The Water - Energy Nexus

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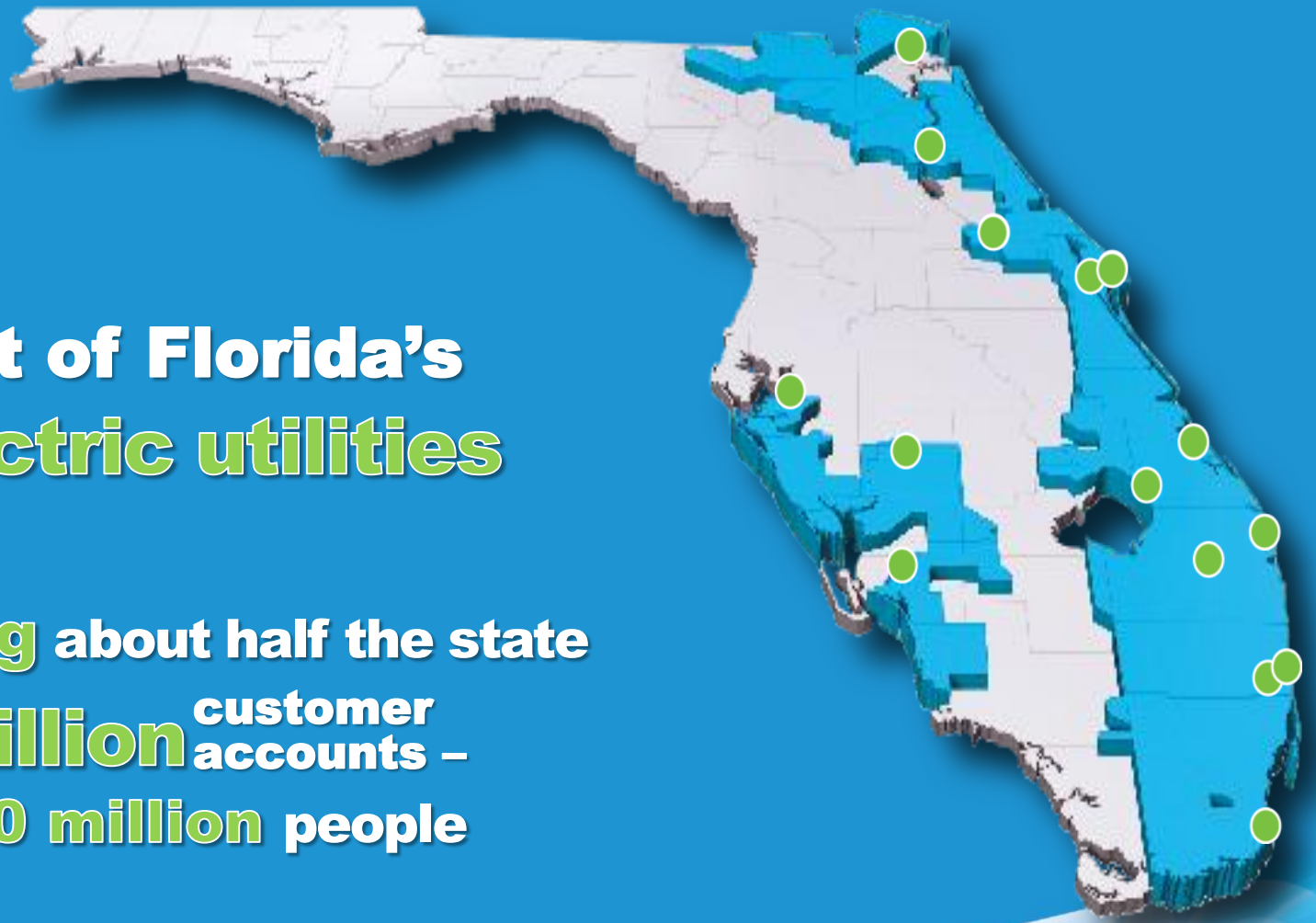
NEXTera ENERGY

- World's #1 producer of renewable energy from the wind and sun
- Operating in 25+ U.S. states & Canada, but Florida is our home
- Consistently ranks among Fortune's World's Most Admired Companies

Introduction

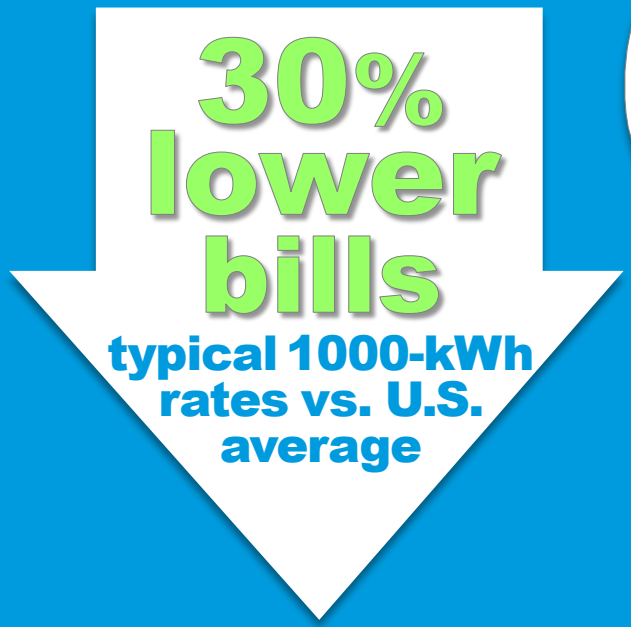


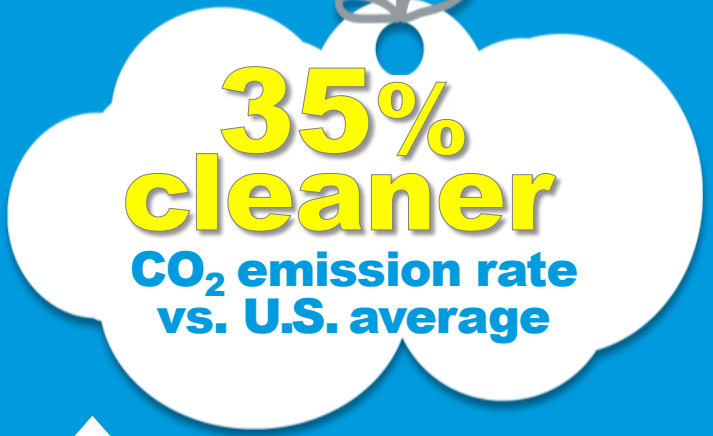
Largest of Florida's
55 electric utilities

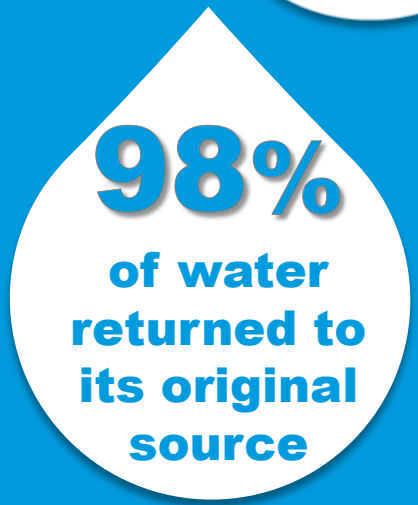
Powering about half the state
4.8 million customer accounts –
nearly 10 million people

Introduction: Our Record

- **We're enabling reliable service, reducing emissions and keeping customer bills low for the long term**



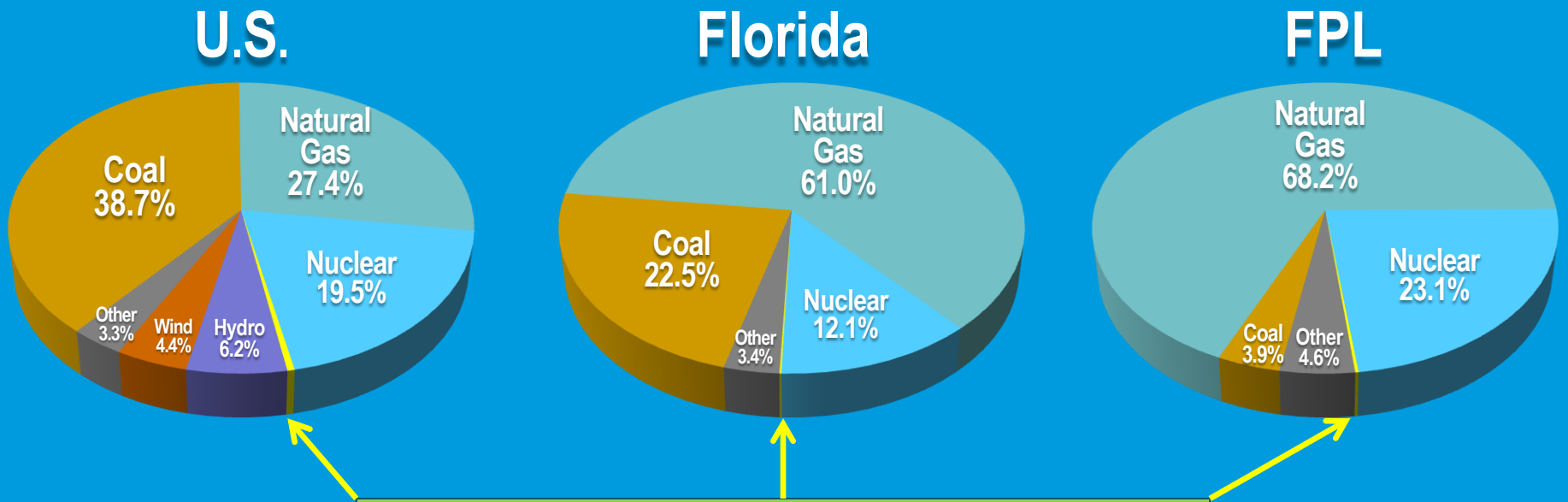




Florida Energy Fundamentals

- **The energy we all use comes from a mix of sources that is influenced by many factors, including regional challenges and relative economics**

Electricity Generation By Fuel Type



Solar = < 1%

Today, solar delivers a small sliver of America's energy needs, but it's growing as the cost continues to come down

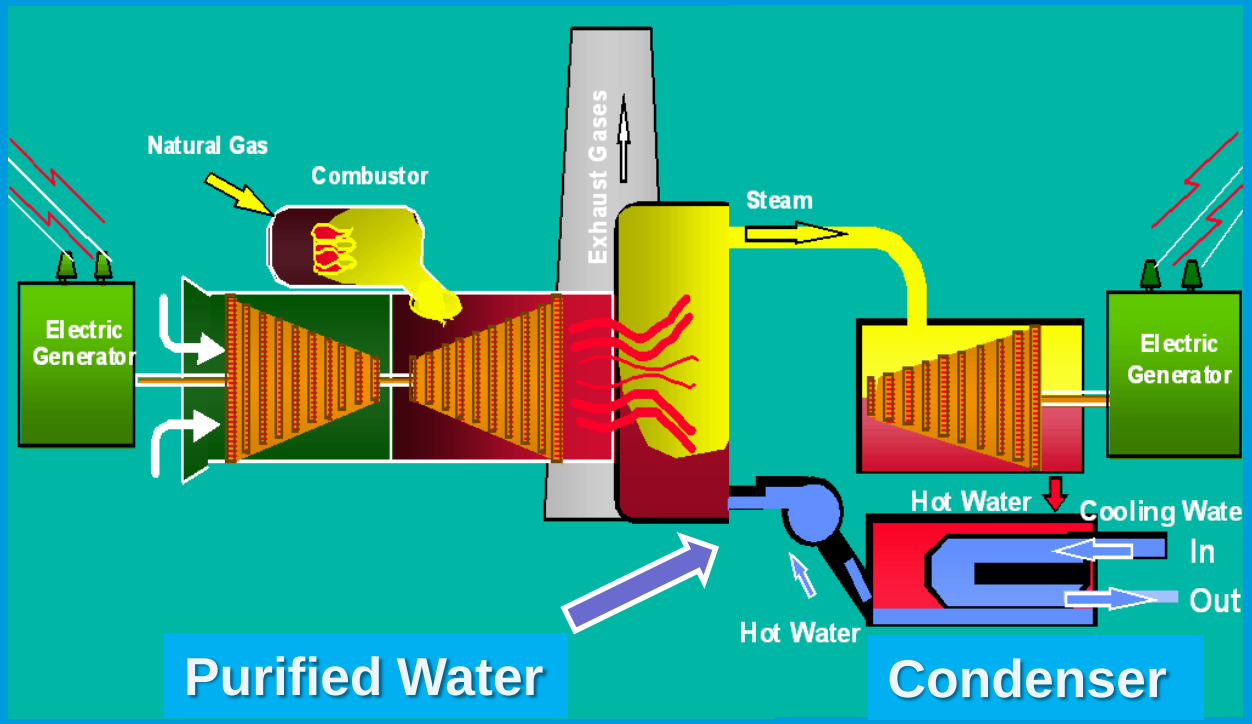
Source: 2014 net electricity generation by energy source – U.S. Energy Information Administration's Electric Power Monthly, published February 2015; FPL 2015-2024 Ten Year Site Plan

Power Plant Water Usage

- **Water use is a necessary part of electricity generation from steam electric power plants**

- Water is purified and heated to produce steam which turns a turbine and generator to produce electricity
- Cooling water is pumped through a “condenser” to convert the steam back to water to be reused

Combined Cycle Steam Electric Generating Plant



Power Plant Water Usage (cont.)

- **Power generation sites have historically relied on large bodies of water to supply cooling water**

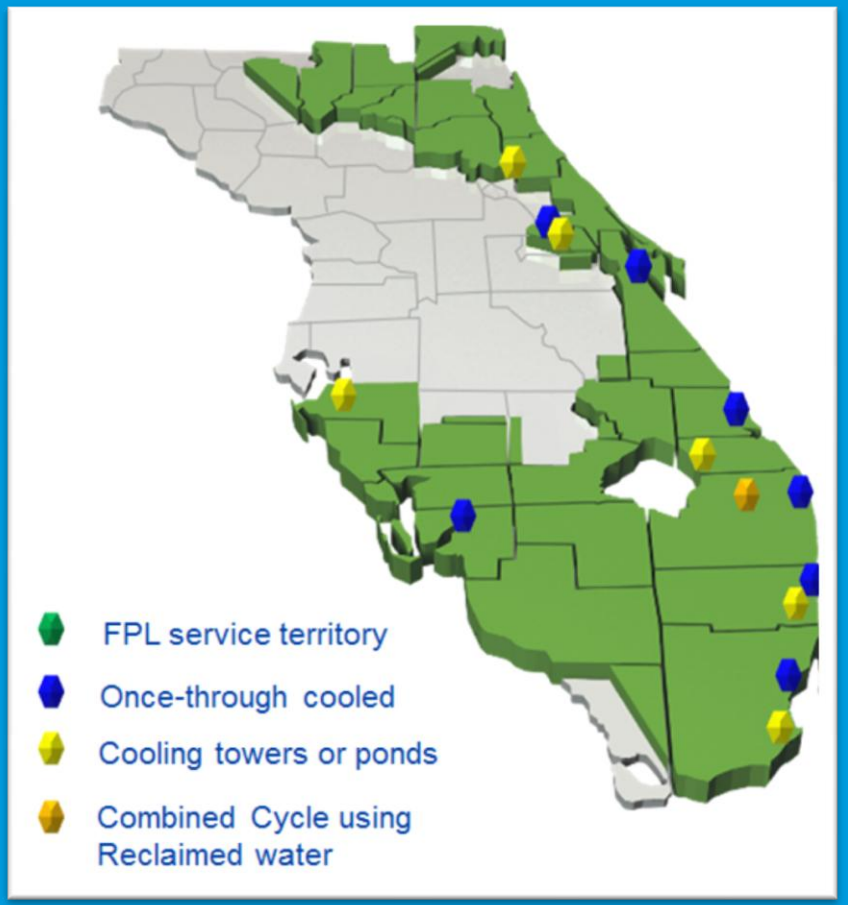
- Before the 1972, Florida power plants were located on natural water bodies (coastal, lakes, rivers) to provide “once-through” cooling water

- After 1972, closed-cycle cooling (i.e. cooling towers or cooling ponds were utilized for condenser cooling)

Power Plant Water Usage (cont.)

☼ Current generation cooling technologies require less water to be withdrawn from sources

- Closed-cycle cooling reduces water withdrawal by about 95 percent
- However, water consumption is significantly increased as these cooling technologies evaporate a large percentage of the water withdrawn



Power Plant Water Usage (cont.)

☼ Water is the new oil

- You can't make steam or cool a condenser for a steam electric power plant without it
- Water is allocated in Florida by Water Management Districts and in many areas it (particularly groundwater) is in short supply
- There is serious competition between municipal use, agriculture, industry and Mother Nature for allocations resulting in Minimum Flows and Levels (MFL's) being assigned to water bodies
- Much coordination and planning is required so that all beneficial uses receive adequate supplies

Power Plant Water Usage (cont.)

- **When power plants are sited, or consumptive use permits renewed, they are generally required to utilize the lowest quality water that is feasible**

- Certain factors must be considered:
  - Technical Factors:
    - Volume
    - Reliability
    - Quality
    - Permittability
    - Navigation
    - Security
  - Environmental Factors:
    - Construction impacts
    - Operational impacts
    - CERP consistency
    - Permittability
- **Reclaimed emerges highly ranked but with a reliability concern**
- Municipal water entity is a non-recourse supplier

Reclaimed Water Usage

☼ FPL's West County Energy Center

- 3,750 MW – one of the largest power plants in the U.S.
- Originally designed to use upper Floridan well system for cooling
- Plant was converted to use the Palm Beach County's treated wastewater via a large pipeline
- PBC wastewater facility is 17 miles east of WCEC
- Uses 21 MGD reclaimed water
- Retains original Floridan well system as restricted backup

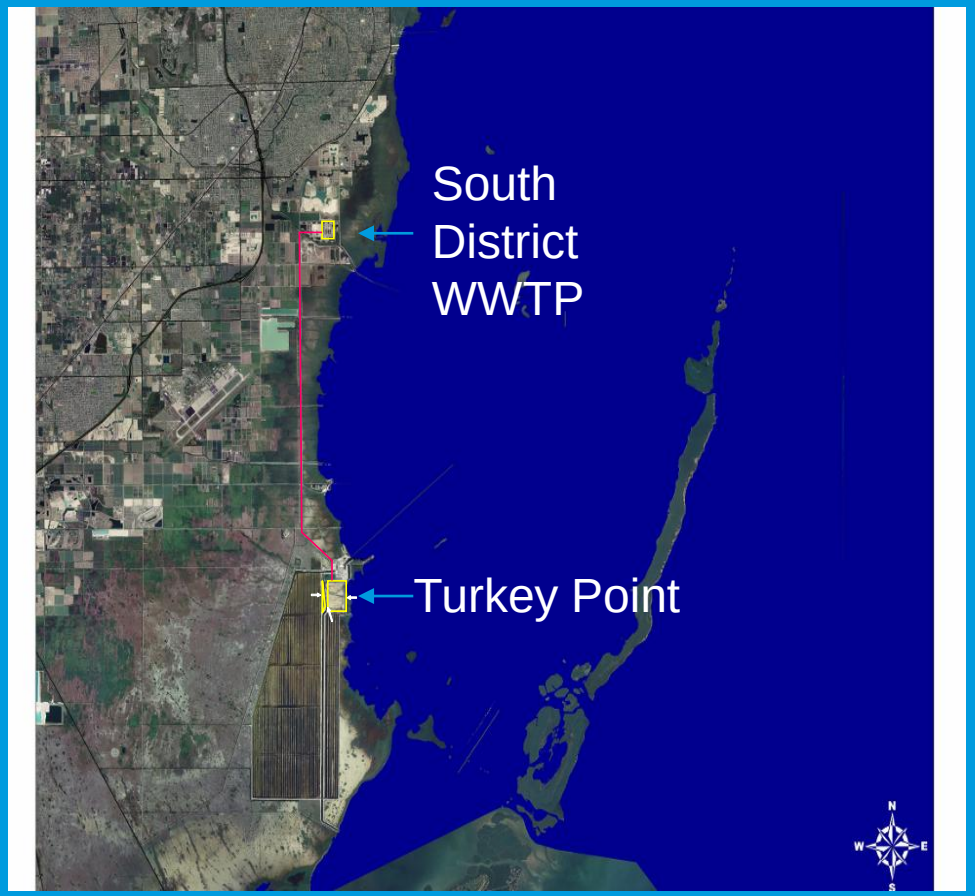
Reclaimed Water Usage (cont.)

- **Combining two serial processes without decoupling (by storage tanks or backup water sources) can impact electric grid reliability**

- **Recent Upsets:**
  - **PBC process upset resulted in high solid content in effluent**
  - **PBC curtailed deliveries until cleared; backup wells could not be brought online**
  - **WCEC had to shut down**
- **Based on FPL's experience, extensive coordination and commitment is required between supplier and user for reclaimed water use to be feasible.**
- **An excellent example of this model is Orange County supplying reclaimed water to the Orlando Utilities Commission Stanton Plant**

Turkey Point 6 & 7 design uses 60 MGD of reclaimed water as primary cooling source

- Joint Participation Agreement with Miami-Dade envisions tight coordination of operations
- 10-mile pipeline will deliver water to FPL site for further treatment
- Does not rely on existing cooling canal system
- A reservoir sufficient to provide five days of storage will decouple operations



Reclaimed water used by Turkey Point 6 & 7 will not compete with reclaimed water reserved for Everglades restoration

Affordable Clean Energy Investments

☼ Investing $3+ billion a year to modernize and improve our infrastructure

- Phasing out older power plants and investing in modern, high-efficiency energy centers that use clean, U.S.-produced natural gas:
  - 33% more fuel-efficient
  - 90% cleaner air emissions
  - 50% cleaner CO_2 emissions rate
  - 57% reduction in cooling water use per MW generated
  - Saving FPL customers more than $1 billion in fuel costs

Advancing Solar Energy

☼ FPL has been investing to advance solar power in Florida for many years

- FPL currently has three solar plants in operation
- By the end of 2016, we will triple our solar generating capacity with the addition of three new universal-scale solar energy centers
- FL's Public Service Commission approved plan is to add 1,200 megawatts of new solar over the next four years
- The additional 1,200 MW saves approximately 10 million gallons per day of water usage

FPL Babcock Ranch Solar Energy Center construction

Advancing Wind Energy

- **FPL's sister company, NextEra Energy Resources, is also taking measures to reduce our water consumption by investing in "water free" power generation from wind and solar**

- Our wind energy capacity has nearly quadrupled over the past decade
- We own and operate approximately 12,600 MW of emissions-free wind energy and will add more than 1,400 MW by the end of the year, which in total is more than enough to power a city the size of Chicago
- With the additional 2016 development, our wind capacity will avoid the withdrawal of more than 112 million gallons of water per day

Demand-Side Management

Energy customers can help reduce water usage through utilizing demand-side management initiatives

- FPL's DSM efforts through 2015 have resulted in an estimated energy saving of 74,717,000 MWh
  - Eliminating:
    - The need to construct the equivalent of approximately 15 new 400 MW power plants
    - Withdrawals of an additional 17 billion gallons of water for cooling purposes annually
    - Withdrawals of an additional 20-25 million gallons of water annually for steam generation
    - Emissions of about 30 million tons of CO_2