

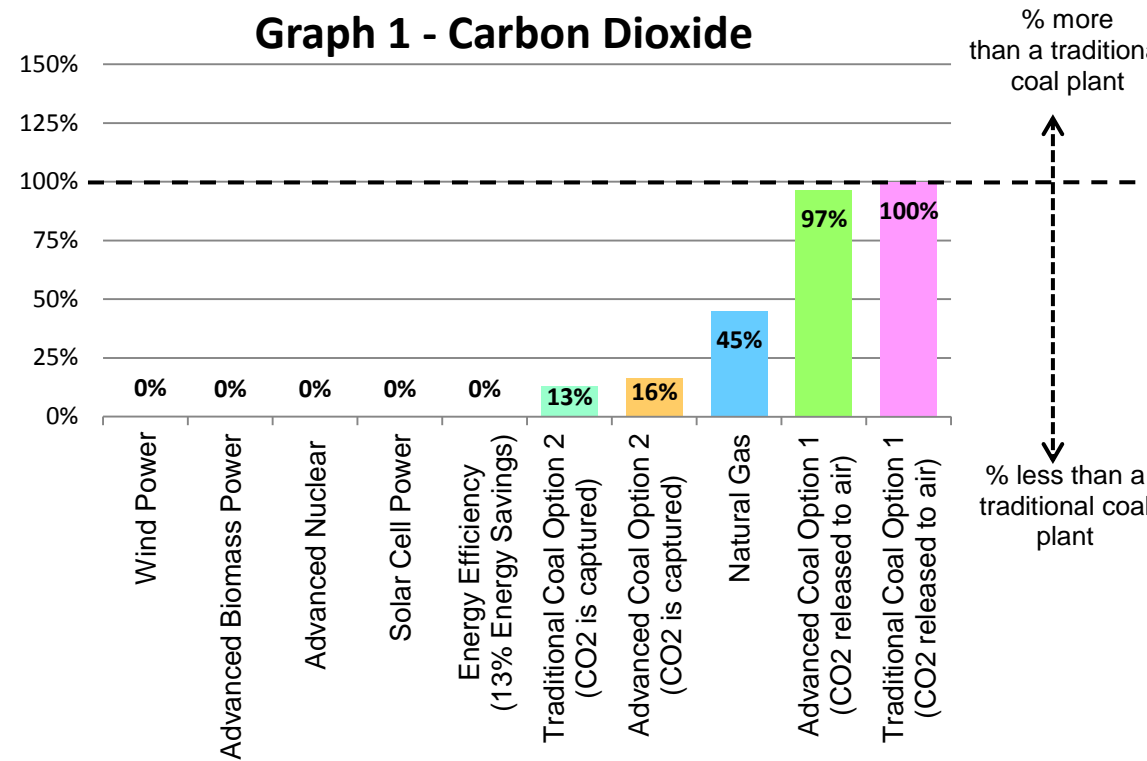
Types of Pollution
<b>CO<sub>2</sub> (Carbon Dioxide)</b> – Coal and natural gas plants release CO <sub>2</sub> into the air. The CO <sub>2</sub> can contribute to climate change. This may lead to a hotter, dryer climate, more intense storms, more floods and droughts, and rising sea levels. The change in climate can have an effect on crops, plants and animals.
<b>Nitrogen Oxides</b> – Coal, natural gas and biomass plants release nitrogen oxides into the air. The nitrogen oxides can cause smog and acid rain. It can also contribute to the creation of particulates (see the ‘Particulates’ box below). The smog can make your eyes, nose, and throat hurt. It can also cause lung problems, especially in young children. The acid rain can turn lakes and rivers acidic. It can also damage trees, and wear down statues and paint on buildings.
<b>Sulfur Dioxide</b> – Coal and biomass plants release sulfur dioxide into the air. The sulfur dioxide can contribute to the creation of particulates (see the ‘Particulates’ box below). It also can cause breathing problems, especially in people with asthma. Breathing it for long periods of time can lead to lung problems and worsen heart disease. It also causes acid rain. This can turn lakes and rivers acidic. It can also wear out trees, statues and paint on buildings.
<b>Particulates</b> – Traditional coal plants release particulates into the air. Nitrogen oxides and sulfur dioxide also make particulates. They are very small particles. When they get in the air, it looks hazy. The smaller ones can pass through your nose and throat. They get deep into your lungs. That can lead to breathing problems and worsen heart or lung disease.
<b>Mercury</b> – Traditional coal plants release mercury into the air. Some of the mercury ends up in water, where it can get inside fish. If people eat too much fish with mercury, that can harm their brain, heart, kidneys, lungs, and immune system. This is especially true for children.

# Pollution Comparison

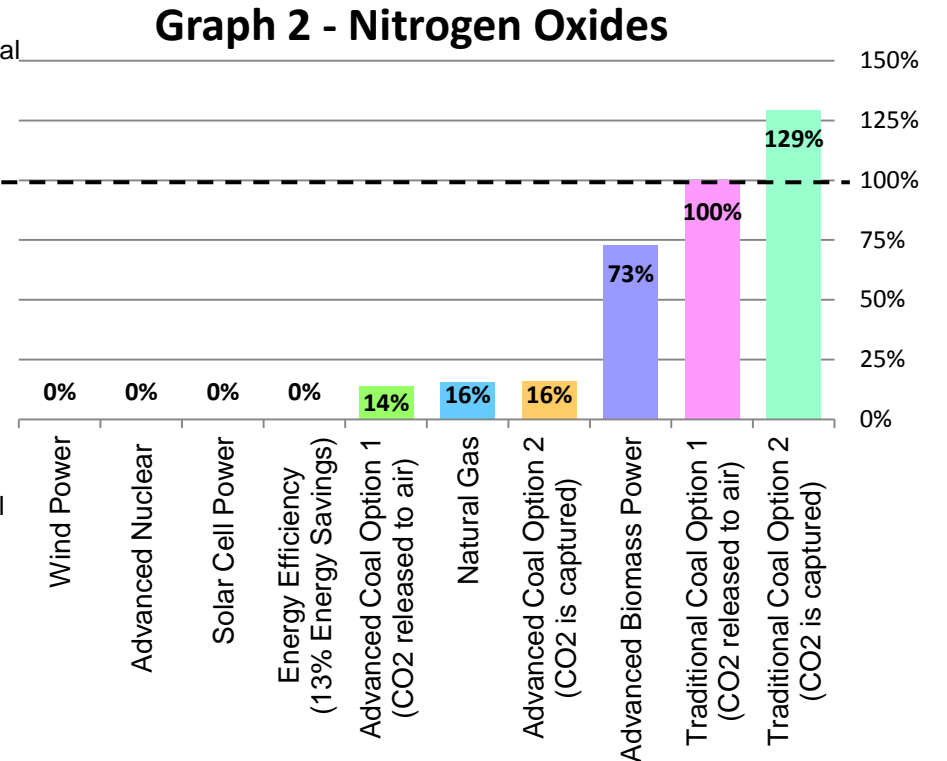
Five types of pollution are shown on this sheet. Each is described in the table to the left. Read the table, “Types of Pollution” to learn more.

The graphs below compare traditional coal plants with other power plant types. The graphs show these 5 types of pollution: (1) CO<sub>2</sub> (carbon dioxide), (2) nitrogen oxides, (3) sulfur dioxide, (4) particulates and (5) mercury. The size of each bar shows the percent of pollution put out by that plant compared to that from traditional coal plants. The pollution from traditional coal plants is always shown as 100%. If a power plant type pollutes less than traditional coal plants, the graph will show a percentage that is less than 100%. If it pollutes more, a percentage greater than 100% is shown. So, the smaller the percentage, the less pollution put out by that plant. A graph shows 0% if a power plant type puts out (almost) no pollution. Overall, shorter bars on the graph are better than longer ones.

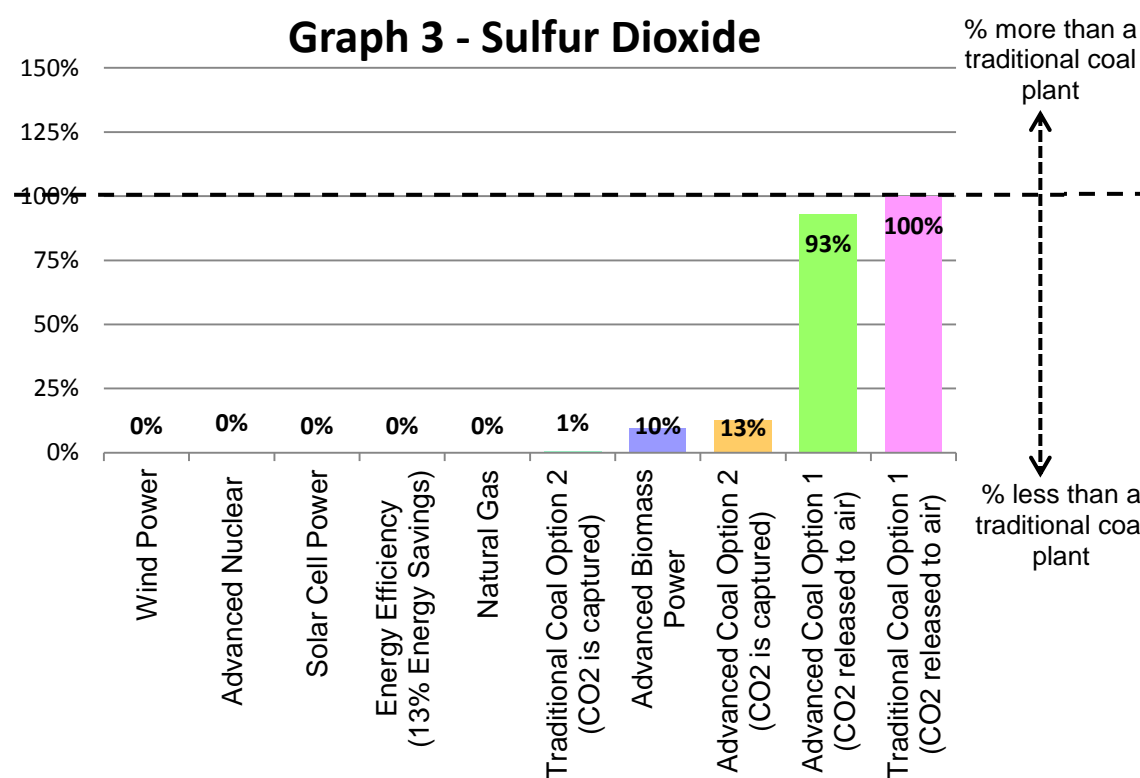
### Graph 1 - Carbon Dioxide



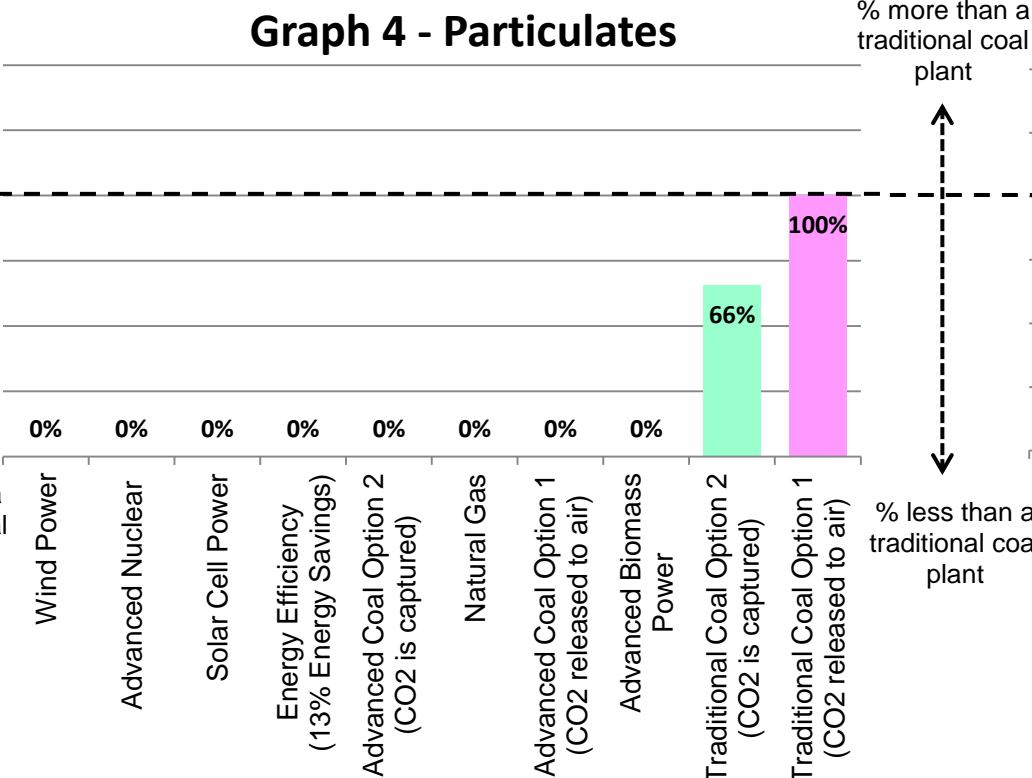
### Graph 2 - Nitrogen Oxides



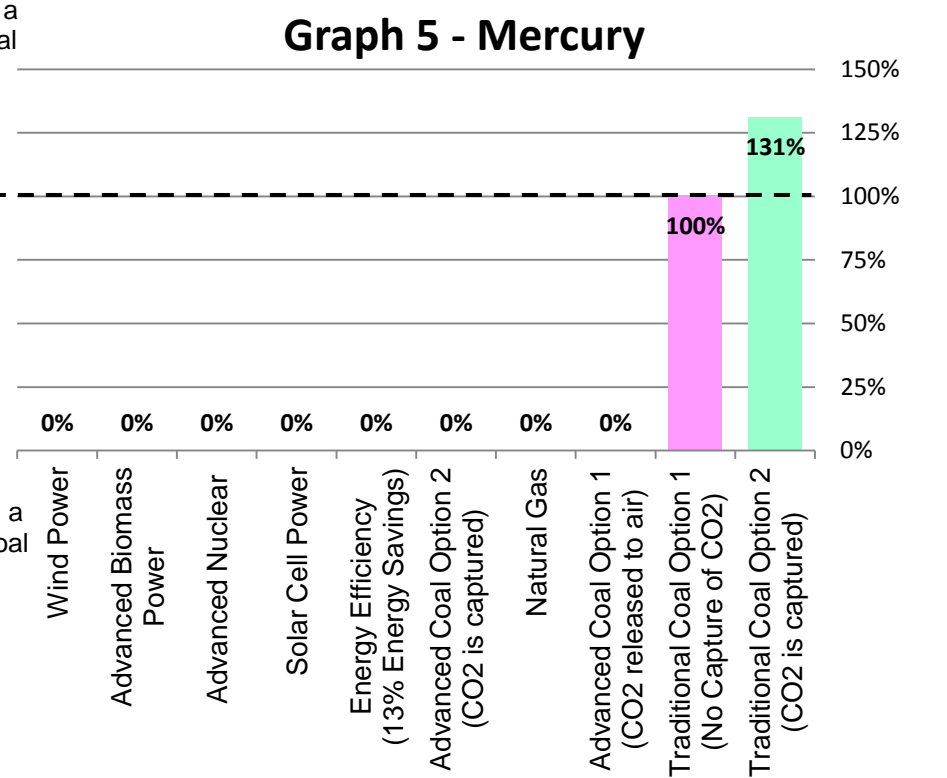
### Graph 3 - Sulfur Dioxide



### Graph 4 - Particulates



### Graph 5 - Mercury



# Cost Comparison

The graph below on the left shows the estimated cost of electricity from each power plant type. The graph below on the right zooms in on types that cost less than \$0.25 per kilowatt-hour. A kilowatt-hour is a measure of electricity use. One kilowatt-hour can power a 100-watt light bulb for 10 hours. The average PA household uses about 700 kilowatt-hours each month. Your house may use more if it has electric heating or electric water heating, if it is very large or if it uses lots of air conditioning.

The numbers on the right side of each graph are the cost of electricity in dollars per kilowatt-hour. The numbers on the left side are the monthly bill for an average PA household if their electricity had the cost shown on the right. The numbers on the right are multiplied by 700 kilowatt-hours to get the monthly bill numbers on the left. Let's say that electricity costs \$0.20 per kilowatt-hour. Then, the monthly bill would then be \$140.

Since experts are not certain about future electricity costs, each bar shows a range. The gray center of the bar (and the dollar value just to its left) show the most likely monthly electric bill. The longer the shaded bar, the more uncertain experts are about the costs. This is also explained in the box titled "Legend" to the right.

**Legend**

This shows the monthly electric bill for an average PA household. It is the cost per kilowatt-hour for that power plant type times 700 kilowatt-hours.

The shaded bar shows the range of possible electricity costs from each power plant type.

