THE ENERGY REVOLUTION: GREENING THE GRID

RAINFOREST ACTION NETWORK

July 2007

Our future hinges on the choices we make today.
Will we continue to produce and consume energy in a manner that accelerates climate change? Will we allow today's corporate energy systems to become so entrenched that the impacts of global warming are inevitable? Will we continue to wage devastating wars over diminishing fossil fuels? Will the next generation witness the collapse of entire ecosystems? Or can we move beyond dirty fossil fuels and avert catastrophic climate change by prioritizing energy efficiency and conservation, coupled with increased use of renewable energy sources like wind and solar?

You know which future you'd choose,
but do you know which future your bank is funding?

Where things stand today:

The facts of climate change are no longer open to debate. Scientists agree that human-induced climate change is real, and that it is not a problem of the future, but of today. More than 150,000 people died from the impacts of climate change in 2000[1]); weather patterns are shifting violently; and glaciers, snow packs and ice sheets are melting rapidly. Nobody knows precisely what the future holds, but we do know that these changes are being caused by the burning of fossil fuels, and that unless we act now, things will get much worse.

More than 82 percent of all climate-changing carbon dioxide emissions in the U.S. come from the burning of fossil fuels. Electricity production is the leading cause of these emissions, and almost half of our electricity is derived from the dirtiest fossil fuel of them all: coal. In the U.S., burning coal creates more than 1.9 billion tons of greenhouse gases every year and is responsible for one-third of our overall emissions.[2]

To make matters worse, the U.S. is undergoing a coal resurgence, with more than 150 new coal-fired power plants in development around the country. These new plants will cost more than $145 billion dollars to build [3] and emit more than 600 million tons of greenhouse gases annually.[4]

Rather than take a stand against global warming, our biggest financial institutions are bankrolling it by funding this new generation of dirty coal development.

Where we could be:

Coal, nuclear and other fossil-fuel power plants are outdated, dangerous and unnecessary sources of energy. We can end our dependence on fossil fuels, curb climate change, protect our environment, and build healthier economies and communities by switching to clean, proven renewable energy options. It's time to get out from under the thumb of corporations whose only concern is economic self-interest. It's time to start an energy revolution by greening the grid.

Energy Efficiency – The First Fuel

The fossil fuel industry likes to blame our energy addiction on a growing demand for electricity, but energy consumption need not grow as we have been led to believe. We can dramatically reduce electricity usage and combat climate change through simple conservation and energy-efficiency measures. Many such options are available to us, but energy companies don't profit from selling less energy. Whether it's smarter urban planning, better insulation of buildings, mandating compact-fluorescent light bulbs, or simply turning off our lights and air conditioners when they aren't needed, we can dramatically reduce our energy needs and save money at the same time.

The production and transmission of electricity could also be far more efficient. According to a joint report by the European Renewable Energy Council and Greenpeace, [5] our current centralized energy infrastructure wastes more than two-thirds of the energy it produces. By decentralizing energy-generating facilities, we can vastly decrease those energy losses by harnessing and using wasted heat, as well as avoid the 6 to 8 percent of electricity lost along long-distance transmission lines. Localizing energy production would also encourage community self-sufficiency and control of energy resources based on local needs.

California has proven this over the past 30 years. While national energy usage grew nearly 60 percent per capita since the 1970's, California's demand remained flat during the same period, even as the state underwent significant economic growth. California's efficiency measures save families almost $1,000 on utility bills every year and eliminate pollution equivalent to 14 million cars on the road.[6]

Energy efficiency means more money stays in the hands of working families and communities, rather than going to fund climate destruction.

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FAST FACTS ON ENERGY EFFICIENCY:

• If invested in energy efficiency measures, the $144 billion being spent on new coal plants could reduce U.S. electricity demand by roughly 19 percent by 2025, eliminating the need for new coal power plants.[7]
• The Swiss Federal Institute of Technology estimates that energy efficiency measures could reduce per capita electricity usage in the U.S. by 80 percent.[8]
• The International Energy Agency estimates that we can cut global C02 emissions by 470 million tons and meet more than half of the Kyoto Protocol goals simply by switching to compact fluorescent light bulbs.[9]
The cheapest and cleanest energy is energy we don't use. Efficiency and conservation should be recognized as the "first fuel." By prioritizing energy efficiency in building construction, urban planning and industry, we can end the rush to build new fossil fuel power plants and start turning off existing ones.

LIVING ENERGY FROM (AND FOR!) A LIVING EARTH

We must phase out polluting energy sources that destroy people and the planet. The question is no longer if we should transition to renewable energy, but when. To prevent greater harm to communities and ecosystems and avert catastrophic climate change, we need to start this transition today.
We can switch to "living" energy that is clean and renewable – energy that comes from a living world and maintains a living world. Though renewable energy currently fulfills only 2 to 3 percent of U.S. electricity needs, its technological development, popularity and usage are growing rapidly.
Wind, solar, tidal, geothermal, and small-scale hydroelectricity [10] are clean, renewable sources of energy and are among the world's fastest growing technologies. With the potential to decentralize energy production, renewable energies offer communities the chance to reclaim self-sufficiency and rebuild localized economies while providing cheaper, cleaner energy solutions.

FAST FACTS ON RENEWABLE ENERGY:

• By 2020, the U.S. could meet 20 percent of our electricity needs from renewable sources. This would avert the need for 975 new power plants, allow for the closing of 180 old coal plants and 14 existing nuclear plants, and save consumers $440 billion.[11]
• By 2050, the U.S. could meet nearly 80 percent of its electricity needs from renewable sources. [12]
• By 2025, solar panels on rooftops across the U.S. could provide 1,037 Gigwatts of electricity. By comparison, our total demand for electricity in 2005 was only about 900 GW.[13]
• According to the Department of Energy, strong wind-power resources in just 6 percent of the U.S. could supply more than 150 percent of current U.S. electricity consumption. [14]
One of the biggest hurdles to greening the grid is the fact that the trillions of dollars spent on the nation's energy infrastructure largely go to outdated, dirty fossil fuels. Major Wall Street banks like Citi and Bank of America are determining our collective fate by continuing to fund dirty energy while holding back the transition to a green grid. It's time we hold our nation's financial institutions accountable for funding global warming. Together, we can build a clean energy future.

www.DirtyMoney.org

COAL IS OVER. FUND THE FUTURE.

[1] World Health Organization, Fact Sheet #266 "Climate and Health," July 2005
[2] Energy Information Administration, "Emissions of Greenhouse Gasses in the United States," 2001
[3] NETL (National Energy Technology Laboratory), Department of Energy, "Tracking New Coal-Fired Power Plants: Coal's Resurgence in Electric Power Generation," May 1, 2007
[4] Emissions rates of 6.5 Mt CO2 emissions/GW from new power plants are conservatively derived from analysis done by Platts, the energy information division of McGraw-Hill. Many estimates are significantly higher.
[5] European Renewable Energy Council & Greenpeace, "Energy Revolution: A Blueprint for Solving Global Warming, USA National Energy Scenario Report," March 2007
[6] Efficiency News interview with energy efficiency expert Dr. Art Rosenfeld, [date?]
[7] US Public Interest Research Group, "Making Sense of the 'Coal Rush': The Consequences of Expanding America's Dependence on Coal," July 2006
[8] Novatlantis, "Smarter Living: The 2000 watt society," 2004 http://www.novatlantis.ch/pdf/leichterleben_eng.pdf
[9] Who, What, http://www.un.org/apps/news/story.asp?NewsID=22053&Cr=global&Cr1=warming, when?
[10] Small-scale hydroelectric power produces fewer than 10 MW and should be compliant with recommendations from the World Commission on Dams (WDC).
[11] Union of Concerned Scientists, American Council for an Energy Efficient Economy, Tellus Institute report "Clean Energy Blueprint," October 2001
[12] USA National Energy Scenario Report, European Renewable Energy Council & Greenpeace, "Energy Revolution: A Blueprint for Solving Global Warming," March 2007
[13] Navigant Consulting report "PV Grid Connected Market Potential under a Cost Breakthrough Scenario," September 2004
[14] http://www.eere.energy.gov/windandhydro/wind_potential.html

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