



2008 USDA-CSREES National Water Conference
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Energy and Water Resources -- National and Regional Perspectives

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Abstract Text:

U.S. total primary energy demand is forecast to increase by about 30% through 2030.(1) As energy and water are inextricably linked, a commensurate impact to water resources can be expected. Coal, petroleum, and natural gas are projected to remain foundational in fueling the U.S. economy in spite of increasing contributions from renewable resources. In fact, assuming no changes in existing laws and regulations, these fossil fuels are expected to provide about 85% of the total U.S. primary energy supply in 2030 – the same as today’s mix. Water resources are impacted by coal mining and preparation operations, and through the extraction of crude oil and natural gas including coalbed natural gas. Thermoelectric power generation requires significant volumes of water for cooling. In terms of energy security, the U.S. continues to evaluate the development of unconventional resources, e.g., oil shale and the conversion of coal to liquid fuels as alternatives to conventional petroleum based fuels. Processes related to commercial scale production of these alternative liquids can also be expected to require significant volumes of water. Notwithstanding growing energy requirements vis-à-vis increased water requirements, opportunities that could lessen water withdrawal and consumptive needs may avail themselves. These include beneficial reuse of produced waters (crude oil and natural gas extraction) and the deployment of technologies that reduce the volume of [cooling] water required for electric power generation. In addition, the sequestration of carbon dioxide in saline formations may yield substantial volume of water if cost effective desalinization technologies can be integrated into the Greenhouse Gas mitigation strategy. In summary, planning and scenario analyses must consider energy and water resources development in concert; employing a singular focus may not yield the desired outcome.

(1) Energy Information Administration, U.S. Department of Energy, 2007. Annual Energy Outlook 2007 – With Projections to 2030; DOE/EIA-0383(2007) (February).

Impact Statement:

Presentation scheduled for symposium D5 (per conversation with Ms. Ginger Paige). Symposium D5 is set for February 4, 2008 from 1-5 pm. The placeholder for this presentation is titled "Introduction to the Issues and Opportunities in Energy and Natural Resource Management Planning from a National Perspective."