODUCTION AND GLOBAL TRADE



Wilting corn causing spike in food prices


The World Needs Our Wheat

WATER FOR FOOD

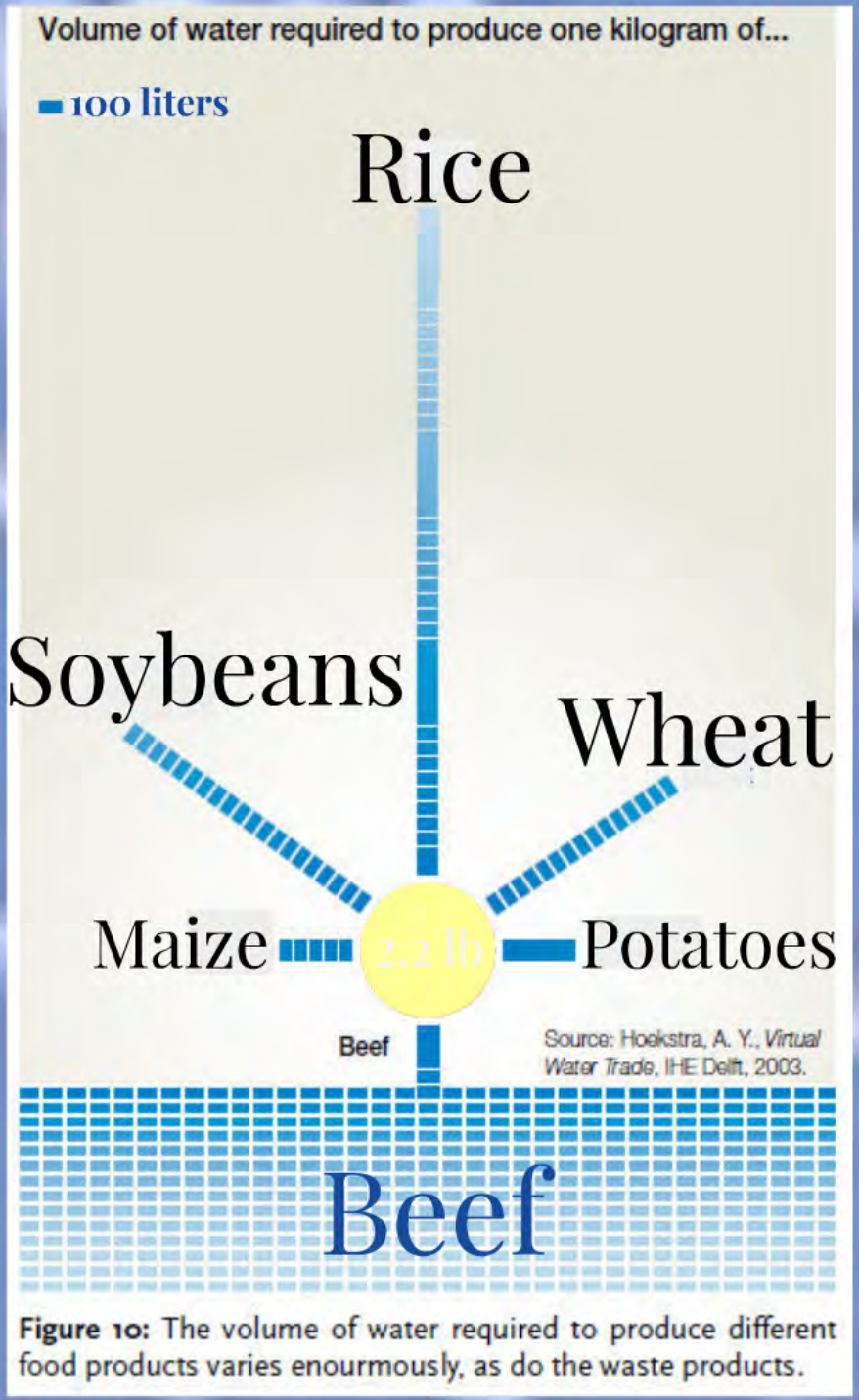
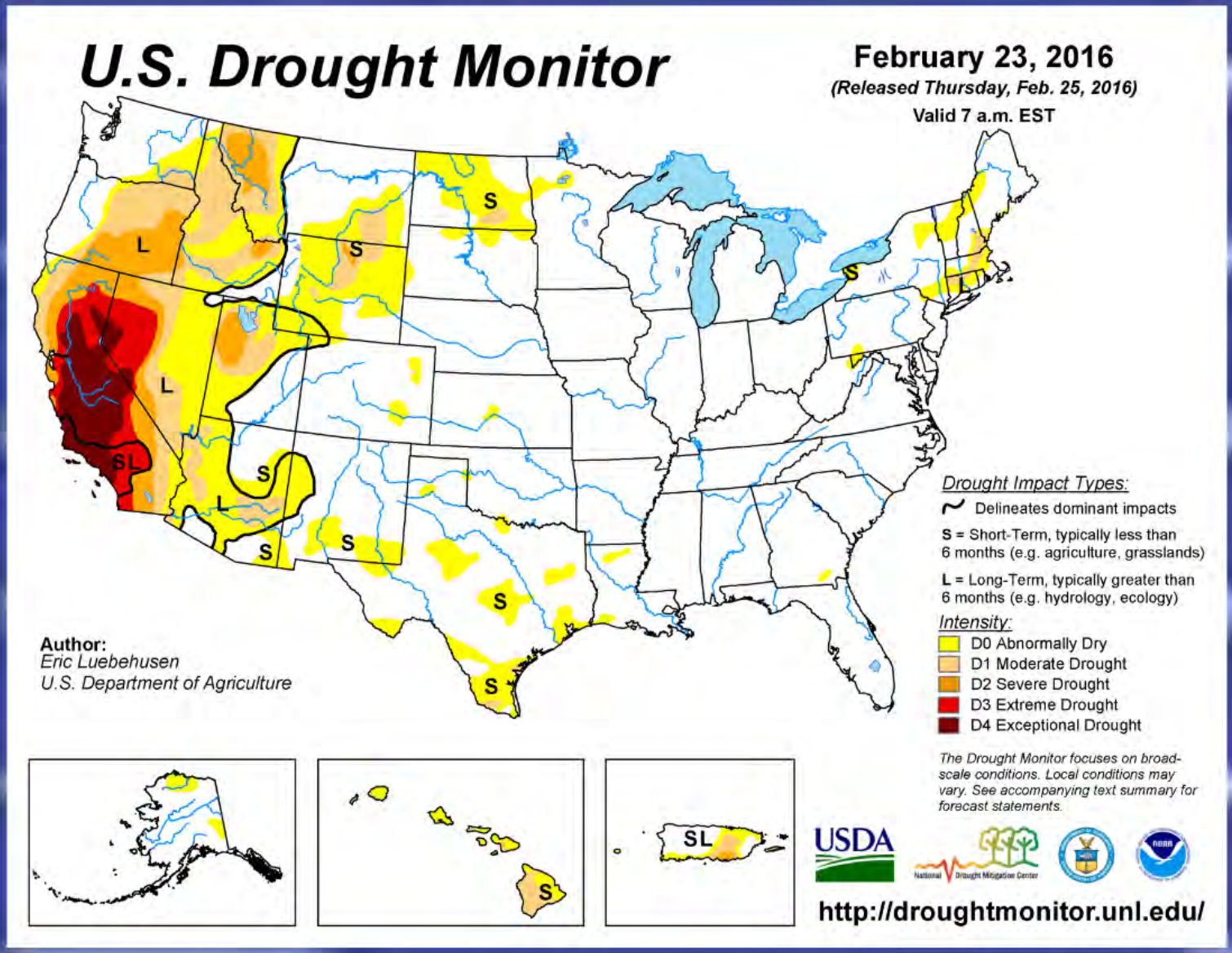
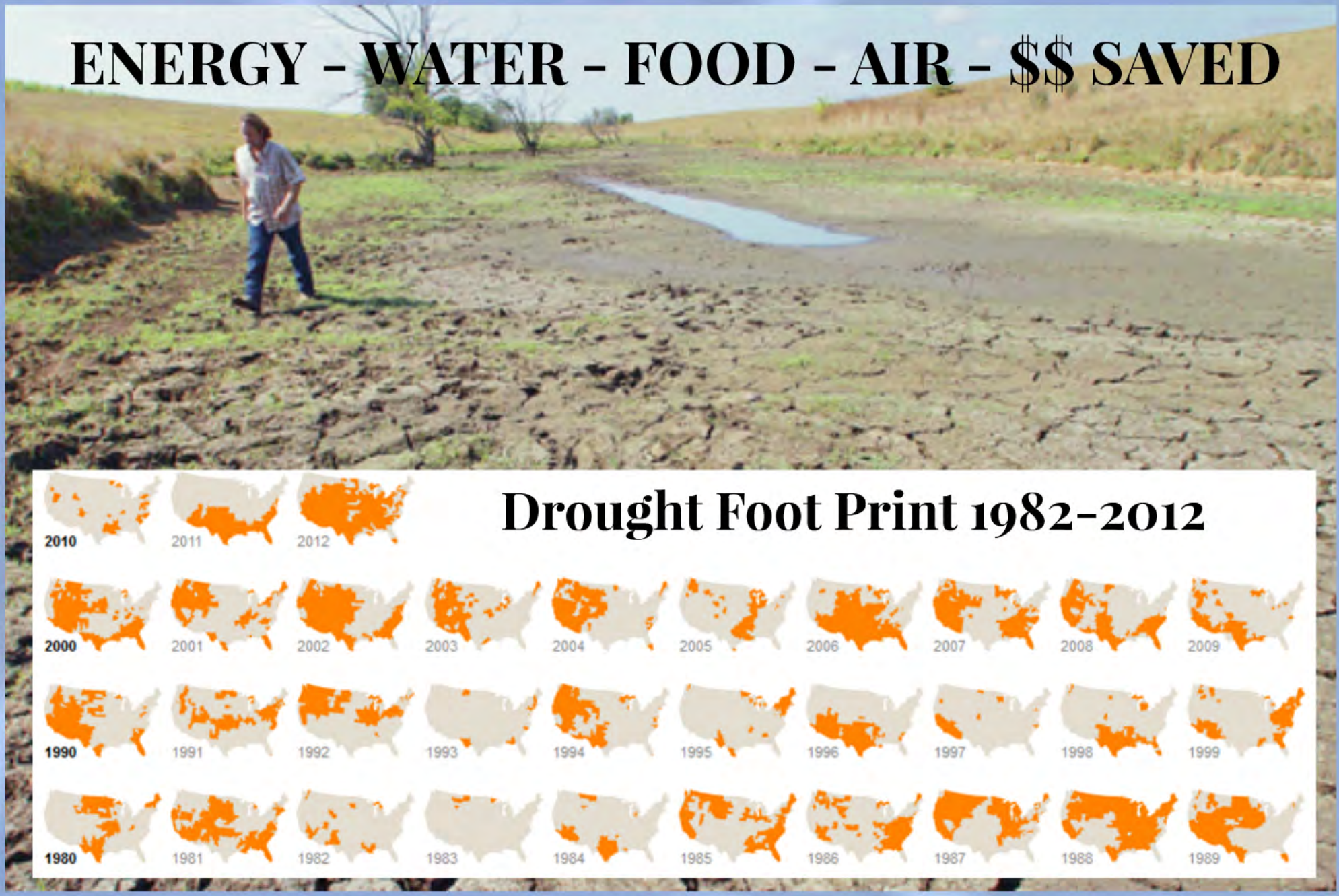


Figure 10: The volume of water required to produce different food products varies enourmously, as do the waste products.

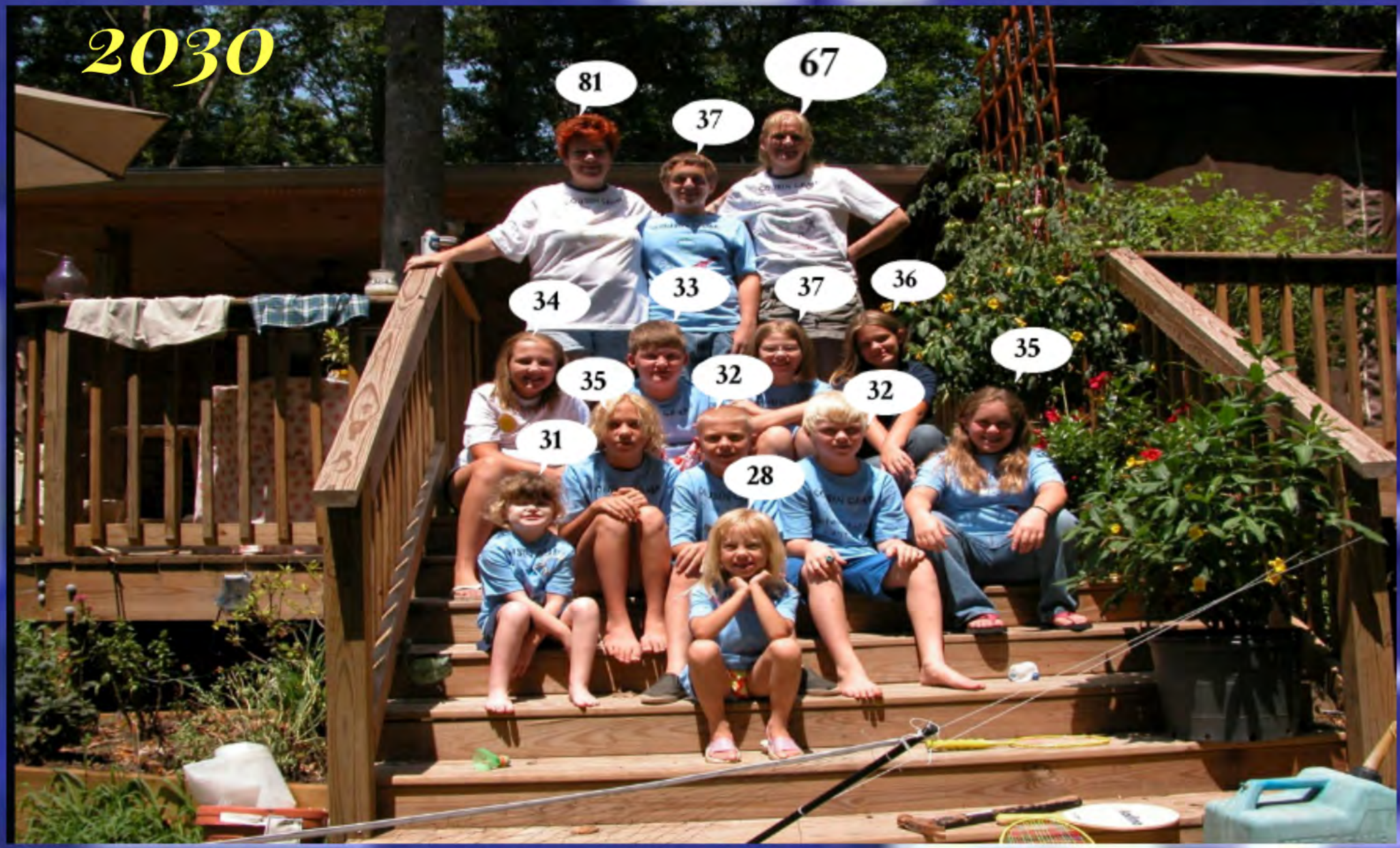

U.S. Drought Monitor
February 23, 2016
(Released Thursday, Feb. 25, 2016)
Valid 7 a.m. EST
Author:
Eric Luebehusen
U.S. Department of Agriculture
Drought Impact Types:
Delineates dominant impacts
S = Short-Term, typically less than 6 months (e.g. agriculture, grasslands)
L = Long-Term, typically greater than 6 months (e.g. hydrology, ecology)
Intensity:
D0 Abnormally Dry
D1 Moderate Drought
D2 Severe Drought
D3 Extreme Drought
D4 Exceptional Drought
The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.
USDA
National Drought Mitigation Center
http://droughtmonitor.unl.edu/

ENERGY - WATER - FOOD - AIR - $$ SAVED

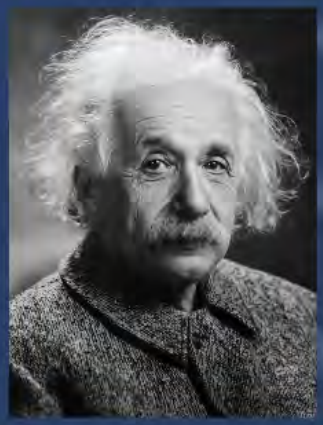


Drought Foot Print 1982-2012

Once in a while something comes along that is so powerful that it literally changes the way that we view the world and how we fit into it; and those of us who adopt it end up finding ourselves professionally and personally transformed - forever


2030
81
37
67
34
33
37
36
35
35
32
32
31
28

Albert Einstein



“Nothing in the world can take the place of persistence. Talent will not; nothing is more common than unsuccessful men with talent. Genius will not; unrewarded genius is almost a proverb. Education will not; the world is full of educated derelicts. Persistence and determination alone are omnipotent. The slogan Press On! has solved and always will solve the problems of the human race.”

It's our time to run