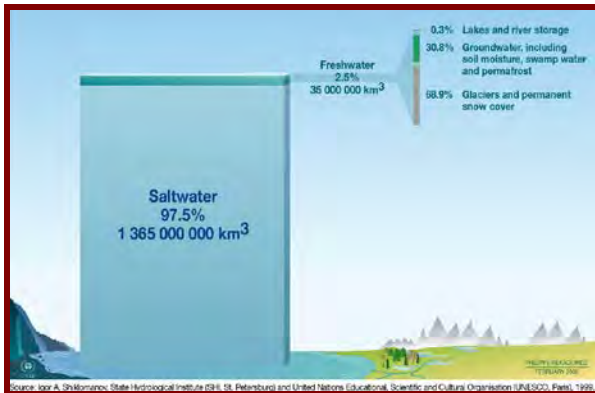


WATER-ENERGY NEXUS

Water is essential. We need access to vast quantities of water for agriculture, energy production, industry, livestock, transportation, and direct human consumption. The United States government currently has no comprehensive understanding of water availability, which is critical to making well-informed policy decisions with regard to water allocation. There are many arguments as to why the US must pursue accurate and complete data on our water availability:



MORAL

Water is a finite resource, and access to clean water is a basic human right. With the proper water management, providing potable water to all people is possible. Vast amounts of water are needed to produce electricity for fossil-fueled thermoelectric power plants. The U.S. government has a responsibility to allocate this water appropriately among many competing interests and industries. The precautionary principle would dictate that the government should seek to mitigate or prevent public health and environmental harm in the context of economic development decision-making and should be used to guide energy and water policy in the United States.

ECONOMIC

Residential consumers pay for their water as well as their electricity. However, most thermoelectric power plants do not pay for their water use. This is a gross market imperfection, as there is no incentive for facilities to install water efficiency measures. Additionally, our water and energy infrastructure is decades old and deteriorating and we must extensively upgrade both systems in coming years. This investment will require a thorough examination of water resources and hopefully push decision makers towards favoring sustainable, water-saving technologies. There are energy options available that are cost-competitive with fossil fuels and have significantly fewer impacts on water resources.

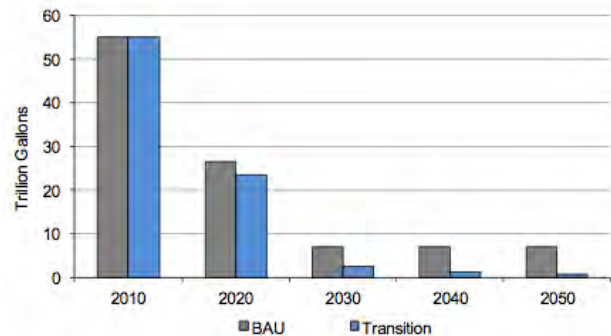


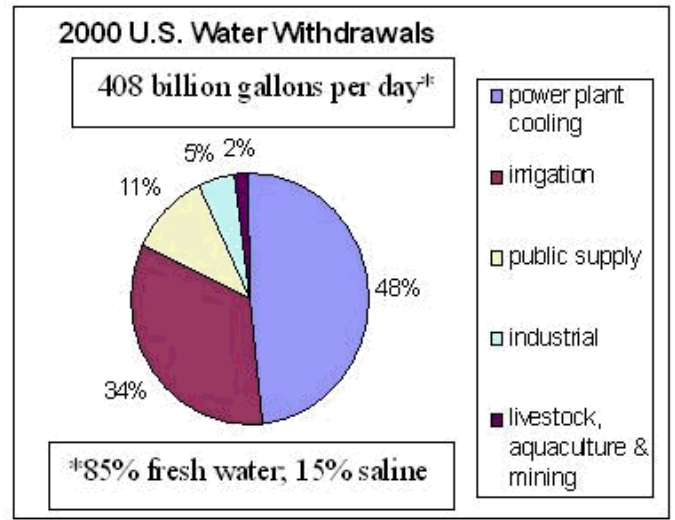
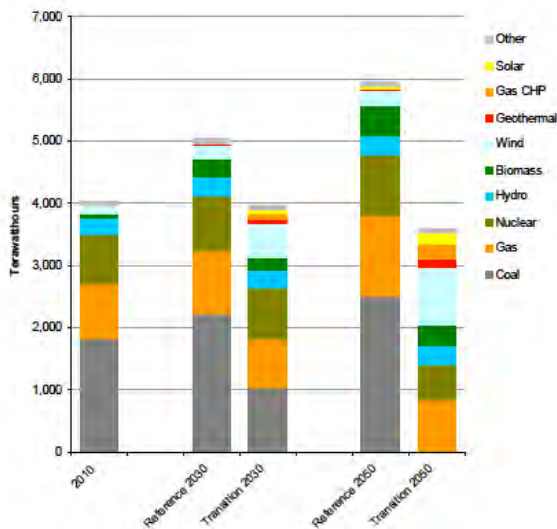
Figure 11. Water Withdrawals at Power Plants in the Two Scenarios

POLITICAL

There is currently no accurate and complete data regarding water resources in the U.S. to inform the public and policymakers. Without federal guidance, state governments have made efforts to manage water resources. However, hydrological systems do not respect political boundaries and states often must compete with one another for water. This patchwork of competing regulations and policies creates tension between the states multiple stakeholders leading to inconsistent water policy.

POLICY PATH

The United States currently has no clear direction when it comes to water resource management or energy policy. With thermoelectric power plants responsible for 49% of water withdrawals in this country, it is critical that an energy policy look toward water saving technologies. As an example, per megawatt-hour generated, the least efficient coal-fired power plants use up to 26,000 gallons of water where as a wind turbine uses about 61 gallons.



FUTURE

With an electricity system so heavily invested in a diminishing supply of finite resources such as fossil fuels and water, policymakers must begin to emphasize sustainability – both resource and economic sustainability. It is technologically feasible and economically preferable to move toward a transition scenario (as outlined on the left). We must advance policies that invest in our future and provide secure energy and water supplies for future generations, while ensuring access to safe, clean water and energy for the current population. Making the right decisions regarding energy and water supplies and allocation today will ensure that future generations will have the resources necessary to meet their basic needs and still maintain a high quality of life.