

DEPARTMENT OF THE ARMY

COMPLETE STATEMENT

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BEFORE

SUBCOMMITTEE ON WATER AND POWER

COMMITTEE ON NATURAL RESOURCES

UNITED STATES HOUSE OF REPRESENTATIVES

ON

**INVESTMENT IN SMALL HYDROPOWER: PROSPECTS OF EXPANDING
LOW-IMPACT AND AFFORDABLE HYDROPOWER GENERATION IN THE WEST**

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Madam Chairwoman and Members of the Subcommittee, I am Michael G. Enschede, Chief of Operations for the U.S. Army Corps of Engineers. Thank you for the opportunity to appear here today.

The U.S. Army Corps of Engineers (Corps) is the largest federal producer of renewable energy in the Nation, operating 75 major hydroelectric plants containing 350 generating units. The installed capacity of these units is over 21,000,000 kilowatts. Stated a bit differently, one out of every four kilowatts of hydropower capacity in the Nation is located in a Corps facility. In an average water year, the gross revenue produced by these assets exceeds \$5 billion. The Corps provides approximately 68 billion kilowatt-hours of clean, low cost, renewable energy annually, three percent of the total energy generation in the Nation. That is enough carbon-free energy to sustain 30 cities the size of Seattle, Washington. Additionally, some 200 million equivalent tons of carbon dioxide emissions is avoided due to the energy generated by the Corps' emission-free renewable hydropower assets.

In March, 2010, the Departments of Energy, Interior and Army signed an Energy Memorandum of Understanding (MOU) to help meet the nation's energy needs for reliable, affordable, and environmentally sustainable hydropower. We will do this by building and strengthening long-term relationships, prioritizing similar goals, and aligning ongoing and future renewable energy development efforts. The MOU identifies seven initiatives for areas of collaboration among the agencies, including a thorough energy resource assessment to identify additional hydropower potential, developing criteria for a basin scale approach to future sustainable hydropower development, identifying and coordinating research and development, assessing renewable energy integration onto the electrical grid and streamlining regulatory processes. All seven initiatives are currently underway with timelines for specific deliverables.

In 2007, the Corps and the Bureau of Reclamation collaborated on a study to identify potential hydroelectric development at existing federal facilities. This study was conducted in compliance with Section 1834 of the Energy Policy Act of 2005. The results of the 1834 study, as it was called, identified over 2,000 megawatts of additional hydropower potential at existing Corps and Bureau of Reclamation facilities that could feasibly be developed. As a follow-up to the 1834 study, a more rigorous assessment of hydropower potential will be performed as one of the initiatives in the recently signed Energy MOU. This effort is scheduled to complete in October 2010.

Today, the most significant challenge to the Corps' effective management of its hydropower assets is aging infrastructure. The Corps began its hydropower mission in earnest during the 1930's, thus the average age of our 75 hydropower plants is about 48 years. To address this challenge, the study phase of a hydropower re-capitalization program, called the Hydropower Modernization Initiative (HMI), was started late last year. HMI will identify critical modernization needs and opportunities to restore efficiency and reliability to hydropower plants utilizing an economic prioritization tool to rank those needs and opportunities over a 20-year horizon. This approach will ensure investments are being made at the right time, in the right amount, and for the right

reasons. Phase I of HMI was completed late last calendar year, identifying six “critical needs” projects where we could invest immediately and begin to accrue benefits. Upon completion, these projects would produce an additional 341 million kilowatt-hours of carbon-free energy a year, delivering from four to ten percent more renewable energy over their current capability and avoiding one million tons of carbon dioxide equivalent emissions. Total construction cost for these six projects would be approximately \$600 million. Phase II of the HMI study is scheduled to complete in Fall, 2010 and will evaluate the modernization needs and opportunities of all Corps hydropower plants outside of the Pacific Northwest region. The HMI re-capitalization program is an opportunity for the Corps to add significantly to renewable energy generation in the Nation at existing facilities while mitigating environmental impacts by improving water quality and reducing greenhouse gas emissions.

The Corps has been collaborating with the Federal Energy Regulatory Commission (FERC) for over 40 years in the development of small privately owned and operated hydropower facilities that are constructed on or adjacent to an existing Corps dams. Today there are approximately 90 FERC licensed small hydropower plants constructed at Corps dams representing about 3,000 megawatts of capability. Currently, the Cannelton Lock and Dam project on the Ohio River is under construction by American Municipal Power Ohio. This project will produce 84 megawatts of power. The Smithland project, also on the Ohio River will start construction next month. There are a number of other projects in various stages of the FERC licensing process. These FERC licensed projects represent the Corps’ commitment to assist non-federal developers in bringing small hydropower projects online. Additionally, over 100 FERC permit applications have been filed by non-federal developers to evaluate the feasibility of constructing a hydropower facility at a Corps owned dam or reaches of rivers with Corps navigation projects. The bulk of these permits are for hydrokinetics projects that take advantage of river velocities to generate hydropower. In March 2009, the Corps worked closely with a company called Hydro Green Energy to bring the country’s first commercial hydrokinetic project online.

It is Corps’ policy to encourage and facilitate non-federal small hydropower development at its locks and dams where a federal interest in hydropower does not exist. An MOU was signed with FERC in 1983 to coordinate efforts between the agencies in the interest of mutual cooperation to facilitate non-federal hydropower development. With the emergence of new hydropower technologies and renewed interest among non-federal hydropower developers to streamline application review processes, the Corps/FERC MOU is currently being revised and updated to avoid duplication of efforts and reduce the time it takes to review applications for development.

The Corps is required to approve any modifications to its facilities under Section 14 of the Rivers and Harbor Act of 1899 (33 U.S.C. § 408). All non-federal hydropower development at Corps facilities will probably require a “408” approval. The Corps is committed to continue to work with non-federal hydropower developers and FERC to streamline the approval process and avoid duplication of efforts between the Corps and

FERC. Improving the “408” approval process will be addressed within the revised MOU between the Corps and FERC.

This concludes my testimony. Thank you for the opportunity to discuss our hydropower program with you. The Corps is committed to continue to do all it can, within its authorities, to increase the nation’s capacity to produce clean, low-cost, renewable, hydropower energy in an environmentally sustainable manner.