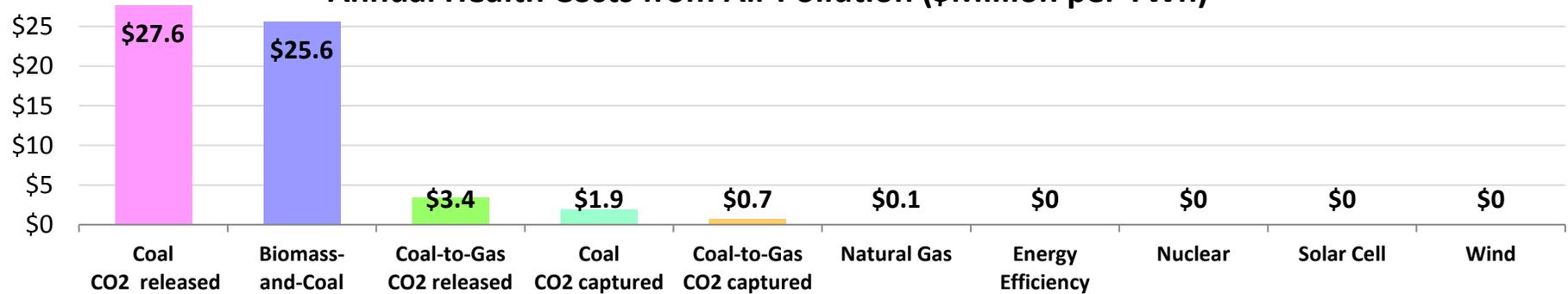


Health Impacts

Some power plants release pollutants into the air called particulates, nitrogen oxides and sulfur dioxides. People who are exposed to this air pollution may have a higher risk of health problems and even dying. They also have more emergency room visits, hospitalizations and lost work days. You could build the power plants further away from where the people are living. But, then the electricity would cost more because it is expensive to transmit electricity over long distances. The health cost bar graph below shows the annual cost to PA (in millions of dollars) from these health effects (per TWh of electricity) from each type of power plant. These costs would likely increase the cost of health insurance and state taxes that are used for health programs.

Annual Health Costs from Air Pollution (\$Million per TWh)

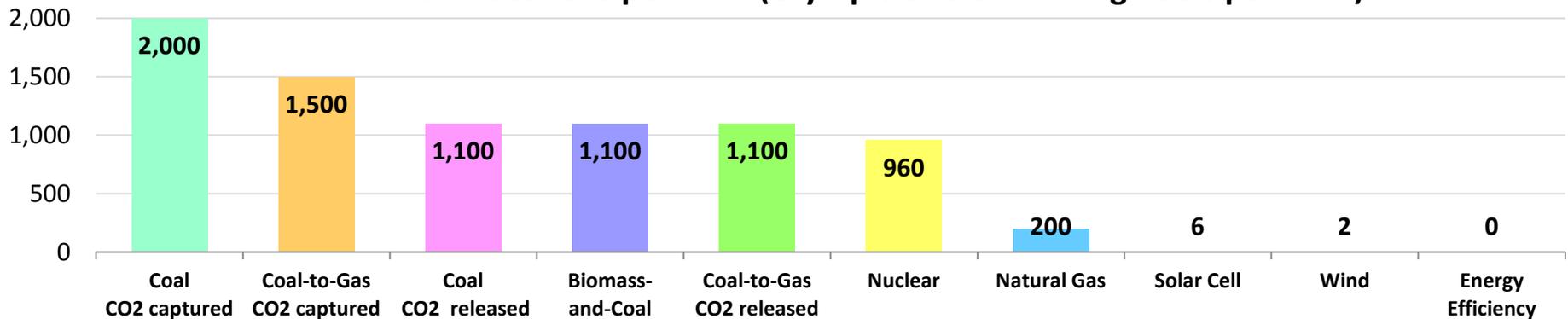


	Coal CO ₂ released	Biomass-and-Coal	Coal-to-Gas CO ₂ released	Coal CO ₂ captured	Coal-to-Gas CO ₂ captured	Natural Gas	Energy Efficiency	Nuclear	Solar Cell	Wind
Particulates: The power plants that are checked at right are a source of small particles that get into air called particulates. They make the air look hazy. The smaller ones can pass through your nose and throat. They get deep into your lungs. They can cause a variety of health problems such as asthma attacks, which may result in death.	✓	✓	✓	✓	✓					
Nitrogen Oxides and/or Sulfur Dioxide: The power plants that are checked at right release nitrogen oxides and/or sulfur dioxide into the air. These gases can be converted into small particles and cause smog and acid rain. The smog can make your eyes, nose, and throat hurt. Breathing it for long periods of time can lead to lung problems and worsen heart disease. The acid rain can turn lakes and rivers acidic and can damage trees.	✓	✓		✓		✓				
Indirect Nitrogen Oxides: Since the power plants checked at right cannot produce electricity when it is not windy or sunny, natural gas plants must be built back them up. The natural gas plants do release nitrogen oxides.									✓	✓
No Direct Air or Water Pollution: The power plants checked at right do not release any direct air or water pollution when operating normally.							✓	✓	✓	✓

Water Impacts

Many power plants use water – mostly for cooling purposes and small amounts to clean equipment. Sometimes the water can be recycled. Sometimes it evaporates or is “used up”. During summer droughts or in dryer climates, conservation of water is especially important. The water use graph shows how much water is consumed or “used up” by the power plant type at all points in the supply chain (for example, coal plants use water at the coal mine and at the plant). It does not include the water that can be recycled. The graph shows the annual amount of water used (per TWh of electricity) from each type of power plant. This water volume is shown in terms of Olympic size swimming pools. One Olympic size pool holds about 650,000 gallons of water

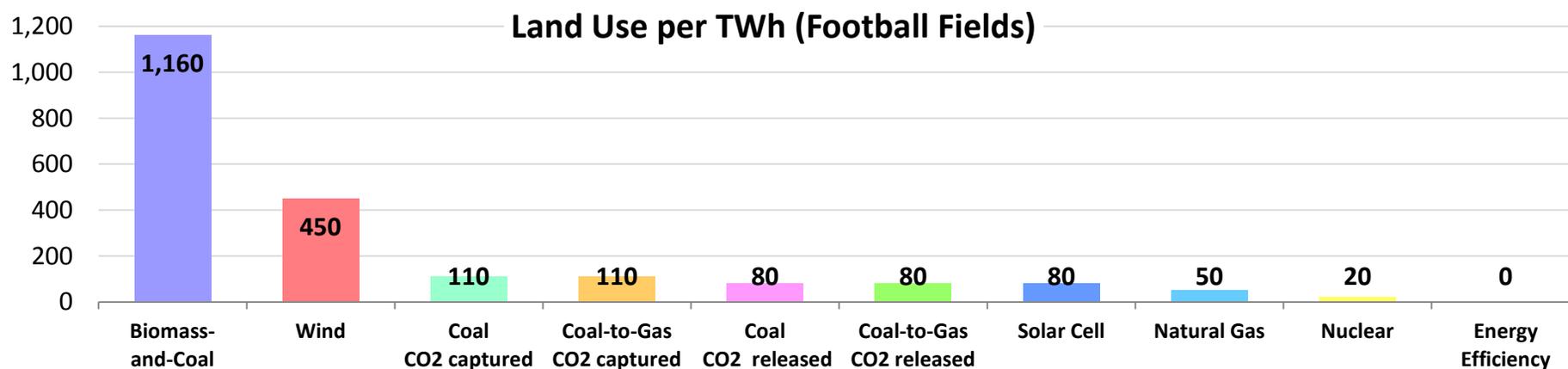
Annual Water Use per TWh (Olympic-Size Swimming Pools per TWh)



	Coal CO ₂ captured	Coal-to-Gas CO ₂ captured	Coal CO ₂ released	Biomass-and-Coal	Coal-to-Gas CO ₂ released	Nuclear	Natural Gas	Solar Cell	Wind	Energy Efficiency
Hot Water Is Released: The power plants checked at right use water to cool down the steam that has been used in the plant. The water comes from wells, lakes, rivers or oceans. When the water is returned to its source, it is hot. This may disturb plants and animals living in the water.	✓	✓	✓	✓	✓	✓	✓			
Water for Cleaning Only: Most of the water use by the power plants checked at right is for cleaning purposes.								✓	✓	

Land Impacts

Some power plants use up a lot of land. This can be harmful to the environment if for example, forests and animal habitats are disturbed. The land use graph shows how much land is used by the power plant at all points in the supply chain (for example, coal plants use land at the coal mine and at the plant). The graph includes the land that can be used for other purposes (for instance, land around a wind machine is included, even though it can sometimes be used for farming). The graph shows the amount of land used (per TWh of electricity) by each type of power plant. The land area is shown in terms of football fields.



	Biomass-and-Coal	Wind	Coal CO ₂ captured	Coal-to-Gas CO ₂ captured	Coal CO ₂ released	Coal-to-Gas CO ₂ released	Solar Cell	Natural Gas	Nuclear	Energy Efficiency
Drilling and Mining: For the power plants checked at right, mining and/or drilling can disturb the local land, plants and animals.	✓		✓	✓	✓	✓		✓	✓	
Land may also be Used for Other Purposes: Some of the land use area included for the plants checked at right may also be used for other purposes (for example, the land above underground gas pipelines or the land between wind machines).		✓	✓	✓				✓		