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RENEWABLE ENERGY AND RURAL DEVELOPMENT: LOGISTICAL ISSUES

Statement of Thomas C. Dorr, Under Secretary
before the Senate Finance Committee

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Mr. Chairman, it is a distinct pleasure for me to appear today to discuss logistical issues related to the build out of renewable energy. I commend the Senate Finance Committee for its interest in this topic, and I would like especially to thank the Dubuque Regional Airport for its leadership in advancing the discussion of these very important issues.

I am mindful that how one frames an issue can strongly influence one's conclusions. The logistical issues surrounding the build out of renewable energy, although challenging, ought not to be considered solely as constraints or obstacles. Every problem is also an opportunity. It is, for example, a truism of the California Gold Rush that most of the money was made, not by the miners themselves, but rather by the merchants and shippers who supplied the miners -- and built much of 19th century California in the process.

So too with renewable energy. Fulfilling the potential of conventional ethanol, cellulosic ethanol, biodiesel, wind, solar, and geothermal will involve major investments in new

infrastructure as well as new distribution and marketing systems. Much of this will occur in rural areas. There are business opportunities at every point in the value chain.

Our objective at USDA Rural Development is to ensure that rural communities, business owners, investors, and workers participate fully in these opportunities. We recognize that problems and constraints are also opportunities in search of solutions. USDA Rural Development administers over 40 programs with a current combined portfolio in excess of $97 billion. Many of our business and utilities programs are already directly involved with renewable energy development. Our community facilities programs are involved as well with related infrastructure such as industrial parks, rail spurs, and airports. Across all mission areas, we recognize that investing in infrastructure provides a solid foundation from which to grow an industry that is sustainable and beneficial to all Americans.

In short, reducing America's dependence on imported oil and accelerating the development of clean, renewable, domestically produced energy are high priorities for the Administration and USDA Rural Development. We are eager to explore partnerships with both public and private entities active in this area and we anticipate that USDA Rural Development's investment in renewable energy will continue to grow in the years ahead.

This decade is clearly a turning point that will define the history of our nation's commitment to renewable energy development for future generations. The rapid growth of renewables in recent years has been driven both by higher costs for oil and natural gas

and by aggressive policy leadership from the Administration and Congress. The results have been impressive. Since 2000:

- Installed wind energy capacity in the United States has quadrupled. The U.S. led the world in new capacity in both 2005 and 2006 and is on track to do so again this year.

- Ethanol production has tripled, increasing from 1.6 billion to almost 4.9 billion gallons last year and capacity will double again in the next two years. We are on track to build out a corn ethanol capacity in excess of 12 billion gallons a year. Some estimates of future production run sharply higher.

- Biodiesel production has risen from 2 million to 246 million gallons last year. USDA currently projects production of 379 million gallons in 2007 rising to 680 million gallons in 2010-2011.

- Cellulosic ethanol shows great promise. Earlier this year the Department of Energy announced the availability of up to $200 million for the development of cellulosic biorefineries at ten percent of commercial scale over the next five years (subject to appropriation). DOE also announced up to $385 million (subject to appropriations) for six cellulosic ethanol biorefineries over the next four years. In addition, the President has proposed an additional estimated $2.1 billion for loan guarantees over 10 years for cellulosic ethanol projects in rural areas, which will

advance the development of cellulosic ethanol production as part of the 2007 Farm Bill.

- Solar power is increasingly competitive for off-grid applications. While costs must still decline significantly before we see large scale utility applications, the progress in the labs continues to be encouraging.

Renewable energy is still building out from a very low base – it accounts for about six percent of total U.S. energy use -- so the logistical impacts of these developments has been limited. As these growth curves are sustained, however, logistical considerations are likely to become more acute -- and part of our challenge is ensuring the structure is in place to meet the needs of consumers.

Large scale wind and solar power, for example, would be expedited by the permitting of new transmission corridors to facilitate inter-regional power transfers, and state level interconnection standards. USDA Rural Development is working with the rural electric cooperatives to anticipate these needs and ensure that adequate funding is available. The permitting and rights of way issues, however, are likely to pose an ongoing challenge to state and local authorities.

The logistical issues associated with biofuels may appear even more daunting. Biofuels production can involve the physical transport of large quantities of bulk commodities. As production grows, this may prompt the need to reevaluate the fuel transport system.

The Agricultural Marketing Service is also expected in the near future to release a detailed analysis of these matters. Briefly, however, the following considerations should be noted:

- The current distribution system for liquid fuels runs largely from ports of entry and a limited number of mostly coastal refineries to dispersed destinations around the country. Biofuels reverse the flow. Dispersed feedstocks will be gathered across rural America. Due to transportation costs, biorefineries are typically located within 50 miles of feedstocks, so the refining base will be distributed as well. Products will then ultimately move from the heartland to the coasts, where 80 percent of the nation's population lives. This will require major investment in new infrastructure.

- U.S. ethanol production continues to increase rapidly. Production in 2007 (Jan.-May) totaled 2.5 billion gallons, 32 percent higher than the same period last year. USDA anticipates production of 6.5 billion gallons over the full year.

- As of August 1, 2007, there were 124 ethanol plants in production with an additional 83 plants under construction. When these are completed, total U.S. production capacity will total 12.9 billion gallons, a roughly eight-fold increase since the beginning of the decade.

- Railroads currently haul 60 percent of the nation's ethanol; trucks 30 percent; and barges 10 percent. In addition, trucks deliver most of the corn to biorefineries. The railroad, trucking, and barge industry are already strained to meet demand and the pressure is growing.

- Rail freight is forecast to increase from 1,879 million tons in 2002 to 3,525 million tons by 2035, an increase of nearly 88 percent. Truck freight is forecast to almost double from 2002 to 2020, while driver shortages are projected to reach 219,000 by 2015. Accelerated development of biofuels will add to the strain.

- The President's 20 in 10 plan calls for a new mandatory fuel standard, requiring the equivalent of 35 billion gallons of renewable and alternative fuels in 2017. The U.S. Senate has passed legislation calling for a 36 billion gallon standard by 2022. .

- Cellulosic ethanol will also involve the collection, storage, and transport of large quantities of new feedstocks. These may include corn stover, wheat straw, switchgrass, forest waste, recycled urban materials, and other biomass. This could require significant new transportation and storage capacity, much of it in areas not now involved in biofuels production.

- The Departments of Agriculture, Energy, and Transportation are jointly considering the current and future transportation challenges posed by the growing demand for ethanol and other biofuels.

- Finally, ethanol is not currently moved by pipeline although research continues in this area. Pipeline transport, when it becomes feasible, will alleviate the pressure on other modes of transportation. It will also, however, require large-scale construction of new infrastructure and the resolution of significant permitting and rights of way issues by numerous federal and state agencies.

None of these problems are insoluble, and all of them pose opportunity for communities, businesses, and entrepreneurs. For USDA Rural Development, this is a high priority. From Fiscal Year 2001 through Fiscal Year 2006, we have already invested over $480 million in more than 1,100 renewable energy and energy efficiency projects ranging from windfarms and ethanol plants to anaerobic digesters and solar installations. Ten separate USDA Rural Development business, cooperative, and utilities programs have contributed to this effort. As the buildout of renewable energy continues, while being cognizant of issues regarding overbuild and balancing supply v. demand issues with current needs, we anticipate that infrastructure investments will become an increasing part of our portfolio:

- Our business and cooperative programs stand ready to assist rural entrepreneurs in seizing opportunities at any point in the value chain. We offer a wide range of grant, loan, and loan guarantee programs that can be tailored to specific situations.

We provide technical support to new entrepreneurs. We are also working to develop business and investment models that facilitate the aggregation of local capital and enhance ownership opportunities in rural communities.

- Our utilities programs can assist in providing the water, power, and broadband infrastructure needed by new industrial development in rural areas. They will also continue to work with the rural utilities to enhance the grid and accommodate the integration of distributed power generation into legacy systems.

- Our community facilities programs can assist regional, state, and municipal authorities in a wide range of infrastructure projects. These might include development of industrial parks, rail spurs, airport expansions, runway strengthening and extensions, and new hangars.

Earlier this year, this Administration proposed a comprehensive Farm Bill that included several renewable energy initiatives that would provide funding for the next ten years. If enacted, USDA Rural Development will be able to provide an estimated $2.1 billion over 10 years in Renewable Energy and Energy Efficiency guaranteed loans for cellulosic ethanol projects in rural areas; $500 million in the Renewable Energy and Energy Efficiency grants; and $150 million in Biomass Research and Development grants. This is a very substantial increase in USDA Rural Development's role in enhancing America's energy security. USDA continues to work with other Federal partners and explore innovative ways to maximize renewable energy opportunities.

In closing, we recognize that renewable energy has become a major driver of the rural economy. Indeed, it may be the greatest new opportunity for investment, jobs, and wealth creation in rural America in our lifetimes, and we are committed to supporting rural communities, businesses, and entrepreneurs in seizing the opportunity. Thank you.