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**RENEWABLE
ENERGY
WORLD**
CONFERENCE & EXPO
NORTH AMERICA

MARCH 8-10, 2011 | TAMPA CONVENTION CENTER | TAMPA, FL

THE ONE EVENT FOR RENEWABLE CONNECTIONS

On-Line Abstract Submission Form

Renewable Energy World Conference & Expo North America
March 8-10, 2011
Tampa Convention Center
Tampa, FL

For all panel presentation proposals, panelists must be confirmed prior to submission as well as acceptance.

** Indicates required field*

Abstract:

* **Abstract** Toward a More Renewable Electric
Title: Power Sector: The Ohio Case

* **Abstract**
Type: panel

* **Previous**
Submission: No

Category First
Choice: Renewables and the Grid

Category
Second Renewable Portfolio Standards
Choice:

**Abstract
Message:**

Toward a More Renewable Electric Power Sector: The Ohio Case F. Hitzhusen, B. Shakya, K. Dabrowska, S. Mishra, M. Farren* For over three decades a team of resource economists and colleagues from forestry, agronomy, engineering, biochemistry and environmental science at The Ohio State University have been engaged in research on more renewable and sustainable energy systems. Over the past eight years this research program has focused on generating detailed county level GIS referenced maps of biomass net availability for energy including crop and forest residues, municipal solid and wastewater treatment waste, livestock waste and CRP land biomass; analysis of the full costs and downstream recreation benefits of abandoned coal mines reclamation; an economic assessment of the downwind and downstream property values and reduced green house gasses (GHG) as well as biofuel generation benefits of anaerobic digestion of livestock waste for electric production; and the development of a large multiperiod least cost simulation model (OHMARKAL) of the electric power sector in Ohio. This model allows us to incorporate all of the foregoing research as well as wind, solar and carbon tax, cap and trade and renewable portfolio standards (RPS) options into the comprehensive determination of full costs and benefits of the various energy options. The panel will start with a brief introduction and overview by Professor Hitzhusen of this multi-faceted research program including findings of the georeferenced biomass for energy inventory for Ohio. A brief presentation by Dr. Shruti Mishra will follow on the full social costs of coal based electric generation in the Ohio context with reference to downstream impacts of surface coal mining on lake based recreation. Dr. Kora Dabrowska will focus on an overview of a comprehensive assessment of the benefits and costs of a potential renewable feedstock, methane biofuel from livestock waste for the electric grid including reduced downstream air and water pollution as well as green house gas reduction. Dr. Bibhakar Skakya and graduate research associate Michael Farren will then present a brief description of the OHMARKAL model including model logic, components, conversion efficiencies, renewable options and feedstock costs, the earlier mentioned policy scenarios and the results of model runs. These brief presentations with questions of clarification after each will set the stage for a 45 minute Q and A concluding section. During this section we hope to draw out similarities and differences from participants regarding the problems and potential of renewables in the grid in states other than Ohio. *Professor Emeritus, Environmental Economics, OSU; Consulting Energy Economist, Richmond, Virginia; Kraus Sea Grant Fellow, NOAA, Washington, D.C.; Resource Economist USGS, Menlo Park, California and Professional Engineer and Ph.D. graduate student, AEDEcon Dept., OSU, respectively.

Primary Contact:

**Presentation on
Biomass Energy Resources in Ohio and OH-MARKAL Model**

**308 Conference Room, ODA
8996 East Main St
Reynoldsburg, OH 43068**

12 – 1pm, April 9, 2010

Topics:

1. Prof. Fred Hitzhusen: Update on current research on biomass energy projects at OSU.
 - a. Biomass Energy Resources Inventory for Ohio
 - b. Cellulosic Energy from CRP Lands
 - c. Anaerobic Digestion of dairy waste for reduction of pollution and biofuels production
 - d. Benefits and costs of Reclamation of Abandoned Coal Mines
 - e. WTP for biodiesel environmental benefits
 - f. Basic and Environmental economic concepts and policy options
2. Bibhakar Shakya, Ph.D.: Energy and Economic Modeling (OHMARKAL). to analyze role of biomass energy in Ohio's Energy Future.

By using a dynamic linear program model (MARKAL), the presentation evaluates various policy and environmental options under the SB 221 for Ohio. The model results indicate that biomass energy resources play an integral role in fulfilling the renewable portfolio requirement of the SB 221. It is also apparent that energy policy and regulation are imperative to make renewable energy resources competitive with coal and other conventional sources. Based on the model results, the paper recommends effective strategies and energy policies for Ohio's cleaner and sustainable energy future.