

1. U.S. Global Warming Pollution Remains Greater than China and India

Carbon dioxide emissions from China and India added together will be approximately 90 percent of the U.S.'s emissions by 2025, according to projections from the U.S. Department of Energy (see Figure 1).ⁱ

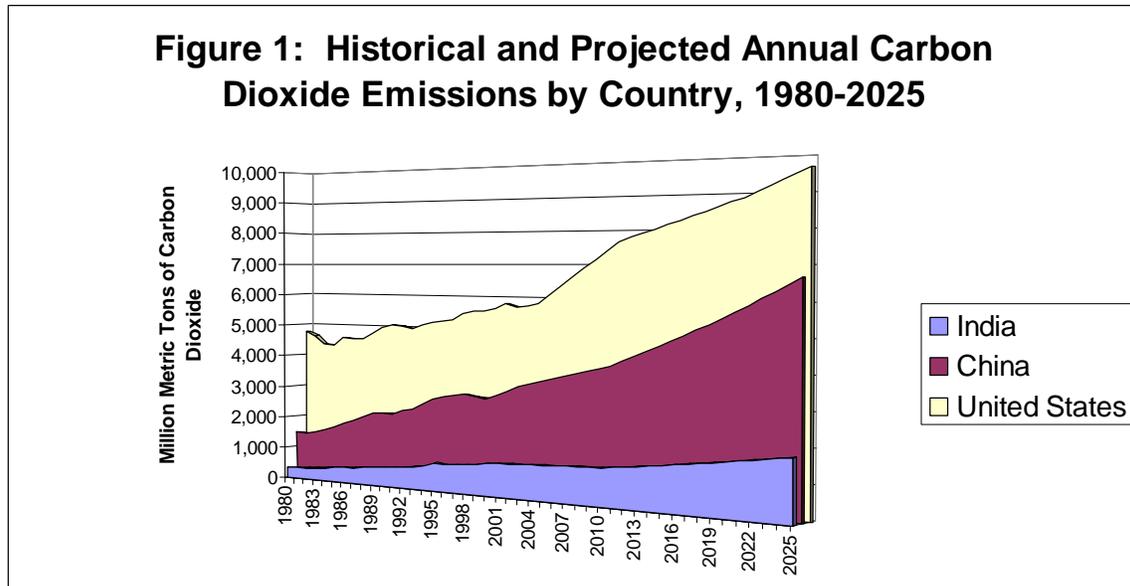


Figure 1 shows that by 2025, U.S. emissions will total 9.66 billion metric tons of carbon dioxide, up from 4.75 billion metric tons in 1980. China's and India's annual carbon dioxide emissions are increasing, and their combined emissions will equal about 90 percent of U.S. emissions by 2025, although the two countries together have almost eight times the population of the U.S.

There is little doubt that developing countries will be major contributors to greenhouse gas emissions in the future as their economies expand, and their emissions growth rate will exceed growth in developed countries. China and India's emissions are projected to grow by over four percent per year between 2010 and 2025, while the U.S. annual growth in emissions will be about two percent. However, carbon dioxide and other greenhouse gases remain in the atmosphere for decades after they are emitted. While there is some natural cycling between the atmosphere and sinks such as forests and oceans, cumulative emissions are a much better indicator of a country's relative contribution to atmospheric concentrations of greenhouse gases.

Figure 2 shows that even in 2025 with increased emissions from China and India, the U.S. will have been responsible for twice as much cumulative emissions from 1980 as China and India combined.ⁱⁱ The picture is even more lopsided going back further in time. Oak Ridge National Laboratory has estimated country-by-country carbon dioxide

emissions back to the beginning of the industrial revolution. According to those data, in 1940, the U.S. emitted 20 times as much carbon dioxide as China and more than 50 times as much as India. However, while the U.S.'s carbon dioxide emissions grew nearly 1.5 percent per year from 1940 through 1980, China's emissions did not begin growing until the early 1950s, and did not begin rapid growth until 1970. India's growth in emissions was even slower, and did not even begin until about 1970. This means that from 1940-1980, the U.S. was responsible for more than six times as much cumulative global warming pollution as China, and more than 16 times as much as India.

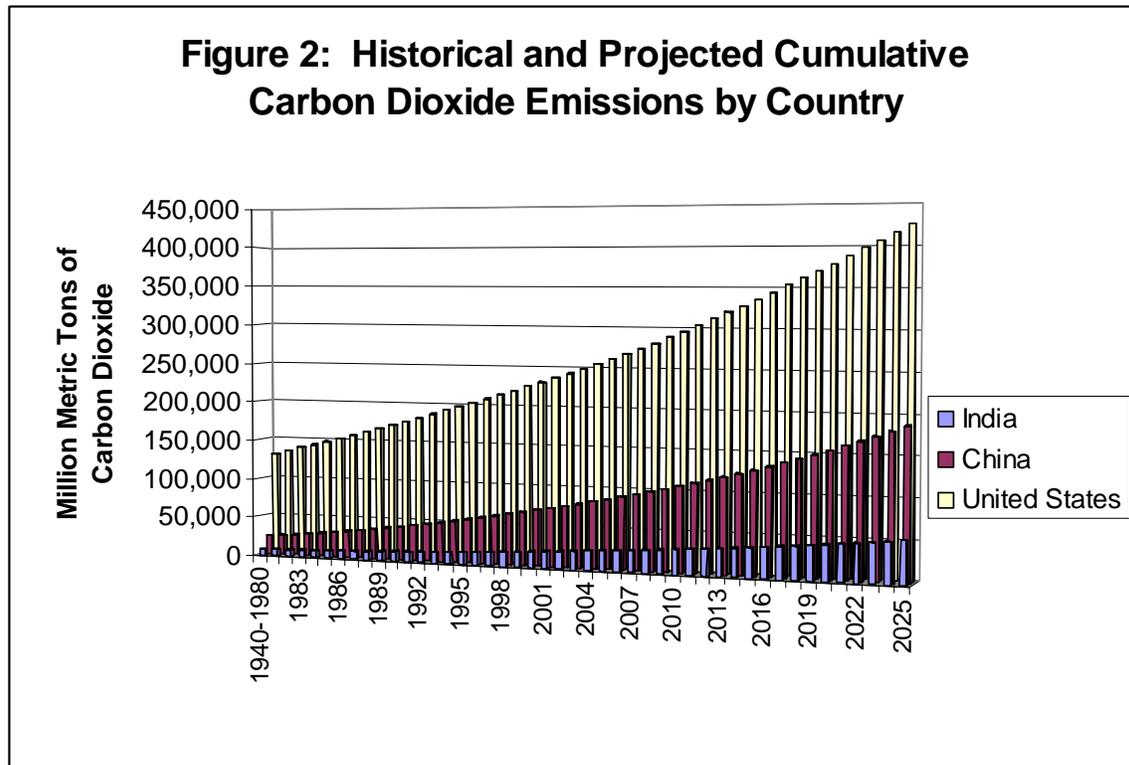


Figure 2 shows that the U.S.'s cumulative carbon dioxide emissions (a direct measure of global warming pollution) are far greater than China's or India's. By 2025, the U.S. will have emitted 426 billion metric tons of carbon dioxide since 1940 – more than twice as much as China (187.4 billion), and more than eight times as much as India (53.6 billion). So even though China's and India's emissions are increasing, the U.S. will still remain responsible for far more global warming pollution than either of those countries.

In light of these figures, the argument that developing countries will have somehow caught up to the U.S. in terms of responsibility for global warming pollution just doesn't hold up.

2. The U.S. Is Less Energy Efficient than Other Developed Countries

The U.S. and other countries have generally become more energy efficient over time – that is, as measured by using less energy per dollar of GDP. However, according to the

U.S. Department of Energy, almost all other developed countries have consistently used less energy per dollar of GDP than the U.S., at least since 1980 (see Figure 3).ⁱⁱⁱ Only a few other developed countries use more. While this gap has narrowed over time, and the U.S. has decreased its intensity by approximately 40 percent, most of the other countries have decreased their intensities as well. The fact is that the U.S. is simply less energy efficient than nearly every other developed country – which explains why the U.S. emits 25 percent of the world’s greenhouse gases with only five percent of the world’s population.

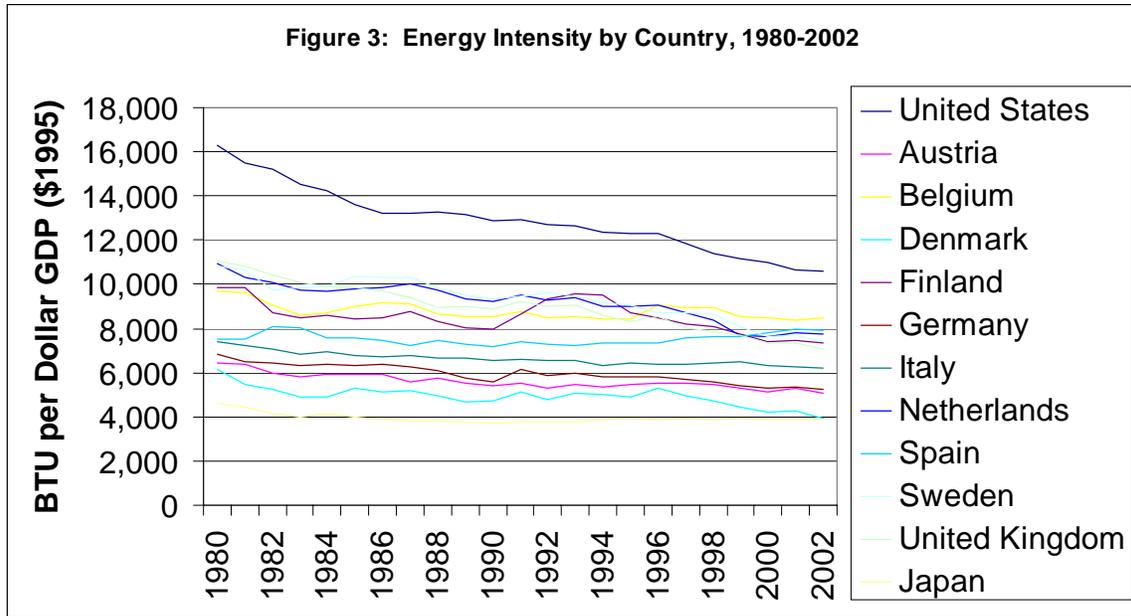


Figure 3 shows that the U.S. is still less energy efficient than other developed countries. The U.S. has become much more energy efficient over the past 20 years, going from over 16,000 BTUs generated per thousand dollars of GDP in 1980 to 10,575 in 2002, a drop of more than one-third. However, other countries that were more energy efficient in 1980 have also improved.

3. The U.S. Lags behind Other Developed Countries in Deployment of Renewable Energy Technology

Despite its poor energy efficiency record, the U.S. has traditionally been a leader in technology development, and has been responsible for most of the advances to date in energy efficiency technology. In the early 1990s, the U.S. deployed more of those technologies at home than other countries. This was the case for electricity generated by wind and solar photovoltaic (PV), both of which were largely developed here in the U.S. (see Figures 4 and 5).^{iv}

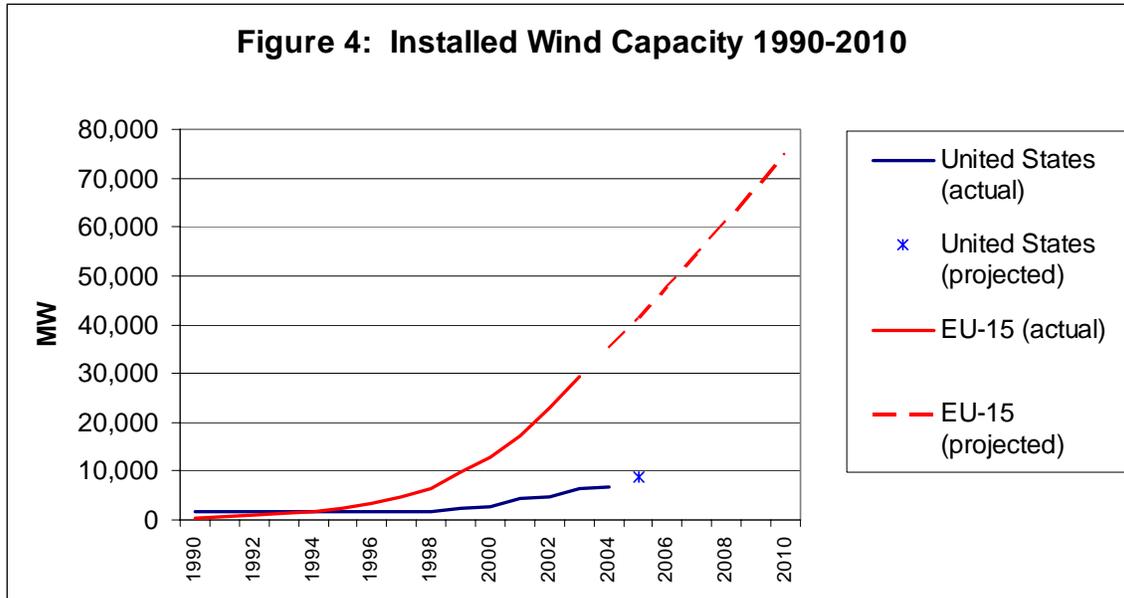


Figure 4 shows that the EU overtook the U.S. in deployment of wind generation in 1994. Currently, the U.S. generates 6,740 megawatts of electricity from wind power, compared to more than 30,000 in Europe. The EU has a target of 75,000 megawatts of wind generation in 2010.

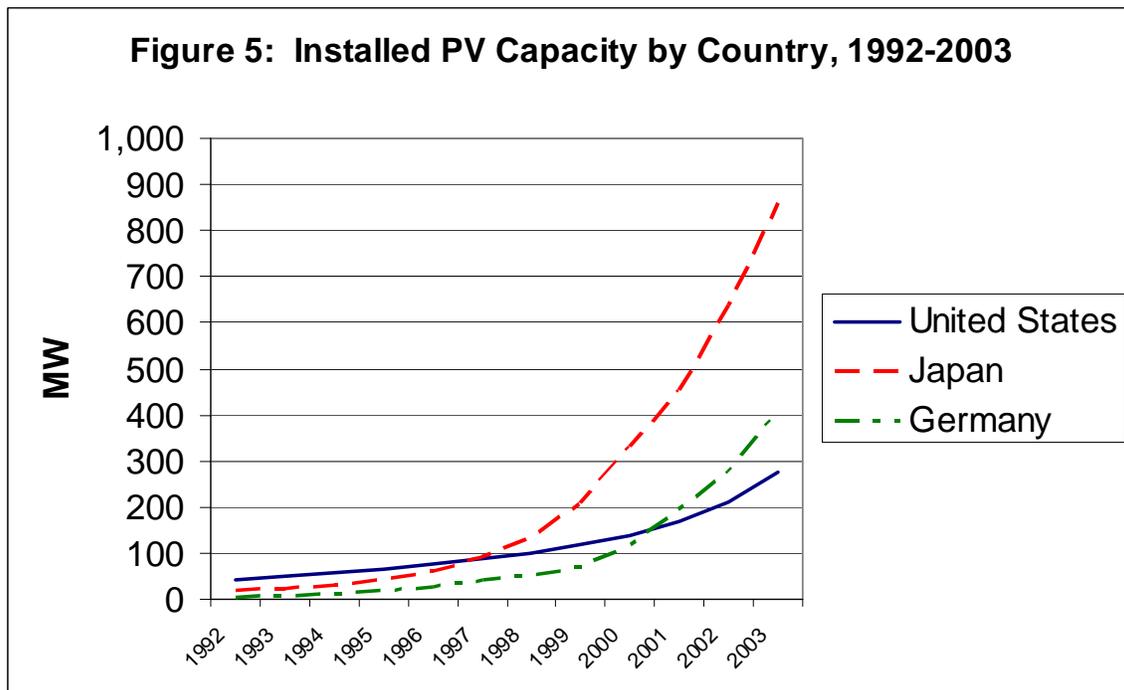


Figure 5 shows that solar PV, a technology developed largely by U.S. companies, is being deployed far more in other countries. Japan outpaced the U.S. in 1997, and generates 859 megawatts of electricity from PV. Germany overtook the U.S. in 2001.

However, other countries began outpacing the U.S. in deployment of wind and PV power in the mid-1990s. This is principally due to a lack of national policy on electricity generation from renewables. Although some states have implemented renewable portfolio standards (RPS), the patchwork of individual state regulations makes it difficult for the technology to take hold. Similarly, the here-this-year-gone-the-next renewables tax credit makes planning for U.S. sales all but impossible for companies that produce these technologies.

Luckily for them, they have an expanding market in Europe. The EU has set a goal of generating 75 GW of power from wind energy by 2010. If deployed here, those 75 GW would satisfy almost 20 percent of the projected growth of U.S. electricity demand by 2020. While other countries do not appear to have goals for PV deployment (and worldwide PV deployment is relatively small), Japan is significantly ahead of the U.S. and represents the world's largest market for PV technology.

Endnotes

ⁱ U.S. EIA, *International Energy Outlook 2004*. http://www.eia.doe.gov/oiaf/ieo/pdf/appa9_a14.pdf. Data are projected for every five years and were interpolated for intermediate years.

ⁱⁱ Data for 1980-2025 from U.S. EIA (see Endnote 1). Pre-1980 data from Oak Ridge National Laboratories as displayed by U.S. EPA. <http://yosemite.epa.gov/OAR/globalwarming.nsf/content/EmissionsInternational.html>

ⁱⁱⁱ EIA, *International Energy Annual 2002*, in constant 1995 dollars. <http://www.eia.doe.gov/pub/international/iealf/tablee1g.xls>

^{iv} Wind power data for U.S. from American Wind Energy Association, *Wind Energy Outlook 2005*. <http://www.awea.org/pubs/documents/Outlook%202005.pdf>. Data for EU countries from European Wind Energy Association, <http://www.ewea.org/03publications/75MW.htm>. Data on photovoltaics from the International Energy Association. <http://www.oja-services.nl/iea-pvps/isr/index.htm>.

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