

Imports from Latin America may help US meet energy goals, study finds

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Latin American nations could become important suppliers of ethanol for world markets in coming decades, according to an Oak Ridge National Laboratory study released recently.

The report, “Biofuel Feedstock Assessment for Selected Countries,” presents findings from research conducted in support of a larger study of “Worldwide Potential to Produce Biofuels with a focus on U.S. Imports” by the Department of Energy. The ORNL study highlights the importance of Brazil’s dynamic sugarcane industry in future world trade in fuel ethanol.

A team of ORNL researchers led by Keith Kline and Gbadebo Oladosu projected that Brazil, Argentina, Colombia and members of the Caribbean Basin Initiative could produce sufficient feedstock for more than 30 billion gallons of ethanol per year by 2017, which would represent a six-fold increase over current production. Nearly 40 percent of the projected supply in 2017 is based on the potential to use new technology to produce advanced biofuels from cellulosic feedstock using crop residues and forestry byproducts.

“Current feedstock production, based on traditional crops such as sugarcane, soybeans and palm oil, has the potential to double or triple by 2017 in some cases,” said Oladosu, the lead economist for the study.

“Supply growth is derived from increasing the area cultivated, supplemented by improving yields and farming practices.”

Although it was not a focus for this research, the researchers highlighted implications for potential land use change.

The ORNL report assembles historic data on feedstock production for multiple countries and crops and calculates future production and the potential supplies available for export. Included in the report are detailed graphs, tables and disaggregated data for feedstock supplies under a range of future growth possibilities.

“The supply projections provide analysts and policymakers with better data on which to base decisions,” Kline said. “The potential for future biofuel feedstock production in Latin America offers interesting opportunities for the U.S. and developing nations.”

Results suggest that an increasing portion of U.S. fossil fuel imports that now arrive from distant nations in Africa and the Middle East Asia could be replaced by renewable biofuels from neighbors in the Americas.

Paul Leiby, an ORNL expert on energy security, notes that ethanol from trading partners in this hemisphere could offer many mutual benefits: more reliable and diversified U.S. fuel supply, improved rural livelihoods in Latin America, reductions in greenhouse gas emissions and the expanded availability of biofuel in many urban markets via delivery at coastal ports.

“Biofuel imports complement domestic biofuel production and diminish reliance on oil, the price of which is unstable and strongly influenced by the OPEC cartel,” Leiby said. “Even if imported, biofuels can improve our energy security by reducing oil imports and expanding our base of independent fuel sources. Best of all, American consumers could pay less at the pump during energy emergencies.”

ORNL’s study focuses on assessing future potential for feedstock

production in Argentina, Brazil, Canada, China, Colombia, India, Mexico and the Caribbean Basin region. Countries were selected based on their potential to impact world biofuel markets, proximity to the U.S. and other criteria. The research team hopes to expand the analysis to include additional nations in Asia and Africa over the coming year.

The report, available at the website noted below, provides supply curves for selected countries and feedstocks projected to 2012, 2017 and 2027. Highlights include:

- If the total projected feedstock supply calculated as “available” for export or biofuel in 2017 from these countries were converted to biofuel, it would represent the equivalent of about 38 billion gallons of gasoline.
- Sugarcane and bagasse, the solid residue after juices are pressed from the sugarcane stalk, form the bulk of potential future feedstock supplies, representing about two-thirds of the total available for export or biofuel in 2017.
- Soybeans are next in importance in terms of available supply potential in 2017, representing about 18 percent of the total.
- Most future supplies of corn and wheat are projected to be allocated to food and feed and would not be available for biofuels. Canada may be an exception because government programs will likely cause these crops to be used as feedstock to meet their domestic biofuel targets over the coming decade.
- In the various countries assessed, recent changes in national policies and laws are catalyzing investments in biofuel industries to meet targets for fuel blending that generally fall in the 5 percent to 10 percent range.

- Social and environmental concerns associated with the expansion of feedstock production are considered in the report, including land availability and efforts to establish systems for certification of sustainable production.
- Sugarcane dominates potential supply among the crops studied while bagasse – the crushed stalk residue from sugarcane processing – and forest industry residues are the principle sources among potential cellulosic supplies.

The full feedstock assessment report is accessible at www.osti.gov/bridge, where DOE-sponsored research reports are archived and available to the public. For more information on DOE biomass programs and research on biofuel imports, see www1.eere.energy.gov/biomass/index.html and www.pi.energy.gov/ .

Source: DOE's Oak Ridge National Laboratory

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