FACTS

IOWA

AMERICAN SECURITY PROJECT

Pay Now, Pay Later: Iowa

Winters and springs in Iowa could become up to 30% wetter over the next few decades, increasing the incidence of extreme events like the 2008 flood that destroyed $4 billion worth of crops throughout the state.[1]

The number of hogs and pigs lost to heat stress will rise, costing significantly more than the $40 million currently lost each year—making a substantial dent in the profits of a business whose sales in 2007 were $4.3 billion.[2]

An increase in energy efficiency of just 1.5% annually could generate $68-90 million in cost savings throughout the state by 2030—as much as $74 per household—and create nearly 3,500 new jobs.[3]

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 Iowa $2.8 billion in GDP and over 10,000 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 Iowa faces significant losses in industries crucial to its economy if no action is taken.

Moreover, data shows Iowa is poised to benefit from the research, development, and distribution of renewable energy technologies. Known primarily as an agricultural state, Iowa has the potential to diversify its economy through investment in renewable energies. **A national investment of $100 billion in green infrastructure over the next two years could create for Iowa 1,204 jobs in wind power and 1,412 in solar power over the next two years—2,207 more jobs than the conventional energy sector likely would create with the same investment.**[4] Should we fail to take action against climate change, Iowans have much to lose.

Pay Later: The Cost of Inaction

Climate change threatens Iowa's proud agrarian history and the health of its citizens. Warmer weather and changing ecosystems will likely force its wildlife and tourists to migrate. It places the economic security of the state and its households in jeopardy.

Iowa's Farmers

In 2008, Iowa had cash farm receipts totaling $25 billion.[5] Its crops are crucial to the world market: the state exported $7.8 billion worth of agricultural goods in 2008, making Iowa the second greatest agricultural exporter in the country.[6]

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Iowa is rightly famous for its corn: the largest grower among the 50 states, it **produced more than 2.5 billion bushels of corn in 2007**—three times the amount grown in Argentina,[7] the world's 5th largest producer of corn.[8] Iowa is also the nation's largest producer of soybeans (more than 486 million bushels in 2009) and hogs and pigs (current inventory over 19 million).[9] Other major agricultural products include cattle and eggs.[10] **Its 92,600 farms cover 86% of the state**.[11]

At first glance, a warmer climate could be beneficial to Iowa farmers, especially those who grow corn. Warmer temperatures would extend

the growing season by as much as six weeks by the last decades of the 21st century.[12] But along with that longer growing season would come a series of problems that could offset and even overtake this advantage.

Wetter springs and drier summers would likely become the norm with climate change.[13] Heat and humidity by themselves are generally good for corn yields, but excessive rain can devastate crops. The **torrential rains that hit the state in the spring of 2008** dealt a double blow: crops already planted were damaged, and fields not yet planted were too soggy to sow.[14] **Ultimately, the flooding damage cost the state nearly $4 billion in lost crops**.[15] Coupled with the projected dry summers, the change in rain patterns could pose an insurmountable threat for many farmers.

Warmer weather patterns also mean that diseases and pests that afflict Iowa's crops could proliferate. Diseases such as grey leaf spot and smut, and insects such as the corn borer, aphid, and leafhopper could do increasingly more damage to crops.[16]

Harm to Other Industries

Climate change could also affect industries such as real estate, hunting and fishing, and finance and insurance. Iowa's forests are jeopardized by climate change. As droughts and temperatures increase, oaks and other hardwoods across much of the state would likely be replaced by more drought resistant species. Moreover, **pests and diseases also increasingly threaten the 2.1 million acres of timberland as temperatures continue to rise**, further placing at risk the habitats of animals like quail, wild turkeys, wood ducks, and 26 varieties of songbird.[17]

The loss of these species, as well as pheasants and whitetail deer, would damage the state's hunting and tourism industries. **In 2006, nearly 1.9 million tourists spent over $913 million in Iowa to hunt, view wildlife, or fish**. These industries support 17,189 jobs throughout the state.[18] Hunting, hiking, and other outdoor activities would likely decline in the wake of warmer temperatures, more erratic weather, and shifts in the population of native species.[19]

The insurance industry may also be affected by the predicted increase in floods. In fact, the industry has become one of the most vocal proponents for cutting carbon emissions from fear of bankruptcy.[20] The insurance industry in Iowa accounts for about 7% of gross state product and over $3 billion in wages.[21]

Rising Health Concerns

Warmer temperatures would mean longer, hotter summers with a likely increase in heat waves. While the number of days above 90°F is expected to stay steady over the next two decades, **by mid-century the number could nearly double to nearly two months of 90+ days**, with almost 90 such days by the end of the century.[22] More than 700 people in the United States lose their lives every year due to heat waves.[23] More days of oppressive weather would likely raise the number of deaths and heat-related respiratory problems. Higher temperatures also mean more air pollution, smog, and ozone, which would put a strain on healthy people and would be potentially deadly for those with heart and breathing problems.[24]

Iowan Labor Force Projected to be Directly Affected

Source: Bureau of Economic Analysis[25]

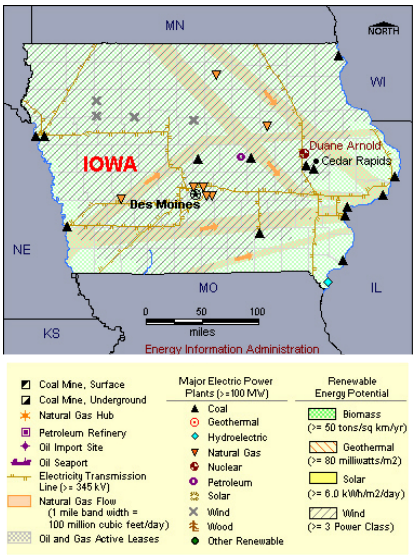
Pay Now: The Benefits of Taking Action

Iowa currently produces more wind energy than any state except for Texas: roughly 3,670 MW, enough to power 940,000 homes—or 75% of the homes in Iowa. In addition to benefiting from using a clean and safe energy source, Iowans have also been able to pay an average of 3 cents less per kilowatt hour for energy.[26]

More energy-efficient methods of farming have the potential to reduce energy use significantly. Tillage (plowing soil and sowing seeds) accounts for up to 11% of the energy expended on corn and soybean farms in Iowa. Tillage also exacerbates soil erosion, which in turn makes soil less productive. Through the work of conservation agencies including the Iowa Department of Agriculture and Land Stewardship, the U.S. Department of Agriculture, and Iowa State University's Agronomy Department, reduced-tillage and no-till farming techniques are being perfected and used more regularly throughout the state. **In 1998, just over half of the 23.2 million acres of planted farmland in Iowa were farmed using reduced-till and no-till methods—up from a decade earlier, when less than 30% of farms were planted this**

way. Conservation tillage can save 1-2 gallons of diesel per acre—which at the 1998 level means a savings of up to 23.8 million gallons of fuel (and millions of dollars) per year. It also reduces carbon dioxide emissions by up to 257,000 metric tons.[27] More conservation tillage will mean more savings.

On the local level, Iowa's cities are doing their share to cut down on pollution and conserve energy. Des Moines has added hybrid and electric vehicles to its fleet[28] and the city is also capturing methane gas at its wastewater plants.[29] Dubuque has, for its part, adopted hybrid and flexfuel policies for its vehicle fleet, while also installing LED traffic and street lights, and renovating municipal buildings by implementing green roofs.[30] Finally, in Iowa City, LED lights are, in cooperation with the U.S. Department of Energy's State Energy Program, being installed in parking garages. The city expects to save $66,000 annually and to reduce its energy use by 1.4 million kWh each year.[31]



Conclusion

Iowa must continue to build its green economy; it must consider action on climate change not just in terms of cost, but in terms of opportunities. If we give Iowa's population, businesses, and investors clear and consistent signals by properly offering initiatives and cultivating demand, investment and innovation in renewable technologies will follow.

Iowans 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 risks of paying significantly more.

(Endnotes)

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