CLEAN ENERGY SOLUTIONS CENTER
ASSISTING COUNTRIES WITH CLEAN ENERGY POLICY

Involving Stakeholders in Adoption and Implementation of Building Energy Codes

—Transcript of a webinar offered by the Clean Energy Solutions Center on 30 November 2016—
For more information, see the clean energy policy trainings offered by the Solutions Center.

Webinar Panelists

Meredydd Evans	Pacific Northwest National Laboratory
Julia Martínez	WRI México
Isaac Elnecave	Midwest Energy Efficiency Alliance

This Transcript

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Eric

Hello, everyone. I'm Eric Lockhart with the National Renewable Energy Laboratory and welcome to today's webinar, which is hosted by the Clean Energy Solutions Center in partnership with Pacific Northwest National Laboratory. Today's webinar is focused on stakeholder engagement and the adoption and implementation of building energy codes. One important note of mention before we begin our presentations is that the Clean Energy Solutions Center does not endorse or recommend specific products or services. Information provided in this webinar is featured in the Solutions Center Resource Library as one of many best practices resources reviewed and selected by technical experts.

Before we begin, I'll quickly go over some of the webinar features. For audio, you have two options. You may either listen through your computer or over your telephone. If you choose to listen through your computer, please select the mic and speakers option in the audio pane. Doing so will eliminate the possibility of feedback and echo. If you choose to dial in by phone, please select the telephone option, and a box on the right side will display the telephone number and audio PIN you should use to dial in. If anyone is having technical difficulties with the webinar, you may contact the GoToWebinar's helpdesk at (888) 259-3826 for assistance.

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as our speakers present. Also, an audio recording and the presentations will be posted to the Solutions Center training page within a few weeks and will be added to the Solutions Center YouTube channel where you'll find other informative webinars, as well as video interviews with thought leaders on clean energy policy topics.

Today's webinar agenda is centered around the presentations from our guest panelists, Meredydd Evans, Isaac Elnecave, and Julia Martínez. These panelists have been kind enough to join us to discuss the role of engaging a diverse set of stakeholders and developing and implementing effective building energy codes. Before our speakers begin their presentations, I'll provide a short, informative overview of the Clean Energy Solutions Center Initiative. And then, following their presentations, we'll have our question-and-answer session where the panelists will address questions submitted by audience, then closing remarks, and a brief survey.

This slide provides a bit of background in terms of how the Solutions Center came to be. The Solutions Center is 1 of 13 initiatives of the Clean Energy Ministerial that was launched in April of 2011 and is primarily led by Australia, the United States, Sweden, and other CEM partners. Outcomes of this unique initiative includes support of developing countries and emerging economies through enhancement of resources on policies relating to energy access, no-cost expert policy assistance, and peer-to-peer learning and training tools, such as the webinar you're attending today.

The Solutions Center has four primary goals. It serves as a clearinghouse of clean energy policy resources. It also serves to share policy best practices, data, and analysis tools specific to clean energy policies and programs. The Solutions Center delivers dynamic services that enable expert assistance, learning, and peer-to-peer sharing of experiences. And lastly, the center fosters dialogue on emerging policy issues and innovation around the globe. Our primary audience is energy policy makers and analysts from governments and technical organizations in all countries. We also strive to engage with the private sector, NGOs, and civil society.

A marquee feature that the Solutions Center is a no-cost expert policy assistance known as Ask an Expert. The Ask an Expert program has established a broad team of over 30 experts from around the globe who are available to provide remote policy assistance and analysis to all countries at no cost. For example, in the area of demand and policy evaluation, we are very pleased to have Bruno Lapillonne from Enerdata serving as one of our experts.

If you have a need for policy assistance and energy efficiency or any other clean energy sector, we encourage you to use this valuable service. Again, the assistance is provided free of charge. If you have a question for our experts, please submit it through our simple online form at cleanenergysolutions.org/expert. We also invite you to spread the word about this service to those in your networks and organizations.

Now, I'd like to provide brief introductions for today's panelists. First up today is Meredydd Evans, who is a senior scientist with the Pacific Northwest National Laboratory, where she is an energy policy and finance expert with experience working on energy efficiency and clean energy policies and projects in numerous countries.

Following Meredydd, we will hear from Isaac Elnecave, who is a senior policy manager at the Midwest Energy Efficiency Alliance, where he focuses on building energy codes programs. And our final speaker, today, is Julia Martínez, who is director of environmental, economics, and climate change at WRI Mexico, where her portfolios included energy efficiency issues, such as collaborating and initiating Mexico City in the UN SE for All Energy Building Accelerator. And with those introductions, I'd like to welcome Meredydd to the webinar.

Meredydd Hi. Thank you. Do you see my screen okay?

Eric Yes, we do.

Meredydd Great. Okay. So thank you and welcome to everybody. We really appreciate your interest and participation. Just to begin, I'll focus, today, on a brief overview of some of the principles and practices and stakeholder engagement related to building energy codes. And I'll also include a brief example of Australia that some of our colleagues from Australia shared. They were not able to participate because the of the time zone differences.

The topic of stakeholder engagement was of high interest to countries that we worked with under IPEEC. Many of the countries identified the need for particular regional intermediaries who could help transfer best practices in code implementation across jurisdictions, whether it's within a country or even potentially between countries.

So after this brief overview, as you heard, will hear from Isaac, who is from the Midwest Energy Efficiency Alliance in the United States, and it's an example of a regional organization like that. They can help fill the gap between code adoption and implementation at the state and local level. And then, with the presentation for WRI Mexico, we'll hear about the leading role that municipalities can play in advancing implementation of building energy codes, including through engagement in international forums, obviously, using Mexico City as an example.

So as you know, building energy codes can play a large role in helping reduce the impacts of climate change. Buildings today account for over a third of global energy consumption. That share is increasing over time as countries develop. Energy codes can help curb building energy use and also improve, again, on the performance while they're reducing pollution and improving energy security.

We analyze the implementation of building energy codes in 22 countries within the IPEEC framework, and there's link, right here, to that study if you're interested. We also prepared, in collaboration with the Global Building Performance Network and IPEEC, a portal with information on these 22

countries that provides fairly detailed examples and information on their implementation strategies, including, to some extent, how they engage with stakeholders.

So looking at building energy codes and stakeholders, there are obviously many, many stakeholders involved. Here, I've tried to capture some of the core categories of stakeholders. And of course, these can vary from one country to another, but first, are the organizations that adopt a code. These tend to be country or state level officials. They can, also, in many cases, include other organizations that serve in a role, for example, ASHRAE or the Australian Building Code Board that are not governmental but help develop codes.

They're the code enforcers who typically may be local government officials. They can also be private certified third parties. For example, the code implementers, the various organizations that have to build the buildings to code, including developers, owners, architects, designers, et cetera, suppliers, who have to understand what the code may mean for their markets and who also may have a stake in what the code actually says, including through industry associations, and then many, many others—local utilities, energy efficiency advocates, et cetera.

Having strong engagement usually improves the quality of a code, and it also usually makes implementation easier. Across countries, we heard, when we interviewed the 22 countries, there is an important gap between adoption, which is typically at the national or state level, and implementation, which is at the local level, and that there was a need for better stakeholder engagement to help the fill that gap, which is where the idea for this webinar came about. Whoop—sorry.

So thinking about stakeholder engagement and the code cycle, the code cycle typically has—and again, it can vary across countries, but if you lump development and adoption together, three main components, the sort of the development and adoption stage, implementation, and building capacity. With the development and adoption, it's important to identify stakeholder and public concerns to create acceptance for the code. Doing this well can also shorten implementation time.

It is, I think, important everywhere, but it is particularly important where the federal government in a federal system does not have the jurisdiction to mandate code implementation. And I'll speak a little bit later, briefly, about Australia's example of working with multiple stakeholders to develop a single national code that everybody could then adopt and accept.

With implementation, I think it's engaging stakeholders can help in improving implementation systems. And just one example among many, in the U.S., there are significant efforts to—and growing efforts to assess implementation in different states to provide feedback on how to improve those systems, and also, for example, to hold focus groups on the compliance software to improve that. Many, many countries engage stakeholders, as well, when they build capacity for implementation, and there, it can run a range of different

activities, but including training on the code itself and updating the skills of either inspectors, developers, or others.

Okay, so there are different needs for stakeholder engagement, to some extent, across different countries. There are a lot of things that are universal, but we find in some countries that the stakeholders may express their concerns more vibrantly at different stages. So for example, in the US, we often find that it is very common at the code development and adoption stages. There's a very vigorous debate, discussion, and at times, it can be challenging.

And in other countries, this may happen at the implementation stage, where there, for example, may be less discussion at the development stage. Where there, for example, may be less discussion at the development stage, that discussion may happen at the implementation stage or for other reasons. And it's important to think through, what would ultimately be the best approach to making sure that stakeholders understand and engage and ultimately can accept how the code will work.

So the code adoption and implementation cycle also can determine how to engage with stakeholders. In particular, having a very clear schedule of code revisions facilitates stakeholder engagement. There are many private sector entities who, if it's a clear cycle, they know, "Okay, at this time in the cycle, this is when we get engaged," and I think that can also help in improving the understanding of the code.

So there are multiple pathways for stakeholder engagement, ranging from very formal types of engagement to semi-formal and informal. The regulatory proceedings that are involved in developing and typically adopting a code tend to be fairly formal, whether they are regulatory in the sense of a government set of regulatory hearings or they are through organizations that—you know, private sector, not-for-profit organizations that help in developing the code.

Less formal include focus group, surveys, conferences. They're planned interactions, but not necessarily with a formal set of rules or a formal set of documents that has to come out of the process. It can be to assess implementation, to share updates and so on.

And then, also, even less formal can include things like individual meetings with stakeholders, hotlines, potentially websites, depending on the type of information shared. Obviously, the cost with each of these can vary depending on how detailed the process is. And, for example, meeting individually with each stakeholders, while any one meeting may not be very expensive, cumulatively, it may not be the most effective approach to engaging, although it still can be helpful in specific cases.

So giving a few examples from some of the countries that we interviewed, many countries have public meetings or conferences to engage stakeholders on energy code issues: Canada, France, Spain, UK, US, Vietnam, India. I've seen many, many countries that will have some type of outreach of this sort. Working groups and technical committees are also very common, particularly

in a regulatory context. And without reading all of the countries, you can see there are quite a range of countries that have this type of stakeholder engagement, as well.

Surveys are increasingly common across countries. We've seen examples from Australia, Spain, the US, China. I don't want to have to mention every single country for time sake, but we see more and more of these as countries seek to better understand their implementation challenges and how to make improvements. Newsletters, Web pages, are also ways of engaging that many countries have used.

So just before I conclude I'd like to give a little bit of information on Australia because it is, I think, an interesting case. Australia is a federation of eight states and territories. In 1994, the Australian Building Codes Board was formed by an intergovernmental agreement as the representative body for all the local—all the states and territories of Australia. And ABCB also represents industry and the commonwealth government.

Before that, Australia did not have an energy efficiency component of its building code. And in 2003, it developed the first version through a very much consensus-driven approach, which I think is quite interesting, given that it's a federal form of government, they were able to bring together all these different parties, such that all the states and the territories, at the end, could universally adopt the new code that they had developed. And built into the code are some differences for different climate zones, but they don't have a distinct and long-lasting adoption process in parallel.

So in an ongoing way, as well, the Australian government has engaged in code assessment. There's a commitment to continually engage with these stakeholders, both through the development and revision process, technical committees, working groups, and the stakeholder surveys that they've done recently to understand implementation.

More recently, they've, as I mentioned, tried to engage with stakeholders to assess the weaknesses in compliance and understand how they can improve compliance. So they launched the National Energy Efficiency Building Project, which engaged 1000 stakeholders from various stages of the construction cycle. And most of the stakeholders brought up issues with compliance and practices that they found could be improved or areas where they had concerns. So there's also an effort to engage with key stakeholders to improve compliance with the minimum standards and to encourage obtaining to going beyond those requirements.

So in conclusion, countries are increasingly recognizing the role of stakeholder engagement as codes get more complex, nuanced, and stringent. Stakeholder engagement can increase the feasibility of the code-adopt measures. It can also help improve the completeness of the code and ultimately the acceptance and the acceptability of the code. And as well, engaging with stakeholders can improve implementation capacity and can help in that sense in reducing the compliance cost and time.

Countries may have different needs in stakeholder engagement, depending on where they are currently, how much understanding there is of the code today. Engagement with stakeholders can help them voice issues. And while some countries may have the greatest challenges in terms of concerns from stakeholders at the code development and adoption stages, others may find that they need to really enhance engagement at the implementation stage. And again, regular revision cycles can facilitate stakeholder participation.

I have a few references mentioned, as well, which will also be available on the website. Thank you very much for your participation.

Eric Great. Thanks, Meredydd. That was great background. Isaac, can you hear us?

Isaac Yes.

Eric Great.

Isaac Going to –

Eric Okay.

Isaac One second.

Eric All right. Looks good.

Isaac Excellent. Okay. Welcome, everyone. My name is Isaac Elnecave. I'm with the Midwestern Energy Efficiency Alliance. We are a regional energy efficiency organization located in the Midwest portion of the United States, based on Chicago.

Brief background—we are a nonprofit. We serve 13 Midwest states. You can see the map there. Its' a very heterogeneous set of states. We have number of activities. One of them is the promotion of code adoption and code implementation and enforcement across all these states.

And one of the things I want to emphasize before we get started is that particular region is extremely heterogeneous, both from a policy, political, social, democratic demographic perspective. So the first point I want to emphasize is that there is no such thing as a one-size-fits-all solution to these issues. You really have to pay attention to the on-the-ground situation in a given state in this region and effectively throughout the United States.

Oh, geez, it's not—okay. I want to first start by saying a couple of things. First of all, in the United States, the energy code process is extremely decentralized. It's broken up, as Meredydd said, into effectively three sections: energy code development, energy code adoption, and then energy code implementation of enforcement, but it is very decentralized.

But the first thing I want to kind of show is that there is a very large, very specific set of stakeholders that are involved, and they're usually involved at all levels of these three cycles, ranging from—and I put these in alphabetical

order, not in order of importance, because that shifts depending on where you are in the cycle. So you can see that you have architects, developers. The construction trades are extremely, extremely important and often overlooked, particularly HVAC.

The federal Department of Energy—and I want to emphasize this point—the Department of Energy is really a stakeholder. It is not necessarily even the driver of energy codes in the United States. It's really one entity among many. In the United States, we have what are called energy raters that do work on rating the energy efficiency of homes but have also moved into the codes process. Homebuilders, both the NAHB, which is the National Association of Home Builders, as well as the state chapter of the Home Builder Associations, are extremely important.

Manufacturers play a very, very large role, although often very specialized. And the final one I want to call out are utilities, typically investor-owned utilities, which have a large stake, generally in construction, often, within the context of new construction and above-code construction but are also involved in code compliance. So as I mentioned, there's three basic levels in the US. There's code development, and that is done by private organizations in two different organizations—the International Code Council and ASHRAE. Both process—develop both commercial and residential codes.

Once the development process, it goes to both state and local adoption. In the United States, adoption occurs either at the state level or for about eight states in the country. It's called "home rule," which means that the state does not set a statewide code but allows municipalities within the state to adopt their own, and then, there's implementation. I think the important takeaway from this is that there are stakeholder processes for all three of these levels, but they are actually quite different, and I will get to that in a second.

So for model code development, you have the International Code Council, and it develops the International Energy Conservation Code, the IECC. It is open and adversarial process that's mediated by code officials and key experts. Basically, any individual can submit an amendment to the code. Then, it is debated, and then, on a two-step process, there's a develop—a committee that makes the first determination of whether they agree with the amendment or not.

And then, there is a second process, where voting is opened up to all code officials across the United States to vote on the individual amendments. But in terms of the stakeholder process, the process really is any individual submits an amendment, and any group or individual can comment, both support and oppose.

So it's very, very formal, and as I mentioned, it's a fairly adversarial process, and that's why, in the United States, progress, in terms of code efficiency tends to be a somewhat disjointed process. Sometimes, we have very strong improvements in efficiency, and sometimes we don't. So that's the ICC.

Then, there's a second one from ASHRAE, which both includes a 90.1, which is for commercial and high-rise residential, and 90.2, as I mentioned, which is

for residential. This is different in that this is a consensus process. They bring in about—anywhere from 20 to 40 experts who debate various improvements in the code, and they make decisions through a consensus voting and a voting process to submit them as amendments. And then, it goes through a formal public comment period.

So it is certainly less adversarial in terms of its process, but there is still a fair amount of debate within experts and stakeholders about moving to the code development. And so once you have the model codes developed, then it generally goes to states in the United States to make the adoption. And in the Midwest, for example, in the 13 states, the Midwestern Energy Efficiency Alliance region, 9 states have statewide codes, and 4 have the home rule where individual municipalities adopt.

The process there is also fairly adversarial, but it is not as much a voting—but it is a smaller process, I guess, is a good way to put it, in which you usually have about 20 to 25 state experts—state and regional stakeholders around the room. And I want to emphasize—and I want to point out one thing here in the state process. States usually include what is called "enabling legislation," which says that states will consider updates every set number of years, but there's an administrative process, which is what I'm describing now, which actually makes the decisions as to how a state will update its code.

And it's important to note that in every case—I know of no exceptions—states will take the model codes that have been developed and, inevitably, amend them to suit individual state needs. And importantly, in many state processes, there is an advisory stakeholder group and what we would call a decision-making one. So there's an advisory that often does the deep discussions and the deep deliberations over different amendments, but there is a—will almost be inevitably be a voting body, which is usually a subset of these advisory committees. But again, it's almost, inevitably, a fairly adversarial process, and the formality for these stakeholders groups are based on that recognition to give people a place to have civil discussion.

So once you have those two, you then move into what I would call the post adoption or the implementation and the compliance section, and this is actually quite different. And this is where I'm going to put a little bit more focus. The reason is is that once a code is adopted, if you will, the discussion and the debate, in that sense, is over, and the debate now shifts into how to take the code and turn them into code-compliant buildings, right? A code that is not complied with makes a very effective doorstop, but usually, it's not much more than that.

Now, there are a lot of reasons why implementation and enforcement are difficult. And enforcement _____ in the United States are chronically underfunded and understaffed, and as the code gets more complex, it becomes more difficult to build it, for builders to build to build to it, and code officials to enforce it—this particularly on the commercial side. And so we face a chronic lack of expertise, so we are understaffed, and the people who are there don't really often have a full grasp of what's the requirements.

We engage in a lot of educational efforts, but they're often inadequate and poorly targeted. And one of the other problems is because of all these issues and because of traditional concerns about health and safety, energy codes are not high on responsibilities. And so therefore, again, it's one of those issues that gets a little bit less attention, and so compliance can be fairly low in a lot of places.

So taking these issues and these problems and obstacles to enforcement, MEA, along with a number of other organizations, including the Building Codes Assistance Project, have worked in a number of states to form what we call Code Compliance Collaboratives. And this is one of the nice innovations that have been developed here in the States. I point out four different states that have them. These are usually state-level committees—stakeholder committees.

Importantly, these, the Code Compliance Collaborative, as its name implies, really are designed to be both ongoing and non-adversarial. This is a consensus. It's usually going to be a consensus-based process, and really, what we're doing here is soliciting stakeholder input on what they perceive to be the problems with enforcement of the code.

So at this point, everybody takes, as a given, that a code has been adopted, whatever it is. And so now we're saying, what are the obstacles to proper implementation in enforcement? And so this is the medium, which we address those issues. These code collaboratives include all of the stakeholders I mentioned earlier, as much as possible.

We cover issues in these collaboratives, such as training, code interpretation, research, for example, in places like Nebraska. In places like Nebraska, we have engaged in funding code compliance evaluations in the state.

In places like Minnesota, we have engaged in what is called "code interpretations," where we have code officials and bring up tricky issues that code officials and builders have trouble interpreting in terms of the code because, as many people who work in energy codes know, codes are not always written in lucidly clear language. So we engage in code interpretation, and again, that's a good consensus process. And as I said, and as I mentioned, they also include research. In Nebraska, we are working on trying to figure out the connection between improved code compliance and reduction peak-electricity demand, which is an issue that utilities are very interested in.

So these collaboratives meet on usually about a quarterly basis. And one of the other things that we really work on in these co-collaboratives is to establish the importance of energy codes and really raise the awareness and the importance of energy codes to many of the stakeholders involved here, who often know about it, but often, like I said, tend to have less focus on it. These collaboratives also establish and identify leaders in the code community who would be willing to talk to others.

So you will get four or five code officials who really are interested in the energy code, and those become code champions—energy code champions, who then go to their building official associations and to individual friends

and colleagues and talk about the energy code, helping to spread kind of the awareness of the codes. And as I said, this is really, I think, a point that cannot be emphasized enough, that this process is to get to have people know each other, have home builders and advocates and utilities all in the same room, talking in a non-adversarial way, develop relationships with perhaps the hope that on the next adoption—development and adoption cycle, the process becomes less adversarial, more consensus based, which we feel would always result in better codes.

And with that, I will end. This is the MEA Codes Team. We would be happy to take any questions. And if you want to contact us directly, we are always happy and anxious to talk with you. That is the end.

Eric Great. Thank you, Isaac. That was a great rundown of a lot of the issues you're working on. Just a reminder to attendees to type in questions to the questions pane as you have them as we go along. We'll turn it over to Julia, now.

Julia Hi. Hello. Thank you very much. We want to also thank the Clean Energy Solutions Center for giving WRI Mexico this opportunity to talk about the Global Energy Efficiency Accelerator platform in Mexico, and specific, the Building Efficiency Accelerator.

Well, we, at WRI Mexico started, first, in September 23rd, during the UN Climate Week in New York. Mexico City government engaged with the Building Efficiency Accelerator Project of the United Nations Sustainable Energy for ALL because Mayor Mancera of Mexico City attended the meeting with Mr. _____, and Mayor Mancera decided to sign the agreement. So Mexico City became one of the first inaugural city, globally, to officially join the BA platform, making a commitment to work on improving building efficiency in Mexico City. That was a very big state.

Then, on March 19, 2015, we had the first Mexico City workshop. Our partners from WRI, from the Washington, D.C., they came down that Mexico City that already had signed, decided to host the BA kickoff activities. That was very important because the first activity of the Accelerator was to put together all the stakeholders that would be able to move energy efficiency in buildings in Mexico City. So we had business leaders and representative of civil society and also from the federal government, from all the ministers from the Mexico City government.

And after this big workshop that was very successful, the private sector was the first time that was involved in such a specific theme, was very excited. So we established, from them, three working groups _____ BA activity Mexico City. And working group one was in charge of codes, norms, and regulations. This working group was very, very successful because we put together the key stakeholders that should stay there.

So we had working group meetings and advisory group meeting. The advisory group was with very high-level representatives from the Ministry of Energy, from the National Commission for the Efficient Use of Energy.

So in June 5th of last year, we developed recommendations for the city government and _____ _____ to deal with barriers, implementing the Energy Efficiency Project. So in working group one what we had is the task to develop codes, so with funds from the UK, from the Prosperity Fund, we ask _____ _____ to develop the first energy conservation codes for Mexico. That was very important, and it followed the International Energy Code Council of the US.

Then, on August last year, we had a finance and retrofit working group and the stakeholders _____ meetings. We developed solutions for the financial and technical implementation of building efficiency, retrofits in Mexico City. And the minister, again, we always counted with his support of Ms. Tanya Müller, the minister of environment of Mexico City, and we had over 90 policymaker representatives there.

In September last year, we gave the specific recommendation to the Mexico City government. On October 15, Mexico City ministry said they might discuss all the recommendation we gave to them. And in Code 21, it was quite interesting because Mayor Mancera, mayor of the government of Mexico City, spoke at the first ever Building Day at COP21 in Paris.

So the new Global Alliance for Building and Construction was established, and he, Mr. Mancera, announced the plan for energy code implementation in Mexico City and stressed the importance of buildings in Mexico. That was the first time that—in Mexico City, always, the number one issue regarding energy and greenhouse gas emission with the transport sector. And now, he stress the importance of the building sector.

Last year, as I told you, we had working groups meeting, and we had, last year—I'm sorry—in March this year—the first energy conservation code for buildings in Mexico was presented and had the support of the Ministry of Energy of Mexico. You can see, there, the picture of Tanya Müller, the secretary of environment, discussing energy efficiency action and commitment during the launching of the BA initiative.

So also, in the working group one, we had the big achievement of developing the very first energy conservation codes in Mexico. And also, with the help of the Danish Energy Agency, we had the development of the first technical norm to support the regulations of Mexico City. Mexico City had regulations for the construction sector since 2007, and they didn't do anything. So they decided to have an updated regulation, and this regulation was _____ _____ _____ for more than four years.

So the very good thing this year was the publication of the updated regulation for construction in Mexico City. And also, as I mentioned, with the help of the Danish, we have complementary technical norm because the regulation of Mexico City only has it regarding energy, the lightning, and solar water heating. And however, the complementary technical norm was based on the new codes. So the technical norm has—covers all the technical norms of the goals.

And in October of this year, that was a very big step because Minister Müller had the procurement and energy audits for four public buildings. Under the BA, we have the commitment that the Mexico City government would have retrofitted buildings. So now, Minister Müller have the audits from that by the Mexico City Climate Change Forums. This is a very important action because the government was really the one who found these groups on forums from the Climate Change Forums by taking a percentage of the tax from vehicle registration in Mexico City.

The governor of Mexico raised Prosperity Fund, as I told you, to have the first energy conservation code that you can see in the screen. And it also has a guide. This is a very important because a guide was developed for all the municipalities to follow the code to be easy to follow the energy conservation code.

And the ministry that was last year, as I told you, on March 8th, this code was presented. And this code is important because it established minimum regulations for energy efficiency building using prescriptive _____ and performance-related provisions. It is founded of that broad base of principles that made possible the use of new materials and new energy efficiency _____. Governor of Mexico will keep on working with the government of Mexico on the adoption of the code at a national level.

Now, also, working with WRI—with Global WRI, we have a new action plan underway with GEA funds that is called the Deep Dive 2016-2017 and with the same working groups that were formed originally. The Deep Dive program implementation is Phase II and will go from January of this year to October 2017. _____ _____ two workshops on building retrofit and finance will be developed, and four public buildings have been already audited. The results will be ready by the middle of this month, and the challenge, now, is to have funds to have these four public Mexico City buildings retrofitted next year in 2017.

Also, we are launching the building challenge initiative, a Mexico City program supported by the National Commission for the Efficient Use of Energy. And this initiative targets public and private sector, encouraging building owners and managers to subscribe the challenge and accept to retrofit buildings of 15,000 square meters or above and achieve an energy savings of 10 percent or more in 2 years, additional scale up of activities to advance building energy code implementation in other cities.

Also, we've _____ from the Prosperity Fund of the UK. We are already engaging our cities in Mexico. For example, in the state of Jalisco, signed the MoU with the building efficiency later this year. And the municipalities of Guadalajara and Mexico will sign it this month. So we are giving training to these two municipalities for them to adapt and adopt the codes by the first semester of next year. So we already are working with the municipalities.

We think Mexico City and you know Bogotá, Colombia held a workshop to learn the Building Efficiency Accelerator in November this year, and WRI Mexico was there to show them the process and our experience for the past

year and for this year to advance in their building energy costs. So we're very happy to have activities in municipalities in Mexico and also abroad in Bogotá, Colombia.

In the absence of a strong national code or a gap between code adoption and implementation, cities can take this initiative. One option is to engage with international platforms and forums. That's for sure. Thank you very much for your attention.

Eric Great. Thank you very much. Thank you to all the presenters. That was fantastic. Very informative. We have some great questions coming in. Just a reminder, again, to enter questions into the question pane to all the attendees.

The first question kind of applies to all three of you, so feel free to jump in, and it's about, "If you could just elaborate a little bit more on how you go about identifying which stakeholders need to be in the room for different aspects of the process and how you sort of achieve a balance of different perspectives." Just sort of a general question getting at sort of what process or practical steps you can take to make sure you identify the right group.

Julia Well, if I may—I'm from WRI Mexico. I think that the Building Efficiency Accelerator put together the most important stakeholders. That was a key to have acceleration of the energy efficiency in buildings. So you have to have the private sector. You have to have the academia, all the ministries from the Mexico City government. You have to have the colleges of architects and engineers. You have to have all the people that give the license to train them and to start producing materials for the implementation and monitoring of the codes. Thank you.

Isaac This is—

Meredydd This is—go ahead, Isaac.

Isaac No. Go ahead.

Eric Isaac, if you want to go ahead and then—maybe we can go Isaac and then Meredydd.

Isaac Okay. A way of thinking about that question is that, in many ways, the stakeholders, in a sense, identify themselves. And what I mean by that is is, as you're in, for example, a development or the state adoption process, those who are interested will work very hard to insert themselves into the process because they often have a very specific interest, whether it's the home builders, whether it's suppliers, whether it's utilities. And so one of the things we notice is that, within the process, the people who are interested, from a stakeholder perspective, will show up.

That said, when we move into the kind of, as I pointed out, the non-adversarial processes, like in enforcement, you can then, at that point, have identified those people and those organizations and those industries that have been part of the process. And they will have [break in audio] certainly most likely have stated concerns about certain issues, and you can bring them in.

So for want of a better way of thinking about this, I can give you an example. As codes have progressed in the United States, the issues around the relationship between buildings and renewable energy have begun cropping up. So at the development hearings, just recently completed development hearings for the 2018 edition of the IECC, a representative from the Solar Energy Industries Association became a much more visible and active participant in the process, which then immediately points out to you and says, "Well, when we are involved in the implementation phase, we need to be talking to the solar industry because they now clearly have a stake in this."

So I would say that the key is paying attention to who shows up and who is participating in the more adversarial processes so that you can bring them in for the compliance and the codes collaboratives. That's it for me.

Meredydd Yeah and just maybe briefly adding on to that, we've seen in some countries where code implementation is fairly new, where the stakeholders may not—the private-sector stakeholders, in particular, but it could be across board, may not have a great idea of what it is that they need to be thinking about, what their position may be. And it can be pretty interesting. It creates some interesting opportunities to engage people and educate and to make progress on the code.

At the same time, it is important, I think, to—to give one specific example, in Vietnam, we've been working on their code and also on their standards for testing windows. When they went out for stakeholder feedback on the windows, they found that they did not get a tremendous amount of feedback, not because they don't have windows, but because most of the manufacturers really don't understand the process yet.

And so I think they're looking at trying to better engage those stakeholders so that they understand, and they do have a stake in the process and also to facilitate implementation. That's just one example. But figuring out who the important may be and making sure that eventually they learn what the important pieces of the code may be and what they may mean to them as they go forward with implementation. Thanks.

Eric Great. Thank you very much for those responses. The next question is maybe more Meredydd and Julia. And the attendee asked, "Which aspects of building energy efficiency codes would be good to focus on initially for countries that are starting from the early stages. Is it practical to consider all the parameter, or are there aspects that are more important to focus on in the early-going than others?"

Meredydd So I would argue it depends on your situation in the country. Obviously, in hot climates and in tropical climates, you may have somewhat different measures that are going to be the most important from an energy perspective, but there may also be a different way to go about it. Rather than starting with a scaled back code, it may make sense to start implementation in a scaled back set of buildings and build capacity in, say, government buildings, first, or in very large buildings to begin with or in buildings where the government

is already providing financing. So I've seen those types of examples happen in many countries that are just beginning with code development.

I think the challenge with having a really scaled-back code is figuring out what the most important measures are—can be difficult if you don't have a lot of information already on your buildings. And countries that don't have a code tend to have limited information on their buildings, and it can be just a very large process to develop a code from scratch with a small set of measures. So I think making sure that you're creating a process that is clear to people, and over time, you can easily expand it as your capacity to implement grows I think are some important things to consider. Thanks.

Julia Well, for Mexico, the energy conservation code that was based on the International Energy Code Council, it takes into consideration the climate, the different climates in Mexico. The northern part of the border with the US, it is very hot climate in Mexicali, and it is good to show the authorities that if they comply with the code, the electricity bills will go down and the subsidies could be reduced dramatically. So Mexico has several different climate zones. So it depends on the zone, how you would go about addressing all the stakeholders for complying with the code. Thank you.

Isaac Eric, can I add just one brief point?

Eric Of course.

Isaac One of the things that I would think about is that to have a good code and have a good implemented code, you need a very good infrastructure behind that code in terms of an educated workforce and an industry and an industry that can manufacture and provide the materials and the expertise. So as you're thinking about developing a code, you have to think about local infrastructure and its ability to do so and understand that that development of that infrastructure goes kind of in tandem with the development of code.

Sometimes, you develop a code, and then, the industry kind of builds around it. And in other cases, you have a fairly good industry. You have a fairly mature industry, and then, you can start your code around that industry and then build out from there. Otherwise, again, you have a code that doesn't get properly implemented. That's it.

Eric Great. Yeah, thank you for that. The next question's actually for you, Isaac, if you could, on the US front, talk a bit more about US states' tendency to amend the national model codes and how common that is and how extensive.

Isaac That's really broad.

Eric Yeah, but the attendee knows that it definitely varies across places, of course.

Isaac The short answer is that I have never been involved in a—well, there's always two sides to this. There's the residential adoption, and then, there's the commercial adoption. In the commercial realm, the model code generally gets adopted most very often without any or very, very, very minor changes

usually to syntax or wording changes. Commercial codes tend to go fairly smoothly, even in states that have somewhat of an antiregulatory bent.

However, the residential code is not—I can't remember any process I've been in within the last five years—and I've been in certainly more than about a dozen—where there hasn't been some significant amendments to the code—usually, not always, but usually, in terms of making it somewhat less stringent than the model code. A lot of that process, to give some examples, often, those processes are tied to a non-mature industry. For example, as we have been adopting codes that require people to use diagnostic equipment, such as blower door or Duct Blaster equipment, states have been hesitant to require that because there are a lack of qualified technicians.

Other aspects relates to building practices. My personal favorite is we try to, as we require more significant insulation requirements in the walls, if it requires a change in the way you build, for example, going from two-by-six walls—excuse me—going from two-by-four to two-by-six walls, there is always a fair amount of pushback on that. And often, amendments are made to put the requirements back to the less stringent level.

So those are kind of the two issues. You have a change with building practices significantly, or if there is an inadequate industry or technical ability around it, you will have states ending the model code. And it happens on the residential side in pretty much every case. Does that answer your question?

Eric

Yeah, great. Thank you. That's perfect. The next question was directed to Isaac, but Meredydd and Julie may want to also comment. Isaac, you mentioned that, several times, sort of different aspects of the process being fairly adversarial. The question is, "Is there sort of best practices of managing those sessions and conversations and driving them towards conclusion and maintaining buy-in for the result?" Sort of general ideas or practical steps, again, there to take to manage those tough conversations.

Isaac

Yes and I mean, first of all, I think it's very important to have a very—and in those situations, you need kind of a—it's a two—I would say a two- or three-tiered level in that you do need a very formal structure to make sure that everybody's voice gets heard. And that's a big—that's a big, big requirement. There are a lot of voices, and there's usually a fair amount—you have, within the structure, and if you consider it adversarial, even if it is, there is both very stark differences. And then, there is also nuanced differences between this, and so you need to have a structure that allows everybody's voice to come in.

The development process is, unfortunately—tends to be an either/or process. You put in an amendment, and it either gets voted up or down. There is a way of amending the requirements, but it can get awfully, awfully complex. So by the formal process allowing all voices, it gives participants the ability to have, for want of a better word, side conversations to kind of see if they can find common ground. And I can tell you there was a great, great example of this in the last round, where there's been a lot of discussion about, "How do we include renewable energy within energy efficiency code?"

And there a lot of different players here. There's the renewable industry. There are homebuilders. There are insulation manufacturers and there the like. And as people's positions became clearer and clearer, there were discussions—side discussions—that allowed people to come to a consensus kind of outside the formal process, but the formal process, once the consensus came in, the formal process allowed that consensus to become part of the amendments.

So I think that's the other part. You need to have a process that allows consensus to develop and then be implemented within the code. That tends to happen a lot more in the state adoption process, where it's a smaller group, where it's a group of people who know each other. These states tend to be fairly small. There's not a huge number of people who are really, really deeply involved in this, and so that's another way of doing it, and an important way of doing it is to be able to allow creative solutions that come from, if you will, side discussions, to be implemented within the formal process. Sorry—longwinded answer.

Eric No, that was great. Thank you. Julia or Meredydd, do you have anything to add for the process for tougher conversations?

Meredydd No, I think Isaac did [break in audio].

Julia Hello?

Eric Yes.

Julia Yes, for Mexico, it is very important to have the political support, and also, _____ with the former speakers that you have to listen to everybody, to all the voices, to be able to try to make a case and to convene the best ideas to get the support for going forward. Thank you.

Eric Thank you very much. The next question is for Julia, and the participant asks, "What tools will be used going forward to show energy efficiency in buildings, such as LEED, in Mexico?"

Julia I'm sorry—such as what?

Eric LEED certification. That's an example.

Julia Oh, right.

Eric [Inaudible].

Julia Right. We have several kinds of certifications—LEED, BREEAM, and already some of the most important buildings in Mexico have the LEED Platinum, and the Mayor Mancera have the LEED Silver. So we hope to—this year—to have them retrofitted buildings of Mexico City that have been already audited and to ask them if the LEED process to certify them.

Eric Great. Thank you. The next question is about peer learning that came up in a few of the conversations and sort of what aspects of the process is developing

and implementing codes that yield themselves to peer learning opportunities across cities, states, regions, and nations, and the best way to go about that.

Isaac Okay. I'll give a brief answer to that. From my perspective, the best place for the peer learning and education really, really occurs at the implementation and the compliance stage. The codes collaboratives that I mentioned are a really great opportunity for that. We will bring the speakers who will deep dive into specific issues.

But because we have a fair amount of expertise in these collaboratives, they can bring a fair amount of experience and knowledge to others. And also, because it's a fairly diverse group, perspectives are brought in that I aren't universally shared. I mean a utility has got one perspective. A home builder and a _____ code official have other perspectives, and these kind of perspectives within a, like I said, a collaborative—in our code collaboratives and our kind consensus features allow everybody to really get a more holistic vision of what the process is about. And like I said, this has often led to less adversarial issues on the next adoption rounds.

Eric Julia, I don't know if you have anything you'd like to add from the Mexico perspective on peer learning.

Julia I just I think this is quite important, the peer learning, and we are producing materials. The Danish Energy Agency is producing materials for all kinds of stakeholders, for architects, engineers, director of works. I think we are in a very early stage, but the experience of the previous speakers are quite important for WRI Mexico. Thank you.

Eric All right. Thank you very much. The next question is specific to utilities and sort of what role did utility—electric utility does or should play throughout the process and what role they might have in ensuring commercial customers, consumers, for example, are adhering to codes?

Isaac The utility role is fairly multifaceted, but I want to emphasize a couple of points that are kind of implied in that question. In all my discussions with utilities, and we've dealt with many of the utilities in the Midwest and Northeast. Utilities, first and foremost, from a consumer perspective, do not view themselves as code enforcement agents. And they will make that point to you. They will make that point continually and usually very vehemently.

That said, some of the roles that utilities play is they have many utilities as part of their—efficiency programs have what are called "new construction programs" or "above code programs," in which they fund and provide technical assistance for those commercial buildings that want to go beyond code and really strive for high-efficiency buildings. And what that really does is that provides a learning platform for code work. In other words, it lets us know what's possible, what's cost effective, what works, what does not work. And that's a level of expertise that utility and utility efficiency building managers have that really plays into the code.

The other place where they really have a real significant role to play is in funding code compliance—basically code enforcement, not being the code

enforcement but funding those efforts to do things, such as do—fund significant training opportunities, to provide training venues, to provide the utility expertise in teaching people how to build to code and above code, if you will, and also to provide funding to develop, if you will, a cadre of enforcements. Usually, we call those "third-party enforcements and enforcers," who work kind of concomitantly or side by side building code officials and provide extra boots on the ground in terms of plan review and field inspection.

And utilities can be very important players in funding those kinds of processes. I will add with the caveat that they usually do so with the hope that they will receive credit towards the energy efficiency program goals, but those are some of the ways that utilities can play a role.

Julia For Mexico, having the codes since March this year and going to the municipalities and having, then, Mexico City doing the audits of the buildings and going through the retrofits, the thing is that, as I mentioned to you, they are not code enforcement agents. But we have to go to the utility companies and show them how they will save a lot of money by reducing the subsidy they give to the northern states for air-conditioning.

So that would be quite important to show them that the reduction of the subsidies and the reduction of the electricity consumptions and of the greenhouse gases emissions because Mexico has a NDC to comply and to show increased ambition in four years. So it's going to be really a big task, but it's a win-win situation for the utility company. Thank you.

Eric Great. Thank you very much. There's questions about compliance, and if one of you could comment on the cost of compliance to codes and how compliance is best handled when talking to various stakeholders throughout the process.

Julia Yeah, we know this is a big issue, the extra cost, and it's also a very big task to talk to the builders, to the companies, and show them the enormous benefits, the code benefits, health benefits, social benefits, of following the codes. But it is an issue for Mexico.

Meredydd I think it can be very difficult in many countries, where a code is new, to understand what the cost of compliance may be. Because if, for example, you are in a country that really has not had a history of installing high-efficiency windows and the market is quite limited, and green building developers may import that equipment, obviously, that's going to be really expensive. And so if you assume that those are going to be your costs going forward, it can be a very challenging conversation with stakeholders.

But that said, as implementation grows, the cost of compliance tends to drop radically, and I think it is important to have clear information that looks at a range of possible costs as supplies do increase. And just engage with stakeholders because, oftentimes, stakeholders really have no idea, and they may assume that costs are much, much higher than they are, in fact, if they actually look at the options they have for compliance. Thanks.

Isaac I think a good way to think about this is to break this question out into kind of two pieces. And I think Meredydd really answered the first one well, which is there's often going to be an incremental cost to a new code or to—and putting a new code in place from more stringent requirements—more stringent requirements, new processes, and all that. And that's a cost of compliance, but I think another cost you have to pay attention to is the actual work that code officials and other have to do when you move into the cost of compliance.

In other words, as the code becomes more complex, educational requirements for learning the code increase. The amount of time you have to spend reviewing and inspecting may also increase, and those costs do have to be taken into account because, again, municipal code enforcement agencies tend to be very, very caught—funding constraint.

And those are questions that we've been working on and trying to—and we've been working through our code collaboratives to address those questions, which is, again, why I think the issues _____ around code interpretation, broadly speaking, so that code officials have a consistent way of answering questions and looking at issues. And the development of third-party compliance people come into play because these kind of solutions that we discuss and work through in the collaboratives help reduce the cost of actually boots-on-the-ground enforcement of the code. Thank you.

Eric Great. Thank you very much. As we're getting sort of near the end here, I want to remind you, the attendees that, for any questions we didn't get a chance to get to, we'll be connecting offline. And at this point, I'd like to turn back to the panelists for any closing remarks you may have, and we'll go in the order that you presented, if that's all right. So we'll start with Meredydd.

Meredydd Hi. I'd like to just thank, again, the participants in the webinar, as well as the co-panelists and the Clean Energy Solutions Center for their work and to recognize the role that the US Department of Energy has had in supporting IPEEC, as well. Obviously, stakeholder engagement is a really important component of ensuring that code implementation goes well, and we'd welcome your feedback as you go forward. If you have questions, feel free to share them with the Clean Energy Solutions Center, and they can get them to us, and thank you.

Isaac My final comment is just to—want to restate it's really, really important to make sure that all voices are heard. There is a lot of different perspectives often where we think that there is disagreement, there is actual major points of agreement and common ground that can be built upon. And it's really important to use these stakeholder processes to develop relationships and for people to get to know each other outside of even formal processes so that productive conversations can occur. Thank you.

Julia And from my point of view, I think it's, again, very important to listen all the voices and for—to have a brand-new energy conservation code for buildings. We need to go to reach the public. We need public awareness, a lot of public awareness, a lot of educational materials for all kinds of stakeholders, and also, it's quite important at the municipal level to have the political support.

Thank you. And thank you because I learned a lot from the two participants. Thank you.

Eric

Great. Thank you all very much Those are fantastic presentations and a very informative Q&A. The survey that I mentioned will pop up at the conclusion of the webinar, so I think the attendees in advance for just taking a moment to answer those five questions that should pop up when the webinar concludes.

So on behalf of the Clean Energy Solutions Center, I'd like to extend a thank-you to all of our expert panelists and, again, to our attendees for participating today. It was a great audience, and we really appreciate your time.

I invite our attendees to check the Solutions Center website if you would like to view the slides and listen to a recording of today's presentation, as well as other previously held webinars. Additionally, you'll find information on our upcoming webinars and other training events, and we are now posting webinar recordings to the Clean Energy Solutions Center YouTube channel, but please allow about one week for the audio recording to be posted.

We also invite you to inform your colleagues and those in your networks about Solutions Center resources and services, including the no-cost policy support. Have a great rest of your day. And we hope to see you again at a future Clean Energy Solutions Center [break in audio]. This concludes our webinar.