

**ENERGY EFFICIENCY AND HYDROPOWER BILLS**

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**HEARING**  
BEFORE THE  
**COMMITTEE ON**  
**ENERGY AND NATURAL RESOURCES**  
**UNITED STATES SENATE**

ONE HUNDRED THIRTEENTH CONGRESS

FIRST SESSION

ON

**S. 306**

**H.R. 267**

**S. 545**

**H.R. 678**

**S. 761**

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APRIL 23, 2013



Printed for the use of the  
Committee on Energy and Natural Resources

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U.S. GOVERNMENT PRINTING OFFICE

81-228 PDF

WASHINGTON : 2013

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# CONTENTS

## STATEMENTS

	Page
Hogan, Kathleen, Deputy Assistant Secretary for Energy Efficiency, Office of Energy Efficiency and Renewable Energy, Department of Energy .....	16
McMorris Rodgers, Hon. Cathy, U.S. Representative From Washington .....	4
Murkowski, Hon. Lisa, U.S. Senator From Alaska .....	2
Pimley, Lowell, Deputy Commissioner of Operations, Bureau of Reclamation, Department of the Interior; Accompanied by Kerry McCalman, Manager, Power Resources Office, Bureau of Reclamation, Department of the Interior	11
Wright, Jeff C., Director, Office of Energy Projects, Federal Energy Regulatory Commission .....	6
Wyden, Hon. Ron, U.S. Senator From Oregon .....	1

## APPENDIXES

### APPENDIX I

Responses to additional questions .....	43
---	----

### APPENDIX II

Additional material submitted for the record .....	59
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## ENERGY EFFICIENCY AND HYDROPOWER BILLS

TUESDAY, APRIL 23, 2013

U.S. SENATE,  
COMMITTEE ON ENERGY AND NATURAL RESOURCES,  
*Washington, DC.*

The committee met, pursuant to notice, at 10:10 a.m. in room SD-366, Dirksen Senate Office Building, Hon. Ron Wyden, chairman, presiding.

### OPENING STATEMENT OF HON. RON WYDEN, U.S. SENATOR FROM OREGON

The CHAIRMAN. The committee will come to order.

The purpose of today's hearing is to receive testimony on 5 bills pending before the committee. Four of the bills on the committee's agenda promote hydropower. If I had to cut my comments on these bills down to one phrase, that would be, as Senator Murkowski and I have talked about often, "hydro is back."

The fact that 4 of the first 5 energy bills considered by the committee this year promote hydropower shows how important this resource can be to a clean energy future. S. 545, the Hydropower Improvement Act of 2013, has been introduced by the ranking committee member, Senator Murkowski. S. 545 includes a number of provisions that will make the Federal Energy Regulatory Commission licensing process more efficient and at the same time be extremely sensitive to environmental values. I am pleased to be a co-sponsor of S. 545.

In the last Congress, a hearing was held on similar legislation, S. 629, and that bill was reported by this committee. I believe S. 545 is a significant improvement from its predecessor and an important step forward toward increasing the contribution of renewable hydropower to the transition to a lower carbon economy.

Also on the agenda is H.R. 267, the Hydropower Regulatory Efficiency Act of 2013 sponsored by Representatives Cathy McMorris Rodgers and Diana DeGette. H.R. 267 is very similar to S. 545 and was passed by the House unanimously by a vote of 422 to nothing. When you just say those words, "422 to nothing," you almost feel like a vote took place in an alternative galaxy because it is hard to imagine anything passing 422 to nothing.

[Laughter.]

The CHAIRMAN. The other hydropower bill on the agenda is S. 306, the Small Conduit and Rural Jobs Act, introduced by Senator Barrasso, a member of our committee. S. 306 expands and simplifies the jurisdiction of the Bureau of Reclamation over hydro-

power on existing pipelines, canals, and other small conduits on Bureau facilities.

Also before the committee is H.R. 678 and that is a bill sponsored by Representative Tipton. H.R. 678 is similar to S. 306. It was passed by the House earlier this month by a vote of 416 to 7 after a compromise was reached on language concerning the application of the National Environmental Policy Act.

Finally, I am pleased to have before the committee S. 761, the Energy Savings and Industrial Competitiveness Act, introduced by our colleagues Senator Shaheen and Senator Portman. This bill is very similar to S. 1000 as reported by the committee in September 2011, with titles covering building efficiency, commercial building efficiency finance, industrial efficiency, and Federal agency energy efficiency.

The Energy Information Administration reports that the building and industrial sectors of our economy currently account for 72 percent of this country's energy usage. So improving efficiency can play a major role in cutting costs for our businesses and our consumers, making the economy more competitive and reducing greenhouse gases and other emissions.

So we are looking forward to hearing from our witnesses about these bills and how they will help contribute to a clean energy future.

First, I want to recognize Senator Murkowski and tell her what a pleasure it has been working with her on these hydro issues especially. I think the two of us said some time ago that these used to be the forgotten renewables, and you and I are going to make sure that that is no longer the case. I just appreciate our working on those issues.

[The prepared statement of Senator Wyden follows:]

**STATEMENT OF HON. LISA MURKOWSKI, U.S. SENATOR  
FROM ALASKA**

Senator MURKOWSKI. Thank you, Mr. Chairman. I am not big into slogans other than my bumper sticker that is "energy is good." I think I am ready for another bumper sticker slogan and that is "hydro is back." I like that one. So I am all over it and look forward to working with you on these initiatives that I think are so important to us.

I have long been a hydropower proponent. I consider hydropower to be our hardest working renewable resource, one that often gets overlooked, as you have noted. But I do not think that there is any question that our largest source of renewable electricity is and must continue to be part of our energy solution. So how do we make that happen?

I do think that what we are seeing today here in this committee is just a perfect example of how we do move hydropower through. We have got good, broad bipartisan and bicameral support for the two hydropower measures that we have before us today.

The Hydropower Improvement Act, which is my legislation to advance conventional hydropower, has been cosponsored by you, Mr. Chairman, which I appreciate, but also Senators Risch, Senator Cantwell, Senator Udall, all members of the committee, as well as Senators Begich, Bennet, Crapo, and Murray.

The companion bill, which Representative McMorris Rodgers will speak to this morning, has already passed, and as you note, Mr. Chairman, when you have a vote that is that overwhelming, 422 to nothing, that gets your attention. It certainly got our attention here on this side of the Congress, and how we figure out ways to move it I think is going to be important.

This legislation is supported by the National Hydropower Association, American Rivers, a host of other organizations.

The other measures that you have mentioned, Mr. Chairman, S. 306, sponsored by Senators Barrasso and Risch; H.R. 678 that is sponsored by Representative Tipton—you already spoke to that. But when we look to the support that we have from the stakeholders for these various measures, we have got the American Public Power Association, the Family Farm Alliance, the Oregon Water Resources Congress, the Colorado River Energy Distributors Association, I think all good measures of the broad support that we have there.

As with hydropower, I continue to believe that efficiency is part of the all-of-the-above energy plan. We need to be doing more of it more often, and I credit the good work of Senator Shaheen and Senator Portman in this area. Again, I think when we are talking about efficiency, this is a bottom-line issue, an area where it is really in our best interest to find agreement, particularly as we deal with these very difficult budgetary and fiscal constraints that we have. So the work that Senators Portman and Shaheen have done with the Energy Savings and Industrial Competitiveness Act is good. Again, when you look to the supporters of this legislation, some 200 different organizations, a wide range of efficiency advocates and manufacturers, I know that both Senators have been working very aggressively to garner that support, and I think that that will hold them in good stead as we move this legislation through.

Mr. Chairman, I am not sure which, whether it will be the hydropower package or whether it will be the energy efficiency package, but my prediction—and I usually do not make predictions on legislation around this body, but that one of these two measures will be signed by the President, and I would like to be there with members of this committee as we recognize the advancements that we are making in good areas as it relates to efficiency and renewables with hydro. So I look forward to that day, but it starts here.

The CHAIRMAN. Well said, Senator Murkowski, and I think you and I are operating on the principle we are going to get both of them signed.

Senator MURKOWSKI. Absolutely.

The CHAIRMAN. Without turning this into a bouquet tossing contest, Senator Portman is here and I just want to commend him for the excellent work he has done. He and Senator Shaheen have really been in the vanguard of looking to tap the potential of energy efficiency, and we just look forward to working with you and bulking up the energy efficiency cause to the greatest extent we can and commend you for it.

Today we have the Honorable Cathy McMorris Rodgers who comes from our part of the world, the Pacific Northwest. She is the Republican architect of the bipartisan team that produced these al-

most astounding votes in the House of Representatives for important issues. Congresswoman, we welcome you today. We will make your prepared remarks part of the record in their entirety, and why do you not just go ahead with your comments? Again, our commendations for the leadership.

**STATEMENT OF HON. CATHY MCMORRIS RODGERS, U.S.  
REPRESENTATIVE FROM WASHINGTON**

Mrs. MCMORRIS RODGERS. Thank you very much, Mr. Chairman. I hope we can keep the momentum going in the Senate. I really appreciate your leadership and thank you, Senator Wyden, Senator Murkowski, for convening this hearing today to bring attention to the important role that hydropower has played, but also the potential that it has as a part of an energy package moving forward.

I just wanted to make a brief statement.

I am eager to advance an all-of-the-above energy strategy and, in doing so, have joined with my colleagues in a bipartisan fashion in the House to make sure that our Nation's largest, cleanest, most affordable, reliable, and renewable energy source is included, and that is hydropower, and the potential of hydropower is tremendous.

In my home State, Washington State, which I share with Senator Cantwell, 75 percent of our electricity is coming from clean, renewable energy. But that is not just the Pacific Northwest, but the rest of the country can expand an energy source that will not only lower energy cost, but create thousands of jobs. We could double hydropower in this country without building a new dam, simply by investing in new technology. Only 3 percent of the dams actually produce electricity, and we can create up to 700,000 jobs over the next decade alone.

In central and eastern Washington, which I represent, the Columbia and Snake River system through irrigation transformed a dry, barren desert with lots of sagebrush into one of the most productive agriculture regions in the world. The low cost of hydropower brought tech companies like Google and Yahoo to locate their data farms in central Washington and brought manufacturing facilities like BMW to Moses Lake. Also, because of advanced technology in new turbines and improved fish ladders, we are seeing record salmon returns in the Pacific Northwest.

Around 7 percent of our Nation's electricity and 75 percent of our renewable energy comes from hydropower. Yet, the regulatory approval process for hydropower development, especially for smaller projects, can be unnecessarily slow, costly, and cumbersome. That is why I joined with my friend, Diana DeGette from Colorado, to introduce the Hydropower Regulatory Efficiency Act, which you noted passed with a big vote in the House earlier this year. Specifically, this bill is going to streamline the permitting process for small hydropower and conduit projects, reducing the burdens impeding development and getting this low-cost power to communities faster. We need to make the regulatory approval process for hydropower development easier and less costly, and that is what this legislation will do. I sometimes call it the 1040-EZ for hydropower permitting.

By utilizing currently untapped resources, the United States could double the amount of hydropower produced in this country, and that I think is a tremendous asset that we have.

So from my perspective, I will do everything I can to help unleash American ingenuity to increase hydropower production, lower energy costs, and expand domestic energy production in an affordable and cost-effective way.

I look forward to working with all of you in the Senate to move this bill as quickly as possible to the floor and then to the President's desk. Thank you again.

The CHAIRMAN. Congresswoman, thank you for an excellent statement, and as a tax reformer, I love your analogy to the 1040-EZ of hydropower.

Let us see if any colleagues have questions. I do not. I think you have said it all. Senator Murkowski, any colleagues like to make comments?

Senator MURKOWSKI. Do you think we can get 100 to nothing on this side? If so, can you help us make that happen?

Mrs. MCMORRIS RODGERS. With the Senators on this panel, I have every confidence.

Senator MURKOWSKI. OK. We will work with you on that. Thank you.

The CHAIRMAN. Other Senators? Senator Cantwell.

Senator CANTWELL. Mr. Chairman, I would just say that I so appreciate the Congresswoman being here today to shed light on how important this is to the House of Representatives and how easy it is to get people's attention on this. Our former colleague, Senator Craig, and I had worked on some reforms on hydro relicensing which paid dividends in the end, and I think that is what we are trying to do, to create the simplicity to this process, get the questions answered but do so on the front end instead of the back end in a legal process. So I so appreciate your leadership on this issue in the House.

The CHAIRMAN. Senator Cantwell, as usual, is too logical for Washington, DC. I thank you.

Any other Senator who would like to make a comment? OK.

Mrs. MCMORRIS RODGERS. OK, thank you.

The CHAIRMAN. Senator Portman.

Senator PORTMAN. Just really first to thank my former colleague from the House for her leadership on so many issues, including this one. We were just talking. We have not heard much from our constituents on this, although on the Ohio River, we have a number of locks and dams, as you know. In fact, we have hydropower, and I think AMP is currently looking at about 6 additional hydropower facilities. I assume this would also help on existing hydropower in places like Ohio.

Mrs. MCMORRIS RODGERS. Yes.

Senator PORTMAN. Thank you. I appreciate you coming today.

The CHAIRMAN. Congresswoman, thank you and we will excuse you at this time.

Mrs. MCMORRIS RODGERS. OK, thank you very much.

The CHAIRMAN. Now we have a panel of administration witnesses: Mr. Jeff Wright, Director of the Office of Energy Projects, the Federal Energy Regulatory Commission; Mr. Lowell Pimley,

Deputy Commissioner of Operations at the Bureau of Reclamation at the Department of the Interior, and he is accompanied by Mr. Kerry McCalman, Manager of Power Resources at the Bureau of Reclamation. Dr. Kathleen Hogan, Deputy Assistant Secretary for the Office of Energy Efficiency and Renewable Energy at the Department of Energy.

So we welcome all of you, and let us begin with you, Mr. Wright. We will make your prepared statement a part of the record in its entirety, and if you could summarize your views today, that would be very helpful.

**STATEMENT OF JEFF C. WRIGHT, DIRECTOR, OFFICE OF ENERGY PROJECTS, FEDERAL ENERGY REGULATORY COMMISSION**

Mr. WRIGHT. Chairman Wyden, Ranking Member Murkowski, and members of the committee, my name is Jeff Wright and I am the Director of the Office of Energy Projects at the Federal Energy Regulatory Commission. I appreciate the opportunity to appear before you to discuss S. 545, the Hydropower Improvement Act of 2013, and H.R. 267, the Hydropower Regulatory Efficiency Act of 2013.

The commission regulates over 1,600 non-Federal hydropower projects at over 2,500 dams pursuant to part 1 of the Federal Power Act, or FPA. Together, these projects represent 54 gigawatts of hydropower capacity, more than half of all the hydropower in the U.S. The FPA authorizes the commission to issue licenses and exemptions for projects within its jurisdiction. About 70 percent of the hydropower projects regulated by the commission have an installed capacity megawatts or less.

I will turn now to the draft legislation.

Section 5 of S. 545 and section 6 of H.R. 267 would require the commission to investigate the feasibility of implementing a 2-year licensing process at existing non-power dams and for closed loop pump storage projects.

I support the goal of an expedited licensing process. It is commission staff's goal to act on all license applications as quickly as possible, and the commission has established processes that allow for great flexibility and efficiency. I am not certain whether an additional licensing process is necessary. We have been able to issue some licenses in a matter of a few months where the project proponent had selected a site wisely, stakeholders have agreed on information needs, and State and Federal agencies performed their responsibilities quickly. Moreover, the commission operates under significant constraints imposed by the FPA and by other legislation affecting the licensing process, the Clean Water Act, Coastal Zone Management Act, Endangered Species Act, and the National Historic Preservation Act among them. Without the ability to waive sections of the FPA and other acts or to set enforceable schedules in licensing proceedings, it is not clear that the commission, under its existing authorities, can establish a shortened process.

Section 6 of S. 545 and section 4 of H.R. 267 would establish various measures to promote conduit hydropower projects, which is consistent with commission policy and has been a major focus of commission staff's efforts in the last few years. These sections

would amend section 30 of the FPA to establish a procedure whereby qualified conduit projects with an installed capacity of 5 megawatts or less would not be required to be licensed.

I support this provision which would serve to increase the amount of electric generation derived from conduits. This would also allow the commission to grant conduit exemptions on Federal lands and would permit the commission to issue conduit exemptions for those projects with an installed capacity of up to 40 megawatts for both non-municipal as well as municipal applicants.

Section 7 of S. 545 and section 3 of H.R. 267 would amend the Public Utility Regulatory Policies Act of 1978 to increase the maximum capacity of a project which could be granted a small hydropower exemption from 5,000 to 10,000 kilowatts. This would promote development of small hydropower by allowing more projects to qualify for this exemption, and I therefore support this provision.

Section 8 of S. 545 and section 5 of H.R. 267 would amend the FPA to authorize the commission to extend the term of a preliminary permit issued under FPA section 5 once for up to 2 years. Commission staff has heard that developers are concerned that the need for environmental studies can make it difficult to complete a license application within the current maximum 3-year term of a permit, with the result that a developer which has invested substantial time and money studying a project may face the possibility of losing its project, based on competition from other entities, if it needs to seek a subsequent permit. I therefore support the proposed FPA amendment.

Section 9 of S. 545 and section 7 of H.R. 267 will require the Department of Energy to study the flexibility and reliability that pump storage facilities can provide any opportunities and potential generation from conduits. While I cannot speak for the Department of Energy, I support such research.

In conclusion, there is a great deal of potential for the development of additional hydropower projects throughout the country, including small projects and marine and hydrokinetic projects. Working within the authority given it by Congress, the commission continues to adapt its existing flexible procedures to facilitate the review and, where appropriate, the approval of such projects. Commission staff remains committed to exploring with all stakeholders every avenue for the responsible development of our Nation's hydropower potential. The legislation under consideration will assist in realizing that potential.

That concludes my remarks. I would be pleased to answer any questions you may have.

[The prepared statement of Mr. Wright follows:]

PREPARED STATEMENT OF JEFF C. WRIGHT, DIRECTOR, OFFICE OF ENERGY PROJECTS,  
FEDERAL ENERGY REGULATORY COMMISSION, ON S. 545 AND H.R. 267

Chairman Wyden, Ranking Member Murkowski, and Members of the Committee: My name is Jeff Wright and I am the Director of the Office of Energy Projects at the Federal Energy Regulatory Commission (Commission or FERC). I appreciate the opportunity to appear before you to discuss the following legislation: S. 545, "Hydropower Improvement Act of 2013" and H.R. 267, "Hydropower Regulatory Efficiency Act of 2013." As a member of the Commission's staff, the views I express in this testimony are my own, and not those of the Commission or of any individual Commissioner.

## I. BACKGROUND

The Commission regulates over 1,600 hydropower projects at over 2,500 dams pursuant to Part I of the Federal Power Act (FPA). Together, these projects represent 54 gigawatts of hydropower capacity, more than half of all the hydropower in the United States. Hydropower is an essential part of the Nation's energy mix and offers the benefits of an emission-free, renewable, domestic energy source with public and private capacity together totaling about seven percent of U.S. electricity generation.

Under the FPA, non-federal hydropower projects must be licensed by the Commission if they: (1) are located on a navigable waterway; (2) occupy federal lands; (3) use surplus water from a federal dam; or (4) are located on non-navigable waters over which Congress has jurisdiction under the Commerce Clause, involve post-1935 construction, and affect interstate or foreign commerce.

The FPA authorizes the Commission to issue either licenses or exemptions for projects within its jurisdiction. Licenses are generally issued for terms of between 30 and 50 years, are renewable, and carry with them the right to exercise federal eminent domain to obtain property necessary for the construction, operation, and maintenance of a project. Exemptions are perpetual, and thus do not need to be renewed, but do not permit the use of eminent domain.

Congress has established two types of exemptions. First, section 30 of the FPA allows the Commission to issue exemptions for projects that use, for generation, the hydroelectric potential of manmade conduits that are operated for the distribution of water for agricultural, municipal, or industrial consumption, and not primarily for the generation of electricity. Conduit projects must be located on non-federal lands, and have a maximum capacity of 15 megawatts (40 megawatts if the exemptee is a state or local government entity). Second, in section 405(d) of the Public Utility Regulatory Policies Act, Congress authorized the Commission to grant exemptions for small hydroelectric power projects having an installed capacity of 5,000 kilowatts or less. To qualify for this type of exemption, a project must be located at an existing dam that does not require construction or the enlargement of an impoundment, or must use the hydropower potential of a natural water feature, such as a waterfall. Both types of exemptions are subject to mandatory fish and wildlife conditions provided by federal and state resource agencies.

The Commission has established three licensing processes, with the intent of allowing parties to select the process that is best suited to individual proceedings. The integrated licensing process (ILP) frontloads issue identification and environmental study to the period before an application is filed, and is thus well-suited to complex cases with substantial issues. The alternative licensing process (ALP) allows participants significant flexibility to tailor licensing procedures in a manner that may work well for unique cases. The traditional licensing process (TLP), in which environmental and other work can occur after the application is filed, appears to work best for less controversial matters. The TLP may be the process that is best-suited for many simple cases involving exemptions or small, low impact licenses. Commission staff has also developed a pilot licensing process for marine and hydrokinetic projects in which, with the assistance of federal and state resource agencies, a project can be licensed in as little as six months.

It is extremely important to note that project developers and other stakeholders, not the Commission, in most instances play the leading role in determining project success and whether the regulatory process will be short or long, simple or complex. The first key issue is site selection and proposed project operation. For example, the processing of applications tends to be expedited when applicants propose projects that: (1) are located at an existing dam where hydropower facilities do not currently exist, (2) would result in little change to water flow and use, (3) are unlikely to affect threatened and endangered species and are unlikely to need fish passage facilities, and (4) involve lands and facilities that are already owned by the applicant. To the extent that a proposed project, even one of small size, raises concerns about water use and other environmental issues, it may be difficult for the Commission to quickly process an application.

Another, and related, factor is the extent to which project developers reach out to affected stakeholders. If a developer contacts concerned citizens, local, state, and federal agencies, Indian tribes, and environmental organizations, and works with them to develop consensus as to what information is needed to understand the impacts of a project and what environmental measures may be appropriate, and to develop support for the project, the application and review process is likely to be simpler and quicker. Where a project comes as a surprise to affected entities or where a developer does not respond to expressed concerns, the Commission's job becomes much more difficult.

A final, and again related, matter is the development of the full record that the Commission needs to act on an application. A potential applicant needs to work with Commission staff and with federal and state resource agencies and other stakeholders to determine what information is needed to support an application, and to provide the Commission with a complete application. Where Commission staff or other stakeholders must ask an applicant to provide information that is missing from an application, the regulatory process slows down.

The other entities with roles in the licensing and exemption process regarding small hydropower projects are also key to its success. The quickest, most efficient process can be achieved only where federal and state agencies, as well as other stakeholders, devote the resources early on to help project review move ahead, and where they display the flexibility to look at the merits of individual projects and the willingness to shorten the process in appropriate cases. Commission staff is dedicated to making the regulatory process as short and cost-effective as possible. We can only do that where applicants, resource agencies, and other stakeholders serve as willing partners in the process.

## II. COMMISSION EFFORTS REGARDING SMALL AND INNOVATIVE PROJECTS

The majority of the hydropower projects regulated by the Commission are small projects, with about 70 percent having an installed capacity of 5 megawatts (MW) or less. In recent years, the Commission has seen a greatly increased interest in small hydropower projects at existing dams, in innovative marine and hydrokinetic projects, and in pumped storage projects, particularly closed-loop pumped storage, which does not involve regular water withdrawals from rivers or other water sources. The Commission has responded by implementing a number of measures to facilitate efficient review of project proposals. In 2007, in order to provide personalized, responsive service to entities seeking to develop small hydropower projects, Commission staff established a dedicated phone line and email address for inquiries on small hydropower, developed a brochure to provide guidance to potential developers of small, low impact hydropower projects, and put these resources and a list of frequently-asked questions on the Commission's website.

In light of the continued growing interest in such development, the Commission held a technical conference on December 2, 2009, at its Washington, D.C. headquarters to explore issues related to licensing, and exempting from licensing, small non-federal hydropower projects in the U.S. The technical conference generated discussion on recommendations that could improve the process for authorizing small hydropower projects. In addition to insights received from the panelists and attendees at the technical conference, written comments were solicited and over 40 comment letters were received from industry representatives; federal, state, and local agencies; private citizens; and non-governmental organizations. At the Commission's April 15, 2010 meeting, staff reported on the conference and the comments received, and presented an action plan to assist and expedite the review of small hydropower proposals. The action plan adopted the following immediate changes: (1) adding new web-based resources to the Commission's website ([www.ferc.gov](http://www.ferc.gov)) to make it easier for applicants to understand and complete the licensing process; (2) updating or creating Memoranda of Understanding (MOUs) with other agencies to improve coordination; (3) continuing to maintain our small hydropower contact list on our web site to answer applicant questions; and (4) educating potential small hydropower developers through a new education and outreach program. The Commission has, under its small hydro initiative, held numerous outreach meetings with small hydropower developers and interested stakeholders, and implemented web based tools, such as application templates and application checklists, which potential applicants can use to prepare their applications. The small hydro website further contains guidance and sample letters that applicants can use to obtain waivers from fish and wildlife agencies for part of the pre-filing consultation process. The Commission staff has also relaxed some of the standards, under Section 4.39 of its regulations, for exhibits and drawings for exemption applications. For those applicants that have filed complete and adequate applications, and for which the Commission has determined that impacts are minimal, the Commission has reduced the public notice period from 60 days to 30 days and the reply period from 45 days to 15 days. A number of conduit and small hydro exemptions have been approved in as short as two months and original licenses in as short as 6 months from the date that an application has been deemed complete.

Since the April 15, 2010 Commission meeting, we have updated our MOU with the U.S. Army Corps of Engineers (March 2011) and entered into an MOU with the U.S. Coast Guard (March 2013); launched a small hydro program website (August 2010); participated in small hydro workshops across the U.S.; conducted webinars

on our small hydro website (November 2010, December 2010, June 2011, and January 2012); and updated our small hydro brochure. Upcoming outreach efforts will include participating on a small hydro panel at the National Hydropower Association's annual conference in Washington, D.C., working with the state of Colorado on providing state guidance documents on our small hydro licensing process; and updating our small hydro licensing web site in response to user input. As a result of these efforts, consultation has improved, applications are more complete, and application processing times have been reduced. With this background, I will turn to the draft legislation.

### III. HYDROPOWER IMPROVEMENT ACT OF 2013 (S. 545) AND HYDROPOWER REGULATORY EFFICIENCY ACT OF 2013 (H.R. 267)

The Hydropower Improvement Act of 2013 and the Hydropower Regulatory Efficiency Act of 2013 have the commendable goal of increasing hydropower production in the United States. I strongly support this goal, and offer comments on specific sections of the draft legislation.

#### *A. Section 5 of S. 545 and Section 6 of H.R. 267*

Section 5 of S. 545 and Section 6 of H.R. 267 would require the Commission to investigate the feasibility of implementing a two-year licensing process, in particular, with respect to hydropower development at existing, non-powered dams, and for closed-loop pumped storage projects.

I support the goal of an expedited licensing process. Indeed, as I have discussed, it is Commission staff's goal to act on all license applications as quickly as possible, and the Commission has established processes that allow for great flexibility and efficiency. I am thus not certain whether an additional licensing process is necessary. During the last few years, we have been able to issue some licenses in a matter of a few months, where the project proponent had selected a site wisely, stakeholders had agreed on information needs, and state and federal agencies performed their responsibilities quickly. Moreover, the Commission operates under significant constraints imposed by the FPA, and by other legislation affecting the licensing process—the Clean Water Act, Coastal Zone Management Act, Endangered Species Act, and National Historic Preservation Act among them. In the absence of the ability to waive sections of the FPA and other acts, or to set enforceable schedules in licensing proceedings, it is not clear that the Commission, under its existing authorities, can mandate a shortened process.

#### *B. Section 6 of S. 545 and Section 4 of H.R. 267*

Section 6 of S. 545 and Section 4 of H.R. 267 would establish various measures to promote conduit hydropower projects. This goal is consistent with Commission policy and has been a major focus of Commission staff's effort in the last few years. These sections would amend section 30 of the FPA to establish a procedure whereby conduit projects with an installed capacity of 5 MW or less would not be required to be licensed, provided the applicant makes a showing that the project qualifies as a conduit project. These sections would also allow the Commission to grant conduit exemptions on federal lands and would permit the Commission to issue conduit exemptions for those projects with an installed capacity of up to 40 MW. This proposed upper limit would apply to non-municipal, as well as municipal applicants. I support these provisions, which should serve to increase the amount of electric generation derived from conduits.

#### *C. Section 7 of S. 545 and Section 3 of H.R. 267*

Section 7 of S. 545 and Section 3 of H.R. 267 would amend Section 405(d) of the Public Utility Regulatory Policies Act of 1978 to increase the installed capacity of a project to which the Commission could grant a small hydropower exemption from 5,000 to 10,000 kilowatts. This change would promote the development of small hydropower at the nation's existing non-powered dams by allowing a larger pool of small, low-impact projects to qualify for small hydropower exemptions. Such exemptions are attractive to developers in that the exemptions are perpetual, and thus the developer need not expend the cost and effort to renew the authorization as is the case with licenses. I, therefore, support this provision.

#### *D. Section 8 of S. 545 and Section 5 of H.R. 267*

Section 8 of S. 545 and Section 5 of H.R. 267 would amend the FPA to authorize the Commission to extend the term of a preliminary permit issued under FPA Section 5 once for up to two years. Preliminary permits grant the permittee a "first-to-file" preference with respect to license applications for projects being studied under a permit. Commission staff has heard anecdotally that developers are con-

cerned that the need for environmental studies in some instances makes it difficult to complete a license application within the current maximum three-year term of a permit, with the result that a developer which has invested substantial time and money studying a project may face the possibility of losing its project based on competition from other entities—particular those with statutorily-granted municipal preference—if it needs to seek a subsequent permit. I therefore support the proposed FPA amendment, which could ameliorate this problem. It might be worth considering, as an alternative, authorizing the Commission to issue permits for terms of up to five years, which could avoid the need for developers to go through the process of seeking an extension.

*E. Section 9 of S. 545 and Section 7 of H.R. 267*

Section 9 of S. 545 and Section 7 of H.R. 267 would require the Department of Energy to study the flexibility and reliability that pumped storage facilities can provide and the opportunities and potential generation from conduits. While I cannot speak for the Department of Energy, I support this research.

IV. CONCLUSION

There is a great deal of potential for the development of additional hydropower projects throughout the country, including small projects and marine and hydrokinetic projects. Working within the authority given it by Congress, the Commission continues to adapt its existing, flexible procedures to facilitate the review and, where appropriate, the approval of such projects. Commission staff remains committed to exploring with project developers, its sister federal agencies, Indian tribes, the states, local government, and other stakeholders every avenue for the responsible development of our nation's hydropower potential. The legislation under consideration will, as I have testified, assist in realizing that potential.

This concludes my remarks. I would be pleased to answer any questions you may have.

The CHAIRMAN. Mr. Wright, thank you.

We have an important vote in the Finance Committee right now. We are fortunate to have Senator Franken to chair, and I should be back quite shortly. Senator Murkowski, I believe, will also be able to stay. So I apologize to my colleagues, and I will be right back and thanks to Senator Franken.

Senator FRANKEN [presiding]. I guess we will turn to Mr. Pimley.

**STATEMENT OF LOWELL PIMLEY, DEPUTY COMMISSIONER OF OPERATIONS, BUREAU OF RECLAMATION, DEPARTMENT OF THE INTERIOR; ACCOMPANIED BY KERRY MCCALMAN, MANAGER, POWER RESOURCES OFFICE, BUREAU OF RECLAMATION, DEPARTMENT OF THE INTERIOR**

Mr. PIMLEY. Thank you. Chairman Wyden, Senator Franken, Ranking Member Murkowski, members of the committee, I am Lowell Pimley. I am the Deputy Commissioner for Operations for the Bureau of Reclamation. I am accompanied today by Kerry McCalman, Reclamation's senior advisor for hydropower who may help in responding to any technical questions the committee may have today.

Thank you for the opportunity to testify on the two bills before the committee today. My written statement on S. 306 and H.R. 678 have been submitted for the record.

The Department has testified on a prior version of S. 306 and H.R. 678 and continues to support the goals of these bills which aim to increase generation of hydropower in existing canals and conduits. We believe these bills will provide greater certainty and administrative streamlining of these types of projects.

Both S. 306 and H.R. 678 will clarify that Reclamation is responsible for authorizing conduit hydropower development on all Rec-

lamation facilities through the Lease of Power Privilege, or LOPP, contracts. The Department supports this jurisdictional clarification in the interest of expediting the authorization process.

Section 2 of S. 306 and H.R. 678 would also require that Reclamation offer preference in the award of LOPP's to irrigation districts or water user associations with which Reclamation has an existing contract for operations and maintenance. We agree with this concept. In September 2012, we incorporated this approach into our revised Lease of Power Privilege directive and standard.

Additionally section 2 of S. 306 would provide that NEPA "shall not apply to small conduit hydropower development, excluding siting of associated transmission on Federal lands." Reclamation's newly published Lease of Power Privilege procedures allow for categorical exclusion under NEPA to be applied to low-impact hydropower projects.

The Department understands the importance of timely environmental review and believes development of low-impact hydropower can be efficiently analyzed using these existing review processes without unduly delaying project development.

H.R. 678, as amended by the House of Representatives, directs Reclamation to apply its categorical exclusion process under NEPA to small conduit hydropower development, excluding siting of associated transmission facilities on Federal lands. If enacted, Reclamation would interpret the House-passed language as endorsing our current directive and standard to potentially apply categorical exclusions, provided no extraordinary circumstances exist, pursuant to NEPA. Reclamation cannot guarantee categorical exclusions will apply on every small hydropower project but will use the processes outlined in our directive and standard to determine whether a closer review under NEPA is warranted. That said, under our current procedures, Reclamation anticipates that the majority of hydropower development on Reclamation's facilities will qualify for categorical exclusion.

Section 2 of S. 306 specifies that Reclamation's Power Resources Office will be the lead office of small conduit hydropower development. Given their project-specific knowledge, Reclamation's regional or area offices are actually better positioned to be the first point of contact for developers with our Power Resources Office being called in as needed. For that reason, the Department is pleased to support the House-amended language in H.R. 678 specifying that the Power Resources Office will be the lead office for small conduit hydropower policy and procedure-setting activities.

Additionally, S. 306 and H.R. 678 would amend section 9(c) of the Reclamation Project Act of 1939. Several of the definitions in S. 306, as drafted, would affect other authorities in the 1939 act, and we recommend technical improvements which are detailed in my written testimony. The Department appreciates and supports the language in H.R. 678, as amended in the House, that reflects those technical recommendations.

Finally, H.R. 678 provides that nothing in this subsection shall alter or affect any existing preliminary permit, license, or exemption issued by FERC under the Federal Power Act or any project for which an application has been filed with FERC. This language allows for existing and pending FERC licenses to remain within

FERC's licensing process. The Department welcomes and supports this clarification.

Reclamation will continue to review and assess potential new hydropower projects that provide a high economic return for the Nation, are energy efficient, and can be accomplished in accordance with protections for stakeholders and the environment. With recommendations detailed in my written testimony, the Department believes these bills will go a long way toward meeting the administration's goals of developing clean, reliable, cost-effective, and sustainable hydropower in the United States.

In closing, I would like to offer my commitment to work with you and your staff to further develop the points in my testimony, and I would be happy to answer any questions at the appropriate time. Thank you.

[The prepared statement of Mr. Pimley follows:]

PREPARED STATEMENT OF LOWELL PIMLEY, DEPUTY COMMISSIONER OF OPERATIONS, BUREAU OF RECLAMATION, DEPARTMENT OF THE INTERIOR, ON S. 306 AND H.R. 678

Chairman Wyden, members of the Committee, I am Lowell Pimley, Deputy Commissioner of Operations at the Bureau of Reclamation (Reclamation). I am pleased to provide the views of the Department of the Interior (Department) on S. 306 and HR 678, the Bureau of Reclamation Small Conduit Hydropower Development and Rural Jobs Act. The Department supports the goals of S. 306 and HR 678, which aim to increase the generation of clean, renewable hydroelectric power in existing canals and conduits, and believes these bills will provide greater certainty and administrative streamlining of these types of projects. As noted in previous hearings, the Department has an aggressive sustainable hydropower agenda, which we continue to implement under existing authorities. My testimony today will summarize the areas where the Administration supports the objectives of S. 306 and HR 678, as well as detail the areas in the bills where we believe improvements could be made, recognizing that the House of Representatives amended HR 678 to address many of the Department's concerns.

Reclamation is the second largest producer of hydropower in the country. A 2010 Hydropower Memorandum of Understanding (2010 MOU)<sup>1</sup> signed by the Secretaries of Energy and the Interior, and the Assistant Secretary of the Army (Civil Works) provides a strategy to facilitate the development of sustainable hydropower on federal facilities. Before I share the Department's views on S. 306 and HR 678, I want to highlight some of the activities underway at the Department to develop additional renewable hydropower capacity. In March 2011, Secretary Salazar and the U.S. Department of Energy Secretary Steven Chu announced nearly \$17 million in funding over three years for research and development projects to advance hydropower technology. The funding included ten projects that will receive a total of \$7.3 million to research, develop, and test low-head, small hydropower technologies that can be deployed at existing non-powered dams or constructed waterways. The funding will further the Obama Administration's goal of meeting 80 percent of our electricity needs from clean energy sources by 2035.

In March 2011, the Department released the results of an internal study, the Hydropower Resource Assessment at Existing Reclamation Facilities, that estimated the Department could generate up to one million megawatt hours of electricity annually and create jobs by addressing hydropower capacity at 70 of its existing facilities. In March 2012, Reclamation completed the second phase of its investigation of hydropower development, Site Inventory and Hydropower Energy Assessment of Reclamation Owned Conduits, as referenced in the 2010 MOU. While the first phase, completed in 2011, focused primarily on Reclamation dams, the second phase focused on constructed Reclamation waterways such as canals and conduits, and estimated the Department could generate over 365,000 megawatt hours of electricity annually by addressing hydropower capacity on 373 of its existing canals. In total, the two studies revealed that an additional 1.5 million megawatt-hours of renewable energy could be generated through hydropower at existing Reclamation sites.

Reclamation worked diligently with our stakeholders and the hydropower industry to improve our Lease of Power Privilege (LOPP) processes, and this collaboration

<sup>1</sup> <http://www.usbr.gov/power/SignedHydropowerMOU.pdf>, 2010

culminated in the release of an updated and improved LOPP directive and standard in September 2012. These new procedures better define roles, timelines and responsibilities that will allow us to better support and encourage sustainable hydropower development at Reclamation facilities.

In summary, both S. 306 and HR 678 would do two things: 1) provide a blanket authorization for the installation of small hydropower units on all Reclamation-owned canals and conduits and 2) require that Reclamation offer preference to water user organizations for the development of canal/conduit hydropower under a LOPP. Additionally, S. 306 would exempt small canal/conduit hydropower projects below 5 MW from the requirements of the National Environmental Policy Act (NEPA), while HR 678 directs Reclamation to apply its categorical exclusion process under NEPA to small conduit hydropower development. Finally, S. 306 designates Reclamation's Power Resources Office (PRO) as the lead point of contact for requests to develop canal/conduit hydropower under a LOPP. Per the Department's recommendation, HR 678 was amended to direct Reclamation's PRO as the lead office for policy and procedure setting activities.

Section 2 of S. 306 and HR 678 would clarify that Reclamation is responsible for authorizing conduit hydropower development on Reclamation-owned facilities through LOPP contracts. As background, Reclamation is authorized by existing law to issue LOPP contracts that utilize Reclamation-owned facilities for private hydropower development under Section 5 of the Townsites and Power Development Act of 1906, 43 U.S.C. § 522, and Section 9(c) of the Reclamation Project Act of 1939, 43 U.S.C. § 485h(c). Statutes that are specific to individual Reclamation projects may also apply. Similar to the LOPP process, the Federal Energy Regulatory Commission (FERC) may also issue licenses for hydropower development under the authority of the Federal Power Act, 16 U.S.C. § 791 et seq. To resolve potential confusion over whether a Reclamation LOPP contract or a FERC license should govern hydropower development at Reclamation facilities, Reclamation and FERC entered into agreements in 1981 and 1992 to address hydropower development. In particular, a 1992 memorandum of understanding between Reclamation and FERC (1992 MOU)<sup>2</sup> established a process to resolve questions of jurisdiction over hydropower development at Reclamation facilities. Reclamation and FERC continue to work together to improve that process and make the process more efficient.

Section 2 of S. 306 and HR 678 would specifically authorize Reclamation to develop or enter into LOPP contracts for the development of new hydropower on conduits or canals on Reclamation-owned projects. This language would streamline the issuance of LOPP contracts by simplifying the Reclamation-FERC jurisdictional consultation that was established in the 1992 MOU. This language also could provide Reclamation with an opportunity to discuss programmatically resolving jurisdiction over hydropower development on Reclamation conduits with FERC, thus creating the potential to eliminate case-by-case jurisdictional consultations for development on Reclamation conduits.

Section 2 of S. 306 and HR 678 would also require that Reclamation offer preference in the award of LOPPs to "irrigation districts or water users associations" with which Reclamation has an existing contract for operations and maintenance (O&M) of that project or project feature. While Reclamation already provided preference to existing irrigation districts and water user associations pursuant to Section 9(c) of the Reclamation Projects Act of 1939 we agree that these irrigation districts and water users currently operating and maintaining Reclamation transferred works should get additional favorability. In September 2012 we incorporated this concept into our revised LOPP directive and standard. Reclamation would be happy to work with the sponsors of the bills and the Committees to resolve any concerns regarding preference.

Section 2 of S. 306 would provide that NEPA "shall not apply to small conduit hydropower development, excluding siting of associated transmission on Federal lands[.]" The Department opposes a waiver of NEPA. Furthermore, this language is in contrast to the existing provision in Section 30 of the Federal Power Act (16 U.S.C. 823a) that allows FERC to approve an application to develop hydropower within conduits located on non-federal lands under certain conditions. Accordingly, as provided in FERC's regulations at 18 CFR § 380.4(a)(14), FERC is not required to prepare an environmental assessment or environmental impact statement for certain conduit hydropower projects that meet the statutory and regulatory criteria and do not have the potential for significant environmental impacts.

The Department understands the intent of S. 306 to be that conduits and canals are existing, man-made structures where environmental impacts associated with construction have already occurred and/or been mitigated. However, the Depart-

<sup>2</sup>The 1992 MOU is available in the Federal Register at: 58 Fed. Reg. 3269 (Jan. 8, 1993).

ment's view is that low-impact hydropower, particularly in conduits and canals, can be efficiently developed by utilizing existing environmental review provisions that will not unduly delay project development and ensure environmental health and safety. Environmental analysis for many LOPP contracts has, for example, been addressed through environmental assessments rather than environmental impact statements. Reclamation's newly published LOPP procedures also allow for an existing categorical exclusion under NEPA to be applied to low-impact hydropower projects where low impact is defined by their impact to project operations as opposed to the size of the project. Reclamation believes that low-impact hydropower developed in conduits or canals may be appropriately analyzed under the same categorical exclusion procedures that are documented in the Departmental Manual at 516 DM 14.5(C)(3) and (D)(4).

HR 678, as amended by the House of Representatives, directs Reclamation to "apply its categorical exclusion process under the National Environmental Policy Act of 1969 (42 U.S.C. 4321 et seq.) to small conduit hydropower development under this subsection, excluding siting of associated transmission facilities on Federal lands." The Department recognizes the intent of HR 678 to encourage the use of the categorical exclusion procedures that are allowed for in its LOPP directives and standards and documented in the Departmental Manual. If enacted, Reclamation would interpret this language as endorsing its current directive and standard to potentially apply categorical exclusions, provided that no extraordinary circumstances exist, pursuant to 40 C.F.R. §1508.4. Under Section 2 of HR 678, Reclamation does not guarantee that categorical exclusions will apply on every small hydropower project. Reclamation believes it should preserve its discretion to determine whether a closer review under NEPA is appropriate.

The Department believes that environmental protections should continue to apply in the context of new construction undertaken on federal lands, and will continue to apply NEPA through the use of categorical exclusions or environmental assessments. We understand the value and importance of expedient environmental review and believe development of hydropower within Reclamation's existing conduits and canals can be efficiently analyzed utilizing these existing review processes.

I would also like to address concerns raised by language in Section 2 of S. 306 specifying that "the Power Resources Office of the Bureau of Reclamation shall be the lead office of small conduit hydropower activities conducted under this subsection." The Department understands the bill sponsor's desire to simplify points of contact for entities seeking to develop hydropower. However, in practice, project-specific expertise concerning Reclamation facilities resides first at the field level where ownership responsibility for the specific infrastructure resides. It is preferable for developers to approach the appropriate Reclamation regional or area office with proposals to develop conduit hydropower, and contact the PRO as needed. There is a robust channel of communication between the PRO, other Denver Offices, and Reclamation regional and field offices that allows for successful implementation of a LOPP agreement. Reclamation organizes its workforce as appropriate to maximize the efficiency and expertise of personnel.

For these reasons, the Department is pleased to support the House amended language in HR 678 specifying that "the Power Resources Office of the Bureau of Reclamation shall be the lead office of small conduit hydropower policy and procedure-setting activities conducted under this subsection."

S. 306 and HR 678 would amend 9(c) of the Reclamation Project Act of 1939, which in addition to providing LOPP authority, authorizes the Secretary to enter into contracts for municipal water supply and miscellaneous purposes. Several of the definitions in S. 306 as drafted would affect the other authorities in the 1939 Act. In particular, the proposed definition of "transferred work" is too narrow to refer to all works affected by subsection 9(c) of the 1939 Act, since that subsection authorizes contracts involving works other than conduits. Either the definition would need to be broadened to include all affected works, or the term defined narrowed from "transferred work" to "transferred conduit." Also, the existing 1939 Act has a definitions section. Any definitions that are of general application should be included in the existing definitions section, rather than in subsection 9(c). Definitions that apply solely to conduit hydropower need to do so explicitly, to avoid misapplication or confusion. The Department would be happy to work with the Committee on S. 306 to make these technical changes to the language of the proposed definitions and their placement within the existing 1939 Act. The Department appreciates and supports the language in HR 678 that narrows the terms defined as recommended above.

As referenced above, Reclamation has procedures in place through the LOPP process for the sites where Reclamation has the authority to develop hydropower. In September 2012 we released an updated LOPP Directive and Standard that im-

proved our processes, especially for conduits and canals, and incorporated the concept of additional favorability for irrigation districts and water user associations with O&M responsibility on Reclamation projects.

Finally, HR 678 provides that “nothing in this subsection shall alter or affect any existing preliminary permit, license, or exemption issued by the Federal Energy Regulatory Commission under Part I of the Federal Power Act (16 U.S.C. 792, et seq.) or any project for which an application has been filed with the Federal Energy Regulatory Commission as of the date of the enactment of the Bureau of Reclamation Small Conduit Hydropower Development and Rural Jobs Act.” This language allows for existing and pending FERC licenses to remain within FERC’s jurisdiction, rather than be redirected into Reclamation’s LOPP process.

In conclusion, as stated at previous hydropower hearings before this committee, Reclamation will continue to review and assess potential new hydropower projects that provide a high economic return for the nation, are energy efficient, and can be accomplished in accordance with protections for fish and wildlife, the environment, or recreation. As the nation’s second largest hydropower producer, Reclamation strongly believes in the past, present and bright future of this important electricity resource. With these recommended revisions, S. 306 and HR 678 will go a long way towards meeting the Administration’s goals of developing clean, reliable, cost-effective, and sustainable hydropower in the United States.

Thank you for the opportunity to discuss S. 306 and HR 678. This concludes my written statement, and I am pleased to answer questions at the appropriate time.

Senator FRANKEN. Thank you, Mr. Pimley. Mr. McCalman, thank you for being here to respond to questions that the panel has.

But we will go to Dr. Hogan for her testimony.

Dr. Hogan.

**STATEMENT OF KATHLEEN HOGAN, DEPUTY ASSISTANT SECRETARY FOR ENERGY EFFICIENCY, OFFICE OF ENERGY EFFICIENCY AND RENEWABLE ENERGY, DEPARTMENT OF ENERGY**

Ms. HOGAN. Thank you. Chairman Wyden, Senator Franken, Ranking Member Murkowski, and members of the committee, thank you for inviting me to testify today on behalf of the Department of Energy regarding energy efficiency.

We all know energy efficiency is a large, untapped resource in the United States, which offers many benefits, billions in consumer savings, improved competitiveness, more domestic jobs, greater reliability of our energy systems, reduced reliance on foreign oil, and reduced air pollution. We are making significant progress on energy efficiency and realizing many of those benefits. DOE’s energy efficiency portfolio is making important contributions, but there is more that we can do through high-impact, leveraged efforts to catalyze more of these benefits.

This year’s State of the Union Address included a goal to cut the energy wasted by our homes and businesses by half over the next 20 years and to double our energy productivity. It included a new partnership with the States on energy efficiency and grid modernization called Race to the Top, and the President’s fiscal year 2014 budget requests additional funding for energy efficiency and clean energy programs, including Race to the Top.

So we thank you for your leadership on S. 761, the Energy Savings and Industrial Competitiveness Act of 2013, and look forward to working with you on it on the additional things we can do with energy efficiency.

While the administration is still reviewing the bill and does not have a specific position at this time, we clearly support the objectives of the bill. I would like to highlight some of the areas where

we see greater opportunities for energy savings, particularly ones that relate to S. 761.

We can just look at our homes and buildings where they consume 40 percent of U.S. energy at a cost of \$400 billion a year and a cost that continues to grow in this country. Here, DOE-catalyzed innovation is yielding new lighting, heating and cooling, windows, building envelope, and other technologies, many offering 50 percent savings over current ones. We are showing how to design and construct whole new buildings that put all the pieces together with savings of 50 percent or more.

Building codes help put low-cost energy saving measures in place during the construction and major renovations of these buildings and provide savings over the very long lives that our buildings have. DOE has a longstanding program assisting State and local governments with adoption and implementation of building codes for both residential and commercial buildings, and we know that there are many opportunities for greater savings here.

We also know that lack of qualified professionals is a frequently cited issue by home and building owners wanting to upgrade their buildings. Here DOE is helping to improve the U.S. Energy efficiency work force by leading multi-stakeholder efforts to define quality work, establish accreditation requirements for training programs, and establish certification requirements for professionals. We are working with GSA on programs for the Federal work force for the people that are responsible for energy use in Federal buildings, and we are engaged in a pilot effort with NIST on building tune-up trainings. Again, there is much more work that we can do here.

We also know that limited access to financing is a frequently cited issue, and improving access to financing is one of the objectives of the DOE's Better Buildings Challenge effort through which we have partnered with more than a dozen financial organizations that have put on the table \$2 billion in financing for commercial building improvements, half of which have been executed. Clearly \$2 billion is again just the beginning of what we need to do in terms of access to financing, and we continue to work with State and local governments here on best practices with regard to any number of finance mechanisms.

Improving industrial energy efficiency and competitiveness is another priority across the energy-intensive, the less intensive, the large, small, and medium firms. Here DOE is advancing next generation materials and processes working with more than 100 organizations through their Better Plants commitments to improve their energy intensity by 25 percent or more, supporting industrial assessment centers across the country, and participating in the development of new international standards for energy management and its related protocols. Again, there is clearly a lot more work that we can do here.

Our minimum energy conservation standards are providing tens of billions of dollars in energy savings across all of these sectors. Just this month, the Department issued a final standard for distribution transformers which will go into effect in 2016 providing billions in savings for commercial and industrial entities through

this one area alone. So again, many more savings that we can achieve.

We also continue our work across the Federal Government to help the Federal Government lead by example and achieve large energy savings, water savings, and to meet our renewable energy goals. Energy savings performance contracts have been a very important tool. The Federal Government remains on target to meet the President's goal to implement \$2 billion in performance contracts by December 2013, and again, there is just a lot more opportunity for the Federal Government with performance-based contracts. We also know there is a lot of opportunity for us to continue to do work with data centers and the use of computers and power management.

So in summary, I will just say that energy efficiency is the cornerstone of a more secure, resilient, and competitive energy economy, and we look forward to seeing what we can do working with you together.

Thank you again for the opportunity to be here today, and I am happy to answer questions.

[The prepared statement of Ms. Hogan follows:]

PREPARED STATEMENT OF KATHLEEN HOGAN, DEPUTY ASSISTANT SECRETARY FOR ENERGY EFFICIENCY, OFFICE OF ENERGY EFFICIENCY AND RENEWABLE ENERGY, DEPARTMENT OF ENERGY

Chairman Wyden, Ranking Member Murkowski, and Members of the Committee: thank you for inviting me to testify today on behalf of the Department of Energy (DOE) regarding energy efficiency.

The Energy Savings and Industrial Competitiveness Act of 2013 outlines new provisions for building codes, financing building upgrades, industrial energy efficiency, and efficiency of Federal buildings among other areas. The legislation would increase DOE's role in providing technical assistance to building code bodies and would expand the type of support that DOE provides to States. It would also establish DOE-administered rebate programs for more energy efficient electric motors and transformers.

The Administration is still reviewing the Energy Savings and Industrial Competitiveness Act of 2013 (S. 761) and does not have a position on the bill at this time. The Administration does, however, support the objectives of improving energy efficiency in the residential, commercial, and industrial sectors and in the Federal government. Energy efficiency is a large, low-cost, but underutilized U.S. energy resource. Increased energy efficiency offers savings on energy bills, opportunities for more jobs, improved industrial competitiveness, and lower air pollution. This year's State of the Union address included a goal to cut the energy wasted by our homes and businesses by half over the next 20 years.

The President also called on us to build on the success of existing partnerships as well as to establish new partnerships, in particular with the States. This includes his call for a new Race to the Top for Energy Efficiency and Grid Modernization challenge. Modeled after the successful Administration approach to education reform to promote forward-leaning policies at the Statelevel, the President's budget includes \$200 million in one-time funding for Race to the Top awards to support State governments that implement effective policies to cut energy waste and modernize the grid.

As Deputy Assistant Secretary for Energy Efficiency in the Office of Energy Efficiency and Renewable Energy (EERE), I am responsible for overseeing DOE's portfolio of energy efficiency research, development, demonstration, and deployment activities. I am pleased to be here today and look forward to working with Congress, and this Committee in particular, and discussing how we can catalyze greater energy efficiency to help address our Nation's energy challenges. My statement today will provide an update on DOE's energy efficiency portfolio, the challenges we are working to address, and the progress we are making.

## HOMES AND COMMERCIAL BUILDINGS

Improving energy efficiency in our homes and buildings offers a tremendous opportunity to create well-paying jobs, save money for businesses and consumers, and make our air cleaner. In the U.S., homes and buildings consume 40 percent of the Nation's total energy with an annual energy bill of more than \$400 billion.<sup>1</sup> DOE estimates that these energy bills can be cost-effectively reduced by 20-50 percent, or more, through various energy efficiency approaches.<sup>2</sup>

DOE uses a portfolio approach to pursue the potential energy savings in buildings. Research and development (R&D) on next-generation building technologies will lead to advances in enduses representing the majority of building energy consumption, including efficient lighting that is cost-competitive in today's market, new technologies in heating and cooling, and windows that decrease energy demands and improve comfort. Some highlights from DOE's project portfolio include:

- DOE's R&D on solid-state lighting has the potential to reduce lighting energy usage by one-fourth, saving businesses and consumers \$15 billion annually.<sup>3</sup> Already, new technology developed with DOE support has led to a solid state bulb with lower lifecycle costs that lasts roughly 25 times longer than traditional incandescent bulbs.
- New heat pump water heaters offer households large savings on water heating, more than 50 percent in many cases. As a Nation, we spend \$34 billion<sup>4</sup> each year on energy for water heating,<sup>5</sup> and heat pump water heaters could free a large percentage of that cost to meet other household expenses. The first of these innovative water heaters that use a hybrid of electric heating and heat pump technologies are being commercially produced here in the United States.
- Efficient windows, pioneered with EERE funding, have played a critical role in the market shift toward double-pane windows with low-emittance coatings, which insulate three times better than typical single-pane windows. More recently, EERE has helped develop and commercialize technology to create better, more efficient windows for cold climates that will allow in more energy than they lose.

DOE also invests in whole building R&D that demonstrates how new energy efficient technologies can function together to create an efficient system, achieve greater overall savings, and inspire the next-generation of buildings. For homes, this will translate into a new generation of housing stock that is durable, uses smarter energy management systems, and offers substantial energy savings. Our recently introduced Challenge Home program is a new and compelling way to recognize builders for their leadership in increasing home energy efficiency, improving indoor air quality, and making homes zero net-energy ready. DOE Challenge Homes are verified by a qualified third party and are at least 40-50 percent more energy efficient than a typical new home.<sup>6</sup>

In addition to creating energy efficiency opportunities in the new buildings market, DOE invests in activities that target the large savings potential that exists across the stock of existing homes, many built before modern codes. Here, the Department is working with organizations in communities across the country to demonstrate upgrade programs that offer savings of 20 percent or more for single family and multi-family residences. Within this market space, effective programs are the ones that include three elements: clear, compelling information for homeowners on potential energy savings; skilled workers; and access to financing. To help improve these programs, we are developing new rating tools to help consumers understand the efficiency of their buildings and the opportunities for improvement.

In addition, in late September 2012, EERE reached the major milestone of weatherizing more than one million homes across the country since 2009, while supporting tens of thousands of jobs in local communities. These efforts save eligible

<sup>1</sup>Buildings Energy Data Book, U.S. Department of Energy, March 2012, <http://buildingsdatabook.eren.doe.gov/TableView.aspx?table=1.2.3>.

<sup>2</sup>See, for example, DOE/ASHRAE's Advanced Energy Design Guides for commercial buildings (<http://www1.eere.energy.gov/buildings/commercial/aedg.html>) and DOE's Building America program ([http://www1.eere.energy.gov/buildings/residential/ba\\_index.html](http://www1.eere.energy.gov/buildings/residential/ba_index.html)).

<sup>3</sup>BTP ET Program Information Sheet: Solid-State Lighting, August 10, 2011.

<sup>4</sup>"Annual Energy Review." EERE Buildings Data Book, 2011, <http://buildingsdatabook.eren.doe.gov/TableView.aspx?table=2.3.5>.

<sup>5</sup>"Saving Energy." EERE Buildings Technology Program, 2012, [http://www.eere.energy.gov/buildings/saving\\_energy\\_ge.html](http://www.eere.energy.gov/buildings/saving_energy_ge.html).

<sup>6</sup>A typical new home as built to recent model energy codes. For more information on DOE Challenge Home methodology, see [http://www1.eere.energy.gov/buildings/residential/pdfs/ch\\_label\\_methodology\\_1012.pdf](http://www1.eere.energy.gov/buildings/residential/pdfs/ch_label_methodology_1012.pdf).

families hundreds on their heating and cooling bills in the first year alone. Each year, these programs train thousands of workers in both the public and private sectors, boosting their ability to serve the home retrofit market and helping to grow the clean energy workforce. To ensure the consistency and quality of this growing U.S. workforce, the Department is leading efforts to define Standard Work Specifications for Energy Efficiency Upgrades in residential weatherization and building a foundation for the home energy industry through professional training and certification.

We have similar efforts targeting energy efficiency opportunities for commercial buildings. Two particular efforts to highlight are the Energy Efficient Buildings Hub and the Better Buildings Challenge. To accelerate the development and deployment of energy-saving solutions for commercial buildings, DOE established the Energy Efficient Buildings Hub, a Regional Innovation Cluster headquartered at the Navy Yard in Philadelphia. A key feature of the Hub is the availability of a unique set of buildings as a test bed, including a 30,000-square-foot building that will be used to demonstrate advanced energy retrofits of commercial buildings. The tools developed, lessons learned and best practices from the Hub will ultimately help enable widescale deployment in similar climate zones and building types nationwide.

The Better Buildings Challenge (BBC) is a signature partnership effort, with over 110 partners across the commercial, industrial, and public sectors. Together, these partners represent approximately 2 billion square feet of commercial and industrial space, 300 manufacturing plants, and \$2 billion in private sector financing. As partners advance toward meeting their individual goals, the BBC website<sup>7</sup> will highlight their commitment and progress, including information on showcase projects and hundreds of replicable implementation models. To date, more than \$1 billion of the commitment from private sector financial firms has been extended to projects, and we are continuing to look for ways to expand access to private-sector financing, as this remains an important barrier cited by commercial building owners.

Further, DOE assists with the adoption and implementation of state and local building codes for both commercial and residential buildings. Building codes take advantage of the broader set of efficiency measures available during construction and major renovations. The Department emphasizes updating codes based on cost-effective savings opportunities and assisting state and local governments with ensuring code compliance so that savings are realized. To accomplish its objectives in this area, DOE has developed a suite of assistance tools it routinely provides to state and local authorities.

#### ADVANCED MANUFACTURING

The U.S. manufacturing sector also offers important opportunities for cutting energy waste, while improving our industrial competitiveness and promoting economic growth. In the United States, manufacturing represents about 12 percent of the gross domestic product and nearly 12 million jobs.<sup>8</sup> The Department's investments in advanced manufacturing are geared toward developing next-generation technologies, processes, and materials that offer substantial improvements in efficiency across a product lifecycle and at costs competitive with current technologies. We are also assisting industry with strategic energy management and combined heat and power (CHP). This portfolio will enhance the competitiveness of U.S. manufacturing now and for the longer term.

In the State of the Union address, President Obama called for a network of manufacturing innovation institutes that will help to support investment in U.S. manufacturers' competitiveness and accelerate innovation in manufacturing. The Department of Energy is a partner in the pilot institute, the National Additive Manufacturing Innovation Institute (NAMII), located in Youngstown, Ohio. NAMII is bridging the gap between basic research and product development for additive manufacturing, providing shared assets to help companies (particularly small manufacturers) access cutting-edge capabilities and equipment, and creating an environment to educate and train workers in advanced additive manufacturing skills. Additive manufacturing techniques create 3-D objects directly from computer models, depositing material only where required. These new techniques, while still evolving, are projected to exert a profound impact on manufacturing for high-value products. They

<sup>7</sup>The BBC website address is [www.betterbuildings.energy.gov/challenge](http://www.betterbuildings.energy.gov/challenge).

<sup>8</sup>Full-time and Part-time employees by industry, U.S. Department of Commerce, <http://www.bea.gov/iTable/>

[iTable.cfm?reqid=5&step=4&isuri=1&402=43&403=1#reqid=5&step=4&isuri=1&402=43&403=1](http://www.bea.gov/iTable/?reqid=5&step=4&isuri=1&402=43&403=1#reqid=5&step=4&isuri=1&402=43&403=1)  
Value added by industry as percentage of GDP, U.S. Department of Commerce, <http://www.bea.gov/iTable/>  
[iTable.cfm?reqid=5&step=4&isuri=1&402=5&403=1#reqid=5&step=4&isuri=1&402=5&403=1](http://www.bea.gov/iTable/?reqid=5&step=4&isuri=1&402=5&403=1#reqid=5&step=4&isuri=1&402=5&403=1)

can give industry new design flexibility, reduce energy use, and shorten time to market. To realize the full potential of additive manufacturing, the technology will need to be integrated into broad manufacturing solutions. In applications where additive manufacturing is competitive, DOE estimates that 50 percent or more energy savings could be realized.

In January, the Department announced the selection of Ames Laboratory to establish an Energy Innovation Hub that will develop solutions to help address the domestic shortages of rare earth metals and other materials critical for U.S. energy security. The Critical Materials Institute (CMI) will bring together leading researchers from academia, Department of Energy National Laboratories, and the private sector. CMI will focus on technologies that will enable the U.S. to make better use of available materials as well as eliminate the need for materials that generally must be imported from overseas and are subject to supply disruptions. These critical materials, including many rare earth elements, or the development of feasible substitute technologies are essential for American competitiveness in the clean energy industry; many materials deemed critical by the Department are used in modern clean energy technologies such as wind turbines, solar panels, electric vehicles, and energy-efficient lighting.

In addition to investments in advanced process and materials R&D, the Department has active technical assistance programs aimed at reducing manufacturing energy intensity by 25 percent over ten years by engaging a diverse set of industry partners in effective business models, continuous improvement in energy efficiency, modeling key processes, and supporting standards and certifications for third-party services. DOE technical assistance also supports the achievement of the national goal set by President Obama in an Executive Order last August of developing 40 gigawatts of new, cost-effective industrial CHP by 2020. And, DOE provides tools to support improvements in a number of common systems in manufacturing facilities, including motor, steam, compressed air, and pumping systems.

#### APPLIANCE AND EQUIPMENT STANDARDS

In addition, the Department implements minimum energy conservation standards for more than 60 categories of appliances and equipment. As a result of these standards, energy users across all sectors are estimated to have saved tens of billions of dollars on their utility bills in 2010. Since 2009, 17 new or updated standards have been issued, which will help increase annual savings even further over the coming years.

Most recently DOE finalized a standard for three types of distribution transformers that take effect in 2016. The standard for low-voltage dry-type transformers, which are typically used by commercial and industrial users, represents 30 percent savings over the prior standard and provides estimated net benefits of up to \$11.8 billion on equipment sold through 2045<sup>9</sup>. The two other types of distribution transformers that were subject to this rulemaking, liquid-immersed and medium-voltage dry-type transformers, are used primarily by electric utilities in outdoor settings as opposed to inside buildings. These two standards combined provide estimated net benefits of up to \$5.7 billion on equipment sold through 2045.

#### FEDERAL LEAD-BY-EXAMPLE

Finally, DOE plays a critical role in providing technical assistance to Federal agencies to increase understanding and accelerate cost-effective adoption of energy-saving technologies and strategies. The U.S. Federal government is the Nation's single largest user of energy and has both a tremendous opportunity and an acknowledged responsibility to lead by example in saving energy. In December 2011, President Obama signed a Presidential Memorandum directing the Federal government to enter into a minimum of \$2 billion in performance-based contracts over the next two years for energy retrofits on Federal buildings. Agencies have identified a pipeline of over \$2 billion in energy efficiency projects for Federal buildings that will be contract awards by December 31, 2013. These projects will use energy savings to pay for project implementation costs, achieving substantial energy savings at no net cost to the American taxpayer. More than \$500 million in projects have already been awarded, which will also help agencies meet the government's goals to reduce Federal building energy consumption per gross square foot by 30 percent from 2003 through 2015; increase renewable energy use to 7.5 percent annually; reduce water use intensity by 26 percent from 2007 through 2020; reduce vehicle petroleum use by 2 percent annually; and reduce greenhouse gas emissions by 28 percent from 2008 through 2020.

<sup>9</sup>Net present value of net benefits, in 2011 dollars, estimated at a 3 percent discount rate.

Federal data center optimization and closures, the use of Energy Star and EPEAT-registered computers and power management also remain important opportunities for energy savings.

#### CONCLUSION

Through R&D, deployment, and collaborations at all levels of government and the private sector, the Department of Energy aims to capitalize on the opportunities that energy efficiency affords. The Department's efforts to lead in next-generation buildings and advanced manufacturing will result in a more secure, resilient, and competitive energy economy. While we are making progress, continued efforts are necessary to capture the full set of opportunities.

Thank you again for the opportunity to speak to this important issue, and I would be happy to answer any questions.

Senator FRANKEN. Thank you, Dr. Hogan.

I really would like to congratulate Senators Portman and Shaheen for their bipartisan effort in crafting this legislation. I certainly hope it is one that we will pass in the Senate.

Since I am chairing here, I am going to pass it off and maybe I will ask questions when it appears that the chairman is coming back so I can get to Judiciary.

Senator Murkowski?

Senator MURKOWSKI. Thank you.

Several questions for each of you. First, thank you for being here today to provide testimony to the committee on the various measures that we have in front of us.

Mr. Wright, let me begin with you. You mentioned the 2-year licensing process within both S. 545 and H.R. 267, and you have indicated that there are—I think the terminology you used—“significant constraints? that are imposed by the Federal Power Act, but you also cite too to other Federal acts, whether it is endangered species, clean water, coastal zone management.

Can you give me a little more background in understanding the FERC's inability here to set enforceable licensing schedules with these other agencies and whether or not there are any consequences then to these agencies if they miss the deadlines that might be subject to this FERC licensing process?

Mr. WRIGHT. Thank you, Senator.

First of all, we do not have a regime where we set a schedule for other agencies which would be similar under the Natural Gas Act which does have that kind of authority.

What we do have with the Federal Power Act are mandatory conditions that are allowed by—for instance, for Fish and Wildlife at the Federal and State level. In that example, we have to wait for those agencies to act before we can actually issue a license. For instance, I will go to the Clean Water Act. That authority is delegated down to the State. They give water quality certifications. We are dependent upon the State to act before we can actually issue a license, and in some respects and in some States, it is a multi-year process.

We do our NEPA work. We continue with that, and in large part, we are done with our NEPA work within a 2-year period. Much of the waiting for the final issuance of a license is dependent upon the other permits from other permitting agencies to finish their work and allow us to prepare an order and prepare that license for issuance.

Senator MURKOWSKI. So we can go ahead and provide for this 2-year licensing process, but what you are saying is you cannot necessarily direct or control what may happen within these other Federal agencies and the timelines that they have. So is this kind of a best effort type of an approach in your view, or is this something that folks can count on as they are looking to the licensing process, that it is a 2-year hurdle for them?

Mr. WRIGHT. I will say this. We will endeavor, if this bill passes, to come up with a 2-year licensing process, but we do not have a hammer, if you will, over the other agencies to dictate a schedule and make these licenses priorities of their work product.

Senator MURKOWSKI. This is what we are trying to do here. We are trying to put forward a path to give some level of certainty that there is a process that will not be open-ended. Of course, when we recognize some of the complicating factors that come up because of ESA, the Endangered Species Act, Clean Water Act, we do not want these other acts to be used to thwart the intent which is a more streamlined process. So that may be something that we need to provide a little focus to.

Mr. Pimley, I wanted to ask you about the NEPA waiver and the categorical exclusion language. You have given some detail in both your written and your oral testimony here.

Do you think it would be helpful if we were to provide for report language on this issue of categorical exclusion? Would that be helpful just in providing some clarity out there?

Mr. PIMLEY. I think that we certainly would not oppose any language like that. We would interpret that as further clarification that we should follow the process as H.R. 678 has told us to follow the process we have in place in our directive and standard. So it certainly would reaffirm that process, yes.

Senator MURKOWSKI. Then finally, Dr. Hogan, for you. Under the Energy Savings and Industrial Competitiveness Act, there is a program in there called Supply Star, which is designed to identify and promote highly efficient supply chains. Are we going to run into a situation where Supply Star is confused with the Energy Star program, relatively similar in name, in purpose? Does this cause confusion? Is this an issue or not?

Ms. HOGAN. I think this is all workable. I think first Supply Star starts as a sort of business-to-business framework to help organizations that are—the materials that they need to bring in as part of their processes to help have a good framework for improving energy efficiency up and down the supply chain. So I think there is a lot of benefit to have in that sort of business-to-business world before we start talking about products and recognition and any potential confusion with Energy Star. Certainly we can work with the EPA to make sure that there is no confusion.

Senator MURKOWSKI. Thank you, Mr. Chairman.

Senator FRANKEN. I am not sure if we had an early bird. Senator Portman, we will go to you.

Senator PORTMAN. Thank you, Mr. Chairman. I appreciate your comments earlier and appreciate Senator Coons, who was here earlier, who has been involved in the design of this legislation.

This is the same bill basically that we had before the committee last year. So in a sense, it is old business. We have made some

changes. Frankly, in the fiscal climate we have, we have made it more fiscally prudent. We have dropped the language that expanded the DOE's loan guarantee program and replaced it with a State-based financing mechanism that I think will work better. A number of our colleagues had expressed concerns about the loan guarantee program. But this is very similar to the legislation that came through the committee last year, 18 to 3.

I want to thank the Energy Department and Dr. Hogan, in particular, for their help on this. They have given us expertise and advice all the way through.

Senator Coons is now here. Sorry. I did not see you.

This has enabled us, I think, to come up with, again, some refinements to the legislation that make it even more effective.

A couple questions I would have for Dr. Hogan briefly. One is with regard to the Advanced Manufacturing Office, or AMO as I affectionately call it. This is something that, as you know, we are focused on as a way to help the manufacturing sector, in particular, get some of the technology they need to be able to be more energy efficient, which is important for our competitiveness and the economy. There are other offices at DOE that focus more on the science side and focus more on some of the production even of technologies like solar energy. But we want to be sure that AMO has this special focus on manufacturing.

So I guess I would just ask you if you could talk a little bit about the role of the Advanced Manufacturing Office, why is it important, why does the Federal Government play a role here, and if you could explain a little about what the office does now and maybe what you think it should do.

Ms. HOGAN. Great. So as you have noted, we have changed the name of our program that was focusing on the industrial sector from the Industrial Technologies Program to the Advanced Manufacturing Office. I think what you should hear in those words is our intense focus on manufacturing and our interest in being able to bring forth new solutions that make sense for all of industry but as we take sort of a more lifecycle approach looking at sort of where we use energy in our economy and look for the big steps that we can make to improve sort of energy intensity across our economy.

So what we are looking for are opportunities where we can get 10, 20, 30, but really 50 percent savings in our processes, in our materials, and to work with all of the industries where we have those opportunities for such changes. So that includes energy-intensive industries, as well as sort of advanced manufacturing techniques that we think are critical to the competitiveness of our economy going forward.

Senator PORTMAN. Thank you very much.

You noticed Senator Wyden, Chairman Wyden, earlier mentioned the fact that there are over 200 organizations and companies that have supported this legislation, and many of those 200 are industrial companies, manufacturers who are interested in the energy efficiency best practices and again the deployment of technology to help them that came out of this. So they are very excited about having this Advanced Manufacturing Office work closely with them as partners, and I think that is the goal of this legislation certainly

to engage them as stakeholders directly so that they are getting what they need out of this to become more competitive and also to save energy. So it has both issues.

Earlier you called the energy efficiency a cornerstone of national energy policies, and I think that is certainly correct. There are many of us on this committee who believe we ought to be producing more energy, including hydro, but also we ought to be using less and being more efficient. That is certainly consistent.

You also said in your statement that the administration supports the objectives of the legislation but that you are still looking at the bill. We appreciate again your working with us to come up with an even better bill this year.

You also noted several times in your testimony that there is a lot more opportunity to find energy savings through efficiency, and we certainly agree with that. That is one reason we have focused this legislation on some of those areas. You mentioned that buildings, for instance, is where we use 40 percent of our energy. One of the focuses this year is on the building side including, as I noted earlier, kick-starting this private sector investment in building efficiency, but also more transparency in the national building codes. We have worked with the home builders and others on that transparency.

We also are focused on training that next generation of workers, as you talked about, through these university-based building training and research assessment centers.

Then manufacturing we talked about earlier, which I think we have got some really exciting opportunities there, including the Supply Star program that Senator Murkowski talked to you about.

Then finally, the Federal Government where we have the largest user of energy in the world, as far as we can tell, and sometimes it is used efficiently, sometimes not. There is lots of, as you indicated, opportunity there, including getting these companies that perform service contracts in efficiency and are paid over time through the savings to be engaged directly in some of the objectives of the legislation, including installing natural gas vehicle charging infrastructures and electric vehicle infrastructures.

So I think there is a lot of opportunity here, as you said, and we appreciate your support already and, again, appreciate the Senators, including Senator Coons and Senator Wyden and Senator Murkowski and others, who have contributed to the design of the legislation this year.

Thank you, Mr. Chairman.

The CHAIRMAN [presiding]. Thank you, Senator Portman.

Senator Coons is next.

Senator COONS. Thank you, Chairman Wyden, and thank you for the different sponsors who brought forward these hydropower bills today that I think are quite interesting and deserving of consideration.

I want to thank Senator Portman and Senator Shaheen for their leadership on moving forward this vital energy efficiency bill. I strongly support this legislation and am determined to do whatever I can to contribute to its passage through this committee and its adoption through the whole Senate. It passed through this committee last Congress by a vote of 18 to 3. So, as Senator Murkowski

mentioned, this is old business that we hopefully will move forward on swiftly.

I think there is clear indication of strong bipartisan support for the common sense ideas in this bill. As Senator Portman mentioned, there are more than 200 off-the-Hill validators, sponsors from business, trade associations, advocacy groups. This bill contains no mandates. There are no compulsory requirements on a company or individual because of this legislation. It is something that I think has been misunderstood or miscast. If there are other additional concerns, my understanding is the sponsors are more than willing to work through any Member's office to explain them or address them.

These are difficult economic times. First, we do need to reduce our deficit, and so I am grateful for the revisions that have been made. I think this bill offers a perfect opportunity for responsible bipartisan progress that finds savings wherever possible and works in public/private partnerships to achieve that.

Since my work on the State Energy Efficiency Workforce in Delaware more than a dozen years ago, I have been convinced that energy efficiency is a powerful, vital way to achieve progress. There is no winning or losing, simply progress by improving energy efficiency.

So I would like to mention two other things, if I might. In your comments, I was encouraged to hear positive reference to the Better Buildings initiative and performance-based contracts. So I want to work with the administration to make sure there is not a CBO scoring hurdle to the broad and responsive adoption of the ESCO technology.

Also, you mentioned the importance of financing for energy efficiency. A bill which will be reintroduced this week, The MLP Parity Act, of which I am a cosponsor, includes a provide that extends the tax benefits of the MLP structure to commercial and institutional buildings based on the 179(b) tax credit, that definition.

Let me get, if I could, to building codes. Last year, the American Council for an Energy Efficient Economy did a study of the Shaheen-Portman bill that suggested the benefits it would provide—more than 90 percent of them would come through improvements in building codes. As a former county official, I was responsible for the maintenance, update, and implementation of our building codes. Your office will play a key role in working with private code-setting organizations to define consensus-based standards that can be achieved for higher energy savings.

Some have raised the concern that these building codes might then be some Federal mandate. Could you speak to that, and could you tell us more about what you are doing now in the building codes area and what more you could do with this legislation?

Ms. HOGAN. Great. Yes, I think there is some confusion out there in the building code space.

The way this process works in this country is there are code bodies where various entities bring proposals and those get examined from any number of angles, including with a lot of examination from the code officials across the country, and then the updates, the sort of new proposals get voted on.

So what does DOE do in that process? We bring to the table what we hope is very sound analysis on the costs and benefits of new measures that could make sense to deliver cost effective savings as we upgrade those codes. Of course, we get to vote on those as well, but really, with a sort of a minor voting role relative to all the votes that are taken. So what we are really trying to do is bring forth very good information on the costs and the benefits of these measures and stay up to date with technology as it develops.

What we have been able to do with regard to, I guess, the 2012 code update that States and local jurisdictions are looking at now is bring forth a lot of information around the savings that, for example, the average household could see as they would buy a home that would have those advanced measures in place. What we see is the average homeowner would have a net cash-flow improvement on the order of \$200, \$300, \$400 a year. So truly these codes are making a difference in people's lives.

But that is really what we see our role as, is bringing very good information to the table on what these measures, as you update the codes, can offer. Then it is up to the States and the local jurisdictions to look at those numbers, evaluate them, and adopt the code, consistent with their own legislation that they have on the books.

The other part that I think that I think we all know is important is not just code adoption, but looking at how you ensure that the codes are being abided by on the ground. We have a variety of technical systems tools that we offer there as well.

Senator COONS. Thank you, Dr. Hogan. Thank you again to Senators Portman and Shaheen for their leadership on this important legislation. I look forward to working with you and the leadership of the committee in moving this forward promptly.

The CHAIRMAN. Very good.

Senator Barrasso.

Senator BARRASSO. Thank you, Mr. Chairman. Thank you also for allowing my bill and its House counterpart to be considered in this hearing, this Barrasso-Risch-Tipton bill named the Bureau of Reclamation Small Conduit Hydropower Development and Rural Jobs Act. It authorizes the Bureau of Reclamation hydropower development on nearly 47,000 miles of Federal canals throughout the West. In Wyoming alone, 121 sites could be developed, according to the Bureau of Rec March 2012 report. Oregon has the second highest conduit hydropower capability with 68 identified sites.

The bills proactively authorize hydropower development on existing facilities that have already gone through Federal environmental review.

The bills also provide common sense administrative and regulatory streamlining to ensure that this development proceeds to the construction phase.

Both the House and the Senate bills were originally introduced with a NEPA waiver. That was done because we are talking about manmade facilities on already disturbed ground that had to go through Federal permitting previously.

I realize, however, that compromise on this provision is necessary to get this bill across the finish line. So working together with the House counterparts, we supported an amendment that recognizes the Bureau's existing NEPA categorical exclusion proc-

ess and it strengthens it by directing it to apply to, quote, small conduit hydropower, close quote, which is something the existing process fails to do. This will help insulate the Bureau and investors from unnecessary lawsuits. It also matches how FERC currently treats similar conduits when it comes to NEPA. But by endorsing the categorical exclusion process, it also gives the Bureau the administrative flexibility to use what it calls extraordinary circumstances in case a project does deserve more scrutiny. This off ramp from a NEPA categorical exclusion is important as part of its flexibility.

The amendment was adopted by a voice vote in the House and then the House passed this bill on a roll call vote by 416 to 7. I am happy to report, Mr. Chairman, that all of the Oregon House Members voted for the bill.

Mr. Chairman, the list of the bill's supporters grows every day. The National Hydropower Association, Family Farm Alliance, National Water Resources Association, American Public Power Association, and the Western Governors Association, the Oregon Water Resources Congress are just some of the supporters. I ask, Mr. Chairman, that the letters of support be added to the record.

The CHAIRMAN. Without objection, so ordered.

Senator BARRASSO. Thank you, Mr. Chairman.

I sincerely hope that we can move forward on this compromise, get these small hydro projects underway by getting this bill signed into law.

With that being said, with all the good work that has been done to meet everyone's needs, I just want to seek a clarification with a statement, Mr. Pimley, in your written testimony. You stated, quote, Reclamation believes it should preserve its discretion to determine whether a closer review under NEPA is appropriate. It is my understanding that such a deviation from the categorical exclusion process for the installation of a small hydro conduit would occur if there were, quote, extraordinary circumstances.

So can you describe maybe in a little more detail when the Bureau would exercise this discretion to do that closer review under NEPA with regard to small hydro conduits?

Mr. PIMLEY. Yes. As you pointed out, our assessment of extraordinary circumstances is based on an evaluation of the checklist that we utilize for all of our minor construction categorical exclusions. That document is rooted in the department's manual, and it has been used since 2008 across the Department on all agencies to evaluate the relative impact of anything unusual that would not normally have been analyzed perhaps in the evaluation.

The experience we have had has been very good. We wanted to use an existing process so that we were not reinventing or plowing new ground, and by doing so, we think we have got the procedure in place to have an efficient and very timely evaluation to get us past that part of the process, past the NEPA compliance portion.

Senator BARRASSO. Are there any other circumstances where the Bureau would exercise discretion to do a closer review under NEPA other than that case of extraordinary circumstances that you can think of?

Mr. PIMLEY. In general, if there are some issues with local impacts or listed species and so forth, we would go through our nor-

mal NEPA assessment on most projects. But again, the idea was that we would use the minor construction process we already have in place to try to use a process that has worked very well, and that seems to capture, at least up until now, the breadth of what we have encountered on those minor construction projects.

Senator BARRASSO. So is it your opinion that if we adopt this language that passed the House, would that accelerate the permitting and installation of the small hydro conduits on Bureau of Rec canals?

Mr. PIMLEY. I believe that the intent is to do just that. Our interpretation, as you mentioned in your opening statement, is we interpret this as basically endorsing our process we have now. Yes, we believe that process will accelerate the overall process from application through construction.

Senator BARRASSO. Thank you, Mr. Pimley.

Thank you, Mr. Chairman.

The CHAIRMAN. Senator Barrasso, thank you. I think you and Senator Risch have done good work on this issue. I was going to ask a question about the extraordinary circumstances issue as well, and I know we are going to work together on this and get this out quickly. I think you noted the almost astounding vote in the House. You practically cannot get that kind of a vote to order a soda around here.

[Laughter.]

The CHAIRMAN. So I really appreciate the good work you all have done.

Let us see. Next is Senator Udall on our side.

Senator UDALL. Thank you, Mr. Chairman.

Welcome. Your testimony today is very important.

Mr. Chairman, I have got an initial statement for the record that I would like to ask unanimous consent—

The CHAIRMAN. Without objection, it will be entered into the record.

Senator UDALL. It goes on at great length about how fantastic Colorado's approach is.

The CHAIRMAN. Eloquent.

Senator UDALL. It is eloquent as well.

[Laughter.]

Senator UDALL. It's about how targeted and broad-reaching Colorado's approach is, including the National Renewable Energy Lab's presence and so on.

But I would like to turn, if I could, to a couple of questions.

Mr. Wright, I will start with you. Your testimony referenced the State of Colorado and the FERC have a history when it comes to working together to streamline the development of small-scale hydro. In 2010, Colorado and the FERC signed a memorandum of understanding to develop a pilot program. In 2011, on the heels of that, an irrigation pipeline in Meeker was the first project to successfully complete that new pilot process. That approval took just 2 months, while in the past, similar projects have taken upwards of 3 years to get approval, and that is a remarkable change of pace.

Can you talk a little bit more about what you have learned from the pilot program and what role the program may play if the proposed legislation were to become law?

Mr. WRIGHT. Thank you, Senator.

What we did learn from the MOU with Colorado—and this is spelled out in the MOU—was seeking sites that are accommodating for hydro development, and that is one of the points I made in my testimony, is finding proper sites, also running the traps, if you will, between the various permitting agencies. This makes the process go quicker and this is what we have seen in Colorado, and this is part and parcel of the MOU with Colorado in terms of finding those spots, those sweet spots, if you will, for development, making sure that the government agencies, other permitting agencies are on board, and that makes the process go that much quicker.

Senator UDALL. We look forward to continuing to move in that direction. We have many, many opportunities in Colorado.

I want to talk about H.R. 678, if I might, which has been introduced and carried in the House. The chairman talked about the strong support for it. I am looking forward to working with the chairman and Senator Barrasso to move the bill from our committee to the President's desk.

I know we want to maximize our Federal resources to develop clean, sustainable energy, as H.R. 678 will do, but we should not do that at the expense of the environment. Some of the bills have the potential to waive some of the requirements from NEPA, which has brought tremendous benefits to our country. I want to highlight one from Colorado.

For years, the I-70 corridor, which runs from Denver to Glenwood Springs, experienced hours of congestion as travelers heading to the ski areas, including Senator Murkowski's sons who are going to college in our great State, hikers, other recreational destinations. We have had a lot of plans for improving the corridor's capacity, but some of them were unattractive and would have channeled the Colorado River and would have had some negative effects. So the majority of the stakeholders did not support this preferred alternative, and the Colorado Department of Transportation then used the NEPA process to initiate a collaborative decisionmaking process to identify a new reconstruction plan. Thanks to the input it received through the NEPA process, CDOT, our Colorado Department of Transportation, came up with a plan that was not only safer but it had fewer impacts on the environment and the river. That project has won now some 30 awards for innovative design and environmental sensitivity.

I understand Representative Tipton's bill is consistent with the Bureau of Reclamation's categorical exclusion policy set by the administration last September. Mr. Pimley, could you expand on the reasoning used by the BOR to waive the NEPA requirements on small hydropower projects?

Mr. PIMLEY. I mean, I would not say that we were waiving NEPA compliance. The process we would go through is based in a well established process for a minor construction, which is designed to recognize that largely you are operating within an existing footprint of a facility. So you go through a process to evaluate whether this is—in the conduit hydro process, you go through a process to evaluate whether or not you are, in effect, within the same footprint if you are using existing infrastructure, if you are not changing the diversion flow rates or timing or discharge locations, and

if you are making sure you are not changing the intent of the facility. In other words, if it is irrigation primarily, it remains irrigation.

So with those criteria and the ability, the flexibility to look for extraordinary circumstances which may arise, as is outlined in our DNS, that gives us the ability—if something does jump up that does indicate there are some impacts that we had not anticipated, we still have the ability to go to a more detailed NEPA evaluation, environmental assessment. That is what we have used up till now. I think we have got about a half dozen of these that we have done using the EA process.

Senator UDALL. So your overall sense is there is a balance here, and CE's, categorical exclusions, have a real role to play, but there is also a check and balance, as you foresee it, that could be applied to Congressman Tipton's bill.

Mr. PIMLEY. Yes, absolutely.

Senator UDALL. Thank you, Mr. Chairman.

[The prepared statement of Senator Udall follows:]

PREPARED STATEMENT OF HON. MARK UDALL, U.S. SENATOR FROM COLORADO

Thank you all for being here today and for your testimony. I'm pleased that my colleagues, Senators Shaheen and Portman, have reintroduced their energy efficiency bill—there is certainly more work to do on these technologies. In Colorado, we are appreciative of the great research on efficiency and future of energy development being done at the National Renewable Energy Lab in Golden. I have said it many times on this Committee, but I will repeat it again—Colorado is a model for its pursuit of true energy security—and energy efficiency advancements are a big part of that effort.

That being said, I would like to focus my questions on the prospects of hydropower development, both for Colorado and for the nation. Water is a vital part of Colorado society from agriculture to recreation and from hydropower to the beautiful landscapes that water helps provide. It is important that we keep these multifaceted uses in mind as we discuss the future of hydropower today.

Colorado has a long history of hydropower within the state. More than half of the hydropower sites in Colorado are rated as small-scale hydropower and these sites combined to provide a capacity of 64.6 MW. Like many of my colleagues' states here, Colorado has much untapped energy capacity in the form of small-scale hydropower.

The CHAIRMAN. Thank you, Senator Udall.

Senator Risch is next.

Senator RISCH. Thank you very much.

Mr. Wright, you made reference in your testimony to the deadlines that you can put on other agencies when you are dealing with gas facilities. Two questions. No. 1, does that work? No. 2, is there reason that procedure cannot be followed with the small hydro facilities?

Mr. WRIGHT. I will say in the gas side, it works to an extent. The Energy Policy Act of 2005 allowed FERC to set schedules for processing natural gas infrastructure. The hammer, if you will, for that is if the other agencies did not meet the schedule, then the applicant could sue them in Federal court. It is not often you see an applicant who wants to sue a permitting agency.

But what I would say a benefit that has been on the gas side is that it has established a bit more order, if you will. We do come out with a schedule of how we process gas projects and permits from other agencies—we ask them to be complete with their analysis and their permitting 90 days after we issue our environmental

document. I would say we, on the whole, have had some success with that.

Going back to hydro, we do not have that kind of regime, if you will, for scheduling, and I would think that would be very beneficial in terms of trying to reduce the time it takes for licensing of hydro projects, if we could establish some sort of priority, if you will, for the other agencies to realize that the hydro projects should be higher on their agendas than they seem to be at times.

Senator RISCH. So your characterization is, although not perfect, it is better under the regime for gas facilities. Is that right?

Mr. WRIGHT. Senator, I think that is a good characterization.

Senator RISCH. It would seem to me that that is probably something that should be looked at here inasmuch as one of the main criticisms we get of the Federal Government always is the lack of urgency. Urgency is the hallmark of the private sector, but not so much when it comes to the Federal Government. The fact that delays take place and private capital is sitting on the sideline waiting to deploy is always a problem. So I appreciate your thoughts in that regard.

Without asking you to get too far into the weeds on this, do you think that is something that could work on the hydro projects after your experience in gas projects?

Mr. WRIGHT. I would think it would be a good beginning to try to establish some sort of order to the process, if you will, and instead of many agencies who wait for us to finish our environmental work on the hydro side and then they begin their operations, we have seen on the gas side agencies operate in parallel to us, if you will. While we are doing our NEPA analysis on the gas side, other agencies, permitting agencies, are doing their work at the same time.

Senator RISCH. It is shocking to hear the Federal Government is not doing duplicative work when instructed to do so by statute. Thank you very much.

Thank you, Mr. Chairman.

The CHAIRMAN. Thank you, Senator Risch. Again, commendations for your good work and I look forward to working closely with you on these issues.

Mr. Wright, let me start with you on S. 545, Senator Murkowski's bill. I think it is a first-rate bill and am looking forward to doing everything I can to work with her to get this passed.

Now, we are curious, Mr. Wright. How much do you expect the amount of megawatts in these types of projects to increase if the reforms in S. 545 are enacted?

Mr. WRIGHT. Senator, to put a number on that is probably speculative at best, but what I would say is anytime you amend statutes that in my statement will reduce barriers to entry into the hydro world, you could probably expect an increase in applications, an increase in generation and capacity overall. As I believe you quoted, we have got over 80,000 dams in this country. Only 3 percent of them are powered. I think a change especially in conduit and small generation requirements could only spur an increase in generation. I think as the U.S. realizes that hydro is kind of the low-hanging fruit, if you will, of renewables, hydro generation will experience a resurgence especially in small generation.

The CHAIRMAN. I know you do not want to speculate. You do not want to even give us a ball park, for example, regarding the amount of megawatts. It is such a good news story. In the U.S. Senate, you like a good news story when you can get one.

Mr. WRIGHT. I will say that I have also heard the number that there is the potential for over 60,000 megawatts out there by 2025. So I think as we liberalize the requirements, so to speak, we could come close maybe to realizing—you know, 60,000 is probably an upper limit. If we could get to 30,000 megawatts by 2025, just through some of these actions—

The CHAIRMAN. Let us get closer to 60,000.

Mr. WRIGHT. OK. We will try.

The CHAIRMAN. All right.

A couple of questions on the mandatory conduit exemption, just so we can kind of have a clear record in terms of the history.

The Federal Power Act has an exemption for small conduit projects, and S. 545 broadens the exemption, makes it more available, and that certainly makes sense to me as a basic proposition.

Now, the current exemption is discretionary. It was proposed in 1978. The exemption would have been mandatory. The commission would have been required to grant the exemption if a proposed project met certain criteria. Senator Johnston, who chaired this committee managing the bill to which an exemption was offered on the floor, said he did not want to go that route of the mandatory exemption and offered the amendment if it were made discretionary. That is where the Senate came down.

So with S. 545, there is a different route with respect to the smallest of the small conduit projects. It makes the exemption statutory. For these projects, it removes the smallest conduit projects from the commission's jurisdiction as a matter of law if they meet the criteria.

What do you make of the argument—and there is such strong support for broadening the exemption—that the commission should be allowed to make the decision instead of it being made for them?

Mr. WRIGHT. I would notice that in S. 545, it establishes a noticing regime, if you will. If the conduit does qualify under the parameters, it would qualify for the 5 megawatt or less. But it also gives a balance in that it allows parties to contest a qualifying determination if they do desire to.

I would also say that this change to the FPA does not trump any other Federal or State law. So in that sense, if another State or Federal agency wishes to question the development of the conduit, they may do so. We are not going to stand in their way.

I would also say there is nothing prohibiting a developer to come in for a traditional license if they so desire, and we stand ready to dispose of that as quickly as possible.

The CHAIRMAN. Very good.

One other question about S. 545 on the fish and wildlife protections I think all of us care so much about. This preserves the fish and wildlife protections afforded by the current small hydro exemption for the small conduits over 5 megawatts, but goes a different route for those of 5 megawatts or less. What is your take on that with respect to the waiver and the issues there?

Mr. WRIGHT. I am sorry. I really have to study that a little more in depth, but I would be glad to answer a question on that.

The CHAIRMAN. Very good. Why do you not get back to us on the record on that point?

Mr. Pimley, with respect to H.R. 678 categorical exclusions—and I kind of want to walk this through it so I can kind of have for the record and Senator Murkowski and I can talk about this. We are trying to move this as quickly as we can. Under departmental rule, only the CE's, the categorical exclusions, established by the agency rule are subject to this extraordinary circumstances review and categorical exclusions that are created by statute are not unless the governing statute requires it.

So I can really understand this, does H.R. 678 bar the Bureau of Reclamation from reviewing small conduit projects for extraordinary circumstances? I was under the impression from the earlier kind of discussion that it did not, but just so you are clear on that.

Mr. PIMLEY. Our interpretation of the amended language in the bill is that it basically endorses the process we have documented in our directive and standard which includes the ability to consider extraordinary circumstances. So the short answer would be, no, we do not believe it bars—

The CHAIRMAN. Very good.

One question for you, Dr. Hogan.

I see my friends, Senator Franken and Senator Manchin, have arrived.

On the energy efficiency front, the President challenged the country to double U.S. energy productivity, something I strongly support. Our economy clearly has shifted in recent years looking to try, in particular, to use less energy, and even more recently, companies are moving back to the United States to reinvest in our manufacturing sector so they can take advantage of cheaper natural gas.

How are these changes in our economic landscape going to effect the ability of the country to meet the President's goal?

Ms. HOGAN. Yes. I think the President has put out some ambitious but achievable goals about cutting energy waste by 50 percent and doubling energy productivity over the next 20 years or so. I think what that really means is we are working hard to get as much from every Btu that we use as possible, and that is really what we want to be focusing on here in a way that we continue to improve industrial competitiveness across the country. So I think the President is really putting us on the right path with these goals, and then, of course, as we sort of move forward and make progress toward them, we can continue to look at them and revise them as appropriate.

The CHAIRMAN. I am over my time. I just want to ask one question about the Shaheen-Portman legislation that I strongly endorse.

S. 761 is very similar to S. 1000, as reported by the committee in the last Congress. It has 4 titles: buildings, commercial building efficiency finance, manufacturing, and Federal Government efficiency.

Could you describe the importance of these areas in achieving the President's goal of doubling national energy productivity by 2030? My view is that S. 761 would contribute significantly to

achieving that goal that the President set, but just to have your views on the record would be helpful.

I thank my colleagues for letting me get that extra question. I know Senator Franken, in particular, is trying to get back and forth to the Judiciary Committee. So if you could give us a brief answer, and maybe you could incorporate it for the record so we could go to—we have Senator Manchin and Senator Franken next. I want to let them ask their questions.

Dr. Hogan.

Ms. HOGAN. Sure. Again, we have not looked into real detail into this bill, but generally we think that the areas covered by this bill make an important contribution to the President's goal. As we have talked about, the bill puts in place some really new ways for DOE to work hand in hand with the States and local governments on building codes. Building codes are a powerful way to deliver savings, consistent with the roles that the State and local governments play with building codes. We know that lack of a trained and skilled work force, as well as lack of access to financing, are also stumbling blocks to greater investment in energy efficiency where it makes sense, and there are some great provisions in that area as well.

Industrial energy efficiency is a place for additional progress to be made both in the supply chain, as we have discussed, as well as enhancing, I think, some of the things the Department does in a way that it partners more broadly with the private and public sector.

We also know that there is more progress we can make in the Federal sector too as we use the tools that are available to us or potentially expand what it is those tools can do.

The CHAIRMAN. I need you to look into this bill in detail because I think it is a good bill. It is a bipartisan bill. There is great interest here in the Senate. Could you get back to me with your views on the details of this bill, say, within 2 weeks?

Ms. HOGAN. Yes, we can.

The CHAIRMAN. Very good.

Next in order of appearance is Senator Manchin.

Senator MANCHIN. We were betting on who was next.

[Laughter.]

Senator FRANKEN. No one wanted to bet. The chairman did it right.

Senator MANCHIN. Let me just ask whoever would answer this question. The reason I say this, in my little State of West Virginia, I think there are 3 dams that were built during or before World War II, that had the penstocks, had everything ready to go for the power this country needed to defend itself, as you know, during that period of time.

About halfway through the war, they decided not to finish and put the power units on. The penstocks are still there. Everything is ready to go.

How many dams were built in America during that time that have never been retrofitted that were ready to go? Does anybody know that? You all know you have them in your States. Everybody has one I am sure.

Mr. WRIGHT. Senator, I will say I do not know the answer to that question.

Senator MANCHIN. We are talking about building this and doing this. I mean, most of them have the—everything is ready and we just did not need the power at that time and fossil was so much cheaper, oil, whatever at the time. They never put it in. But they are all prepared, ready to go. I have got two ready to happen in my State anytime you want to do it.

That was just a question. If you could give me that answer, I would deeply appreciate it.

Dr. Hogan, I would go to you because I noticed that it was said that with the energy efficiencies, that we could cost effectively reduce by 20 to 50 percent or more is what you have been saying. Correct? Now, you are saying with homes and buildings. You are factoring in power plants in that savings, correct, because of the waste we have from the power plants? You are saying that power plants are about 30 percent efficient?

Ms. HOGAN. Correct. Power plants are about 30 percent.

But I think as we talk about reducing energy use in the home, it is really reflective of the energy bill in the home.

Senator MANCHIN. But I am saying we think that we can do things much more efficiently with our homes and our buildings because of all the waste. But you readily admit that we have an awful lot of waste in our power plants.

Ms. HOGAN. Sure.

Senator MANCHIN. A lot of our coal plants, natural gas plants. We have a lot of waste there.

How come you are not putting any money to retrofit them? That is where your greatest savings are. That is where your greatest efficiencies would be because that is where your greatest loss is.

Ms. HOGAN. I think the Department of Energy has a broad portfolio of efforts, including looking at ways to improve the efficiency of our power plants. The other area I think that is ripe for a significant savings are things like combined heat and power where we also can greatly improve the conversion efficiency.

Senator MANCHIN. Let me just say what you have here. About half of the budget of the Office of Fossil Energy and in DOE on the President's energy efficiency initiative, while reducing funding on programs like the advanced energy systems program at the National Energy Technology Lab. So it does not make sense, if you are trying to get the efficiencies you want and you are not trying to retrofit or make that happen at the largest plants that you have identified as the most inefficient.

Ms. HOGAN. No. I mean, we would be happy to have this broader conversation with you. I think when you look at what the role of the Department of Energy is, it is largely one of looking at what the research challenges are—there are indeed challenges—and then also helping people understand what their opportunities are. As we know, sort of what goes on with power plant retrofits is a very complicated—

Senator MANCHIN. But I am saying NETL, the National Energy Technology Lab, has been very effective in working with fossil, both coal and natural gas, but you keep cutting their budget. The Department of Energy does not put any money in it.

Ms. HOGAN. If we look at the investment the Department has made in improvements in R&D for our fossil-based system in this country, we will see that it is very substantial. But I am happy to sort of continue the conversation.

Senator MANCHIN. We would be happy to because we are not seeing what you are seeing, and we had the figures from your own agency to back that up. But I would love to sit down and talk with you.

One more very quickly. This is for anyone. Do you have any estimate at all about how much energy can be saved through the energy efficiencies programs such as the Shaheen-Portman bill and if you have any idea about that as far as what you think that can actively do?

Ms. HOGAN. So I think I am the one that is here speaking to the energy efficiency issues.

This is something we will be happy to go back and look into. We have sort of gone through that there is a long list of energy efficiency provisions in the bill that touch on a number of different areas, the building codes, industrial energy efficiency, enhancing the work force for commercial buildings, as well as additional opportunities with the supply chain. So we will be happy to look into that in more detail.

Senator MANCHIN. Can you give me a ratio of what the savings would be per the cost? That is all. I am just looking if it makes sense—the type of savings that we have for the cost that we are investing. There has to be a cost ratio.

Ms. HOGAN. Yes, and I think everything that you look at in this bill is looking to address market barriers for things that really are cost-effective. So I think you can expect a pretty good cost-benefit ratio.

Senator MANCHIN. The only thing I would ask real quick—and I am sorry, Mr. Chairman. I will finish right up. If you are going to categorize it—and I would categorize it if you have homes, if you have commercial buildings, and if you have manufacturing. I would include—manufacturing would be in our power plants—how much of the total loss is coming from each one or the inefficiencies, and with the investments you would make in each category, what type of return you can—to me that would make it much easier for me to understand it if you categorize it. So if you are going to spend \$100 million here and only get a \$10 million return and you are going to spend \$100 million here and get a \$400 million return, I would like to at least see the comparisons. Does that make sense?

Ms. HOGAN. Sure. We can look at it.

Senator MANCHIN. For the sponsor of the bill, I think you know where I am going with this.

Thank you, Mr. Chairman.

The CHAIRMAN. Thank you.

Nobody on this committee spends more time advocating for renewable energy than the Senator from Minnesota. So we welcome your questions.

Senator FRANKEN. I was happy to hear the Senator from West Virginia talk about renewable energy, about hydro and about energy efficiency at power plants, as well as in buildings and commercial buildings and homes.

I started an initiative in Minnesota called Back to Work Minnesota because I see that this is an opportunity to create jobs.

Again, I congratulate Senator Portman and Senator Shaheen on this important bill, S. 761, because it seems to me that the bang for the buck here is pretty obvious when you are talking about saving energy and at the same time you are creating jobs.

In Minnesota, we manufacture energy efficient windows, energy efficient doors, HVAC systems that are incredibly energy efficient. You have the jobs that are created when people do the retrofit. People in our building trades have been hit over the last several years with the depression in their industry, and we need to put these people back to work. It also pays for itself. I want to talk to you a little bit about financing.

But I really would like to ask you about what you see as the job creation possibilities that come out of this piece of legislation.

Dr. Hogan.

Ms. HOGAN. So as you look at the legislation, I mean, you are building to more efficient levels, providing more access to financing in the commercial building space, looking at new opportunities for efficiency in the industrial sector, particularly as there is clear information about how to improve energy efficiency up the supply chain. I think there is a fair amount of information out there supporting what you are saying about the enhanced jobs that we get by working to improve the efficiency of our buildings and facilities. So when you look at the bill, you are seeing some very important provisions that will help us grow that energy efficiency marketplace and build those jobs.

Senator FRANKEN. I work closely with my constituents in Minnesota, and I often hear that a major impediment to doing retrofits is financing. I support the goals in the bill. I think it is very smart in the bill that we have provisions to address exactly that, overcoming financing obstacles.

A 2009 study from McKinsey found that more than \$1 trillion in wasted energy could be saved in this country if we spent on the scale of hundreds of billions of dollars. That is a great return on investment that can help our citizens save money and cut down on unnecessary greenhouse gases and, as you just said and as I said, create jobs. That is why I believe this bill can and probably should go further in providing financial incentives for building retrofits.

How large is the opportunity for energy savings in buildings? It is 40 percent of our energy. What kind of financial incentives and also what kind of financing can we do? Because if you—and we have different financing approaches that we have used in Minnesota where the energy service company essentially puts all the money up front and they get paid back either through—the owner of the building pays the old energy bill and the excess money goes right back to the energy service company. There are all kinds of models. Can you speak about that a little bit?

Ms. HOGAN. Yes. Again, we do see that access to financing is frequently cited as a reason why building retrofits are not going forward. We do see that many, many, many buildings can be improved from an energy efficiency standpoint by 20 percent or more. Then you have to look at sort of the more particular issues that are out there in the commercial building marketplace. I think you are

referring to some of the issues with the public sector. Some of them have a harder time getting access to dollars.

Senator FRANKEN. Actually in the public sector in many cases, it is easier because they know that in the public sector that building is going to be in the same hands for 30 or 40 years. MUSH, right?

Ms. HOGAN. The MUSH market and using the energy savings performance contracts that you were referring to. Right.

So the part of the industry that has figured out how to do that is doing it well, but there are still many more public entities that do not quite know how to use that type of contractual mechanism. So there is a lot more work to be done to expand the number of people that can do that well and to get the savings we can from the public sector, the MUSH market.

When you go to the private—

Senator FRANKEN. Should we not, just for everyone listening and watching—it is municipal, university, schools, and hospitals. That is the MUSH market, everybody. You are welcome.

Ms. HOGAN. It has nothing to do with dogs. Right.

Senator FRANKEN. Unless it is a university that teaches people how to train dogs. I think that is the only overlap.

Ms. HOGAN. Right.

Senator FRANKEN. I am sorry I got this off track.

[Laughter.]

Senator FRANKEN. Let us talk about pace laws. Can you explain to the folks what pace laws are and how they work? I think they are really a good way of doing this.

Ms. HOGAN. Right. So there is a lot of different financing mechanisms out there, and pace is one where you put—I mean, it is somewhat similar to what you are saying with the energy performance contract where you engage in a retrofit for the building. There is a cost. The cost gets assigned to the property assessment and you pay it back through your sort of property tax process.

Senator FRANKEN. Yes. In other words, instead of paying up front, you put it on your property as a property tax, and even if the property changes hands, it just stays with it. In this way, you can get financing from a county or from a city or from a State. The Edina, Minnesota was the first in Minnesota to do that, and we are having other cities do it. Actually, you can borrow money at a lower rate because the city is doing it or the county is doing it.

Ms. HOGAN. Right, and it addresses the issue that the building may change hands before the energy efficiency measure may pay itself back. So you are attaching the improvement to the building as opposed to the owner and addressing some of those key barriers.

Senator FRANKEN. Mr. Chairman, I am over my time, but can I ask one more?

The CHAIRMAN. Absolutely.

Senator FRANKEN. I want to spend a couple minutes talking about a separate energy efficiency issue, the energy efficiency resource standard. Are you familiar with that at all? We have that in Minnesota and a number of other States, I think, have implemented these standards.

In Minnesota, there is a requirement for utilities to get 1.5 percent more efficient use of their electricity by their consumers every year. By doing this, it has incentivized exactly what we are talking

about. It has incentivized retrofitting because the utilities are looking for customers to do exactly that, and it is developing more efficient technologies. Can you talk about the merits of a Federal energy efficiency resource standard?

Ms. HOGAN. I think I can talk generally about that. I mean, clearly we are interested in policies that, as you are pointing out, encourage energy savings where energy savings make sense. At the State level, the energy efficiency resource standard is proving to be a very effective tool. I think over half the States across the country have such a standard. It can be at varying levels, 1 percent, 1.5 percent, 2 percent in some States. As you are pointing out, it really engages the utility in delivering effective programs across all of their customer classes to get the savings where the savings are cost-effective and with a good payback. So it is a powerful tool.

Senator FRANKEN. It is a powerful tool that I think we could use and possibly legislate that nationwide, being careful not to punish the utilities in those States that have already been doing this for a number of years like they have in Minnesota.

Thank you all for your testimony. Dr. Hogan, thank you specifically for answering my questions.

Mr. Chairman, thank you.

The CHAIRMAN. Thank you, Senator Franken.

Senator Murkowski has indicated to me she does not have any further questions, and I think Senator Portman would like to make a statement. Then we will wrap up.

Senator PORTMAN. Just briefly again, thanks, Dr. Hogan, for being here. I thank Chairman Wyden and Senator Murkowski for allowing us to have this hearing today and to move quickly on the energy efficiency legislation. I thank Senator Franken. He has obviously got a wealth of experience in this.

We talked earlier about the ESCO's at the Federal level that are allowed to perform these services for efficiency and then be paid over time with the savings, which is the Federal Government. We are expanding what those savings can be to include the electric and natural gas charging stations, for instance, which is infrastructure. So we do have some legislation here which will help to strengthen that at the Federal level.

I really loved getting the question, Dr. Hogan, from my colleague from West Virginia, Senator Manchin, because that is really what this is all about. We are going to get you a lot of good data, but just a couple thoughts here.

The authorization, based on the CBO numbers we have so far—and we will get the final numbers before the markup—is about \$570 million. That will all be offset so there will be no cost. In other words, this is a deficit-neutral bill. Given the times we live in, we think that is necessary. We are committed to finding those offsets.

However, in terms of the cost-benefit analysis, we have an analysis out there that shows that this legislation per what Senator Franken talked about and also Senator Coons in terms of jobs, 80,000 new jobs. We have a figure out there that there would be a savings of \$4 billion per year by 2020 to consumers in terms of energy costs. So in terms of a cost-benefit analysis, that is pretty impressive.

In terms of the emissions savings, there are a lot of people concerned about with CO<sub>2</sub> in particular. It is equivalent to taking 5 million cars off the road, which is a pretty significant savings.

In terms of the Federal Government, the costs there we talked about earlier, the Federal Government being the biggest energy user in the world. We think there is about a \$24 billion bill a year for energy just in the Federal Government alone. So this is a direct help to taxpayers, obviously, because whatever savings—we will get you some numbers on these—goes directly into the taxpayers' pocket because this is money otherwise that would be spent at the Federal level.

So we think this is an incredible bang for the buck, which is why I am excited about it and appreciate again the fact that we are moving quickly on this legislation this year. Having gotten out of committee with a good bipartisan vote last year, we are hoping to do that again and get it to the floor and, as Senator Murkowski said and the chairman said, hopefully get it through the House and then to the President for signature.

Thank you, Mr. Chairman. Thank you, Dr. Hogan.

The CHAIRMAN. Senator Portman, thank you very much. A couple of hours ago, Senator Murkowski and I began saying that hydro is back, and I think with the good work that you and Senator Shaheen are doing, we can amend that and say energy efficiency is coming back, too. So we commend you for your good work.

With that, the committee is adjourned.

[Whereupon, at 11:46 a.m., the hearing was adjourned.]



## APPENDICES

### APPENDIX I

#### Responses to Additional Questions

##### RESPONSES OF KATHLEEN HOGAN TO QUESTIONS FROM SENATOR WYDEN

*Question 1.* S. 761, is very similar to S. 1000 as reported by the Committee in the last Congress. It has four titles: buildings; commercial building efficiency financing, manufacturing, and Federal government efficiency.

Please provide the Department's view on each section of the bill and an estimate of the savings that would result from each section.

Answer. An analysis of S. 761 is as follows. The Administration is still reviewing the bill, and the following analysis does not provide or represent a complete position on the bill or any of its subtitles. This analysis and estimates therein are preliminary and do not necessarily reflect all inputs, effects, or impacts.

##### TITLE I—BUILDINGS

###### *Subtitle A—Building Energy Codes*

This subtitle would expand on DOE's authority to assist in the development of model building codes. The bill would add to the existing building code program certification requirements for States and Tribes to demonstrate improvements in the energy efficiency of their building codes and achievements in compliance.

Importantly, the bill would authorize the establishment of stretch codes and targets for codes by DOE to advance energy efficiency in the absence of improvements in the model building codes.

The bill would expand upon recent DOE steps to increase the transparency of its participation in the voluntary codes process. The bill language would codify many of those efforts and provide further enhancement of those efforts.

The bill would authorize \$200 million to carry out these tasks. DOE has yet to perform an analysis that details the annual consumer savings and costs realized upon implementation of these provisions.

###### *Subtitle B—Worker Training and Capacity Building*

This subtitle would establish a grant program to develop and support building and training centers at institutions of higher education to identify opportunities for optimizing energy efficiency; to promote emerging concepts and technologies; to train building engineers, scientists, technicians and code officials in energy efficiency design and operation; and to promote research in alternative energy sources and distributed generation.

While the bill would make clear that this authority would be coordinated with DOE industrial research and assessment center programs and other Federal programs in order to avoid duplication of effort, DOE understands this provision as complementing its on-going workforce training efforts and energy service development activities, including the current Industrial Assessment Centers program.

##### TITLE II—PRIVATE COMMERCIAL BUILDING EFFICIENCY FINANCING

Title II would establish a grant program focused on State-level investment in programs to promote energy efficiency retrofits through the use of a variety of innovative financing mechanisms, including commercial Property Assessed Clean Energy (PACE) programs, credit enhancements, and revolving loan funds.

The high initial costs of installing improved building energy efficiency measures can deter businesses from making such investments. The availability of private sector financing, however, can allow these projects to happen. We have seen that often

businesses with access to financing to undertake efficiency upgrades could generate enough savings to pay finance costs associated with their energy efficiency investments. DOE supports State-level financing programs as a means to secure long term access to funding for energy efficiency retrofits. Currently, included with the many eligible activities under the Department's State Energy Program are State-level activities to improve access to financing for energy efficiency and renewable energy projects.

The bill would authorize \$250 million for a 5-year period, spanning from 2015 through 2020, to help States develop financing mechanisms that would spur increased energy efficiency investments that leverage private sector financing. Through the financing mechanisms described in the bill, this funding could be leveraged into a many-fold increase in available energy efficiency retrofit financing for commercial entities. Moreover, the grant program authorized under the bill focuses exclusively on the investment potential for energy efficiency that can be realized by such programs.

#### TITLE III—INDUSTRIAL EFFICIENCY AND COMPETITIVENESS

##### *Subtitle A—Manufacturing Energy Efficiency*

Manufacturing is the most diverse energy-use sector—in terms of energy services required, sources of energy used, and technologies needed and product output. This subtitle would provide further emphasis to DOE's efforts in interagency cross-program coordination to ensure the strengthening of the U.S. industrial sector through smarter and more efficient uses of energy. The Future of Industry Program, as outlined in the bill, would enhance the potential of the DOE program offices, the National Laboratories, and the industry sector to identify and deploy technologies and practices that will increase industrial efficiency and productivity, which in turn will improve the competitiveness of the U.S. industrial sector. Such authority would allow DOE to continue to partner with industry, small business, universities, and other stakeholders to identify and invest in emerging technologies with the potential to create high-quality domestic manufacturing jobs and enhance the global competitiveness of the United States.

##### *Subtitle B—Supply Star*

This subtitle would establish a program to identify and promote practices, recognize companies, and recognize products that use highly efficient supply chains in a manner that conserves energy, water and other resources. This subtitle also authorizes the

Department to award competitive grants and other incentives in support of such practices.

Benefits from understanding and recognizing energy and resource efficiency across the supply chain include:

- Improved operational efficiencies,
- Decreased energy intensity,
- Energy data for fact-based decisions,
- Support for organizational and cultural change,
- Drivers for organizational integration,
- Reduced environmental impacts,
- Competitive advantages over firms that neglect resource management,
- Visible demonstration of social responsibility, and
- Positioning for carbon accounting.

##### *Subtitle C—Electric Motor Rebate Program*

This subtitle would establish a program to provide rebates for expenditures made by entities for the purchase and installation of new energy efficient electric motor controllers for constant speed motors. These motors are used in both commercial buildings (elevators, escalators, moving sidewalks) and manufacturing facilities (conveyor belts). For the rebate program for motor controllers, preliminary DOE estimates indicate that the \$10 million cost to the government of the rebate program over two years and the \$36 million capital investment costs for participating entities could save approximately \$74 million (undiscounted, real dollars) in electricity bill payments by the end-users over the lifetime of the motors with controllers purchased in the two years that the rebate is in place. The average lifetime of these motors is approximately 11 years and therefore these electricity bill savings accrue over a longer period of time than the rebate program.

*Subtitle D—Transformer Rebate Program*

This subtitle would establish a program to provide rebates for expenditures made by owners of industrial or manufacturing facilities, commercial buildings and multi-family residential buildings for the purchase and installation of a new energy efficient transformer. The Department has recently finalized improved energy efficiency standards for this equipment, which are to take effect beginning in 2016. The availability of rebates could, in the interim, incentivize the installation of high-efficiency transformers both in advance of and to exceed the new standards. For products with long estimated lives, such as distribution transformers, installation of models with higher efficiency can result in significant long term energy and dollar savings following the additional initial capital cost.

The rebate program could be beneficial for the purchase of more energy efficient transformers because of the nature of the market for the low-voltage, dry-type transformers that would be eligible for this rebate. In most cases, the low-voltage, dry-type transformers installed inside buildings and plants are purchased by electrical contractors or building managers who are not responsible for paying future energy bills. Thus, most of these purchases are made on the basis of lowest first cost, not efficiency, which creates a potential for energy savings that could be realized by purchasing more efficient transformers. This program could attract more efficient transformers into the market ahead of the new energy conservation standard for low-voltage dry-type distribution transformers; however, it should be noted that NEMA Premium level will be a required efficiency level for the vast majority of the market (3-phase units) in 2016. For the two year rebate program, the government cost of \$10 million and the purchaser costs of \$20 million could save the end-users approximately \$362 million (undiscounted, real 2012 dollars) in electricity bill payments over the lifetime of the transformers purchased in the two years of the rebate program. It should be noted that the average lifetime of this equipment is approximately 30 years, so that these savings are generated over a long period of time relative to the length of the rebate program, and that the new energy efficiency standards for this equipment are to take effect beginning in three years.

## TITLE IV—FEDERAL AGENCY ENERGY EFFICIENCY

As frequently noted, the Federal government is nation's largest energy consumer. This means that there is tremendous opportunity and a clear responsibility to lead by example through improvements to energy management across our buildings, facilities, and fleets. The bill would further emphasize, and enhance, efforts to identify opportunities for improving energy efficiency in some of the most energy intensive sectors of the Federal government, including the increased need for information, communication, and data center resources.

The bill would also expand the authority of the energy savings performance contract (ESPC) program to allow the conversion of Federal fleets to alternative fueled vehicles if substantial savings could be generated through such a conversion to pay for the investments needed. This application of ESPC authority is not within the present framework of Administration policy, which relates only to Federal buildings, and is beyond the scope of the Administration's current guidance and would require careful review.

*Question 2.* Title I of S. 761 directs DOE to support the development of a voluntary national model building energy code, to encourage state adoption of the code, and to certify adoption.

How would DOE encourage state adoption, and what would be the benefits in terms of efficiency and market standardization?

*Answer.* The Administration is still reviewing S. 761, and the following preliminary analysis does not provide or represent a position on Title I of the bill. Moreover, at this time DOE has not determined how it would implement enhanced activities to encourage State adoption of more efficient building energy codes under the authorities provided in the bill.

Title I of S. 761 would expand on DOE's authority to assist in the development of model building codes. The bill would add to the existing building code program certification requirements for States and Tribes to demonstrate improvements in the energy efficiency of their building codes and achievements in compliance.

Importantly, the bill would authorize the establishment of stretch codes and targets for codes by DOE to advance energy efficiency in the absence of improvements in the model building codes.

The bill would expand upon recent DOE steps to increase the transparency of its participation in the voluntary codes process. The bill language would codify many of those efforts and provide further enhancement of those efforts. The bill would authorize \$200 million to carry out these tasks. DOE has yet to perform an analysis

that details the annual consumer savings and costs realized upon implementation of these provisions.

*Question 3.* Experience and skill in designing and installing energy efficiency measures varies widely around the country. Title I of S. 761 would direct DOE to establish Building Training and Assessment Centers at existing educational institutions to promote training and improve the skills of building professionals in building energy retrofits.

What lessons has DOE learned from establishing their Industrial Assessment Centers that would be applicable to these Building Centers?

What does this training provision do to level the availability and quality of training programs between states, and what impact would this have on job creation?

Answer. The Administration is still reviewing S. 761, and the following preliminary analysis does not provide or represent a position on Title I of the bill.

Title I, Subtitle B of S. 761 would establish a grant program to develop and support building and training centers at institutions of higher education to identify opportunities for optimizing energy efficiency; to promote emerging concepts and technologies; to train building engineers, scientists, technicians and code officials in energy efficiency design and operation; and to promote research in alternative energy sources and distributed generation.

While the bill would make clear that this authority would be coordinated with DOE industrial research and assessment center programs and other Federal programs in order to avoid duplication of effort, DOE understands this provision as complementing its on-going workforce training efforts and energy service development activities, including the current Industrial Assessment Centers (IACs) program. Currently, IAC teams are located at 24 universities across the country. Through periodic funding opportunity announcements, universities have been eligible to apply to host an IAC and receive DOE funding to provide assessments for industrial facilities.

The IAC program enables promising engineering students around the country to conduct energy assessments in a broad range of manufacturing facilities, providing skills and experience that prepares the students to compete in today's economy while helping local companies and factories to reduce energy waste, save money, and become more economically competitive. We expect that the training provision in S. 761 would build upon this foundation to achieve additional benefits related to job creation and access to quality training with a focus on cutting waste in the nation's buildings.

*Question 4.* Title II of S. 761 would establish an initiative, under the existing State Energy Program, to encourage states to focus on the challenge of increasing investments in private commercial building efficiency.

Would you briefly explain why this particular sector has been resistant to energy efficiency investments and improvements and how this provision would help to overcome this resistance?

Answer. The Administration is still reviewing S. 761, and the following preliminary analysis does not provide or represent a position on Title II of the bill.

Title II of S. 761 would establish a grant program focused on State-level investment in programs to promote energy efficiency retrofits through the use of a variety of innovative financing mechanisms, including commercial Property Assessed Clean Energy (PACE) programs, credit enhancements, and revolving loan funds.

The high initial costs of installing improved building energy efficiency measures can deter businesses from making such investments. Also, commercial buildings may have split incentives in cases where the building owner would be the one to undertake improvements while the tenants would be the ones to pay the energy bill and receive the benefits. Additionally, some buildings change ownership frequently so the owner may not realize the full payback from an energy efficient upgrade. The availability of one or more private sector financing mechanisms, however, can allow these projects to happen. We have seen that often businesses with access to financing to undertake efficiency upgrades could generate more than enough savings to pay finance costs associated with their energy efficiency investments. DOE supports State-level financing programs as a means to secure long term access to funding for energy efficiency retrofits. Currently, included with the many eligible activities under the Department's State Energy Program are State-level activities to improve access to financing for energy efficiency and renewable energy projects.

The bill would authorize \$250 million for a 5-year period, spanning from 2015 through 2020, to help States develop financing mechanisms that would spur increased energy efficiency investments that leverage private sector financing. Through the financing mechanisms described in the bill, this funding could be leveraged into a many-fold increase in available energy efficiency retrofit financing for commercial entities. Moreover, the grant program authorized under the bill focuses

exclusively on the investment potential for energy efficiency that can be realized by such programs.

*Question 5.* DOE's Advanced Manufacturing Office (AMO) has increasingly focused on R&D for new, more efficient industrial processes. But, our installed industrial base uses about 30 percent of the nation's energy.

What do you think is the appropriate balance between R&D on new processes and support for retrofits to increase the efficiency of existing manufacturers?

How will you interpret Title III of the bill to realign the AMO's priorities?

*Answer.* Through the Advanced Manufacturing Office (AMO), DOE works closely with a broad set of industry sector stakeholders. The Office approach has shifted emphasis to investments in foundational technologies—technologies that are anticipated to have a high impact in helping save energy and improve competitiveness and that will benefit multiple industries in the installed industrial base. When R&D investments are approached in this manner, the extensive supply chains associated with manufacturing multiply the government's initial investments from one industry to multiple applications in other industries and end-use products. Examples include improving processes for the manufacturing of steel and chemicals, as well as advancing additive manufacturing, development of new lightweight materials, and new high performance semiconductor materials.

Many of these foundational technologies have cross-cutting potential and directly enable improved energy efficiency retrofits for existing manufacturers in the installed industrial base. The need for cost share typically requires that research be conducted by, or in partnership with companies that include the installed industrial base, and would benefit from the development of these foundational technologies. For example, in 2012 DOE invested over \$18 million in four projects from the Innovative Manufacturing Initiative Funding Opportunity Announcement that directly benefits the steel industry.

AMO pursues this mission through investments that research, develop, and demonstrate (RD&D) at convincing scale new energy-efficient manufacturing processes and materials technologies to reduce the energy intensity and life-cycle energy consumption of manufactured products and promote a corporate culture of continuous improvement in energy efficiency among existing facilities and manufacturers. AMO-supported technologies must have the potential to reduce the life-cycle energy consumption of impacted manufactured goods by 50% over ten years. AMO investments in RD&D projects and shared RD&D facilities are competitively selected and cost-shared with industry to maximize energy savings and economic benefits.

AMO also supports industry's adoption of technology through the Industrial Technology Assistance program by developing strategic partnerships. DOE support to industry helps lower a range of institutional barriers to prepare innovative, energy-efficient technologies and energy management systems for commercial deployment. AMO's software tools assist existing facilities in identifying energy-saving opportunities in systems commonly used across the sector such as steam, process heating, compressed air, pumps, fans, motors, data centers, and combined heat and power (CHP). The Better Buildings, Better Plants Program has 118 industry partners demonstrating their commitment to energy savings by signing a voluntary pledge to reduce energy intensity by 25% over ten years. Moreover, eleven manufacturers have signed on to the Better Buildings Challenge to not only make their buildings and facilities more energy efficient by 2020, but to transparently share the business approaches they use to achieve these savings.

AMO's Industrial Assessment Centers (IACs) continue to be a workforce development initiative to train the next generation of energy engineers. Led by faculty directors, students receive hands-on experience conducting assessments for small- and medium-sized manufacturers (SMEs) in their region, while the SMEs gain access to critical resources and bottom line benefits. The Regional Clean Energy Application Centers (CEACs) promote and assist the implementation of CHP, waste heat to power, and district energy technologies and concepts across the U.S. by providing market studies, education and outreach, and technical assistance. The Superior Energy Performance program offers industrial and commercial facilities the opportunity to earn a certification by voluntarily demonstrating continual improvement in energy efficiency. The program provides a transparent system for verifying improvements in energy performance and management practices through the application of the internationally accepted ISO 50001 energy management standard.

Title III of S. 761 would provide further emphasis to DOE's efforts in interagency cross-program coordination to ensure the strengthening of the U.S. industrial sector through smarter and more efficient uses of energy. The Future of Industry Program, as outlined in the bill, would enhance the potential of the DOE program offices, the National Laboratories, and the industrial sector to identify and deploy technologies and practices that will increase industrial efficiency and productivity, which in turn

will improve the competitiveness of the U.S. industrial sector. Such authority would allow DOE to continue to partner with industry, small business, universities, and other stakeholders to identify and invest in emerging technologies with the potential to create high-quality domestic manufacturing jobs and enhance the global competitiveness of the United States. The Administration is still reviewing S. 761, and this preliminary analysis does not provide or represent a position on Title II of the bill.

*Question 6.* Title III of S. 761 would direct DOE to establish a rebate program to promote the replacement of inefficient electric motors and electric transformers.

Why aren't the energy savings achieved by replacement of existing equipment with more efficient equipment enough of an incentive for businesses to make these replacements without government incentives?

What's a rough estimate of the energy savings that would be achieved by replacing the nation's electric motors and transformers with more-efficient and cost-effective models, and what's a rough estimate of the savings that would result from these two rebate programs in S. 761?

*Answer.* The Administration is still reviewing S. 761, and the following preliminary analysis does not provide or represent a position on Title III of the bill.

Title III, Subtitle C of S. 761 would establish a program to provide rebates for expenditures made by entities for the purchase and installation of new energy efficient electric motor controllers for constant speed motors. These motors are used in both commercial buildings (elevators, escalators, moving sidewalks) and manufacturing facilities (conveyor belts). For the rebate program for motor controllers, preliminary DOE estimates indicate that the \$10 million cost to the government of the rebate program over two years and the \$36 million capital investment costs for participating entities could save approximately \$74 million (undiscounted, real dollars) in electricity bill payments by the end-users over the lifetime of the motors with controllers purchased in the two years that the rebate is in place. The average lifetime of these motors is approximately 11 years and therefore these electricity bill savings accrue over a longer period of time than the rebate program.

Title III, Subtitle D would establish a program to provide rebates for expenditures made by owners of industrial or manufacturing facilities, commercial buildings, and multifamily residential buildings for the purchase and installation of a new energy efficient transformer. The Department has recently finalized improved energy efficiency standards for this equipment, which are to take effect beginning in 2016. The availability of rebates could, in the interim, incentivize the installation of high-efficiency transformers both in advance of and to exceed the new standards. For products with long estimated lives, such as distribution transformers, installation of models with higher efficiency can result in significant long term energy and dollar savings following the additional initial capital cost.

The rebate program could be beneficial for the purchase of more energy efficient transformers because of the nature of the market for the low-voltage, dry-type transformers that would be eligible for this rebate. In most cases, the low-voltage, dry-type transformers installed inside buildings and plants are purchased by electrical contractors or building managers who are not responsible for paying future energy bills. Thus, most of these purchases are made on the basis of lowest first cost, not efficiency, which creates a potential for energy savings that could be realized by purchasing more efficient transformers. This program could attract more efficient transformers into the market ahead of the new energy conservation standard for low-voltage dry-type distribution transformers; however, it should be noted that NEMA Premium level will be a required efficiency level for the vast majority of the market (3-phase units) in 2016.

For the two year rebate program, the government cost of \$10 million and the purchaser costs of \$20 million (undiscounted, real 2012 dollars) could save the end-users approximately \$362 million in electricity bill payments over the lifetime of the transformers purchased in the two years of the rebate program. It should be noted that the average lifetime of this equipment is approximately 30 years, so that these savings are generated over a long period of time relative to the length of the rebate program, and that the new energy efficiency standards for this equipment are to take effect beginning in three years.

*Question 7.* Title IV of S. 761 would require the Federal government to develop a plan to use advanced power savings techniques to reduce energy use by government computers, and it would require the Federal government to develop a goal for energy savings through the consolidation of data centers.

How will these requirements be implemented in the context of existing government efficiency objectives and programs, and are they duplicative of any existing federal efficiency requirements?

*Answer.* As frequently noted, the Federal government is nation's largest energy consumer. This means that there is tremendous opportunity and a clear responsi-

bility to lead by example through improvements to energy management across our buildings, facilities, and fleets.

Currently, Energy Star already provides significant guidance for power management of computers; in addition, the power management settings are incorporated into the Energy Star certification process. As mandated by Executive Order 13423, Federal agencies are required to activate Energy Star “sleep” features on computers and monitors; this E.O. also mandates that Federal agencies buy Electronic Product Environmental Assessment Tool (EPEAT) certified products. Executive Order 13514 requires Agencies to promote electronics stewardship by ensuring procurement preference for EPEAT-registered electronic products, enabling of computer power management, activation of duplex printing functions, and procurement of Energy Star-qualified and FEMP-designated electronic equipment.

With regard to the data center consolidation, in 2010, the Office of Management and Budget launched the Federal Data Center Consolidation Initiative (FDCCI), which seeks to promote the use of Green IT by reducing the overall energy and real estate footprint of government data centers; reduce the cost of data center hardware, software and operations; increase the overall IT security posture of the government; and shift IT investments to more efficient computing platforms and technologies, like cloud computing. The FDCCI was built on foundational efforts across the government, including those carried out under Section 103 of the Energy Policy Act of 2005.

Title IV of S. 761 would not only codify development of guidance and goals relevant to the power savings techniques requirements listed in the Executive Orders and the activities of the FDCCI, it would also further emphasize and enhance efforts to identify opportunities for improving energy efficiency in some of the most energy intensive sectors of the Federal government, including the increased need for information, communication, and data center resources. To that extent, it would complement broader Federal efforts to use total cost of ownership metrics, such as those recently called for in another OMB initiative, known as PortfolioStat.<sup>1</sup> Under PortfolioStat, agencies are optimizing those data centers that are pivotal to delivering taxpayer services, while closing duplicative and inefficient data ones to better enable mission delivery. In this context, energy efficiency measures are one component of many efficiency measures that agencies are addressing as complete work under the FDCCI.

The Administration is still reviewing S. 761, and this preliminary analysis does not provide or represent a position on Title III of the bill.

Currently the FDCCI is managed by OMB and GSA, and the Energy Star Power Management program and the EPEAT program are managed by EPA. The Department’s Federal Energy Management Program (FEMP) also provides services, tools, and expertise to Federal agencies to help them achieve their legislated and executive-ordered energy, greenhouse gas, and water goals. Additional energy savings guidance related to information and communications technologies would complement existing Federal efforts.

#### RESPONSES OF KATHLEEN HOGAN TO QUESTIONS FROM SENATOR MURKOWSKI

*Question 1.* The Energy Savings and Industrial Competitiveness Act contains a section to “reform and reorient” DOE’s industrial efficiency programs. There has been much talk in this Committee and in the full Senate about the duplication of federal authorities, some of it across agencies but also some within, and the need to consolidate or streamline some of the programs or authorizations within our jurisdiction. What are your thoughts on this type of approach? Are there other areas that you can point to where a re-organization may be helpful?

Answer. The Administration is still reviewing S. 761, and the following preliminary analysis does not provide or represent a position on Title III of the bill. Title III of S. 761 would provide further emphasis to DOE’s efforts in interagency cross-program coordination to ensure the strengthening of the U.S. industrial sector through smarter and more efficient uses of energy. The Future of Industry Program, as outlined in the bill, would enhance the potential of the DOE program offices, the National Laboratories, and the industrial sector to identify and deploy technologies and practices that will increase industrial efficiency and productivity, which in turn will improve the competitiveness of the U.S. industrial sector. Such authority would allow DOE to continue to partner with industry, small business, universities, and other stakeholders to identify and invest in emerging technologies with the potential to create high-quality domestic manufacturing jobs and enhance the global competitiveness of the United States.

<sup>1</sup> <http://www.whitehouse.gov/sites/default/files/omb/memoranda/2013/m-13-09.pdf>

DOE has recently taken steps to ensure that the Department's investment in industrial-sector energy technologies yields the greatest benefit possible. In particular, the recently announced EERE's Clean Energy Manufacturing Initiative will help integrate manufacturing activities across DOE, focus them on American competitiveness goals, provide the Advanced Manufacturing Office and the other EERE technology offices with rigorous analysis on the best use of federal dollars, and establish an improved mechanism for engaging directly with industry partners on energy efficiency and clean energy challenges. EERE coordinates its activities with other Federal agencies through the Advanced Manufacturing National Program Office at the National Institute of Standards and Technology (NIST), in order to minimize overlap and foster increased collaboration in agency goals and activities. The Department is committed to increasing collaboration across its programs and with the National Laboratories, as well as with its academic, non-profit, and private sector partners, in order to eliminate duplication of activities, reduce fragmentation of efforts, and accelerate the achievement of its technology goals.

*Question 2.* In your testimony you describe R&D that is underway on next-generation building technologies and the idea of these technologies functioning together with others to create energy-efficient systems—integrating “silos” of efficiency (appliances, buildings) with the goal of achieving greater overall savings. Please elaborate.

*Answer.* In addition to efforts focused on specific building components, DOE invests in whole building R&D that demonstrates how new energy efficient technologies can function together to create an efficient system, achieve greater overall savings, and inspire the next generation of buildings. For homes, this will translate into a new generation of housing stock that is durable, uses smarter energy management systems, and offers substantial energy savings. DOE's research in these area focuses on several technologies, including sensors, controls, and whole building performance.

Sensors are designed to help building owners and operators better manage their energy use through improved information sharing between systems and automation. Sensors measure predefined variables, such as the amount of natural light coming in through an office window, and then feed this data into a building's control system. The control can then respond by adjusting the various building systems. For example, sensors may note when a person leaves a room and let controls know to turn off the lights, or can ensure that faucets only release water if someone's hand is waved.

Advanced building controls can play a significant role in improving building energy performance. Controls can be programmed to automatically respond to environmental variables, such as daylight, but can also respond to preprogrammed parameters aligned with other factors, like whether a particular day falls on a weekend or a holiday. Responses can include increasing a room's temperature when it is cold outside, or having the lights turn on automatically when it is too dark. The delivery of continuous, up-to-date information on building system and component performance will enable more cost-effective equipment servicing and optimized building operation. Building owners and operators can realize lower maintenance and operating costs, and building occupants could enjoy greater levels of comfort and personalized control.

Whole building performance energy management systems are designed to integrate the diverse and numerous systems that a building operates to control the building environment. These systems include refrigeration, heating, ventilation, and air conditioning (HVAC), lighting, and a host of others. By having these systems communicate with each other, building owners and operators can achieve improved building performance and reduced energy use.

#### RESPONSE OF KATHLEEN HOGAN TO QUESTION FROM SENATOR LANDRIEU

*Question 1.* Energy efficiency is an issue that all sides can agree is important. One item that unfortunately is not addressed in this legislation concerns Section 433 of the Energy Independence and Security Act of 2007 which created a mandate to ban fossil fuel use in new federal buildings and renovation projects over \$2.5 million by 2030. This restriction would prohibit the use of clean and efficient domestic fuels like natural gas to be used in numerous federal buildings. When this legislation was passed we had no real idea about the supply of natural gas that we would be able to provide. Yet the most recent analysis by the Potential Gas Committee (PGC) showed a dramatic increase in the estimated recoverable natural gas reserves in the U.S. The assessment of 2,384 trillion cubic feet is the highest assessment in the 48 year history of the PGC. Given our increasing access to these vast reserves of cheap, clean energy, does it seem reasonable to revisit these restrictions placed on the fed-

eral government which already operates 370.2 million square feet of office space and instead provide the federal government with the option to use this fossil fuel which affordable, abundant and American?

Answer. As you note, Section 433 of the Energy Independence and Security Act directed the Department to establish regulations to implement statutorily mandated Federal building standards that require incremental reductions in energy consumption from fossil fuels, as compared to 2003 levels, with a required 100 percent reduction beginning in fiscal year 2030. DOE has been working hard to find the right balance to help agencies meet these ambitious requirements with as much flexibility as possible. The law does provide the Secretary with the discretion to adjust the requirement downward for a specific building upon request by the head of an agency, when meeting the requirement would be technically impracticable in light of an agency's specific functional needs (such an adjustment does not apply to the General Services Administration).

The Administration is committed to an all-of-the-above energy strategy. The Department of Energy has been working to advance this rule, as it is an important way for the Federal government to lead by example. At the same time, we have been listening to stakeholders who indicate a need for flexibility. We have responded to Congress that we would seek comment again, and are in the process of doing so currently. Providing clarity on stakeholders' questions about implementing Section 433 of EISA is a top priority for the Department.

#### RESPONSES OF KATHLEEN HOGAN TO QUESTIONS FROM SENATOR FRANKEN

*Question 1.* Please outline the merits of state and local energy and water disclosure policies, particularly as they apply to large commercial buildings. What can the Department of Energy do to help more states and localities implement these policies?

Answer. Benchmarking and disclosure policies can facilitate market-based competition and drive investment in energy efficiency. Informational resources for State and local governments are available through The State and Local Energy Efficiency Action Network (SEE Action).

SEE Action is a state and local effort facilitated by DOE and EPA that helps States, utilities, and other local stakeholders take energy efficiency to scale. SEE Action's Working Group on Existing Commercial Buildings has developed fact sheets that are tailored to State and local stakeholders and regulators of rate-payer funded programs; as well as a document entitled, "Benchmarking and Disclosure: State and Local Policy Design Guide and Sample Policy Language." All of these publications are available at [http://www1.eere.energy.gov/seeaction/existing\\_commercial.html](http://www1.eere.energy.gov/seeaction/existing_commercial.html).

*Question 2.* Energy consumption in the U.S. could be reduced substantially through behavior changes alone. What steps can the Department take to prioritize consistent and effective research in this area? Please also provide your recommendations to Congress on how we can strengthen and improve behavioral research efforts at the Department of Energy.

Answer. The Department understands the value of behavioral and social sciences and is increasing the use of these disciplines within its energy efficiency programs. Several programs within the Office of Energy Efficiency and Renewable Energy (EERE) are using behavior-based tools and information to shape program design, implementation, and evaluation.

These programs span the nation's key energy use sectors and include: the State and Local Energy Efficiency Action Network (SEE Action), the Clean Cities initiative, the Better Buildings Neighborhood Program, and Home Performance with ENERGY STAR. In addition, EERE is developing a Home Energy Score, and creating a Commercial Building Asset Rating and Building Performance database. In each case, the Department is employing social science research—including public survey data and experimental behavioral research—when designing, evaluating, and communicating about its programs. We would be happy to continue the conversation as to how we can build upon and improve the Department's behavioral research efforts to achieve higher energy efficient outcomes.

*Question 3.* Studies show that the energy efficiency of information and communication technologies could be greatly improved. Please indicate how best practices and lessons learned from energy efficiency improvements in the information and communications technology sector at federal agencies can be communicated, and transferred, to the private sector.

Answer. The Department's Federal Energy Management Program (FEMP) assists Federal agencies in reducing data center energy consumption by encouraging them to adopt best practices, construct energy-efficient data centers, and educate energy managers and information technology professionals.

FEMP's Data Center Initiative partners with the General Services Administration (GSA), the Energy Star Program, and private industry to make data centers more energy efficient. One of the most visible results transferrable to the private market from these partnerships is the training that is created to raise awareness of efficiency opportunities and support project implementation. These include in-person seminars to IT and Facilities professionals, webinars on tool use (Data Center Profiler Suite), and online webinars.

*Question 4.* Please provide the Department's estimate of the job creation potential of S. 761.

Answer. The Department has not undertaken a comprehensive analysis of S. 761 and does not currently have an internal estimate of its job creation potential. We would be happy to discuss requests for a comprehensive analysis of impacts of S. 761.

#### RESPONSES OF KATHLEEN HOGAN TO QUESTIONS FROM SENATOR MANCHIN

*Question 1.* Homes and commercial buildings last a long time and I can't imagine we expect them to all get replaced or upgraded at once. This tells me that while some low-hanging fruit exists—where we can get significant energy savings from modest investments—our savings might taper off down a more modest amount after that.

Does the DOE have an estimate of how much energy we can save through energy efficiency programs such as those that the Shaheen-Portman bill would support or through the initiatives in the President's proposed initiatives? Specifically: how much in energy savings are we talking per year? And does the rate of those savings change over time because it takes a long time to replace buildings?

Answer. Energy efficiency is a large, low-cost, but underutilized U.S. energy resource, and the opportunity for energy savings in the buildings sector is vast. We spend more than \$400 billion each year to power our homes and commercial buildings, consuming more than 70% of all electricity used in the United States, about 40% of our nation's total energy bill, and contributing to almost 40% of the nation's carbon dioxide emissions.<sup>2</sup> Much of this energy and money is wasted. If we cut the energy use of U.S. buildings by 20%, we could save approximately \$80 billion annually on energy bills, reduce greenhouse gas emissions, and create jobs.<sup>3</sup>

The U.S. built environment includes approximately 80 billion square feet of commercial space and about 116 million homes. While energy efficient new construction is important to lock in savings for the life of the building, strategies to improve the efficiency of existing buildings are essential to have an impact on U.S. building energy use. The Department's Building Technologies Office therefore invests in an array of innovative, cost-effective energy saving solutions that apply to both new and existing homes and buildings, and appliances that are used in every sector. These activities range from longer-term R&D on emerging technologies in building components and systems, to providing information, tools, and standards for increasing the use of efficient off-the-shelf technologies and for building code adoption and implementation in the short term. Having a diverse portfolio of activities allows the Department to help capture the "low-hanging fruit" of energy efficiency options available today as well as invest in advances that will save businesses and consumers money in the future.

The Department has not undertaken a comprehensive analysis of S. 761 and its potential impacts on energy use and savings. We would be happy to discuss requests for a comprehensive analysis of impacts of S. 761.

*Question 2.* Deputy Assistant Secretary, in your testimony you state that homes and buildings consume 40% of the Nation's total energy. It is my understanding that a large portion of this energy—about half of it—is lost in the generation of the electricity that is eventually to be used in those homes and buildings. This is reported as "Electrical System Energy Losses" by the Energy Information Administration (EIA). That is to say that you're counting the fact that our power plants are only 30 or 40 percent efficient in your calculations of our energy use.

It would follow that if we improve the efficiency of our electricity generation and reduce losses in electricity transmission, we will directly address the energy use—not just in the homes and buildings, but everywhere electricity is used.

My question to you is this: should we be spending \$200 million dollars—about half the budget of the office of Fossil Energy in the DOE—on the President's "Race to the Top" energy efficiency initiative, while reducing funding on programs that would

<sup>2</sup>Buildings Energy Data Book, U.S. Department of Energy. March 2012, <http://buildingsdatabook.eren.doe.gov/TableView.aspx?table=1.2.3>. <sup>3</sup>

<sup>3</sup>Cross-Agency Priority Goal: Energy Efficiency, FY2013 Quarter 1 Update

help us generate electricity more efficiently? For example, the Advanced Energy Systems program at the National Energy Technology Laboratory is a program which has a long track record of helping improve the efficiency of our coal and natural gas power plants which we know are going to be responsible for providing our nation with safe and secure electricity well into our future? Shouldn't we be spending money on both energy efficiency and getting more bang out of our buck with our resources?

Answer. The Administration is committed to an all-of-the-above energy strategy that reduces our dependence on oil, saves businesses and consumers money, and positions the United States as the global leader in clean energy.

As part of this strategy, DOE has requested \$200 million in one-time funding for Race to the Top awards, based on demonstrated performance, to State and tribal governments, local governments with public power utilities, and electric cooperatives that implement effective policies to cut waste and modernize the grid. The Department would offer informational resources and merit-based technical assistance grants to States and other eligible applicants that wish to qualify for awards for the greatest demonstrated improvements in energy efficiency and energy productivity. Race to the Top would lead to improvements in both energy efficiency and grid modernization.

Race to the Top is just one part of the Department's FY 2014 budget request, which includes \$28.4 billion in discretionary funds (including \$11.7 billion for nuclear security). DOE's request supports an array of activities including conducting basic science research; advancing the safe and environmentally sound production of domestic fossil fuels; supporting clean and secure nuclear energy generation; developing the next generation of renewable energy technologies; modernizing and improving our electricity systems; and increasing energy efficiency of our homes, buildings, and vehicles.

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RESPONSES OF JEFF C. WRIGHT TO QUESTIONS FROM SENATOR WYDEN

S. 545 & H.R. 267

*Question 1.* Two Year Licensing Process: The Commission's default "integrated licensing process" (ILP) is designed to take five-years. S. 545 and H.R. 267 both require the Commission to consider establishing a two-year licensing process for low impact projects at existing non-hydro dams and for "closed loop" pumped storage.

a) Do you agree that in many instances the Commission is capable of getting its part of the licensing process done in two years or less for a low-impact project such as adding hydro to an existing non-hydropower dam?

Answer. While it is correct that the ILP, established through a public process with the collaboration of federal and state resource agencies, Indian tribes, licensees, and other stakeholders, provides for a five-year licensing process, the Commission's regulations allow applicants to request approval to use the traditional licensing process (TLP) or the alternative licensing process (ALP), which can take substantially less time. Also, the TLP is the default process for exemptions, both conduit and small hydroelectric power projects. Low impact projects at existing dams are typically good TLP candidates and many of the new projects that have been authorized in recent years used the TLP. In instances where developers select sites that do not raise significant environmental issues or other public concerns and where developers engage in outreach with federal and state agencies, Indian tribes, local communities, and other stakeholders to build a consensus that projects are desirable, the Commission already can, and does, issue licenses within as few as two months from when a complete application is filed.

b) Is it accurate to state that other federal and state agencies with authority over certain aspects of the licensing process do not always act in a timely manner?

Answer. Our experience with licensing new projects at existing dams is that agencies typically act in a timely or near-timely manner such that licensing is not significantly delayed. We attribute this to most of these projects being properly sited such that there are few or no endangered species, water quality, or fish passage issues. Our limited experience with closed loop pumped storage projects indicates that these projects are likely to be more challenging to license in a timely manner because they can affect environmental resources of particular concern to the public and agencies. Our experience has not been as positive with respect to project relicensing.

c) Should the Commission adopt a two-year goal or some other goal significantly shorter than five-years for low-impact project licensing, recognizing that other involved agencies are not legally bound by it and may not comply?

Answer. Our goal has been and continues to be to process license applications in as timely a manner as possible, in some cases in less than two years, as noted above. Without the ability to set schedules that are binding on all stakeholders, including federal and state agencies, the Commission cannot guarantee any specific timeframes. Whether it would be valuable to set a goal without the power to achieve it is a matter to be considered.

d) Is a non-binding two-year licensing goal for low impact projects better than no goal at all?

Answer. Please see response to 1(c) above.

e) Absent a two-year licensing goal or some other goal that is significantly shorter than five-years what options does a hydro developer have whose low impact project is uneconomic due to the costs and length of the ILP or the "Traditional" or "Alternative" licensing processes? Is dealing with such a situation best done on an ad hoc basis as it is currently? Alternatively, would it be better for the Commission to have a policy or process to address the licensing of low impact projects that only are viable with a shorter and less costly licensing process?

Answer. Our experience through licensing new projects and discussions with developers indicates that it is the lack of financing or the inability to execute a power sales agreement, and not the licensing process, that makes a project uneconomic. Moreover, while Commission staff strongly supports the development of small hydro power, it is also the case that a developer must have the wherewithal to engage in the licensing process and to meet licensing requirement. That said, Commission staff works closely with developers and is constantly reviewing Commission processes in an effort to ensure that they are as efficient and cost-sensitive as possible.

We have dedicated a significant amount of staff resources over the past several years to developing tools and web-based resources to guide developers in ways to expedite low-impact projects. The process has worked best and most quickly when developers approach Commission staff about specific, well-sited projects and staff work with them on the process that appears best suited to their specific project.

*Question 2.* Please explain the apparent inconsistency between paragraphs 2-6 and paragraph 7 of the Commission's declaratory order in Power Site Reservation Fees Group, 142 FERC,61,196 (Mar. 21, 2013).

(a) If a power site reservation is a valuable interest in land, which the United States retains under section 24 of the Federal Power Act, and if section 10(e)(1) requires any licensee who uses the power site reservation to "pay to the United States reasonable annual charges ... recompensing" the United States for the use of the power site reservation, why has the Commission decided it "will no longer assess annual charges" for the use of power site reservations" on "former federal lands included within the boundaries of hydropower projects as to which" a power site reservation exists?

(b) Paragraph (7) of the Commission's order states that "licensees have given valuable consideration to obtain fee ownership of federal lands, and have done so for the development of hydropower, the very purpose for which the power site reservation was created." But has the licensee given valuable consideration for the right to use the federal power site reservation itself, which section 24 requires "shall be expressly reserved in every patent issued for lands" reserved for power development? If the licensee has already "given valuable consideration to obtain" the power site reservation, as paragraph (7) suggests, was the power site reservation, in fact, reserved to the United States? Conversely, if the power site was reserved to the United States, did the United States, in fact, receive "valuable consideration" for its sale to the licensee?

(c) If a power site reservation is a valuable interest in land, and section 10(e)(1) of the Federal Power Act requires the Commission to collect a "reasonable annual charge" for the use of that valuable interest, from what source does the Commission derive the "equitable" power it claims in paragraph (7) to waive those charges?

Answer. I was not asked to testify as to this matter, and the Commission's annual federal land use charges are not within my area of responsibility. The Commission, as an independent regulatory agency, speaks through its orders, and staff cannot add to what the Commission has stated in an order.

*Question 3.* Another important aspect of the current small conduit exemption is that it only exempts them from FERC licensing requirements, not from Federal and state fish and wildlife protections. S. 545 preserves the fish and wildlife protections afforded by the current small hydro exemption for small conduits over 5 megawatts, but exempts those of 5 megawatts or less from those protections.

Why is it necessary to waive those fish and wildlife protections for small conduit projects of 5 megawatts or less?

Answer. In my opinion it is not necessary to waive fish and wildlife protections for small conduit projects, but my experience is that fish and wildlife issues rarely arise regarding such projects. Since October 2004, the Commission staff has issued 65 conduit exemptions. In none of these cases have fish and wildlife agencies filed any substantive conditions related to protection of fish and wildlife resources.

#### RESPONSES OF JEFF C. WRIGHT TO QUESTIONS FROM SENATOR MURKOWSKI

*Question 1.* Both S. 545 and H.R. 267 establish a process for FERC to consider “qualifying conduit hydropower facilities” through an expedited public notice and comment period. Such qualifying projects must (1) use a non-federally owned conduit; (2) be 5 mw or less; and (3) not have a current FERC license or “exemption.” I view this as maintaining our federal nexus through the FERC review process but providing flexibility for the vast majority of conduit projects that are non-controversial. Do you agree? Also, please explain to the Committee how you envision this new provision working.

Answer. Yes, I agree. The proposed legislation would maintain flexibility for qualifying conduit exemption projects less than 5 MW. After a developer files a notice of intent to construct a qualifying facility as determined by staff, the Commission would issue a public notice, and if no comments are received during the notice period alleging that the project doesn’t qualify, the developer could then construct the project without Commission authorization. In the event that a commenter alleges that the project does not qualify, staff will review the comments and make a final determination regarding the project’s qualifying status.

Once FERC makes a determination that the proposed project meets the qualifying criteria and there is no public opposition, then that project is not required to get a license or an “exemption” from the Commission, correct? But, doesn’t any applicable state or other federal law remain in force? Also, there’s no requirement that a project developer must use this new process, correct?

Under the proposed legislation, projects that do not require Commission authorization would still be required to obtain other pertinent approvals. Also, nothing would preclude the project developer from seeking a license or conduit exemption from the Commission.

*Question 2.* S. 545 and H.R. 267 are premised on the need to develop additional hydropower resources. What is your view of the potential of undeveloped hydropower?

Answer. The U.S. Department of Energy in its April 2012 “An Assessment of Energy Potential at Non-Powered Dams in the United States” reports that, where conditions are suitable, non-powered dams could be powered to create up to 12,000 megawatts of new electric generation capacity.

*Question 3.* What are some steps Congress can take to improve the hydropower licensing/relicensing process?

Answer. Congress could enact legislation that provides the Commission, as lead agency, the ability to establish an enforceable schedule for all stakeholders, including federal and state agencies with mandatory conditioning authority.

#### RESPONSE OF JEFF C. WRIGHT TO QUESTION FROM SENATOR MANCHIN

*Question 1.* Can you tell me how many dams are out there and not producing power?

Answer. The U.S. Department of Energy in its April 2012 “An Assessment of Energy Potential at Non-Powered Dams in the United States” reports that there are more than 80,000 non-powered dams that provide a variety of other functions, including water supply and inland navigation.

Especially when you look at dams that were originally supposed to produce power, dams built before or during World War II, that they for whatever reason decided to not generate power from?

As a regulatory agency, we only have occasion to investigate the history of an existing, non-powered dam when a development application is filed to utilize it or its head potential for electricity generation. For example, on April 30, 2013 Tygart, LLC filed with the Commission an application for an original license for the proposed 30-megawatt Tygart Hydroelectric Project No. 12613 to be located at the U.S.

Army Corps of Engineer's existing Tygart Dam on the Tygart River in Taylor County, West Virginia.

For those 80,000 non-powered dams that are federally owned, the particular federal owner (e.g., U.S. Army Corps of Engineers and U.S. Bureau of Reclamation) may have more information on the history of its dams, including the reasons it is non-powered.

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RESPONSE OF LOWELL PIMLEY TO QUESTION FROM SENATOR WYDEN

S. 306 & H.R. 267

*Question 1.* H.R. 678 establishes a statutory categorical exclusion for small conduit hydro projects. It says nothing about extraordinary circumstances. In a similar situation involving statutory categorical exclusions for oil and gas development, the Department has taken the position that it cannot review the action to determine whether there are extraordinary circumstances since the statute does not require it. Similarly, H.R. 678 does not expressly require review for extraordinary circumstances.

If H.R. 678 does not bar the Bureau of Reclamation from reviewing small conduit projects for extraordinary circumstances, shouldn't the provision be amended to permit extraordinary circumstances review?

Answer. HR 678, as amended by the House of Representatives, directs Reclamation to "apply its categorical exclusion process under the National Environmental Policy Act of 1969 (42 U.S.C. 4321 et seq.) to small conduit hydropower development under this subsection, excluding siting of associated transmission facilities on Federal lands." If enacted, Reclamation would interpret this language not as statutorily creating a categorical exclusion, but as endorsing its current directive and standard to potentially apply a categorical exclusion, provided that no extraordinary circumstances exist, pursuant to 40 C.F.R. §1508.4. For that reason, Reclamation does not believe it will be barred from reviewing extraordinary circumstances for the development of small conduit hydropower projects. Reclamation would not be opposed to amendment language clarifying consistency with its current policies that ensure extraordinary circumstances are considered when applying categorical exclusions.

RESPONSE OF LOWELL PIMLEY TO QUESTION FROM SENATOR MURKOWSKI

*Question 1.* What are the financial challenges in developing conduit hydropower at federal canals and pipelines? In particular, what are the capital costs, regulatory costs and other costs on a project covered by S. 306 or H.R. 678?

Answer. The cost of hydropower development varies widely and is dependent on a number of factors. Costs related to licensing, equipment and civil works, transmission interconnection, and environmental and cultural resource mitigation all vary greatly by site. According to the National Hydropower Association small hydropower projects of 10 MW or less can range from approximately \$1,500-\$6,000 per kilowatt installed (<http://www.hydro.org/why-hydro/affordable>), and the top 70 sites identified in the 2011 "Hydropower Resource Assessment at Existing Reclamation Facilities" report show an estimated potential cost of between \$1,455-\$7,745 per kW installed.

It is difficult to identify general Capital Costs and Environmental Costs for conduit hydropower projects due to the wide range of possible conditions that may present themselves. The hydraulic conditions themselves will generally dictate the cost effectiveness of a given site. However, in some cases, other conditions could impact the cost effectiveness of conduit hydropower projects. For instance, some canal systems, because of their age, may be considered historic sites in and of themselves and require special historic property consideration and documentation. Others may be situated near endangered plant or animal species or wetlands which may be impacted by construction of penstocks, powerplants or powerlines. Interconnection studies and contracts are often required and can vary widely.

Since Reclamation is not the entity developing the sites covered by S. 306 and H.R. 678, detailed project cost information has not been developed. That said, based on conversations with recent developers we can provide some examples of overall project costs. One of the more recent examples of the costs associated with these projects is a 900 kW installation on a Reclamation canal. The overall project cost approximately \$2,000,000 (-\$2,200/kW installed) according to the developer, and of that \$2,000,000 approximately \$50,000 was spent on the direct costs of executing the Lease. These activities included NEPA, and design and construction reviews.

Another recent example is a 7.5 MW canal project with an overall cost, including powerplant, transmission, substation, contingencies etc., of approximately \$20 mil-

lion (-\$2,900/kW installed). Non-Capital costs including planning, preliminary designs, pre-construction costs, construction management were \$1 Million. The cost of executing the Lease, including NEPA, and design and construction reviews was \$125,000, and mitigation as a result of NEPA was \$750,000. The cost of executing the Lease, including NEPA mitigation, accounts for approximately 4% of the overall cost of the project.

RESPONSE OF LOWELL PIMLEY TO QUESTION FROM SENATOR MANCHIN

*Question 1.* Can you tell me how many dams are out there and not producing power? Especially when you look at dams that were originally supposed to produce power, dams built before or during World War II, that they for whatever reason decided to not generate power from?

Answer. Approximately 3% of the nation's 80,000 dams currently generate power. Some nonpowered dams are better configured for power generation in that power penstocks were installed with the anticipation that power would be added later. In many instances, other dam outlet works can be modified to supply water to a hydro-power plant. In other cases a new water conveyance must be installed in the dam. Development of power at a dam is determined more by the amount of water available to operate the plant, proximity to transmission, and overall economic feasibility which factors in any water conveyance structures originally installed to support hydropower. Reclamation's Hydropower Resource Assessment, published in March 2011 identified 143 dams in the western 17 states with hydropower potential totaling 180.5 MW of capacity and 795,320 MWh of annual energy potential. Fifty-two of those dams showed a cost benefit ratio greater than 0.75 percent with a total capacity of 147.5 MW and 674,261 MWh of annual energy potential. Development has been initiated on 13 of these dams.



## APPENDIX II

### Additional Material Submitted for the Record

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#### STATEMENT OF THE AMERICAN PUBLIC POWER ASSOCIATION

The American Public Power Association (APPA) appreciates the opportunity to submit this statement focusing on hydropower legislation to the Senate Energy and Natural Resources Committee's April 23, 2013, hearing on energy efficiency and hydropower bills. APPA is the national service organization representing the interests of over 2,000 community-owned, non-for-profit electric utilities (collectively known as public power). These utilities include state public power agencies, municipal electric utilities, and special utility districts that provide electricity and other services to over 47 million Americans.

Hydropower is the nation's largest source of clean, renewable electricity, accounting for 62% of domestic renewable generation and 8% of total electricity generation. Of public power's total generation portfolio more than 17% is hydropower according to the most recent Energy Information Administration data from 2011. It is a reliable source of base-load (i.e.; available most of the time) energy. Despite the beneficial use of hydropower, most dams were built, decades ago, for purposes other than power generation, such as for flood control, crop irrigation, or storage of municipal water supplies. Therefore, only 3% of the country's approximately 80,000 dams currently have facilities that generate electricity. Given this situation, there is substantial potential for adding renewable hydro-electric generation to non-power dams by installing electricity generation equipment at those sites. At the same time, there are a number of regulatory, financial and other barriers impeding the commercial development of this hydropower potential. The legislation being considered at this hearing seeks to address a few of these issues.

APPA appreciates and supports Congress' interest in hydropower and the provisions in the various bills introduced in the 113th Congress that would expand hydropower usage, particularly in light of the many benefits this abundant resource provides as a source of low-cost, reliable and emissions-free power. Unfortunately, there are significant impediments to licensing and relicensing of hydropower projects, especially smaller units. APPA believes the licensing process for these small projects is overly burdensome and uneconomic. Further, APPA supports legislation that cuts the lengthy, duplicative and, at times, contradictory regulatory processes for hydropower projects. Streamlining the multi-agency inefficiencies associated with hydropower development on federal projects is also necessary.

Therefore, APPA supports H.R. 678 and S. 306, the Bureau of Reclamation Small Conduit Hydropower Development and Rural Jobs Act introduced by Representative Scott Tipton (R-CO) and by Senator John Barrasso (R-WY), respectively, that address these issues. These bills would authorize power development at the Bureau of Reclamation's conduits. This new authorization in both bills will help clarify and streamline the multi-agency inefficiencies associated with hydropower development on these federal projects by cutting duplicative processes and reducing the regulatory burdens that many of our members have encountered. Further, the legislation protects existing agreements that water users have on conduit generation projects and provides additional safeguards to ensure such projects do not undermine water deliveries. This bill is a needed fix to a burdensome process. APPA also supports the language added to H.R. 678 during consideration on the House floor that would replace the NEPA waiver with the following language:

The Bureau of Reclamation shall apply its categorical exclusion process under the National Environmental Policy Act (42 U.S.C. 4321 et seq.) to small conduit hydropower development under this subsection, excluding siting of associated transmission facilities on Federal lands.

This new language is a good faith effort to bring regulatory certainty to help spur hydropower development while giving administrative flexibility to the Bureau of

Reclamation. It also provides a needed fix to the differences in the Department of the Interior's and the Bureau of Reclamation's NEPA provisions and the Lease of Power Privilege (LOPP) program. Consequently, this language strengthens the bill.

APPA also supports the other hydropower legislation by Representative Cathy McMorris Rodgers (R-WA), H.R. 267, the Hydropower Regulatory Efficiency Act, and the companion bill in the Senate by Senator Lisa Murkowski (R-AK), S. 545, the Hydropower Improvement Act of 2013. Both bills would promote hydropower development at conduits (i.e.; man-made water conveyances such as tunnels, canals, or pipelines that are operated for water distribution and not primarily for electricity generation) by excluding projects under 5 MW from federal licensing requirements if the project met certain criteria. It would also facilitate conduit project development by exempting projects between 5-40 MW from federal licensing requirements, upon approval by the Federal Energy Regulatory Commission (FERC), amongst other things.

Together, these bills combine to create a worthwhile small hydropower development program. H.R. 267 and S. 545 give the Federal Energy Regulatory Commission the tools it needs to streamline its statutory program for small hydropower development while H.R. 678 and S. 306 provide a statutory framework missing from its existing authorities for the companion program at the Bureau of Reclamation. These bills accomplish this task while retaining the necessary environmental safeguards that will ensure careful implementation of this newly directed initiative.

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CONEDISON SOLUTIONS,  
April 29, 2013.

Hon. RON WYDEN,  
*Chairman, Committee on Energy & Natural Resources, 304 Dirksen Senate Building,  
Washington, DC.*

Hon. LISA MURKOWSKI,  
*Ranking Member, Committee on Energy & Natural Resources, 304 Dirksen Senate  
Building, Washington, DC.*

DEAR CHAIRMAN WYDEN AND RANKING MEMBER MURKOWSKI:

On behalf of ConEdison Solutions, I am writing to express our support for S. 761, The Energy Savings and Industrial Competitiveness Act and to thank you for holding this hearing today.

ConEdison Solutions is a leading energy services company with over 200 employees in 9 states that provides competitive power supply, renewable energy, sustainability services, and cost-effective energy solutions for commercial, industrial, residential, and government customers. ConEdison Solutions offers programs and services designed to help customers achieve their energy objectives and is accredited as an Energy Services Provider (ESP) by the National Association of Energy Service Companies. (NAESCO).

By addressing energy use in buildings, manufacturing and the federal government, S. 761 focuses on three major areas of energy use. This focus will enable the country to reap the greatest return on its investment in energy efficiency.

Buildings currently consume 40% of all energy used in the United States. The Energy Savings and Industrial Competitiveness Act would:

- Support regular updates to the existing national model building codes. Building codes help investors overcome the market barriers that impede energy savings in this sector, and reduce energy costs for businesses.
- Kick start private sector investment in building efficiency upgrades and renovations by creating a Commercial Building Energy Efficiency Financing Initiative.
- Train the next generation of workers in energy-efficient commercial building design and operation through university-based Building Training and Research Assessment Centers.

Energy efficiency is vital to America's manufacturing future. It helps lower costs for business big and small and the innovation that drives it through the development of new technologies creates manufacturing jobs. To help strengthen manufacturing and create more manufacturing jobs, S. 761:

- Directs the U.S. Department of Energy to work closely with private sector partners to encourage research, development and commercialization of innovative energy efficient technology and processes for industrial applications.
- Helps manufacturers reduce energy use and become more competitive by incentivizing the use of more energy efficient electric motors and transformers.

- Establishes a DOE program—SupplySTAR—to help make companies' supply chains more efficient.

The United States government is the nation's largest energy consumer. It accounted for 1.5 percent of the country's total energy use in 2009 (the most recent year for which figures are available) and spent \$24.5 billion the previous year on fuel and electricity for its roughly 500,000 buildings and 600,000 vehicles. To reduce the federal government's energy consumption, S. 761:

- Requires the federal government to adopt energy saving techniques for computers, saving energy and taxpayer dollars.
- Allows federal agencies to use existing funds to update plans for new federal buildings, using the most current building efficiency standards.
- Clarifies that Energy Service Companies (ESCOs) and Utility Energy Service Contracts (UESCs) can be used by federal agencies to install electric and natural gas vehicle charging infrastructure, making it easier for agencies to use these types of vehicles.

Swift passage of S. 761 is essential to improve energy efficiency, air quality and the economy. According to analysis completed by the American Council for an Energy-Efficient Economy the version of this legislation that was introduced in the 112th Congress could lead to 159,000 new jobs, save consumers \$20 billion in avoided energy costs, and reduce carbon dioxide emissions by 108 million metric tons by 2030.

Again, thank you for holding this hearing and I ask that you move this legislation out of your committee quickly. We at ConEdison Solutions will continue to do our part to help our nation save energy and improve our industrial efficiency.

Sincerely,

MICHAEL N. PERNA,  
*Vice President.*

*April 9, 2013.*

The undersigned organizations, on behalf of our millions of members and supporters are writing to express our strong opposition to the provision in Section 2 of H.R. 678 that waives the National Environmental Policy Act (NEPA) with respect to small conduit hydropower projects at Bureau of Reclamation facilities.

While we support the legislation's intent to encourage the responsible development of low impact, conduit hydropower projects, waiving NEPA reviews for Bureau of Reclamation projects is unacceptable. Since this bill was considered last year (H.R. 2842) the Bureau of Reclamation applied a categorical exclusion under NEPA as a part of its final Directives & Standards for Lease of Power Privilege process—thus making the proposed waiver completely unnecessary. The National Environmental Policy Act is not a roadblock to the successful approval of conduit hydropower projects at Bureau facilities. We believe that this backward step will not accelerate hydropower development. Rather, our experience has shown us that attempts to shortcut or sidestep environmental review typically result in delayed projects.

Successfully advancing the development of new energy resources, like conduit hydropower, requires us to do better than we have done with other forms of energy and other Bureau of Reclamation projects. While we do not oppose the development of conduit hydropower, it must be done responsibly and under all of the appropriate reviews necessary to make sure that such development is consistent with the public interest; a guarantee that NEPA provides.

Therefore we respectfully urge you to vote NO on H.R. 678 unless the language requiring a NEPA waiver is struck from the bill.

*April 23, 2013.*

The undersigned organizations, on behalf of our millions of members and supporters are writing to express our strong opposition to the provision in S. 306 that waives the National Environmental Policy Act (NEPA) with respect to small conduit hydropower projects at Bureau of Reclamation facilities.

While we support the legislation's intent to encourage the responsible development of low impact, conduit hydropower projects, waiving NEPA reviews for Bureau of Reclamation projects is unacceptable. Since this bill was considered last year, the Bureau of Reclamation applied a categorical exclusion (CE) under NEPA as a part of its final Directives & Standards for Lease of Power Privilege process—thus making the proposed waiver completely unnecessary. We would also like to note that, critically, application of CEs require a consideration of whether any extraordinary

circumstances warrant further environmental review. The proposed waiver would eliminate such vital consideration. The National Environmental Policy Act is not a roadblock to the successful approval of conduit hydropower projects at Bureau facilities. We believe that this backward step will not accelerate hydropower development. Rather, our experience has shown us that attempts to shortcut or sidestep environmental review typically result in delayed projects.

Successfully advancing the development of new energy resources, like conduit hydropower, requires us to do better than we have done with other forms of energy and other Bureau of Reclamation projects. While we do not oppose the development of conduit hydropower, it must be done responsibly and under all of the appropriate reviews necessary to make sure that such development is consistent with the public interest; a guarantee that NEPA provides.

Therefore we respectfully urge you to vote NO on S. 306 unless the language requiring a NEPA waiver is struck from the bill.

Sincerely,

American Rivers \* Buffalo Field Campaign \* Center for Biological Diversity  
Defenders of Wildlife \* Earthjustice \* Great Old Broads for Wilderness  
\* Grand Canyon Trust \* Klamath Forest Alliance \* The Lands Council  
Natural Resources Defense Council \* Sierra Club \* The Wilderness Society.

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STATEMENT OF ROBERT S. LYNCH, ROBERT S. LYNCH & ASSOCIATES, ON H.R. 267,  
H.R. 678, S. 306 AND S. 545

Chairman Wyden, Ranking Member Murkowski, Members of the Committee, thank you for having this early hearing on H.R. 267, H.R. 678, S. 306 and S. 545. One of our clients is the Irrigation & Electrical Districts' Association of Arizona (IEDA), a voluntary association organized in 1962 to represent the interests of irrigation, electrical and other special districts, rural communities and other public entities in the acquisition and use of federal hydropower and water from Reclamation projects. The Association marked its 50th anniversary on December 14, 2012. Its 25 members and associate members manage water systems and supply electricity, much of both originating from or on the Colorado River. I am pleased to present this Statement supporting these four (4) bills, which will authorize and promote hydropower development at all water conduit facilities and streamline the processes for development of such hydropower generators not only throughout the Reclamation West but throughout the country. We supported and testified in favor of these bills' House predecessors in the last Congress and we supported and testified in favor of these House bills again this year. We are pleased to offer you our views on these four excellent bills for your consideration.

Over the last century and more, Arizona has developed irrigated agriculture, both in central Arizona and along the Colorado River. We have developed systems of canals and laterals which now serve both irrigated agriculture and municipal and industrial water users. Much of these canal systems are Reclamation project systems built over the years as successive projects were authorized by Congress. A number of the distribution systems were built or have been acquired by the Districts receiving project water. The water that flows in these systems contains energy. Indeed, the water would not flow if it did not. That energy is largely unused as the water courses through these systems until it reaches its ultimate destination and stops moving. The energy is dissipated at that point. Lost.

Recent improvements and innovations in the development of small hydropower generating turbines have made the idea of installing multiple small turbines in these systems a potentially attractive source of electric energy. This technical advance comes at a time when our electricity providers are scrambling to find alternatives to fossil fuel generation, developing conservation and demand side management programs and otherwise trying to make existing electric resources go farther. Indeed, the Department of Energy released just today an assessment extolling the virtues of increased hydropower production in the United States.

Our members would very much like to be part of this effort and participate in a new widespread small hydropower installation program. With these bills, that program could be implemented throughout the West and indeed everywhere water is flowing in the various conduits that water providers are using.

One key to making this happen is to reduce bureaucratic process, and its associated costs, to make small hydropower installation economically attractive in the same fashion as it has become technically attractive. Since the Bureau of Reclamation holds title to so many of these facilities in the West, we and others in the Western Reclamation states have been working with the Bureau of Reclamation to try

to reduce costs and paperwork toward that end. Some of the hurdles we identified along the way needed to be addressed by Congress; hence, H.R. 678 and S. 306.

At the same time, colleagues were negotiating concepts introduced to streamline processes of the Federal Energy Regulatory Commission (FERC), leading to passage of H.R. 267 and introduction of S. 545.

These four bills provide simplified paths for the development of small hydropower facilities in existing conduit. H.R. 678 and S. 306 additionally recognize the primacy of water delivery as a Reclamation mission. They recognize the position that Reclamation law has always historically given to irrigation districts and water users' associations as operators and water distributors. They also answer questions that Reclamation officials have been debating. They give those of us in the Reclamation West a clear incentive to begin working aggressively toward using flowing water in these conduits for electric generation instead of having to let that energy go to waste.

At the same time, we have been working with Reclamation to develop environmental and permitting guidelines that would complement the direction Congress, we hope, will give the agency on this subject. However, Reclamation's reaction to this legislation has not been as helpful as we would have hoped for. Indeed, the Directives and Standards document that Reclamation produced last fall appears to us to complicate rather than simplify the process. We are attaching the comments that we made on the Interim Directives and Standards to give you an idea of the problems we have identified in them. These comments include a two-page timeline we tried to piece together because the Interim Directives and Standards addressed who does what rather than giving us a path and a timeline. That has not changed. Just as importantly, the final Directives and Standards still leave us with a plethora of questions.

Now, Reclamation has established a website, perhaps in reaction to our and others' comments. Ostensibly, this website will make things easier for applicants. The website's 5-page summary is accompanied by 73 pages of attachments and three pages of flow charts illustrating the various paths this process can follow. I have attached the flowcharts. As we lawyers say, "Res ipsa loquitur" (the thing speaks for itself).

In sum, we strongly support H.R. 678 and S. 306. We also strongly support H.R. 267 and S. 545, which will give our distribution system owners a streamlined FERC process to follow for their conduits. We hope the Committee will mark and report these bills as soon as possible. The House amendments to H.R. 678 addressed any remaining real issues. There is an enormous amount of energy being wasted every day as water flows through these conduits to their ultimate destinations. We now have the technology to capture a great deal of that energy in small increments which collectively can provide an enormous resource for the West. This clean, renewable hydropower is waiting for us to use it. We need your help. H.R. 678, S. 306, H.R. 267 and S. 545 are a big step forward toward that end.

Thank you for the opportunity to present this Statement to the Committee. We would be happy to answer any questions or provide any additional information that the Committee might desire as it deliberates over this important and very much needed legislation.

#### ATTACHMENT

IRRIGATION & ELECTRICAL DISTRICTS ASSOCIATION OF ARIZONA,  
*Phoenix, AZ, June 4, 2012.*

MR. MICHAEL PULSKAMP,  
*Bureau of Reclamation, P.O. Box 25007, Denver Federal Center, Denver, CO.*

Re: Comments on the Temporary Directive & Standard for Lease of Power Privilege requirements, Reclamation Memorandum dated April 4, 2012

DEAR MR. PULSKAMP:

The Irrigation & Electrical Districts' Association of Arizona is an Arizona non-profit association celebrating its 50th year of service to the State of Arizona. Our 25 Members and Associate Members take power and water from federal facilities on the Colorado River either directly or, in case of Hoover power, through the Arizona Power Authority, and in case of Colorado River water in central Arizona, the Central Arizona Water Conservation District, one of our Associate Members.

A number of our members operate federal water facilities and others built or acquired water facilities from the federal government. One of our members has already gone through the painful process under Section 30 of the Federal Power Act in dealing with the Federal Energy Regulatory Commission. Others would like to go through a sensible and streamlined process with the Bureau of Reclamation to

install small hydropower units in existing water facilities whose water energy is currently being wasted. With this interest in mind, we offer the following comments on the April 4th Temporary Directive & Standard and appreciate the opportunity to do so.

#### TIMELINES

The Temporary Directive & Standard (D&S) is structured along lines of responsibility by various officials within the Bureau of Reclamation. As such, it is very difficult to get a sense of when things are supposed to happen and what timelines exist for seeing to it that they do. A number of the tasks assigned to various people are not identified as being associated with any particular timeline and the timelines that are stated in the D&S. For that reason, we have attempted to create a timeline that would show a potential applicant the path it would have to take between expressing a "formal request" to Reclamation and actually having an operating electrical device. Our timeline is attached. It contains a number of question marks that indicate that the timeframe and positioning of that particular task was not identified. In our view, it is this very sort of checklist that potential applicants need up front in order to understand what they are getting into, what the requirements are and when they occur. We think Reclamation should consider developing such a timeline and going one step further by identifying the as yet un-timed tasks as either fitting within a timeline already identified or one you assign in order to properly gauge the sequence and timing of events.

#### OTHER COMMENTS

For ease of reference, we will now provide other comments to you in the order in which they relate to the Temporary D&S.

##### *Applicability*

We do not understand the reference to Reclamation "development authority". Does that mean that there is a specific authorized feature of a project that Reclamation has not developed and is therefore off limits to an applicant? Currently Reclamation only has jurisdiction over its facilities that are part of a project authorization that includes power development. One could read this paragraph as saying that any proposed application where Reclamation has jurisdiction could be denied on the basis of Reclamation deciding to do it itself. We doubt that was the intent but this divergent point of who does what needs clarifying. No one wants to go through a process or begin to go through a process only to find out that the agency has decided to do it itself.

##### *Definitions*

We do not understand the meaning of the phrase "conveyance of water over or through a dam, its abutments, or foundation via existing or proposed conveyance features." This is an addition to the definition of conduit that has been used in pending federal legislation and is very close to the definition used by the Federal Energy Regulatory Commission (FERC). Are there existing conveyance features that convey water over or through a dam, its abutments, or foundation? We are not familiar with such facilities but knowing what is already out there may make it easier for us to understand why this addition is important and necessary.

We do not understand why gross revenue would be something that includes renewable energy certificates (RECs). If one of your water districts or water users associations or someone else is going to spend money, go through this process and essentially do all the work and pay Reclamation for its oversight, why would gross revenue be the parameter for deciding the fee and most especially why would it also include the REC. Reclamation has done absolutely nothing except allow a portion of one of its facilities to be utilized at someone else's total expense to generate electricity. The portion of the facility used will most likely be very small in comparison to the overall project of which the site is a part. In a shopping center lease, the triple net lease would be based on gross revenue of whatever store is occupying that particular space but not on its tax breaks. Moreover, for small projects, say 5 megawatts or below, the paperwork to keep track of these calculations and collections would be more expensive than the revenue that would be created. We think the basis for charging needs to be rethought. All of the comments we have seen show that everyone wants the new facilities owner or benefactor to pay a fair share of project obligations. To the best of our knowledge, there has been no real public debate over how one would calculate that. Nor has there been any debate over what concepts should be used for the very smallest of facilities that should not have to go through the entire process. In short, a one-size-fits-all rate structure will only

inhibit the development of additional hydropower in Reclamation facilities in our view. We think this process needs work.

#### *Formal Request*

This term first appears in subparagraph 5.A(3) on page 4. There is no discussion within the document about what constitutes a formal request, what paperwork is required for such a request and whether or not there is any information requirement that precedes it. Yet it is the precipitating event of the process, initiating everything that follows. We presume without knowing that receiving a formal request will initiate the process within Reclamation to decide whether or not Reclamation will turn the requester aside and develop the site in question. Certainly Reclamation would make that decision early and not let an applicant spend a lot of time and money before shutting them out. That Reclamation decision should have a timeline of its own in order to ensure an applicant that it will not get played.

#### *Requests for Extension of Time*

This first appears in subparagraph 5.A(9) and appears to only apply to timeframes outlined in the Lease of Power Privilege (LOPP). Reclamation does intend to consider extension requests for an entity holding a Preliminary Lease. See Section 8. That reference should be included here.

#### *Public Safety*

In paragraph 5.C, the responsibility of the Chief of the Dam Safety Office is outlined but that individual's role in the timeline is nowhere to be found. The subject matter is brought up in a number of places but not with regard to the role this individual plays in executing the timeline.

#### *Notifications*

The appropriate Regional Power Manager or Area Office Manager is responsible for ensuring the publication of solicitations for applicants for a LOPP, apparently after being notified of the receipt of a "formal request" and a "formal determination of jurisdiction (5.A(3)). The 3 following responsibilities are all intended to precede that event. The list appears to have been created backwards rather than forwards. Just as importantly, this duty includes notifying "any other appropriate stakeholders". If someone claims to be an appropriate stakeholder and was not notified, is that grounds for stopping work on the timeline? Is there a remedy for being excluded? What standard is supposed to be applied in the various regions to decide who is an "appropriate" stakeholder? It is our experience that these discretionary vague terms only lead to conflict. Reclamation should consider clarifying this mechanism.

#### *LOPP Lead*

In subparagraph (2), federal power customer organizations are added to a requirement that Reclamation meet with a federal water user that has an operation, maintenance and replacement transfer contract with the relevant project but is not a participant in the proposed LOPP. Reclamation law only allows irrigation districts and water users associations to play that role and so the reference to a federal power customer organization is inappropriate where it is placed. It should be inserted on the next line after the word "project". It is certainly worthwhile to bring federal power customer organizations into these dialogues early and we think this is a good provision. However, the qualification of the federal power organization should be not based on a task it cannot by law undertake. We are also concerned because we are not sure whether the 30-day requirement follows after the issuance of the Preliminary Lease or comes before. Whichever is intended should be clarified but we rather suspect that your water and power customers would prefer it being before and not after you've already selected a Preliminary Lessee. The same paragraph also requires a documentation of "agreed upon terms, roles and responsibilities resulting from this meeting". What happens if agreement does not ensue? Are the terms, roles and responsibilities those outlined in an already issued Preliminary Lease? Is the documentation in question to become part of the Preliminary Lease? Part of the LOPP?

The same assumption about agreeing is also found in Section 6 noting the need for agreement on jurisdiction between the Senior Advisor, Hydropower and the respective Regional Director. Here again, what if they don't agree? What happens? What if FERC doesn't agree?

#### *Selection of Lessee*

In paragraph C., there are criteria that Reclamation intends to apply that "will give more favorable consideration to proposals" that meet two criteria. The two cri-

teria talk about developing and conserving and utilizing water and natural resources. We fail to see what that has to do with putting a turbine in a conduit. Reclamation will also favor an application that demonstrates that the offeror is qualified to develop the facility and to maintain it but does not say how one demonstrates those qualifications. Is an irrigation district that wants to put a turbine in a conduit but has never done so before less qualified than a private company that would do that same thing merely because the company has done it elsewhere? Does the preference stated in the following paragraph override the considerations in paragraph C.?

In the following subparagraphs in paragraph D., the language in subparagraph (1) is not the same as in paragraph C. Subparagraph (2) does not address the issue of what happens when there are two equally qualified preference entities, such as two irrigation districts that take water from the same conduit. Is an irrigation district that takes water less qualified automatically than the other irrigation district that's maintaining the conduit? Subparagraph (3) likewise delves into the use of preference concept but does not deal with the competing preference entity problem. Nor does it tell us what "utilize in the public interest or water resources project" is supposed to mean. If you are putting a turbine in a conduit, the water is already flowing down the conduit. You are not using the water. You are using the energy in the water and the water is continuing on down the conduit. What public interest differentiation could be made in such a situation?

In paragraph 7.E., subparagraph (1) mentions "scoring criteria" but does not tell us what they will be, who will develop them, and whether or not they will be tailored to the specific solicitation or be a set of standards developed separately. In the following subparagraphs, proposal requirements must include expected generation under average, wet and dry hydrologic conditions. Are these to be predefined in the solicitation? Will they be the same for all applications or project by project standards? If these brackets have to be determined by the applicant, what standards will they use? The proposal also has to define the ability of the generation to provide ancillary services. Shouldn't there be a cutoff level of say 15 megawatts at or below which one would not expect a facility to be able to generate ancillary services? Likewise, it is really necessary to do a present worth analysis of a small turbine installation in a conduit?

#### *Timeframes for Development*

These two paragraphs (8.A.&B.) delineate timeframes for installation of a facility on a dam on the one hand and in a conduit on the other. They are not cross-referenced to the duties of the Regional Director nor is the prior reference cross-referenced to these or inclusive of both. Also, since the Regional Director will determine whether there is just cause for any delay, should we assume that some more detail on what that constitutes, akin to a force majeure clause in a contract, will be articulated in the Preliminary Lease and the LOPP? If not, how will this process of deciding on delays be standardized throughout the agency?

#### *PMA Right of First Refusal*

In paragraph 9.D. and again in subparagraph H(3), there is a discussion of right of first refusal. One provision relates to PMAs and the other to "the federal government", whatever that means. Is this a clerical error? If not, are you saying that the local air force base could swoop in and take the turbine power away from the irrigation district? Is there a real need to a right of first refusal for small conduit installations? What would the PMA do with a 12 kV turbine?

#### *LOPP Charges*

In Section 10 and then in Section 11, this subject is treated. We do not understand why charges would be determined differently on transferred works rather than those that have not been transferred. A turbine is a turbine. A project is a project. If there is capital repayment, there is capital repayment. If there is O&M, there is O&M. Determining what a fair contribution to these costs ought to be depends on a number of factors, including whether the project is paid out or not and whether the particular installation has any impact on project O&M. LOPP charges ought to be fair and ought to be simple. One-size-fits-all charging will not promote the widest range of hydropower development on existing Reclamation facilities. We agree that an installation that is devoted to project use and thus relieves Reclamation from supplying that power from the project itself should be treated differently than others. But we also believe that small installations should have a simplified method of contributing to costs in terms of charges that are rational and don't require a lot of paperwork. A 50 megawatt power plant at a dam and a 1 megawatt turbine in a conduit are two totally different things. They should be recognized as such in the charging scheme that Reclamation ultimately settles on.

In summary, we have offered these comments because we very strongly believe in this program and very strongly believe that the wasted hydropower in our existing water deliveries should be harnessed. We believe it is imperative that the ultimate Directive & Standard for this process define a series of business models that will make the process attractive to your existing water and power beneficiaries as well as to third parties who may wish to participate. A good start would be the development of a checklist for 15 megawatt and below conduit applications, similar to the CE checklist in Reclamation's NEPA Manual, that would allow a proposal to bypass most of this process and most of the cost associated with it.

We appreciate the opportunity to comment on the Temporary Directive & Standards and we look forward to working with Reclamation in further refinement of this program.

Sincerely,

ROBERT S. LYNCH,  
*Counsel and Assistant Secretary/Treasurer.*

Temporary Directive & Standards  
LOPP Timelines

RSL  
6-4-12

Initiation of Process

Cite	Time	Task
5.A(3), 2	?	"Formal request" or Federal development investigation
5.A(3)	30 days	Jurisdictional Determination
5.A(4)	?	Senior Advisor, Hydro concurrence
6	?	RD concurrence
5.A(1)	?	Notice to Power Resources Office and Dam Safety Office
5.A(2)	?	Connect stakeholders and Power Marketing Administrations
5.D(4)	?	RPM/AOM notify contractors and other appropriate stakeholders
5.D(3)	?	RPM/AOM notify Power Marketing Administration
5.D(2)	?	RPM/AOM notify Power Resource Office and Dam Safety Office of intent to issue
5.D(5)	?	RPM/AOM creates selection team
5.D(6)	?	RPM/AOM assigns a LOPP lead
5.E(1)	?	LOPP lead coordinates before or at solicitation
5.D(1)	60 days	RPM/AOM prepares and insures publication of solicitation of applications
7.B	90 days	Applicants submit proposals
5.F(1)	?	Selection Team reviews all LOPP proposals
5.F(2) & 7.B	30 days	Selection Team recommends Preliminary lease award

Issuance of Preliminary Lease

Cite	Time	Task
5.A(6)	?	RD designates "responsibility" for development of the LOPP and hydropower development oversight
5.A(7)	?	RD selects Preliminary Lease
5.A(8)	?	RD notifies of selection
	days	
5.A(10)	?	RD does NEPA, et al., screening
5.A(11)	?	RD notifies Senior Advisor, Hydropower (SA) of NEPA approach

## Preliminary Lease Issued

Cite	Time	Task
4.11	?	Cost recovery agreement entered into
5.E(6), 11.A.	?	LOPP Lead ensures collection of advance cost
5.E(3) & 9.F.	?	LOPP Lead coordinates meeting with Preliminary Lessee on public safety issues
5.E(4)	?	LOPP Lead coordinates studies
5.E(2)	30 days	LOPP Lead has meeting with ID/WUA O&M or Federal Power customer (mistake)
?	?	LOPP Lead receives studies from Preliminary Lessee
5.E(5)	45 days	LOPP Lead coordinates study review
9.11(2)	?	Preliminary Lessee provides bond to LOPP Lead
5.C.	?	Chief, DSO advises RD in public safety issues?
5.A(12)	?	RD resolves public safety, security & O&M recommendations concerning LOPP projects facility impacts
8	?	RD resolves extension requests

## Issuance of LOPP

Cite	Time	Task
5.A(13)	?	SA concurs in issuance of LOPP
5.A(13)	?	RD reviews and signs LOPP if SA concurs
5.A(14)	?	- RD establishes maximum timeframe for construction
11.A.	?	Lessee advances costs to Reclamation
5.A(9), 8	?	RD resolves extension requests
9.F.	?	Public safety issues may arise after issuance of LOPP
5.B(5)	5 years	SA reviews LOPP charges re Project Use Power replacement

IDAHO WATER USERS ASSOCIATION,  
Boise, ID, April 23, 2013.

Hon. JAMES E. RISCH,  
Senator, SR-483, Washington, DC.

Re: Full Committee Hearing—Hydropower Legislation

DEAR SENATOR RISCH: This statement is provided on behalf of the Idaho Water Users Association (IWUA), regarding certain hydropower legislation to be heard by the U.S. Senate Committee on Energy & Natural Resources today. We ask that this statement be submitted as part of the hearing record.

IWUA was organized in 1937 to promote the wise and efficient use of water resources. The association is composed of more than 300 members, including irrigation districts, canal companies, and other water providers, serving more than two million acres of irrigated land. IWUA also counts hydroelectric companies among its members.

IWUA supports S. 306 and H.R. 678, the Bureau of Reclamation Small Conduit Hydropower Development and Rural Jobs Act, S. 545, the Hydropower Improvement Act of 2013, and H.R. 267, the Hydropower Regulatory Efficiency Act of 2013. IWUA hereby incorporates the detailed statements submitted by and on behalf of the National Water Resources Association, Family Farm Alliance, Oregon Water Resource Congress and other organizations and entities supporting these bills.

As you know, this legislation is tremendously important to the State of Idaho and its residents. IWUA members have been at the forefront in developing small conduit hydropower in their irrigation systems, as well as installing hydropower at existing dams. This legislation will serve to enhance those efforts, thereby providing additional, clean, affordable low-impact hydropower, while generating income to offset operation and maintenance costs for Idaho's irrigation water providers.

We appreciate your continued leadership on this issue and thank you for the opportunity to provide this statement in support of the legislation.

Respectfully submitted,

NORMAN M. SEMANKO,  
Executive Director & General Counsel.

NATIONAL HYDROPOWER ASSOCIATION,  
Washington, DC, April 17, 2013.

Hon. RON WYDEN,  
*Chairman, Energy and Natural Resources Committee, U.S. Senate, 304 Dirksen Senate Office Building, Washington, DC.*

Hon. LISA MURKOWSKI,  
*Ranking Member, Energy and Natural Resources Committee, U.S. Senate, 304 Dirksen Senate Office Building, Washington, DC.*

RE: Statement for the Record of the National Hydropower Association on the Committee's April 23 hearing to consider hydropower legislation—S.545, S. 306, H.R. 267 and H.R. 678.

DEAR CHAIRMAN WYDEN AND RANKING MEMBER MURKOWSKI:

The National Hydropower Association<sup>1</sup> (NHA) offers this statement of support for the hydropower bills under consideration by the Committee:

- S.545, the Hydropower Improvement Act; and House bill, H.R. 267, the Hydropower Regulatory Efficiency Act; and
- S. 306, the Bureau of Reclamation Small Conduit Hydropower Development and Rural Jobs Act; and the House companion bill; H.R. 678, by the same title.

Together, these bills (and previous versions in the last Congress) have enjoyed overwhelming bipartisan support. In fact, H.R. 267 has passed the House of Representatives by a unanimous vote—twice. The first was 372-0, with the second 422-0. H.R. 678 recently passed the House by a vote of 416-7.

In addition, these bills have brought together both the hydropower industry and environmental interests. NHA was pleased to work with the co-sponsors, Committee staff in the Senate and House, as well as with American Rivers and other groups, on language incorporated in these bills. The result is well-crafted pieces of legislation that seek to increase the deployment of hydropower projects while also preserving environmental values and natural resources, as well as the public's ability to review and participate in the regulatory process.

NHA encourages swift action by the Committee to favorably report legislation and urges action by the full Senate to get these bills to the President's desk for his signature.

KEY PROVISIONS

S. 545 and H.R. 267 contain important and needed provisions to advance the use of America's largest renewable electricity resource—hydropower. These include:

- Non-powered Dams and Pumped Storage: Directs the Federal Energy Regulatory Commission (FERC) to explore a potential two-year licensing process for hydropower development at existing non-powered dams and closed-loop pumped storage projects (of any size).
- Small Hydropower: Increases the FERC small hydro exemption from 5 to 10 MW.
- Conduit Hydropower: Removes non-federal conduit projects 5 MW and under from FERC jurisdiction while preserving public review and increases the FERC conduit exemption to 40 MW for all projects.
- Preliminary Permits: Authorizes FERC to grant developers preliminary permit extensions to allow continued site investigation and license preparation work for projects that are proceeding in good faith and with reasonable diligence.
- Studies: Directs the Department of Energy to study pumped storage project opportunities to support integration of intermittent renewable resource development and provide grid reliability benefits, and a study of hydropower potential from existing conduits.

S. 306 and H.R. 678 both authorize small conduit power project (5 MW and under) on Bureau of Reclamation infrastructure, while providing irrigation districts and water users associations the first right to develop small hydropower on their conduits. The bills also reinforce the water supply priority for Reclamation facilities used for hydropower development.

<sup>1</sup>NHA is a national trade association dedicated exclusively to advancing the U.S. hydropower industry, including conventional hydropower, pumped storage, conduit power and marine and hydrokinetic technologies. NHA represents nearly 200 companies from Fortune 500 corporations to family-owned businesses. Our members include public and investor-owned utilities, independent power producers, developers, equipment manufacturers, law firms and environmental and engineering companies.

During the debate on the House floor, H.R. 678 was amended to include the following provisions, which NHA also supports:

- Directs the Bureau of Reclamation to use its National Environmental Policy Act categorical exclusion process for small conduit applications.
- Grandfathers existing FERC conduit applications on Bureau facilities.

#### CONCLUSION

There is a real and present opportunity today, with the passage of the bills before the Committee, to increase U.S. hydropower generation, which will strengthen our economy, environment and renewable energy supplies.

In addition to greater hydroelectric generation, hydropower projects also provide a myriad of other important benefits: river flow for species and habitat protection; water supply; irrigation; recreation opportunities; flood control and navigation.

And importantly, hydropower and pumped storage assets provide essential grid reliability and stability services such as the ability to quickly meet changing demand in load, firming for intermittent variable energy resources, and blackstart capability in times of outage (such as the August 2003 East Coast blackout, where hydropower projects in New York and Canada operated continuously and also served as the base for restoring power to millions of Americans).

Hydropower is a proven renewable energy resource—one that has been in use in our country for well over 100 years. However, hydropower is also an energy resource for our future, with tremendous growth potential. One of the many myths about hydropower is that there are no new opportunities for growth in our industry. In fact, the opposite is the case.

Right now, there are hundreds of proposed projects totaling over 81,000 MW with pending license applications and preliminary permits filed with FERC. These projects span every sector of the waterpower industry from small conduit opportunities to large pumped storage projects. And while not every one of these projects may be built, the list demonstrates the universe of untapped hydropower potential that exists.

With these projects come significant job creation and economic benefits to local communities across the country. In 2009-2010, NHA commissioned a study examining the hydropower industry's growth and job-creation potential. Conducted by Navigant Consulting, the study found that the nation could add up to 60,000 megawatts of new capacity by 2025 and create 1.4 million cumulative jobs across the country<sup>2</sup>—700,000 direct and indirect jobs in the hydropower industry and the industry supply chain with another 700,000 induced jobs across the economy as a result of the hydropower project development activity.<sup>3</sup>

Every state in the Union is already home to hydropower projects, hydropower equipment manufacturing plants, companies that benefit from the hydropower supply chain and consumers who enjoy hydropower's lower electricity costs. This job-sustaining sector of our economy has the potential for substantial growth, and NHA believes the bills currently under consideration by the Committee provide key support to fully realizing this growth.

There is much at stake; and hydropower, America's leading affordable, reliable, and renewable domestic energy resource, stands ready to help meet our common energy, economic and environmental goals. We look forward to working further with the Committee to advance and enact the policies needed to stimulate development of the country's untapped hydropower resources.

NHA thanks you for scheduling the April 23 hearing and appreciates the opportunity to emphasize our strong support for the bills.

Sincerely,

LINDA CHURCH CIOCCI,  
*Executive Director.*

<sup>2</sup>A cumulative job is a job-year, which is defined as 1 person working full-time for 12 months.

<sup>3</sup>Job Creation Opportunities in Hydropower, Final Report, September 20, 2009. Final Report Update with state breakdowns, April 26, 2010. [http://hydro.org/wp-content/uploads/2010/12/NHA\\_JobsStudy\\_FinalReport.pdf](http://hydro.org/wp-content/uploads/2010/12/NHA_JobsStudy_FinalReport.pdf) <http://hydro.org/wp-content/uploads/2011/02/NHA-Annual-Conf-Frantzis-pres-Final-7.pdf>

NORTHWEST HYDROELECTRIC ASSOCIATION,  
*Clackamas, OR, April 19, 2013.*

Hon. RON WYDEN,  
*Chairman, Senate Energy and Natural Resources Committee, 304 Dirksen Senate Office Building, Washington, DC.*

Hon. LISA MURKOWSKI,  
*Ranking Member, Energy and Natural Resources Committee, 304 Dirksen Senate Office Building, Washington, DC.*

RE: Committee Hearing—April 23rd Hydropower Legislation

As the largest regional hydropower association nationally, our members represent the hydropower industry in Alaska, Idaho, Montana, Oregon, Washington, Northern California and British Columbia. Members represent most investor-owned and public utilities in the Northwest; smaller hydropower developers of water and irrigation districts, cities and industrial entities; equipment manufacturers and service companies; and many consulting firms. As climate change continues to dominate regional and national agendas, northwest hydropower operators look forward to providing an emission-free, renewable resource. Our region represents the largest potential for new, environmentally effective hydropower and we look forward to playing a role in the nationwide debate as to how renewables can continue to grow in an effective regulatory and incentive-based economy.

S. 545 TO IMPROVE HYDROPOWER, AND FOR OTHER PURPOSES

S. 306 TO AUTHORIZE BUREAU OF RECLAMATION FACILITIES  
 FOR HYDROPOWER DEVELOPMENT

Both pieces of legislation, as well as the companion House bills, are supported by our association. Your attention to these bills on a fast track is greatly appreciated and will provide stronger, more effective development of hydropower renewable projects to grow both green energy and needed jobs in the Northwest, as well as other regions of our nation.

The streamlining provided for in S. 545 will provide momentum for developing projects within an environment of stronger stability and expectation of an effective process for approval to more rapidly build our green energy portfolio. A number of the new technological advances our equipment manufacturing members have brought to the marketplace provide for small, environmentally friendly projects as conduit exempt projects in the pipelines of water districts, cities and industrial plants and for the development of ocean energy opportunities.

Providing support through an effective regulatory framework in which the Bureau of Reclamation will lease facilities to promote hydropower development will allow for powering a number of currently unpowered diversion dams already in place, as well as development on Reclamation canals. We will follow the work of the Committee by attending the hearing on the 23rd and look forward to providing any support we can for enactment of your committee's legislation.

JAN LEE,  
*Executive Director.*

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OREGON WATER RESOURCES CONGRESS,  
*Salem, OR, April 19, 2013.*

Hon. RON WYDEN,  
*Chairman, Committee on Energy & Natural Resources, 304 Dirksen Senate Office Building, Washington, DC.*

Hon. LISA MURKOWSKI,  
*Ranking Member, Committee on Energy & Natural Resources, 304 Dirksen Senate Office Building, Washington, DC.*

DEAR SENATOR WYDEN AND SENATOR MURKOWSKI:

Please accept this written testimony on behalf of the Oregon Water Resources Congress (OWRC) regarding the Committee on Energy & Natural Resources' hearing on energy efficiency and hydropower bills scheduled for April 23, 2013. We are writing to express our appreciation for the hearing on small hydropower legislation and to reiterate our unwavering support of both H.R. 267 and H.R. 678.

OWRC is a nonprofit trade association representing agricultural water suppliers in Oregon, primarily irrigation districts, as well as other special districts and local governments that deliver irrigation water. OWRC was established in 1912 to support member needs to protect water rights and encourage conservation and water

management statewide. OWRC members operate complex water management systems, including water supply reservoirs, canal, pipelines, and hydropower production, delivering water to more than 560,728 acres of farm land state-wide, roughly 1/3 of all irrigated land in Oregon. Approximately half of our members have contracts with or are in Bureau of Reclamation projects.

We applaud the bi-partisan efforts of the House and Senate on H.R. 267, the Hydropower Regulatory Efficiency Act of 2013, and Senator Murkowski's bi-partisan companion bill S. 545, the Hydropower Improvement Act of 2013. Equally important is H.R. 678 and its Senate companion S. 306, the Bureau of Reclamation Small Conduit Hydropower Development and Rural Jobs Act. These legislative proposals create a mirror process for small low impact conduit hydro projects that will qualify for either a Federal Energy Regulatory Commission (FERC) small conduit exemption or Lease of Power Privilege (LOPP) permit from the Bureau of Reclamation (Reclamation). As a whole these four bills will create a plethora of positive benefits to not only OWRC members, but to other agricultural water providers throughout the country.

Low-impact hydropower projects in the West are often installed into man-made irrigation canals or pipelines (i.e. conduit projects) utilizing water already being diverted for irrigation. There is no increase in the amount of water diverted and thus no negative impact on stream flow, water quality or aquatic species and habitat from these projects. In essence, these projects use the same water twice; using the same amount to generate renewable energy and then again to irrigate crops and meet other agricultural water needs. The farmers and other water users still receive the water they need for their crops and also benefit from reduced irrigation expenses offset by hydropower revenue accrued over time. Also, these projects are often accompanied by water conservation or efficiency projects that yield increased flows for instream needs, further benefiting the environment.

The potential for expanding low-impact hydropower in the Western Reclamation States is not only high but is also very practical. Utilizing man-made irrigation canals to install either conventional turbine or low head technology is more affordable and feasible to implement than traditional hydropower. The revenue generated from hydropower over time can be used to improve or replace infrastructure to increase water efficiency and conservation or pay off debt incurred in the construction of the projects. The development of new low-head (or low flow) hydroelectric devices and other forms of technology has also created more opportunities for these types of extremely beneficial projects that would have not been possible a few years ago.

H.R. 267 and H.R. 678 both will help these beneficial low impact hydropower projects to move forward without time consuming, expensive and unnecessary regulations. The merits of the bills include:

- Both bills clarify jurisdiction between Reclamation and FERC, avoiding time-consuming and potentially contentious inter-agency consultations;
- Both bills remove unnecessary barriers and cut costs by providing for a streamlined process for small hydropower development not available under current Reclamation law and, therefore, not available in Reclamation's LOPP Directives and Standards;
- Both bills reinforce the water supply priority for Reclamation facilities used for hydropower development through LOPP authority;
- Both bills give irrigation districts and water users associations, functioning as the operation and maintenance providers and/or water distributors, the first right to develop small hydropower in their conduits;
- The Tipton bill, as amended, additionally directs Reclamation to use its NEPA categorical exclusion process for small conduit applications, providing a process parallel to that used by FERC; and
- The Tipton bill, as amended, also grandfathers existing FERC applications on Reclamation facilities.

Streamlining and clarifying the regulatory processes for small low impact hydropower projects will enable numerous economic and environmentally beneficial projects to occur in Oregon and the other Western states. The potential for small low impact conduit projects in the 17 Reclamation states numbers in the thousands. The cumulative benefit from hydroelectric generation becomes even more impressive over the life span of these projects. These projects will replace thousands of tons of carbon emissions with clean green power benefitting the environment and the economy, not only locally but nationally.

OWRC encourages the Committee to move both H.R. 267 and H.R. 678 out of Committee with unanimous consent. We look forward to supporting your efforts in

passing these important legislative efforts and sending them to the President's desk for signature.

Sincerely,

APRIL SNELL,  
*Executive Director.*

*April 17, 2013.*

Hon. RON WYDEN,  
*Chairman, Senate Energy & Natural Resources Committee, 304 Dirksen Senate Office Building, Washington, DC.*

Hon. LISA MURKOWSKI,  
*Ranking Member, Senate Energy & Natural Resources Committee, 304 Dirksen Senate Office Building, Washington, DC.*

DEAR SENATORS WYDEN AND MURKOWSKI:

We are writing to you today to thank you for scheduling the Committee's April 23rd hearing on small hydropower legislation and to reiterate our unqualified support for H.R. 267 and H.R. 678. We believe that passage of these bills by the House puts this important renewable energy program on the verge of success. We are confident that your Committee's early attention to this program will result in a jump start for small hydropower development not only in the West but the throughout the country.

We also want to thank you for introducing S. 545, the companion to H.R. 267, and to compliment Senators Barrasso, Risch, Enzi and Crapo for introduction of S. 306 which mirrors H.R. 678 as introduced. These two Senate bills send a strong signal of support for an enhanced, vibrant small hydropower program.

H.R. 267, spearheaded by Representatives McMorris-Rogers and DeGette, is the product of intense and detailed negotiations, the success of which need only be demonstrated by the unanimous consent with which the bill was passed in the House.

H.R. 678, introduced by Representative Tipton with key support from Representatives Gosar and Costa, as well as from the leadership and other members of the House Natural Resources Committee, likewise has received close scrutiny. Its predecessor, H.R. 2842, passed the House in the last Congress and received a hearing in your Water and Power Subcommittee. Relying on the lessons learned during that effort, H.R. 678 responded to ideas and suggestions put forth previously and since its introduction. The success of that effort, once again, is reflected in its passage in the House by a 416-7 vote on April 10th.

Together, these two bills combine to legislate a small hydropower development program Congress can point to with pride. H.R. 267 gives the Federal Energy Regulatory Commission the tools it needs to streamline its statutory program for small hydropower development. H.R. 678 provides a statutory framework missing from its existing authorities for the companion program of the Bureau of Reclamation. And, both bills accomplish this task while retaining the necessary environmental safeguards that will ensure careful implementation of this newly directed initiative.

Recent improvements in the technology for installing small hydropower units in existing facilities have dramatically increased the attractiveness of this clean, renewable electric generation option. H.R. 267 and H.R. 678 offer the streamlining of governmental process that will provide the incentive for employing it.

Thank you again for your demonstrated interest in small hydropower development. We look forward to working with you on this important program and urge quick action on these bills.

Respectfully submitted,

THOMAS F. DONNELLY, *Executive Vice President*,  
National Water Resources Association,  
LINDA CHURCH CIOCCI, *Executive Director*,  
National Hydropower Association,  
MARK CRISSON, *President & Chief Executive Officer*,  
American Public Power Association,  
DAN KEPPEL, *Executive Director*,  
Family Farm Alliance,  
LESLIE JAMES, *Executive Director*,  
Colorado River Energy Distributors Association,  
APRIL SNELL, *Executive Director*,  
Oregon Water Resources Congress,  
ROBERT S. LYNCH, *Counsel and Assistant Secretary Treasurer*,  
Irrigation and Electrical Districts' Association of Arizona.

April 22, 2013.

Hon. RON WYDEN,  
*Chairman, Energy & Natural Resources Committee, U.S. Senate, SD-364 Dirksen  
Senate Office Building, Washington, DC.*

Hon. LISA MURKOWSKI,  
*Ranking Member, Energy & Natural Resources Committee, U.S. Senate, SD-312  
Dirksen Senate Office Building, Washington, DC.*

DEAR SENATORS WYDEN AND MURKOWSKI:

On behalf of the Western Governors' Association and the Western States Water Council, we are writing to support the goals of the Hydropower Improvement Act of 2013 (S. 545), the Hydropower Regulatory Efficiency Act of 2013 (H.R. 267), and the Bureau of Reclamation Small Conduit Hydropower Development and Rural Jobs Act (S. 306/H.R. 678), which aim to increase the development of small hydropower projects. As you review these bills, please consider the enclosed position from the Council, which supports federal legislation and other efforts to authorize and implement reasonable hydropower development through streamlined permitting processes.

Our organizations support an "all of the above" energy strategy that includes responsible small hydropower development. As stated in the Council's position\*, hydropower is the United States' largest source of renewable electricity. While hydropower currently produces some 100,000 megawatts, or seven percent of the nation's electricity needs, the potential exists to develop an additional 60,000 megawatts. Developing small hydropower projects at existing conduits and canals represents a significant opportunity to help realize this potential because the water that already flows through these structures contains substantial amounts of untapped energy.

In addition, the western states hold great potential for hydropower in existing dams. There are over 23,000 non-powered dams throughout the West capable of providing over 2,000 megawatts of capacity if retrofitted for hydroelectric generation. The development potential at non-powered dams is in addition to the potential at existing canals and conduits.

Although recent improvements and innovations have greatly increased the technical feasibility of small hydropower projects, Congress can do more to reduce the costs and risks associated with small hydropower development by minimizing and streamlining current permitting requirements. We also believe that streamlined permitting processes can provide appropriate protections for important environmental and ecological resources.

In addition, given the states' primary and exclusive authority over surface water allocation, any federal legislation that facilitates small hydropower development should comply with state water laws and interstate compacts. Such legislation should also respect the rights and preference privileges of existing water and power users.

\* Document has been retained in subcommittee files.

Facilitating small hydropower development should be a bipartisan endeavor, as was the work of Representatives Cathy McMorris Rodgers, Diana DeGette, Scott Tipton, and Jim Costa in securing broad support for H.R. 678 and H.R. 267, which passed the House with 416 and 422 votes respectively. We are also encouraged by your bipartisan leadership in developing and introducing S. 545, and hope that the Committee will continue this approach as it considers other bills.

In sum, your Committee's consideration of this legislation is timely. Electricity providers in the West and across the country are currently working to develop domestic energy supplies to satisfy growing electricity demands while also reducing carbon emissions. Small hydropower projects represent a significant opportunity to develop a key renewable domestic energy source and create much needed jobs, while minimizing environmental impacts.

We appreciate your consideration of our comments and look forward to working with you to encourage the responsible development of our nation's hydropower resources.

Sincerely,

JIM OGSBURY, *Executive Director*,  
Western Governors' Association,  
TONY WILLARDSON, *Executive Director*,  
Western States Water Council.

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TROUT UNLIMITED,  
Arlington, VA, May 6, 2013.

Hon. RON WYDEN,  
*Chairman, Senate Energy & Natural Resources Committee, 304 Dirksen Senate Office Building, Washington, DC.*

Hon. LISA MURKOWSKI,  
*Ranking Member, Senate Energy & Natural Resources Committee, 304 Dirksen Senate Office Building, Washington, DC.*

RE: Committee Hearing on Small Hydropower Legislation, H.R. 678, S. 306.

DEAR CHAIRMAN WYDEN, RANKING MEMBER MURKOWSKI, AND MEMBERS OF THE COMMITTEE:

On April 23, 2013, the Senate Subcommittee on Water and Power held a hearing to consider a number of energy efficiency and hydropower bills—including H.R. 678 and S. 306, each titled the Bureau of Reclamation Small Conduit Hydropower Development and Rural Jobs Act of 2013. On behalf of Trout Unlimited and its 150,000 members across the country, we write today—as your committee prepares to mark up the bill this week—to offer our support for HR 678 as amended on the House floor debate and for the Senate counterpart legislation, S. 306 with a conforming amendment.

TU previously offered comment on HR 678 describing support for the overall objectives and for select provisions of the bill while also expressing concern about other bill elements.<sup>1</sup> Key among our concerns, TU objected to language that would waive National Environmental Policy Act (NEPA) review for conduit hydropower developments that are capable of producing less than 5MW.

TU objected to this provision as an unnecessary short-cut in light of existing tools available to expedite NEPA processing, noting the categorical exclusion process as an example. TU also noted that because the generating capacity of a project does not always determine the extent of its potential impacts—an impact-based approach to qualifying projects for expedited processing is more appropriate than simply relying on a numerical megawatt threshold alone.

Subsequently, H.R. 678 was amended to clarify the role of NEPA review in the permitting process. Specifically, the bill amendment—offered by Reps. Tipton and Costa and included in the House-passed version of the bill—replaces the original NEPA exemption language with language directing the BOR to use its existing categorical exclusion process. Through use of the categorical exclusion process, the BOR is able to apply a more impact-based review of projects, allowing minimal-impact projects to proceed quickly, while retaining the discretion to move projects with

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<sup>1</sup>2012, September 19 - Letter to the Senate Energy and Natural Resources Committee in re: Committee Hearing on S. 3483 and H.R. 2842; 2013, March 19 - Letter to the House Natural Resources Water and Power Subcommittee in re: Committee Hearing on H.R. 678; 2013, April 10 - Letter to the Reps. Tipton and Costa in re: TU support for amendment to H.R. 2842 to include NEPA review.

more complicated or problematic impacts or projects that present extraordinary circumstances through a more robust review process under NEPA.

As amended, H.R. 678 represents a common-sense approach to streamlining the licensing process for in-conduit hydropower projects at federal facilities without sacrificing the opportunity for environmental review and informed decision making provided under NEPA. We support the House-passed version of HR 678 and would similarly support S. 306 with conforming amendments.

Sincerely,

STEVE MOYER,  
*Vice President for Government Affairs.*

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CITY OF SANTA BARBARA,  
OFFICE OF MAYOR,  
*Santa Barbara, CA, April 17, 2013.*

Hon. RON WYDEN,  
*Chairman, Energy & Natural Resources Committee, 304 Dirksen Senate Office Building, Washington, DC.*

RE: Support for H.R. 267, the Hydropower Regulatory Efficiency Act of 2013

DEAR SENATOR WYDEN,

On behalf of the City of Santa Barbara, I wish to express my support of HR 267 that would enable the Federal Energy Regulatory Commission (FERC) to waive license requirements for small-scale, conduit hydropower projects that could generate clean renewable energy.

The proposed bill could waive licensing requirements for the City of Santa Barbara's idle conduit hydroelectric powerplant which receives water from Gibraltar Reservoir. Removing the licensing requirements would facilitate reactivation of the .75 MW conduit hydroelectric plant which could then supply clean, environmentally friendly power to Santa Barbara customers.

As background, in 1998 the City surrendered its FERC license and terminated its hydroelectric sales agreement with Southern California Edison due to costs associated with complying with a FERC license as well as FERC requirements which could interfere with water delivery from Gibraltar Reservoir, an important City water source. The City desires to reactivate its conduit hydroelectric facility. However costs associated with obtaining a FERC conduit exemption permit were estimated to be \$100,000 and take twelve weeks for a consultant to prepare. In addition, the review time of the permit was estimated to be between 26 and 52 weeks.

Your support of H.R. 267 would enable the City to cut costs and reduce time associated with reactivating its Gibraltar conduit hydroelectric power plant and would facilitate the delivery of environmentally friendly power to our residents.

Sincerely,

HELENE SCHNEIDER,  
*Mayor.*

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CITY OF SANTA BARBARA,  
OFFICE OF MAYOR,  
*Santa Barbara, CA, April 17, 2013.*

Hon. RON WYDEN,  
*Chairman, Energy & Natural Resources Committee, 304 Dirksen Senate Office Building, Washington, DC.*

RE: Support for S. 545 (Murkowski), Hydropower Improvement Act of 2013

DEAR SENATOR WYDEN,

On behalf of the City of Santa Barbara, I wish to express my support of Senate Bill 545 that would enable the Federal Energy Regulatory Commission (FERC) to waive license requirements for small-scale, conduit hydropower projects that could generate clean renewable energy.

The proposed bill could waive licensing requirements for the City of Santa Barbara's idle conduit hydroelectric power plant which receives water from Gibraltar Reservoir. Removing the licensing requirements would facilitate reactivation of the .75 MW conduit hydroelectric plant which could then supply clean, environmentally friendly power to Santa Barbara customers.

As background, in 1998 the City surrendered its FERC license and terminated its hydroelectric sales agreement with Southern California Edison due to costs associated with complying with a FERC license as well as FERC requirements which

could interfere with water delivery from Gibraltar Reservoir, an important City water source. The City desires to reactivate its conduit hydroelectric facility. However costs associated with obtaining a FERC conduit exemption permit were estimated to be \$100,000 and take approximately twelve weeks for a consultant to prepare. In addition, the review time of the permit was estimated to be between 26 and 52 weeks.

Your support of S 545 would enable the City to cut costs and reduce time associated with reactivating its Gibraltar conduit hydroelectric power plant and would facilitate the delivery of environmentally friendly power to our residents.

Sincerely,

HELENE SCHNEIDER,  
*Mayor.*

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NATIONAL PROPANE GAS ASSOCIATION (NPGA),  
*Washington, DC, May 2, 2013.*

Hon. JEANNE SHAHEEN,  
*U.S. Senate, 520 Hart Senate Office Building, Washington, DC.*

Hon. ROB PORTMAN,  
*U.S. Senate, 448 Russell Senate Office Building Washington, DC.*

RE: Energy Savings and Industrial Competitiveness Act of 2013 (S. 761)

DEAR SENATORS SHAHEEN AND PORTMAN:

On behalf of the National Propane Gas Association (NPGA), I am writing to express appreciation for your leadership in seeking to promote energy efficiency in the buildings sector. The Energy Savings and Industrial Competitiveness Act of 2013 (S.761) contains a variety of provisions that will move America forward in this important area.

NPGA is the national trade association of the propane industry with a membership of approximately 3,000 companies, including 39 affiliated state and regional associations representing members in all 50 states. The single largest group of NPGA members are the retail marketers of propane gas, but the membership also includes propane producers, transporters and wholesalers, as well as manufacturers and distributors of associated equipment, containers and appliances. Propane gas is used in millions of installations nationwide for home and commercial heating and cooking, in agriculture, in industrial processing, and as a clean alternative engine fuel for over-the-road vehicles, forklifts, and commercial lawnmowers, among others.

The propane industry has been hard-hit during the economic slowdown largely due to the reduction of the housing market. Nevertheless, one bright spot has been the development of a vigorous market for propane autogas vehicles, such as delivery vehicles, pickup trucks, police cars, and school buses. Significant growth has occurred in this sector because of the environmental concerns with diesel and gasoline; propane is a considerably cleaner fuel in transportation applications. Congress has also helped spur this growth through tax credits for alternative fuel consumption in vehicles and the installation of alternative refueling infrastructure. These tax credits apply to both propane and natural gas equally; electric vehicles enjoy their own incentives.

We are concerned that S.761 does not address the many benefits of propane vehicles on a comparable basis with natural gas vehicles and electric vehicles. Specifically, Title IV Section 403 relating to "Natural Gas and Electric Vehicle Infrastructure" provides for electric and natural gas vehicles and infrastructure to be "energy or water conservation measures" for purposes of energy savings performance contracts. Section 403 completely omits the propane autogas sector. This, we hope, is simply an oversight that you would be willing to remedy by including propane alongside natural gas in the bill text.

The marketplace has a long history of support for alternative fuel vehicles, and the tax credits have led to renewed interest in this area. Since 1992, the Energy Information Administration has tracked the estimated number of alternative fuel vehicles. As of September 2012, propane autogas fuels over 143,000 vehicles, while compressed and liquefied natural gas vehicles combined fuel less than 120,000 vehicles. NPGA points to these numbers in arguing that parity in the language of S.761 is justified and appropriate.

Senators Shaheen and Portman, U.S. policy should encourage energy security and the use of clean fuels. Propane is a clean, domestic, and prolific fuel. Policy should not place a federal imprimatur on one or two favored fuels to the detriment of others, such as propane, in the marketplace. As the Energy and Natural Resources

Committee considers S. 761, we urge you adopt language to ensure that propane autogas is included in this important legislation.

Sincerely,

RICHARD R. ROLDAN,  
*President and CEO.*

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PREPARED STATEMENT OF DAN KEPPEL, EXECUTIVE DIRECTOR, FAMILY FARM ALLIANCE, KLAMATH FALLS, OR

On behalf of the Family Farm Alliance (Alliance), this testimony has been prepared to justify our strong support for the Committee's April 23, 2013 hearing on small hydropower legislation and to reiterate our unqualified support for H.R. 267 and H.R. 678. We believe that passage of these bills by the House puts this important renewable energy program on the verge of success. We also want to thank you for introducing S. 545, the companion to H.R. 267, and to compliment Senators Barrasso, Risch, Enzi and Crapo for introduction of S. 306 which mirrors H.R. 678 as introduced. These two Senate bills if enacted would prepare the way for an enhanced, vibrant small hydropower program.

The Alliance is a grassroots organization of family farmers, ranchers, irrigation districts and allied industries in 16 Western states. The Alliance is focused on one mission: To ensure the availability of reliable, affordable irrigation water supplies to Western farmers and ranchers. Many of our members operate existing irrigation canals and ditch systems that may provide opportunities to develop in-canal, low-head hydroelectric projects that have tremendous potential for producing significant amounts of renewable energy with virtually no negative environmental impacts. Unfortunately, many who seek to develop hydropower on non-federal and Bureau of Reclamation (Reclamation) water canals and pipelines (collectively known as "conduits"), are seriously challenged by over-burdensome and unnecessary regulatory processes that stand in the way.

We are confident that your Committee's early attention to this program will result in a jump start for small hydropower development not only in the West but the throughout the country.

BENEFITS OF STREAMLINED PROCESSES TO DEVELOP CONDUIT HYDROPOWER

Increased conduit hydropower serves a number of purposes: 1) it produces renewable and emissions-free energy that can be used to pump water (offsetting some fossil fuel pumping) or sell electricity to the grid; 2) it can generate revenue for the hydropower developer (i.e. irrigation districts) to help pay for aging infrastructure costs and water/power facility modernization; and 3) it can create local jobs and generate federal revenue to the U.S. Treasury.

These types of low-impact hydropower developments will not harm the environment since the generation units would be placed on already disturbed ground within existing facilities that have already gone through federal environmental review.

CHALLENGES WITH EXISTING PERMITTING REQUIREMENTS

Despite the obvious benefits of new low-impact hydropower projects, inflexible federal regulations and rules stifle such development. For example, widespread uncertainty exists over which federal agency would manage hydropower development at Reclamation's conduits. Currently, Reclamation would oversee such development depending on how a congressional authorization defined "power" production as a function at a respective Reclamation project. In other cases, FERC would oversee such development if "power" was not intended at a specific Reclamation project. In other projects, it is very unclear which agency would manage conduit hydropower development—especially at older Reclamation facilities, some of which were created administratively and without congressional authorization.

Many of Reclamation's water customers have made it clear that they prefer to work directly with Reclamation on conduit hydropower development on Reclamation-owned facilities (due, in part to the cumbersome FERC process and to the familiarity with Reclamation processes).

Another substantial cost in permitting small hydropower is the level of environmental analysis required by the agencies. Even though Reclamation conduit hydropower units would already be located and built on disturbed ground within existing facilities that have already gone through federal environmental review, a National Environmental Policy Act (NEPA) analysis is still required to be done in this case under existing regulations. This analysis is many times required despite the fact that the Interior Department's current Reclamation Manual allows for NEPA cat-

egorical exclusions (or, “CEs”) for “Minor construction activities associated with authorized projects. . . which merely augment or supplement, or are enclosed within existing facilities.”

Finally, under current regulations, anyone who wants to develop hydropower less than 5 megawatts (which would apply to virtually every single potential location within irrigation canals) can get an exemption from Federal Energy Regulatory Commission (FERC) licensing requirements. However, the process required to get that exemption is time-consuming and costly, just simply to satisfy NEPA compliance requirements.

#### FAMILY FARM ALLIANCE EFFORTS

The Alliance for the past three years has worked hard to make it easier for Western irrigators to develop new low-head hydropower. The Alliance board of directors in February 2010 established a priority initiative intended to serve many of our farmers and ranchers who are interested in installing low-head hydropower facilities in existing irrigation canal systems.

The Family Farm Alliance’s efforts to engage in small hydropower development simplification has focused on streamlining the processes of FERC and Reclamation, the two agencies with jurisdiction over most of the potential small hydropower development sites at existing federal and nonfederal facilities.

The Alliance played a key role in crafting and advocating for each of the bills before you today, and on legislation considered in the last Congress that were predecessors to these bills. In the past three years, the Alliance provided input as all of these bills were being written, and Alliance witnesses testified several times before congressional committees on these bills.

#### THE SOLUTION: H.R. 678 AND H.R. 267

H.R. 678 seeks to streamline these sometimes costly requirements and reduce costs to foster more conduit hydropower at federal facilities and empower irrigation districts to develop this generation. This legislation is intended to coincide with H.R. 267, which provides regulatory reform at FERC for non-federal conduits hydropower generation.

H.R. 678, introduced by Representative Tipton with key support from Representatives Gosar and Costa, as well as from the leadership and other members of the House Natural Resources Committee, likewise has received close scrutiny. Its predecessor, H.R. 2842, passed the House in the last Congress and received a hearing in your Water and Power Subcommittee. Relying on the lessons learned during that effort, H.R. 678 responded to ideas and suggestions put forth previously and since its introduction. The success of that effort, once again, is reflected in its passage in the House by a 416-7 vote on April 10th.

H.R. 267, spearheaded by Representatives McMorris-Rogers and DeGette, is the product of intense and detailed negotiations, the success of which need only be demonstrated by the unanimous consent with which the bill was passed in the House.

Together, these two bills combine to authorize an effective and efficient small hydropower development program Congress can point to with pride. H.R. 267 gives FERC the tools it needs to streamline its statutory program for small hydropower development. H.R. 678 provides a statutory framework missing from its existing authorities for the companion program of the Bureau of Reclamation. And, both bills accomplish this task while retaining the necessary environmental safeguards that will ensure careful implementation of this newly directed initiative. We believe these bills will provide clear direction to both agencies while giving prospective small hydropower developers a simplified, economic path to follow with either agency.

#### CLARIFICATION OF THE INTENT OF H.R. 678

The goals of H.R. 678 are to simplify Reclamation small hydropower processes, protect original project purposes, reduce red-tape and clarify jurisdiction, which will also reduce costs. A key component of the introduced bill sought to exempt small conduit hydropower generation projects under NEPA. We have recently discovered that the original bill requires some modification for it to best apply to Reclamation’s Lease of Power Privilege Program (LOPP).

LOPP was authorized in Section 9(c) of the Reclamation Project Act of 1939 but has received little attention until recently. Applying NEPA to LOPP process has proven costly and, as applied to existing canals and ditches, is generally a misallocation of time and resources. Reclamation only recently updated and finalized a LOPP program in the Directives and Standards of its Reclamation Manual (09/28/12). This action post-dated both Department of Interior and Reclamation

NEPA process updates. Those updates do not mention the LOPP program, let alone small hydropower installations. This differs significantly from FERC, which has specific regulations on use of CEs for small hydropower.

Thus, we support the amended provisions of the House-passed H.R. 678 that would replace the NEPA waiver with the CE process language: The Bureau of Reclamation shall apply its categorical exclusion process under the National Environmental Policy Act of 1969 (42 U.S.C. 4321 et seq.) to small conduit hydropower development under this subsection, excluding siting of associated transmission facilities on Federal lands.

The proposed language directing Reclamation to use its existing CE process protects the program from NEPA process challenges while recognizing that Reclamation's NEPA CE process, very much parallel to FERC's, achieves the appropriate environmental safeguards. This important amendment, approved in the House-passed bill, ensures that the Reclamation NEPA "process" is used. It is not, as some claim, a guarantee that every project would automatically received a categorical exclusion.

Not curing this defect would prevent H.R. 678 from achieving its goal of furthering the development of this "green" power. With this provision, H.R. 678 is better suited to reduce costs, foster more conduit hydropower at federal facilities and empower irrigation districts to develop this generation.

#### CONCLUSION

Recent improvements in the technology for installing and operating small hydropower units in existing conduit facilities have dramatically increased the attractiveness of this clean, renewable electric generation option. H.R. 267 and H.R. 678 offer the streamlining of governmental process that will provide the incentive for employing small hydropower while allowing the proper NEPA analysis to be used to protect the environment.

Thank you again for your demonstrated interest in small hydropower development. We look forward to working with you and the Committee on this important program and urge quick action on these bills.

OREGON WATER RESOURCES CONGRESS,  
SALEM, OR,  
NORTHWEST HYDROELECTRIC ASSOCIATION,  
CLACKAMAS, OR,  
March 4, 2013.

Hon. RON WYDEN,  
*Chairman, U.S. Senate Committee on Energy & Natural Resources, 304 Dirksen  
Senate Office Building, Washington, DC.*

Hon. LISA MURKOWSKI,  
*Ranking Member, U.S. Senate Committee on Energy & Natural Resources, 304 Dirksen  
Senate Office Building, Washington, DC.*

The Oregon Water Resources Congress (OWRC) and the Northwest Hydroelectric Association (NWAHA) are both strong supporters of small low impact hydropower development. The opportunity of bipartisan support in the U.S House of Representatives and U.S Senate for multiple legislative efforts on this issue is extremely exciting and very timely.

Several OWRC districts and NWAHA members already operate hydroelectric projects of varying size and many more are exploring options for in-conduit small hydroelectric power. These small hydroelectric projects are either in an existing canal or pipeline. They have numerous benefits to the district, the water users they serve, and the environment. In-conduit hydropower provides safe and reliable renewable energy and often results in additional water instream for fish and wildlife through related piping projects. However, there are numerous regulatory hurdles that are preventing or deterring many good projects from moving forward.

OWRC and NWAHA support HR 267 which combines Senator Murkowski's beneficial drafting from S 629 and the bipartisan efforts from the House of Representatives by Representative McMorris-Rodgers and a bi-partisan group of nine colleagues. Importantly, the House of Representatives has already passed H.R. 267 and has sent it over to the Senate.

OWRC and NWAHA also support S. 306, which was introduced on February 13th by Senators Barrasso, Risch, Enzi and Crapo, that focuses on streamlining Reclamation's program. Its companion bill, H.R. 678, was introduced at the same time in the House by Rep. Scott Tipton and a bi-partisan group of eight colleagues.

Another item to address during your consideration of small-hydro legislation in the committee would be the inclusion of this language concerning NEPA:

“(3) The Bureau of Reclamation shall not apply the National Environmental Policy Act of 1969 (42 U.S.C. 4321 et seq.) to small conduit hydro-power development under this subsection, excluding siting of associated transmission facilities on Federal lands, as provided in 18 C.F.R. 380.4.”

This is the same language that pertains to the FERC small conduit exemption. By adopting this language, both the FERC process and the Bureau of Reclamation Lease of Power Privilege process would have the same NEPA requirement which is a Categorical Exclusion. That would help clarify any concerns raised with regard to NEPA requirements in these processes.

As you know, the water users in the Columbia River Basin of the Pacific Northwest have been consistently supportive of seeing that fish passage needs are addressed with regard to interaction with our facilities and continue to encourage your support for funding for those efforts.

There are additional issues such as interconnection and unregulated tariffs costs and other issues that should be addressed as you continue your efforts in this area of national energy policy. We would be pleased to work with you on them as you move forward on your drafting.

We appreciate the FERC expedited permit process for small conduit hydroelectric projects but there is definitely room for more improvement. Small, low-impact hydro should be plug and play type projects with simple applications.

The Oregon Water Resources Congress (OWRC) is a nonprofit trade association representing agricultural water suppliers in Oregon, primarily irrigation districts, as well as other special districts and local governments that deliver irrigation water. OWRC was established in 1912 to support member needs to protect water rights and encourage conservation and water management statewide. OWRC members operate complex water management systems, including water supply reservoirs, canal, pipelines, and hydropower production, delivering water to more than 560,728 acres of farm land state-wide, roughly  $\frac{1}{3}$  of all irrigated land in Oregon. About half of our members have contracts with or are in Bureau of Reclamation projects.

The Northwest Hydroelectric Association (NWhA) has as its member's public and private utilities, water and irrigation districts, a range of consultants, manufacturers of industry equipment and unions. We seek to provide education and support for the hydroelectric industry members we represent. Almost all of the hydropower in the Northwest is represented by our membership. Our membership includes entities in Alaska, Idaho, Montana, Northern California, Oregon, Washington and western Canada. In addition to the large hydro installations our members operate, a number of the water and irrigation districts and cities are developing in-conduit projects to take advantage of existing infrastructure while providing clean, renewable energy to local communities.

Sincerely,

APRIL SNELL,  
OWRC Executive Director,  
JAN LEE,  
NWhA Executive Director.