NEW JERSEY FACTS

AMERICAN SECURITY PROJECT

Pay Now, Pay Later: New Jersey

Climate change severely threatens New Jersey's coast, which boasts 60% of state residents, over $100 billion in land and property values, and a $30 billion per year tourism industry concentrated in just four shoreline counties.[1]

A mere 1% decrease in visitors to New Jersey annually would cost the state an estimated 40,000 jobs and $3.7 billion in indirect losses by 2017.[2]

New Jersey has the potential to generate nearly a third of its electricity from renewable sources,[3] and clean energy investments can create as many as 48,000 jobs.[4]

According to a new study, a failure to mitigate the effects of climate change could begin to cause serious gross domestic product and job losses within the next several decades. Between 2010 and 2050, it could cost New Jersey $38.9 billion in GDP and nearly 206,000 jobs.*

GDP numbers are based on a 0% discount rate. Job losses are measured in labor years, or entire years of fulltime employment. Backus, George et al., "Assessing the Near-Term Risk of Climate Uncertainty: Interdependencies among the U.S. States," Sandia Report (Sandia National Laboratories, May 2010), 141.* ***https://cfwebprod.sandia.gov/cfdocs/CCIM/docs/Climate_Risk_Assessment.pdf* *(accessed March 23, 2011).*

Admittedly, the effects of climate change, a complex and intricate phenomenon, are difficult to predict with precision. Informed scientific and economic projections, as we have used in our research, however, allow us to see that New Jersey faces significant losses in industries crucial to its economy if no action is taken.

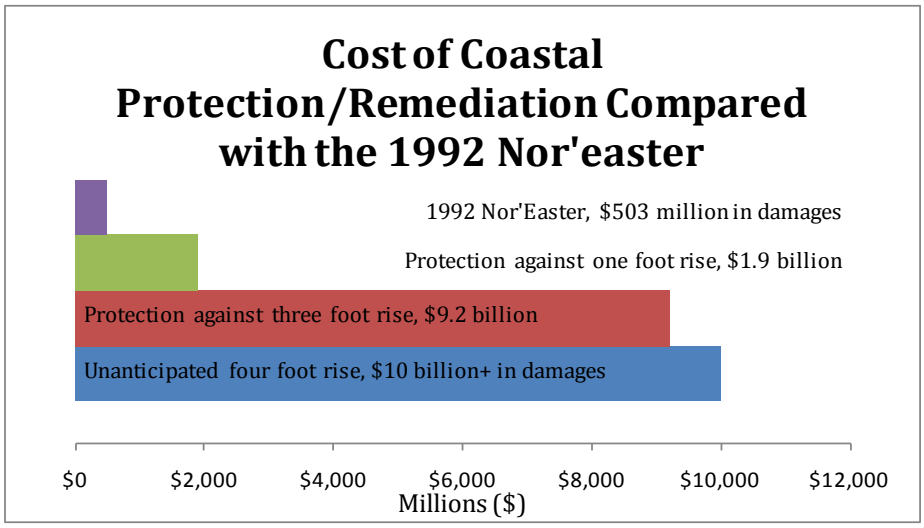
Moreover, data shows New Jersey is poised to benefit from the research, development, and distribution of renewable energy technologies. It has the capacity to produce at least 31% of its electricity from renewable sources, but currently generates only a fraction of that. Since New Jersey also typically produces at least half of its electricity from clean nuclear power,[5] boosting renewable production to 31%—mainly through wind power—would create tens of thousands of jobs[6] and reduce the state's fossil fuel use to less than 20% of electrical consumption.

Should we fail to take action against climate change, Garden Staters have much to lose.

Pay Later: The Cost of Inaction

For many, New Jersey is synonymous with its Atlantic coastline, particularly the sandy beaches of the famous Jersey Shore.[7] It is this coastline that faces the greatest risks from climate change. Recent projections that take into account the Intergovernmental Panel on Climate Change's global sea rise estimates and observed local trends suggest **the sea level around New Jersey will rise nearly 1.5 inches by 2020, and nearly half a foot—5.6 inches—by 2050**.[8] These estimates do not account for a feared acceleration in sea level rise caused by possible rapid changes to ice flow, which could make the changes significantly greater.[9]

As it is, the sea level around New Jersey has risen at nearly twice the global rate over the past century, and **every inch of increase translates to roughly six lost feet of shoreline**—far more than the national average.[10] Combined



Source: National Conference of State Legislatures and Center for Integrative Environmental Research

with the predicted increase in storm intensity, rising sea levels threaten both densely-populated coastal communities[11] and the fragile wetlands central to New Jersey's natural abundance.[12]

A Vanishing Shore

Soil erosion and land subsidence make New Jersey's shore particularly vulnerable to climate change.[13] **Climate models agree that by 2050, currently "once-in-a-century" floods will hit Atlantic City as often as every four years**.[14] In addition, the New Jersey Department of Environmental Protection calculates that 20-year storms will strike as often as once every five years by 2050.[15] New Jersey is particularly susceptible to Nor'easters, such as the one in December 1992 that caused $503 million in damages.[16]

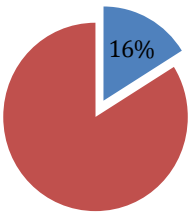
Based on a one to three foot rise in sea level, the Environmental Protection Agency estimated a cost of $160-790 million just to protect the residents of Long Beach Island—roughly $9-44 million *per mile* of shore, or a total of $1.9-9.2 billion if extrapolated to the entire 210-mile shoreline.[17] If climate change continues unabated and seas rise four feet, as the most ominous models predict, New Jersey will likely suffer damages exceeding $10 billion.[18]

A Threat to New Jersey's Workers

More immediate than episodic flooding or gradual sea level rises is the likely effect of climate change on New Jersey's workforce.

The tourism industry is the largest private employer in the state, accounting for some 416,000 jobs,[20] or 10.2% of the total nonfarm workforce.[21] These tourism jobs will be severely afeccted by climate change.[22] Beach erosion, more frequent and powerful storms, flooding of low-lying areas such as Atlantic City, and the loss of ecotourism destinations such as wetlands all threaten the economic security of this industry. **A mere 1% decrease in visitors to New Jersey annually would cost the state an estimated 40,000 jobs and $3.7 billion in indirect costs by 2017**.[23]

New Jersey Labor Force Projected to be Directly Affected



Sources: Byrne; New Jersey Department of Labor and Workforce Development; Division of Taxation, New Jersey Department of the Treasury[19]

In addition, approximately 6% of New Jersey's workers commute to New York City.[24] A joint report by the National Conference of State Legislatures and the University of Maryland Center for Integrative Environmental Research notes that most of the bridges, tunnels, and rail lines connecting New Jersey with New York City "operate below, at or near sea level," making flooding a likely and expensive proposition. It estimates recovery following a major flood to exceed $1 billion,[25] not counting the business losses incurred by hundreds of thousands of workers being stranded away from their jobs. Together, these groups comprise 19.4% of New Jersey's total workforce, putting nearly one in five workers at risk.

A Less Verdant Garden State

Despite being the most densely populated state, New Jersey currently enjoys an impressive forest cover of 39% and a strong agricultural presence.[26] **With continued high emissions of greenhouse gases, however, climate models predict that by 2100 New Jersey could face month-long droughts nearly every summer**[27] **and winters with significantly fewer days of snow cover**.[28]

Increased average temperatures will negatively affect the dairy sector[29] and cool-weather fruit at the heart of New Jersey's agricultural production.[30] In addition, loss of wetlands will greatly reduce habitat critical to commercially important seafood species, such as clams, winter flounder, and menhaden.[31]

Pay Now: The Benefits of Taking Action

Despite the challenges posed by climate change, New Jersey possesses the resources to make significant and long-lasting positive change now. A report by the Union of Concerned Scientists concludes, "**as both a global leader in technology, finance, and innovation and a major source of heat-trapping emissions, the Northeast is well positioned to help drive national and international progress in reducing emissions**."[32] Indeed, in 2007, New Jersey became only the third state in the country to make the reduction of greenhouse gases law, approving among the nation's most ambitious

emissions targets, maximizing total state emissions in 2020 at 1990 levels.[33]

Deriving half of its electricity from nuclear plants, New Jersey is no stranger to clean energy.[34] It could, however, greatly increase its use of renewable sources like wind and biomass. Just 1.1% of New Jersey's electricity is currently generated from non-hydro renewable sources, but it is a leading producer of electricity from municipal solid waste and landfills,[35] sources that remain abundant in the densely populated state. All told, New Jersey possesses the capacity to generate at least 31% of its electricity from renewable sources. Wind energy has the most potential,[36] particularly amid the northwestern Highlands and along the Atlantic coast.

Wind generation along the coast is the most promising, offering a transformative role for the state's famous shore. The New Jersey Board of Public Utilities has approved a 350-megawatt offshore wind farm that would more than double the percentage of electricity derived from renewable sources. The Board has also mandated the state's utilities to derive at least 22.5% of their electricity from renewable sources by 2021.[37] Through investments in alternative energy, upgraded technology, and efficiency gains, the state's Master Energy Plan envisions reducing carbon dioxide emissions nearly 23% below 1990 levels by 2020.[38] New Jersey is also a signatory to the Regional Greenhouse Gas Initiative (RGGI), a group of Northeastern states which pledges to cap and reduce the amount of carbon its power plants emit 10% by 2018.[39]

Robust investment in green energy not only promises significant reductions in New Jersey's greenhouse gas emissions, but is projected to create 20,000-48,000 jobs.[40]

Conclusion

New Jersey must consider action on climate change not just in terms of cost, but also in terms of opportunities. If we give New Jersey's population, businesses, and investors clear and consistent signals by properly offering initiatives and cultivating demand, investment and innovation in renewable technologies will follow.

New Jerseyans will have to pay for the effects of climate change. The only remaining question is whether they will pay now, or pay later and run the risk of paying significantly more.

(Endnotes)

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11 Frumhoff et al., 15.

12 Frumhoff et al.; National Wildlife Federation; New Jersey Department of Environmental Protection, *Climate Change and New Jersey*, 2009. **http://nj.gov/globalwarming/pdf/climate_change_flyer_09.pdf** (accessed September 2, 2010).

13 New Jersey Department of Environmental Protection; National Conference of State Legislatures and Center for Integrative Environmental Research, University of Maryland, 2.

14 Frumhoff et al., 15.

15 National Conference of State Legislatures and Center for Integrative Environmental Research, University of Maryland. 1.

16 Ibid., 2.

17 Ibid., 1-2; *Daily News*, "Seven in Heaven: A Week Away but Close to Home is Just the Thing to Help You Relax and Recharge," June 9, 2002. **http://www.nydailynews.com/archives/travel/2002/06/09/2002-06-09__seven_in_heaven__a_week_awa.html** (accessed October 21, 2010).

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19 Includes members of the New Jersey nonfarm labor force employed in the tourism industry and those which commute to New York for work.

20 Byrne.

21 Based on a 2006 nonfarm workforce of 4,071,000. New Jersey Department of Labor and Workforce Development, *Projections 2016: New Jersey Employment and Population in the 21st Century*, November 2008, 14. **http://lwd.dol.state.nj.us/labor/lpa/dmograph/lfproj/proj_%202016.pdf** (accessed October 20, 2010).

22 Frumhoff et al., 2-3; National Conference of State Legislatures and Center for Integrative Environmental Research, University of Maryland, 2-3.

23 National Conference of State Legislatures and Center for Integrative Environmental Research, University of Maryland, 2-3.

24 Approximately 240,000 New Jerseyans work in New York City. Division of Taxation, New Jersey Department of the Treasury, "NYC Commuter Tax," *New Jersey State Tax News*, Summer 2000, 1. **http://www.state.nj.us/treasury/taxation/pdf/pubs/stn/summer00.pdf** (accessed September 2, 2010). The 9.2% figure compares 240,000 against a total workforce of 4,071,000 (supra n. 21).

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40 The lower and upper bound are taken from Pollin et al., 101, *New Jersey Energy Master Plan,* 14; Pollin et al., *The Economic Benefits of Investing in Clean Energy*, 60.