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SUSTAINABLE ENERGY STUDY #26

Iowa Can Be National Model for Next-Generation Biofuels & Renewable Energy Development:

On October 9, 2007, the Sierra Club and the Worldwatch Institute unveiled a new joint report highlighting the economic and environmental benefits that Iowa can realize by making the smart investments and sound public policy decisions needed in order to transition from corn-based ethanol to the next generation of biofuels.

The report, "Destination Iowa: Getting to a Sustainable Biofuels Future," notes that while Iowa appears to have benefited from the present surge in corn prices and rising ethanol production, the rapid increase in corn prices and production has had far-reaching consequences for the state's environment and economy. The report lays out an alternate scenario for the bioeconomy of tomorrow--one that can bring sustained prosperity to family farmers and communities across Iowa. Iowa can use the transition to second-generation biofuels to become a national model for practices that come without today's environmental costs and with a host of added benefits to the environment and economy that all Iowans can enjoy.

"While it's clear that Iowa has reaped some economic benefits from corn-based ethanol, the current boom has also put stress on the state's environment and other sectors of the agricultural economy," said Greg Haegele, Sierra Club's Director of Conservation. "As the nation's leader in biofuels today, Iowa has a unique opportunity to have a positive impact on the direction that biofuels and the bioeconomy take. Smart planning and sound policy choices made today can make sure Iowa is reaping the economic and environmental benefits of the bioeconomy of tomorrow."

The report was unveiled at an event in Des Moines featuring Iowa state legislators and speakers from other organizations that are also interested in moving Iowa toward a more sustainable biofuels future. In addition to the Sierra Club, the event also featured Chris Peterson, President of the Iowa Farmers Union; John Campbell, Iowa Political Director for the United Steelworkers Union; Mike Tramontina, Director, Iowa Department of Economic Development; and Ed Woolsey, iRenew.

"Destination Iowa" is the first report produced through a new partnership between the Sierra Club and the Worldwatch Institute, an international research organization. Future reports and factsheets will examine biofuels at the national level.

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Summary and Recommendations:

Iowa has made a huge investment in corn-based ethanol and reaped some benefits from the biofuels boom-but not without costs to the environment and the economy. Now it's time for Iowa to make the investments needed to transition to the next generation of biofuels and boost renewable energy production. "Destination Iowa," the first report in an exciting new partnership between the Sierra Club and the Worldwatch Institute, explains where Iowa's bioeconomy is today, where it can go in the future, and charts a course for getting there.

"Destination Iowa" assesses the present state of biofuels in Iowa, charts a course for making the current, corn-based bioeconomy more sustainable, and lays out the policies and practices that can make Iowa a model for the nation in the development of renewable energy and the next generation of biofuels. These policies will provide greater and more sustained economic benefits to family farmers and local communities; protect Iowa's rich farmlands, conservation lands, and wildlife; enhance Iowa's environment; and help Iowa provide America with the solutions it needs to fight global warming.

By making smart investments now and putting the right policies in place, communities across Iowa can enjoy sustained economic growth and prosperity-all while promoting a biofuels and renewable energy future that protects Iowa's storied landscapes, promotes sustainable agricultural practices, protects the environment, and provides a solution to global warming. "Destination Iowa" lays out steps that Iowans can take to today maximize the benefits of the corn-based bioeconomy, while preparing for the richer, cleaner, and more productive bioeconomy of tomorrow.

Iowa is at the epicenter of today's biofuels boom and has the opportunity to lead the nation in the transition toward the next generation of biofuels.

Some of the major policy recommendations from the report include:

- * Increase funding for the Conservation Reserve and Conservation Security Programs to protect fragile soils and lands that provide important wildlife habitat and recreational opportunities.
- * Institute a new federal energy crop transition program to pay farmers at a rate equivalent to the price of corn if they agree to voluntarily transition to perennial grasses and suitable woody crops.
- * Redirect some subsidies away from corn-ethanol toward small farmers, projects for more efficient and sustainable biofuels development, and the development of cellulosic crops.
- * Adopt an electricity carbon performance standard that restricts both the construction of new power plants that are more carbon intensive than a modern natural gas facility, as well as the import of energy from such plants—a policy now in place in California. This will encourage local renewable electricity generation and reduce the incentives for out-of-state coal-fired generation.
- * Incentivize the use of biomass instead of coal and natural gas at biorefineries.

* Increase Iowa's Renewable Electricity Standard and adopt methods of net-metering and interconnection for locally-owned wind and other renewable electricity projects.

* Develop consistent sustainability criteria from Iowa DNR and federal authorities for evaluating biofuels and regulate and monitor emissions and water use at biorefineries.

* Regulate and monitor the livestock industry. Limit the industry's use of high phosphorous-content distiller's grain and its ability to site facilities in sensitive environmental areas or near towns. Mandate less-concentrated production and enforce strict sanitation requirements.

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Worldwatch Perspective - Can Biofuels Make or Break Iowa's Future?

This additional information is provided by Raya Widenoja, *the lead author of "Destination Iowa."*

A report profiling the impact of the current biofuels boom in the U.S. state of Iowa and painting a more sustainable path forward for the biofuels industry was released Tuesday in the state capital, Des Moines. The report, *Destination Iowa: Getting to a Sustainable Biofuels Future*, is a joint project of the Worldwatch Institute and the Sierra Club. It examines the implications of biofuel development for Iowa's economy and environment as well as for climate change.

Iowa is currently the undisputed leader in U.S. biofuels production, with nearly one-third of the nation's ethanol capacity. The state is home to 28 ethanol refineries with a combined capacity of 1.9 billion gallons per year, and to 13 biodiesel refineries with a combined capacity of nearly 260 million gallons a year. Nineteen additional corn-based ethanol refineries are under construction that would enable Iowa to produce another 1.4 billion gallons annually, bringing it to a future ethanol capacity of 2.3 billion gallons.

Biofuels, particularly corn-based ethanol, have been embraced by many in Iowa as a way to provide economic development while reaching energy security and climate goals. Yet the industry is not living up to its potential. Iowa's corn ethanol boom has made some farmers better off but is causing a host of other problems, such as increased water pollution and soil erosion and the loss of conservation reserve lands. It is also pricing some farmers out of the market. Ethanol refineries have brought jobs to small towns—though fewer than expected—and some residents are wondering what will happen once the corn frenzy dies down and the market demands more advanced biofuels and different feedstocks.

Biofuels production has complex implications, not just for the economy but also for agriculture, health, and rural development, as well as for air and water quality, biodiversity, and climate change. The lessons from Iowa and from biofuel programs around the world show that it is important to promote "smarter," rather than just "more," biofuels development.

Biofuels do have enormous potential. If developed in a sustainable manner, they can improve the environment, promote social justice, and provide a carbon-neutral energy source. Yet they represent only part of the solution to our energy needs. Capturing gains from energy efficiency,

improving transport systems, and developing a diverse array of renewable energy sources are other important keys to mitigating climate change and assuring a sustainable energy supply.

The positive potential of biofuels will not be realized unless there is a framework that rewards sustainable production and punishes production that imposes external costs on society and the environment. Without such precautions, biofuels could do as much harm as good. One only has to look to the oil palm takeover in Southeast Asia or the continued clearing of Amazon forests for soy and sugarcane plantations to see the devastation that can arise from poorly considered biofuels production.

Iowa—and the United States overall—needs policies that support more sustainable biofuels. But having the right policies in place is just one step. Another is building awareness of why some biofuels measure up better than others. Blind faith in a concept does little good, because the devil is in the details—in this case, the details of production from the field to the tank.

For example, consumers might think twice about buying ethanol produced in a coal-fired refinery, since these facilities release double the greenhouse gases on average that refineries powered by natural gas do. Consumers may also wish to avoid ethanol derived from corn grown on fragile soils because of the impact this can have on water quality and wildlife habitat, or because of the associated carbon losses and nitrate oxide emissions from cultivating that soil.

Consumers—and producers—might instead choose to invest in the cellulosic ethanol fuels and advanced biodiesel fuels that are now nearing commercialization. These so-called “second-generation” biofuel technologies are much more efficient and sustainable, from an energy and climate perspective, than corn ethanol or soy biodiesel. Moreover, the cellulosic crops—which include certain grasses and woody crops—may be far more effective at promoting rural development in the United States than the current corn-dominated biofuels industry, because more processing will have to be done locally to make their use economical.

The best solution would be to develop a sustainability rating for biofuels—something like a consumer labeling system that rates a fuel based on its life-cycle impacts. Policymakers in the European Union are already working on such a system, which may provide a useful model for the United States. Meanwhile, as the report on Iowa notes, Iowans—and Americans—can demand policies that support sustainable agricultural and fuel refining practices and promote second-generation biofuel technologies.

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More information about the report is available at www.sierraclub.org/iowabiofuels and at <http://www.worldwatch.org/node/5396>.

The full text of the 20-page report can be found at:
<http://www.sierraclub.org/energy/biofuels/iowa/IowaBiofuelsReport.pdf>