

The Economics of Energy

We must “ensure that today’s investments do not lock customers or shareholders into much higher costs tomorrow if greenhouse gases are regulated.”—Three Utility Executivesⁱ

Renewable Energy and Efficiency Portfolio Standard (REPS) ⁱⁱ		Business as Usual
ENERGY BILLS	<ul style="list-style-type: none"> \$577 million saved on energy bills.ⁱⁱⁱ 	<ul style="list-style-type: none"> 0\$ saved on energy bills.
ECONOMIC DEVELOPMENT	<ul style="list-style-type: none"> 2,700/yr jobs gained.^{iv} 6 - 54% increase in local tax revenues across multiple communities.^v Up to \$50 million/yr potential for hog farmers selling carbon credits.^{vi} 	<ul style="list-style-type: none"> \$1.3 billion, 2,000 employee Toyota plant, lost to Mississippi due, in part, to air pollution.^{vii} \$35 million, 400 employee Tesla plant, lost to New Mexico because of our record in addressing global climate change.^{viii}
CRISIS COST	<ul style="list-style-type: none"> Environmental and health risks are reduced. 	<ul style="list-style-type: none"> For 10,000 yrs., we couldn't live in parts of NC if Chernobyl-type accident occurred.^{ix} In 6-9 seconds, we'd get a lethal dose from a 1 yr. old spent nuclear pellet stored at Shearon Harris nuclear plant.^x 14 nuclear plant malfunctions caused unplanned shutdowns by Progress Energy and Duke Energy in the last 6 years.^{xi}
FUEL AND CONSTRUCTION COST	<ul style="list-style-type: none"> 0-negligible^{xii} price for most renewable fuel. 13 renewable energy technologies may be cheaper to install than nuclear.^{xiii} 	<ul style="list-style-type: none"> \$1.6 billion spent on conventional fuel.^{xiv} 16%, 60 yr., rate hike and repayment plan required to finance Shearon Harris.^{xv} At least \$4-\$6 billion debt for new nuclear.^{xvi} \$6.4 billion required for nuclear decommissioning.^{xvii}
BY-PRODUCT COST	<ul style="list-style-type: none"> 7.2- 3.6 million tons of CO₂ displaced per year.^{xviii} \$7.3 - \$340.6 million potential savings on carbon emissions.^{xix} 	<ul style="list-style-type: none"> 0 tons of CO₂ displaced. \$50- \$1.25 billion potential cost of carbon emissions.^{xx} \$1.2 billion, potential liability in health and environmental actions, and litigation for one utility.^{xxi}

ⁱ Karl Bokenkamp (Idaho Power), Hal LaFlash (Pacific Gas & Electric), Virinder Singh (PacifiCorp), and Devra Bachrach Wang, "Hedging Carbon Risk: Protecting Customers and Shareholders from the Financial Risk Associated with Carbon Dioxide Emissions," July 2005, *The Electricity Journal* 18(6): 11–24, cited by Barbara Freese and Steve Clemmer, "Gambling with Coal: How Future Climate Laws Will Make New Coal Power Plants More Expensive," Union of Concerned Scientists, September 2006 at 23, at http://www.ucsusa.org/assets/documents/clean_energy/gambling_with_coal_final_report_sept_06.pdf (last visited May 18, 2007).

ⁱⁱ The North Carolina Utilities Commission employed independent consultants to assess the market for renewable energy in North Carolina. The consulting firm, La Capra Associates, Inc., collected data and conducted analysis. In part of their report, they compare the energy market in North Carolina assuming a 10% REPS, and then assuming no REPS. They call the later scenario business as usual. We adopt their labels.

ⁱⁱⁱ La Capra Associates, Inc., et. al., "Analysis of Renewable Portfolio Standard for the State of North Carolina: Technical Report, Prepared for North Carolina Utilities Commission," December 2006, at 53. In a 10% REPS, of which 2.5% is energy efficiency, customers will save \$577 million as compared to business as usual.

^{iv} *Id.* at 74-75, 76. From the creation and installation of technology to capture gases from animal waste, to building and installing solar panels, experts estimate a renewable energy standard will result the creation of 2,700 jobs more than the conventional utilities' portfolio, annually, for a 7.5% REPS and 2.5% efficiency measure. If North Carolina promotes itself as a center for the production of renewables technology, La Capra suggests that the job creation potential is much greater.

^v *Id.* at xi.

^{vi} See, Environmental Defense, et al, "The Power to Choose," 2007 at 11.

^{vii} Richard Barron, "Pollution plays a role in choice by Toyota," *News Record*, Greensboro, NC, April 10, 2007.

^{viii} "Tesla picks New Mexico over N.C. for plant," *Triangle Business Journal*, February 20, 2007.

^{ix} Wade Rawlins, "Surge in nuclear power likely," *News & Observer*, Raleigh, January 29, 2006.

^x John Murawski, "Nuclear foes see danger in waste," *News & Observer*, Raleigh, April 15, 2007.

^{xi} John Murawski, "Bad time for nuke shutdown," *News & Observer*, Raleigh, September 22, 2006.

^{xii} *Supra* endnote ii at 18. Most renewable energy fuel is free, like sun or wind, or it bears a negligible cost, like urban waste wood from construction.

^{xiii} *Id.* at 40.

^{xiv} See *supra* endnote v at 8; See also, Energy Information Administration, Table 6 at www.eia.doe.gov/emeu/states/sep_prices/eu/pr_eu_nc.html. (last visited May 16, 2007).

^{xv} John Murawski, "Putting a price on nuclear power," *News & Observer*, Raleigh, February 19, 2006.

^{xvi} John Downey, "Duke pushes plans for coal, nuclear." *Charlotte Business Journal*, May 10, 2007.

^{xvii} Duke Energy estimates \$2.3 billion (in 2003 \$) related to nuclear plant decommissioning. See Duke Energy Carolinas, LLC, Form 10-K, 12/31/06, available at <http://www.sec.gov/edgar.shtml>. Dominion estimates \$4.1 billion (in 2006 \$). Dominion Resources, Inc., Form 10-K, filed February 28, 2007, available at http://www.dom.com/investors/pdf/dri10k_dec2006.pdf. NC customers, and customers in other states, will pay in proportion to consumption. The estimates do not include decommissioning costs for Progress Energy.

^{xviii} *Supra* endnote i at 81. A 5% RPS could displace 7.2 million tons of carbon dioxide per year, and a 10% RPS could displace 13.6 million tons. The displacement could save us between \$7.3 and \$340.6 million, depending upon the costs of carbon, and the RPS standard.

^{xix} See *id.*

^{xx} Christopher Kirkpatrick, "Duke to pursue single coal plant," *The Charlotte Observer*, May 11, 2007. According to CEO Rogers, Duke Energy emits about 50 million tons of carbon dioxide, per year. *Supra* endnote i at 80-1. Duke's carbon emissions could cost us between \$50 million and \$1.25 billion dollars per year, depending upon the cost of carbon.

^{xxi} Duke Energy Carolinas, LLC, Form 10-K, 12/31/06, available at <http://www.sec.gov/edgar.shtml>.