



# **Biomass Resource Demand Characterization Study**

## **Cooperative Research and Development Final Report**

**CRADA Number: CRD-11-436**

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## Cooperative Research and Development Final Report

In accordance with Requirements set forth in Article XI.A(3) of the CRADA document, this document is the final CRADA report, including a list of Subject Inventions, to be forwarded to the Office of Science and Technical Information as part of the commitment to the public to demonstrate results of federally funded research.

**CRADA Number:** CRD-11-436

**CRADA Title:** Biomass Resource Demand Characterization Study

**Parties to the Agreement:** Chevron Technology Ventures

### **Joint Work Statement Funding Table showing DOE commitment:**

<b>Estimated Costs</b>	<b>NREL Shared Resources</b>
Year 1	\$ 00.00
Year 2	\$ 00.00
Year 3	\$ 00.00
TOTALS	\$ 00.00

### **Abstract of CRADA work:**

Competing demands for U.S. biomass resources and resulting impacts on regional feedstock availability could have a significant impact on the ability of the biofuels industry to transition to lower cost feedstocks, such as wood, agricultural residues, and energy crops, as well as on the ability of U.S. electric utilities and consumers to meet Renewable Portfolio Standards (RPS) and transition to lower carbon-footprint sources of electricity. Promulgation of regulations that place a cost on CO<sub>2</sub> emissions from fossil fuels will also impact this situation as biomass to power applications become increasingly cost competitive. This increased competition for biomass feedstocks could create technical and economic risks for the Government, industry, and investors, and has the potential to impede commercialization of bio-energy in the U.S. at a meaningful scale.

### **Summary of Research Results:**

To better enable analysts to evaluate the opportunities for production of biofuels and biopower from domestic bioenergy resources, a web application tool, known as the Biomass Demand Atlas (BDA) in the OpenCarto platform was developed: [http://maps-test.nrel.gov/bd\\_atlas](http://maps-test.nrel.gov/bd_atlas). In addition to being able to display data layers for biomass resources, existing and planned bioenergy plants, fossil-based power plants and petroleum refineries, fuel prices, and vehicle densities, BDA geographically assesses the potential amount of bio-power and biofuels that can be generated at different capacity factors and feedstock costs.

For dynamic analysis, the BDA draws from the calculation engine for the Competition for the Uses of Biomass (CUB) model. CUB allows users to vary capital costs, policy impacts on feedstock and carbon

prices, feedstock yields, and demand projections. Results include the total demand of different biomass feedstocks, the average feedstock price, end-product price estimates, and the total amount of electricity and fuels demand that are satisfied. Allowing users to vary the inputs to their own corporate and strategic inputs increases the value to the funding parties. BDA allows users to save their specific scenarios and export results into Excel for further analysis.

**Subject Inventions Listing:** None

**Report Date:** 1/9/15

**Responsible Technical Contact at Alliance/NREL:** Margaret Mann

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