

**Kathryn Conway** Programme Officer, UNEP en.lighten initiative

**Gustau Mañez Gomis** en.lighten Project Manager, UNEP Division of Technology, Industry, and Energy (France)

Vickie Healey: Hello everyone, I'm Vicki Healey with the National Renewable Energy Laboratory, and I'd like to welcome you to today's webinar hosted by the Clean Energy Solutions Center. Our discussions today are going to be focused on the en.lighten initiative and the efficient lighting toolkit, as well as our panelist will be providing some examples of best practices and policy development or quality control mechanisms and environmental sustainability issues. We're really fortunate today to have a great panel representing the United Nations Environment Program presenting on this initiative. So, we're looking forward to their presentation.

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Before we begin, just one important note that I need to mention is regarding the Clean Energy Solutions Center disclaimer, which is that the Clean Energy Solutions Center does not endorse or recommend specific products or services. Information that is provided in this webinar is featured in the Solutions Center's resource library as one of many valuable best practices resources that have been reviewed and selected by technical experts.

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Before we begin, I'm just going to quickly go over some of the webinar features for you. We'll start with the audio features. Basically, you have two options for listening; and you can either listen through your computer or over your telephone. If you choose to listen through your computer, please select the "mic and speakers" function on the audio pane on the right hand side of your screen; and by doing that, it will eliminate the possibility of feedback and echo and any additional background noise. If you select the telephone option, you can also do so by clicking the telephone option, which is also located in a box to the right side of your computer this way; and the telephone number and audio PIN that you should use to dial in will be displayed there. We ask that you please mute your audio devices before the presentations begin; and if you're having any technical difficulties with the webinar, you may contact the

GoToWebinars Help Desk and that phone number is (888) 259-3826, and they will be happy to assist you.

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So we — after we welcome you to introduce yourself and you may do so by typing into the "chat" pane which is located also on the right hand of your screen, and Heather if you're on the line, if you could demonstrate that function that would be great, just a peek to see how it works. And if you'd like to ask the question, we ask that you use the "question" pane where you may type in your question. And if you're having difficulty viewing the material, through the webinar portal you'll find the PDF copy of this presentation at [cleanenergysolutions.org/training](http://cleanenergysolutions.org/training) and you can go there and find the PDF and follow along with our speaker's presentation. Also, I'd look to advise you that an audio recording and the presentation will be posted to the solution center training page in the form — within the next few weeks.

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So we have a really terrific agenda prepared for you today that is focused on the importance of efficient lighting. Kathryn Conway and Gustavo Mañez Gomis of the United Nations Environment Program are going to provide information on the en.lighten issue and the efficient lighting toolkit and highlight again examples of best practices and policy development quality control mechanism and environmental sustainability issue. Before our speakers begin their presentation, I will provide a short, informative overview of the Clean Energy Solutions Center initiative; and then following the presentation, we'll have question and answer session and then after the end we'll wrap up the discussion and — and a closing remarks from our panelist.

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So okay, this slide provides a bit of a background basically in terms of how the Solutions Center came to be. The Solution Center is an initiative of the Clean Energy Ministerial and is supported through a partnership with UN energy. It was launched in April of 2011 and is primarily led by Australia, the United States, and other CEM partners; and outcome of this unique partnership includes support of developing country through enhancement of resources on policies relating to energy access; we also have no cost expert policy assistance that is available; and we peer to peer learning and training tools such as the webinar you are attending today.

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The Solutions Center, we have four primary goals. We serve as a clearinghouse of clean energy policy resources. We also [indiscernible]

[0:05:11] to share policy best practices, data, and analysis tools specific to clean energy policies and program. 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 appearing around the globe. So our primary audience through the Solutions Center is energy policy makers and analysts from government and technical organizations in all countries but we also tried to engage with the private sector, NGOs, and with civil society.

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A marquee feature with the Solutions Center that I want to let all of you know about is that we provide expert policy assistance, and we try the Ask an Expert, which is really and truly a valuable service offered through the Solutions Center. What we've done is we've established a broad team of over 30 experts from around the globe who are available to provide remote policy advice and analysis to all countries, and this service is available at no cost; and I'm pleased to inform you that Gustavo Mañez Mañez, who is one of our panelist today is a project manager for the en.lighten initiative is our expert on efficient lighting policy. So we're excited to have Gustavo Mañez presenting today, as he is one of our policy experts. So if you have a need for policy assistance on efficient lighting or any other clean energy factors, we welcome and encourage you to please use this useful service; and again, this service is provided free of charge. To request assistance, it's very simple. You may submit your request by registering through our Ask an Expert feature at [cleanenergysolutions.org/expert](https://cleanenergysolutions.org/expert) and submit your questions; and then we also invite you to spread the word about this service to those in your network and organization; and just to cover some of the broadcasters that are expert to provide assistance on include energy access, energy efficiency, renewable energy, smart grid, micro grid, clean transportation, and regulations in utilities.

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So, if you're interested in how you can get involve, we encourage you to explore and take advantage of the Solutions Center resources on our website and services including the expert policy assistance that I just mentioned. You can also subscribe to our newsletter and continue to participate in webinars, which we provide frequently. We also encourage you to read and comment on blogs that we have and they are located on our policy forum page; and on our policy forum page, you will find many interesting and informative articles discussing progress of clean energy policy development and implementation of trying around the world. So, we also follow similar articles hosted by our partners at the Renewable and Energy Efficiency Partnership, Leonardo Energy, and we also provide a link of repeat podcast that have been developed by Bloomberg New

Energy synapse. So there are just lots of great information on that policy forum page.

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Now, I'd like to just provide brief introductions of our distinguished panelist and I'm pleased to introduce Gustavo Mañez Gomis who is Project Manager for the en.lighten initiative at the Division of Technology, Industry, and Economics at UNEP. Gustavo Mañez has been responsible for the United Nations Environment Programme/Global Environment Facility (UNEP/GEF) en.lighten initiative, a public/private partnership, working in close contact with governments and private sector partners to promote the global transition to energy-efficient lighting, primarily with the phase-out of incandescent lamps, by 2016. He has experience in policy related aspects of a wide range of environmental subjects including climate change issues, chemicals and waste management and governance. Previously, Gustavo Mañez was the climate change focal point for UNEP in Europe in Geneva, working in Geneva and worked at the UN Institute for Training and Research (UNITAR).

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And we're also joined by Kathryn Conway who is the Programme Officer in the Division of Technology, Industry and Economics, of the United Nations Environment Programme, based in Paris. Kathryn provides technical support to the UNEP/GEF en.lighten initiative and she is an expert in energy efficient lighting technologies and energy policy. Previously, she was a professor and a consultant and Kathryn has more than two decades of experience in global lighting market transformation efforts.

And with that after these nice introductions, I'd like to turn the webinar proceedings over to Gustavo Mañez who'll be our first panelist today. Gustavo Mañez, welcome.

Gustavo Mañez: Hello Vickie, thank you very much and thanks to all for making there. Good morning, good afternoon, and good evening because you're following us from different parts of the world. So welcome to — to this presentation; and I would like to present to you the UNEP en.lighten initiative, which is a unique effort of the United Nations including private sector organizations to promote efficient lighting globally.

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Now the way that we're going to do this webinar is that in the first part, I would present en.lighten in general terms and its components; and in the second part, my colleague, Kathryn, would present one of the key deliverables of en.lighten which is the global transition to energy efficient

lighting toolkit, a guidance document that assist countries to undertake national or regional transitions to efficient lighting.

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Now, the background of efficient lighting is clear. I mean, most of you are coming from government, coming from private sector organizations, coming from consultancies and expert groups, you know that lighting is a key solution to mitigate climate change and reduce energy consumption globally. The International Energy Agency calculates that lighting accounts for close to 19% of global electricity consumption. In our world of calculations, that that means around 6% of GHG emissions globally. The electricity that lighting generates from — from use of fossil fuels is to increase a greenhouse gas emission that accelerates climate change. Now, there is a contrasting opportunity to decrease electricity demand and therefore to have less power plants needed in order to generate the same electricity with better and more efficient lighting practice. The impact that could have on countries' competitiveness by reducing the imports of energy, by releasing funds dedicated to produce electricity for other national priorities such as infrastructure, health, and education are really, really important. Now, we also find that in the current national situation, electrical supply in many countries can't be reliably met. We see the situation in Asia, South Asia, India; two or three months ago, we saw a power outlet change with approximately 300,000,000 citizens not having access to electricity. These power outages diminish a country's productivity and wreak havoc on economies — delaying the economic development of countries but there is a solution. We know lighting is a key priority in order to reduce this electricity consumption. There are already many examples in many economies worldwide of taking aggressive strategies for to increase the efficiency of their lighting base. This has been achieved through many appliance efficiency programs. So there are many good lessons learned out there, and the good news is that in many countries, there's no need to bring them the new.

Next one, please. Now, let's look at how the global map in terms of phase of regulation for inefficient incandescent lamps looks as of today. We see marked in red the countries that have already taken or that planned to take or have at last did plan to take regulatory transitions towards efficient lighting. Some of these countries have started a few years ago. Cuba started in 2005; Australia in 2007. Other countries which are not yet red have not started yet but have announced they will start soon like Canada, which will start in 2014. Other countries have not phased out all incandescent lamps but only have started to phase out a part of them where is — in Russia which has started to phase out 100-watt incandescent lamps but the completion is definitely going to a global transition and more and more countries are all coinciding in this solution.

Let's phase out inefficient incandescent lamps as the first start — step in this transition.

Now, that takes us to the lighting initiative; why are we here? So we're exactly here to accelerate the global transition to environmentally sustainable lighting, we see it's happening already but in many countries, it's not taking place. We're here to provide expert support and guidance for countries to undertake their own transformation programs; and I've mention before that there is many practices and good examples out there on the basis of which we can make recommendations. So we're here basically to be a catalyst to accelerate this global transition. We function as a global center of excellence. We have brought out around 30 organizations including: governments, private sector buddies, including research institution of more than 30 countries, and the idea is basically that these organizations will assist countries through permission expertise and guidance. A new thing formalizing is that with our public-private partnership. They together with leading lighting manufacturers like Philips Lighting and Osram as well as the National Lighting Test Center, well-funded by the Global Environment Facility.

Next one, please. In this slide you will see some of the organizations that are members of our task forces [indiscernible] [0:16:24] World Commission on Lighting which started — kicked off a couple of years ago trying to analyze and provide their experience and struggles too. They've now reach on how they did undertake their transition, more best practices they could take out of it.

Next one, please. And as part of this global dialogue with all these previous organizations which we've seen before, one of the recommendations in order to accelerate this transition towards energy efficient lighting was to come up with a global target; and that global target which all our customers, experts, and member countries recommended was that by 2016, all countries around the world should have phased-out inefficient incandescent lamps or have strategies in place or minimum energy performance standards in place to phase-out inefficient incandescent lamps within an identified timeframe.

Next one, please. Now, the mechanism that in a lengthy process was suggested to assist the countries which have not yet taken action to phase out was the global partnership program; and in this, the brightest, a versatile, and dynamic forum whereby countries can join. This is a voluntary initiative. It's open to all developing and emerging economies and whereby then we'll see if they can advise and support as well as the development of targeted research studies, etc. to assist them to develop what we call national or regional efficient lighting strategies that would accelerate the use of efficient lighting and phase-out inefficient incandescent lamps. There are so far 46 country partners that have joined

in lighting global partnership program as of today. We expect more countries to come on board soon, and we are working with these countries in two different manners and I would explain that in the next slide.

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Now, you will see there the names of the countries that have joined the partnership program. On top, you see the countries which have been selected out of the 46 to develop national or regional efficient lighting strategies starting this year, 2012 and finishing in October 2013 and they are Chile, the Central American region including 8 countries — all Latin America, and Uruguay; within Middle East/ North Africa region, we have Jordan, Morocco, and Tunisia; and from Asia, we have Philippines. The rest of the countries including Bolivia, Paraguay, other countries in Africa from the West African region, and other countries in Asia including Indonesia, Pakistan, Thailand, and Tonga are also participating with this framework but they've received less intense support from unlike the first set of countries, the ones developing lighting — efficient lighting strategies who receive direct support. We support them, both technically through experts as well as visiting financial support on the development of strategies which will effectively phased-out inefficient incandescent lamps by 2016 using an integrated policy approach. It is note — noteworthy to consider that there were — the ECOWAS region that is the West African region, we are working together with the great community of West African States as well as see force development — development of a regional efficient lighting strategy or 15-country members of ECOWAS.

Next one, please. Now, I've been mentioning the integrated policy approach. What does that mean? In our discussions in the lighting process for the last couple of years, the regulators that were present, the lighting experts, private sector members, they all came to the conclusion that the most successful approach to ensure success - a permanent, a sustainable, and a globally accepted transition towards energy efficient lighting is by developing a common strategy within the given country or perhaps within a region with a common vision in terms of what are our goals for climate change, what are our goals for energy efficiency, what do we say in terms of efficiency, etc. and this strategy should address four key components that can ensure success. Now, these four key components include, development of minimum energy performance standards; as you know minimum energy performance standards are regulatory measures which specify minimum efficiency levels acceptable for products within a particular country or region; defining what products can be marketed and which ones should be eliminated. Now, that is the cornerstone of our efficient lighting strategy. As a second measure, we have supporting policies and supporting policies can be a wide range of mechanisms that will be chosen according to the country conditions and circumstances. They can include for instance regulatory and control mechanisms as well

as economic and market based instruments, incentives, voluntary participation initiatives, physical instruments, as well as information campaigns, public communication awareness raising campaigns, etc. These would also include actually energy performance rate. The third component is what we call monitoring, verification, and enforcement; and this is a really key element in order to ensure the overall success of our transition strategy because that will depend very much on a well-functioning system of compliance in order to ensure that the enforcement of the minimum energy performance standards; unless effective and timely market surveillance systems are enforced, substandard products will continue to enter national markets in increasing numbers therefore reducing energy and financial savings. Poor quality products are also responsible of creating a bad perception on efficient lighting products from consumers, from end users and that can bring us at — at risk that can put market-costumer initiatives at risk. Therefore any activities are highly important. And the last component also equally important is the environmentally sound management of lighting programs. Now, we all know that inefficient lighting alternative contained mercury, some of them, the compact fluorescent lamps, but also other toxic products. It is very important to ensure maximum allowable limits of mercury within an amp as well as to create systems to collect and recycle used lamps. So this component is very important in order to increase public acceptance and to decrease fears of — of — on efficient lighting products. So, all these four elements should come together into an integrated approach much like a seamless government in order to ensure the success of our transition strategy.

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Now, we mentioned some of the en.lighten tools and resources that we have developed during the last couple of years. I mentioned before that we have a network of lighting experts from governments, from private sectors, from [indiscernible] [0:24:45] institutions which are ready to provide knowledge, know how, and their hands on experience on how to deliver the transformation towards an efficient lighting. We have also what we call the country lighting assessments; I will — I will explain that to you in the next slide. The Global Efficient Lighting Centre (GELC), which I will also explain. A global policy map including the status as of today of the readiness of countries to adapt this transition to energy efficient lighting. We also have a new tool which we're just creating these days which is called "en.lightenedlearning" or something linear to the Clean Energy Solutions Center that our colleagues have put together in which we are talking today in order to provide remote support to countries specifically on lighting. And another tool is the efficient lighting toolkit, which my colleague Kathryn will introduce to you following my presentation.



Next one, please. Another remnant resource for countries is the MEPS Scenario Modeling tool which we have just finalized and which assist countries to calculate the energy, the financial, and carbon-related emissions over a range of MEPS that countries could choose or could select from existing MEPS or could come up with their own values as well as calculate the timelines that a country transition would choose. So that would be a very practical tool in order to calculate, well, what happens if I put in place MEPS as of tomorrow, what would be the accurate savings for my country within the next few years; and according to the type of MEPS that the country chooses and according to the — to the timeline that the country wants to use it up. We're also preparing the organization of the global efficient lighting policy dialogue which will take place next year, May 2013, in order to discuss policy issues related to the emergence of LEDs. Now, you're all aware of the revolution that the lighting emitting diodes is bringing in the lighting world and it is enhancing our efficiency and provide a number of additional settings previous technology stick and compounded with letting the controls. They could provide exceptional settings and help us reduce electricity related learning. It is very exciting to know that a country like Japan has announced that by 2020, they will [indiscernible] [0:27:30] directly to only LEDs, right. So they will only be using LEDs as their only light source; and a large distributor [indiscernible] [0:27:42] such as IKEA has also announced that by 2016, they will only sell LEDs in their shops. So this is a major move to see that there is a whole excitement of the transition towards LEDs; and in this conference, in this Global Efficient Lighting Policy dialogue, we would like to discuss the implications of this procedure but also what enabling policies are out there, nationally, regionally, and globally to facilitate this transition and how could countries mobilize additional financial resources to accelerate the transition to LEDs.

Next one, please. I've mentioned before the Country Lighting Assessment that's one of the key deliverables of en.lighten, we have developed estimates to 130 countries within the residential, the commercial and industrial, and the other lighting center of the benefits of moving from inefficient, from obsolete technologies towards their replacement — their efficient replacements. Now, the global calculations of this Country Lighting Assessments amount to a savings of approximately 5% of global electricity consumption by moving towards energy efficient lighting across sectors. Now, that would mean around 110 billion US dollars in reduced electricity bills and 490 million tons of CO2 savings per years, which is the equivalent of around 122 million mid-size cars. That would imply that around 250 large coal-fired power plants become redundant and that 210 billion dollars could be avoided in electricity, in energy investment.

Next one, please. One key component of the support that we are providing to countries is the Global Efficient Lighting Center, which is a UNEP

collaborating center based in Beijing in China that provides lighting testing, training, advise, quality control and capacity building to countries. We would assist countries to set up their own national or regional laboratories. It will enhance the systems of procedures for quality control capabilities at the country level. And it's populated by a recognized team of lighting specialist. So we are already starting the support of the GLC in some of our pilot countries. Next one, please.

This is one of the examples of one of the country lighting assessments I've mentioned before and I've mentioned that we have 138 countries or all countries, well, actually two-thirds of the countries of the world. You can see here how the country lighting assessment is structured. You will see on the top of the financial savings annually of the transition, the payback period. Below you see the electricity savings. So for the case of Chile we see that an overall transition to efficient lighting would save almost five percent of national annual electricity consumption. And below that you will see the CO<sub>2</sub> savings. So, the overall transition in that country would save one on two million tons of CO<sub>2</sub> emissions. You will also see the Mercury that could be avoided into the environment by having energy efficient lighting solutions. So instead of burning coal which would emit Mercury to the environment, these energy efficient lighting solutions would save 77 kilos of Mercury each year. Next one please.

Another key tool that we have developed is the interactive policy map, which provides an overview of efficient lighting readiness in countries. So it looks at the four elements of the integrated approach which I mentioned before. And it ranks countries according to progress. Now, this allow us to benchmark countries and to be able to see the progress as they are developing legislation and standards in order to move forward in this transition. We are updating this map every quarter. Next one please.

Another key element of our support to countries is enlighten learning. This online center through which we engage countries through which we share the expertise to our lighting experts on every aspect on integrated approach. So one session of the enlighten learning will deal about how to set up management verification and important systems within the country and we will bring experts on that topic. Another one, to deal with how to set up collection on site and scheme, one what are the best practices, what makes this legislation exist out there et cetera.

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That's it. Thank you very much and I look forward to your questions.

Vickie Healey

Thank you Gustavo Mañez. Thank you so much for that excellent presentation. I do have a couple of questions for you right now. I'll start

with the [indiscernible] [0:33:24] and which is how can my country join the enlighten initiative?

Gustavo Mañez Thank you very much Vicky. So, we have mentioned that 46 countries have joined so far the enlighten initiative and the process to that is by completing a form that we have, that can be downloaded from our website. And in that form, we request a high-level support to join the partnership. So that would mean that either the minister of environment or the minister of energy or best case scenario would be both ministers together sign for the country to join this global partnership. And there is no financial commitment. There is no mandatory requirements from enlighten to the country that joins the global partnership program.

Vickie Healey Okay. Thank you. That form is located on the website. [indiscernible] [0:34:28]?

Gustavo Mañez You can download it from our website, which you can see in this slide that I'm showing right now.

Vickie Healey Okay then. Good. Thank you so much. And other question, well, hopefully before we move on to Catherine's slides. Is facing out incandescent lamps really make a difference to global climate change?

Gustavo Mañez Thank you. Thank you, Vicky. Yes, the phase out of inefficient incandescent lamps can really make a difference to global climate change. We have calculated out of our power country lighting assessments that approximately half of the overall savings that can be achieved from the transition of inefficient lighting technologies to efficient lighting technologies. Half of these savings are made by just facing out incandescent lamps. So this is a huge amount of money and huge amount of reduce CO<sub>2</sub> emissions into the environment.

Vickie Healey Thank you. And actually two more questions just came in from our audience and the first one is, do you have any information on why Ethiopia, is not in the partner countries list?

Gustavo Mañez Sorry Vicky, could you please repeat your question.

Vickie Healey Oh sure. I'm sorry. Do you have any information on why Ethiopia is not in the partner countries list?

Gustavo Mañez Ethiopia is a partner country to the enlighten initiative. So it must have been a mistake if we have not put it on the table, that table must be outdated. But I can tell you that Ethiopia is partner of enlighten.

Vickie Healey Oh okay. Great. And then one final question and we'll move on to Catherine [indiscernible] [0:36:36]. How do you take into account the

rebound effect? People aren't installing more lamps, only municipalities are installing unnecessary streetlights causes these wide consumptions.

Gustavo Mañez Thank you. Thank you very much.

Vickie Healey Okay, sure.

Gustavo Mañez Thank you. This is an extraordinarily important question. And in the framework of our dialogue with the various enlighten task forces, this was debated by lighting experts. And one of the issues that we would like to study in the coming months is exploring the possible impacts down the line of the rebound effect. We are aware that as efficient technologies get deployed, there may be an increase in the use of more forms of light. That could have an impact in terms of electricity consumption. We have not verified specifically what the phased out the in efficient incandescent lamps would mean in this sense. But this is an area that we will be researching in the coming months.

Vickie Healey: Okay. Thank you again. And so with that I think we'll turn the next presentation to Catherine Connelly [phonetic] [0:38:02]. And Catherine thank you for joining us today.

Catherine: Hi! This is Katherine and I want to thank our hosts and welcome to the audience listening around the world. And also thank you to my colleague Gustavo Mañez. I'll be just taking brief tour through the efficient lighting tool kit. Next slide please.

This is a publication that we have available now in PDF version in English and Spanish. It can be downloaded today at this website. But I also want to let you know that by next week we will have it available in English and Spanish in e-book editions. And shortly thereafter, we'll have it in Arabic, Russian and it should also say French.

So we will have five UN languages and this is a very important work that has the contributions of our private partners of our task forces. Many of our advisers and many experts had volunteered their time to debate some of the issues and to provide what they see as the best practice for all the different angles of doing a transition to efficient lighting. Next slide please.

The tool kit is divided into six sections. The first section is a way for policy makers to understand the reasons that efficient lighting can really help with the objectives that they wish to achieve in their nations. So, we thought it was important to lay out some of the basic arguments. First, that a rapid transition to efficient lighting by 2016 is possible. If countries can develop policies that phase out inefficient lamps at the same time, working with their markets to bring in high efficiency lamps. The other advantages in addition to reducing in house gases and some of these are especially

important to the developing countries that we've been working with so far. Many have peak demand problems.

If you can reduce the lighting mode at the peak hours of demand, you can help to avoid power outages. Also, having extra electrical generating capacity is something that you can take advantage of by redeploying it for other uses. If you can reduce your load overall and reduce your consumption, it's possible to reduce energy imports and therefore increase economic security. And finally, if enough reductions are made in consumption so that you decrease the anticipated load in the future, you may be able to reduce the need to invest in new power plants. And this is of course a massive investment whenever you build a new power plant. Many countries would like to have the time to plan for renewable energy plants and this is a way through efficient lighting that we can achieve some of these additional benefits. Next slide.

The scope of the tool kit is single based only directional lamps mainly for consumer applications. Some people say also residential applications and for in-door purposes. One of the questions that came in earlier was about other types of lamps and other types of applications but for now this tool kit is focused from the transition to efficiency that's mainly based on inefficient incandescent lamps. Next slide.

The second section of the tool kit focuses on the different methods of policy making. The tools that are available to policy makers so that they can create legislation regulatory measures that will increase conformance to energy efficiency standards. They could be economic, fiscal or market based so you could use taxation or you could use financial incentives and also you can create policies that raise awareness and help influence consumer purchasing behaviors. Next slide.

So I like to think of this integrated policy approach as a puzzle. The cornerstone, the first piece that we lie down on the puzzle is the minimum energy performance standards. The other elements certainly support this cornerstone but it is the major effort that most people start with and so that comes first in the tool kit. Next slide.

Going about the selection of your method for developing of policies that includes a minimum energy performance standard is a big task but we think that with the support all the experts who have worked on this and have worked to contribute their experiences from around the world. That starting out with this minimum level of product performance and energy efficiency can lead to a sustainable lighting strategy. It's very important to work with manufacturers. They can increase the efficiency of their existing products where they can replace less efficient products with new models. Having transparent consultations with manufacturing partners with sales people, with stakeholders all through the lighting supply chain

is essential for adoption and the success of minimum energy performance standards. This process should include practical cost benefit analysis. This will help ensure positive economic outcomes for all parties.

And we do have some tools available for the countries that we work with. We do some Excel spreadsheets and some extensive modeling and we can share those models, and we can modify the input to reflect what our country partners provide. So, cost benefit analysis is key to coming up with a realistic minimum energy performance standard. But once you have a standard you have to take care to work with the market, to see what is happening in the market place, to monitoring, control, testing and then of course enforcement of compliance. The standards are a success if they are enhanced by some kind of alignment or harmonization with one country standards with their regional trading partners. So in some parts of the world, we are very involved with groups of countries who have chosen to work together as a region. Next slide.

Along with minimum energy performance standards, usually go product information labels. This needs to be coordinated with the standards. There are two basic types. They are mandatory and voluntary. Many countries will start with voluntary labels and then they will phase in mandatory labels. This gives the industry and the opportunity to get used to the labels. To get some feedback on whether they are realistic to work with, whether any adjustments need to be made to them. Some countries go straight to mandatory label. What is most important is the information be clear, that it's credible and the reason for having labels is so that consumers can be aware of what their choices are. They can be aware of the opportunities they have to choose a more efficient lamp, to match a lamp with the amount of money that they have available to make their purchase. And also to think longer term about what purchasing a lamp and operating it might mean for their budget. So consumers can absorb quite a bit of information. It's important to have it both in numeric form, that's a metric. But also most labels give you some very simple scale going from least efficient to most efficient.

And here are some examples from different countries of how this is done. An energy rating label really focuses on the energy efficiency, the amount of watts that go in to operate the lamp and the amount of light that comes out to give you lighting service. Another type of label is an endorsement label. And this doesn't give you a lot of facts and figures or in the scales. It basically tells you that if you trust this brand label, for example energy star or E-light or [indiscernible] [0:47:16], it means that that authority has reviewed the product performance and endorses the energy efficiency of the product. These are two different approaches and both can be used very effectively even in the same market. Next slide.

There are some additional policy options. One is a technology prohibition. This is where you simply ban a certain type of product either to import sales and the manufacturing. Another and very commonly used policy is to encourage cooperative procurement or bulk procurement. Sometimes offering subsidies, rebates, or even give away programs. What this does is open up the market to experience with efficient products. It lets people talk about them. See how they work, get familiar with it, and is often done in advance of the phase in of a mandatory standard.

Another policy option is to work with taxation either to give a discount tax or tax incentive for energy efficient products and a disincentive or a penalty tax for inefficient products. And finally, another policy could be to adjust the electric utilities regulatory mandate so that they are encouraged to promote efficiency and they are allowed to advertise the cost, the first cost of a product over a number of payments. And this is very helpful for the consumer who does not have a lot of cash flow but is eager to save on their electricity bills over time and they can spread the first cost over a number of bills but also get the benefit of the lower electricity rates soon rather than later. Next slide.

In section three we're talking about supporting policies primarily financing. Many governments that we worked with are eager to do something to save energy immediately to reduce their greenhouse gases. They want to do something with lighting but they realized that any new legislation requires some responsibility on their part to take a look at how to finance it. They just can't add to the budget. They have to be able to prove that any expense will give a good return on investment. So energy efficient lamps are relatively simple options for rather dramatic and rapid change and very quickly to bring energy and emission savings on lighting fast. Next slide.

As we mentioned financing is the supporting policy. Another type of supporting policy that we'll talk about later is communication policies. Next slide.

With investment there are several things to take a look at very closely. Of course if you have minimum energy performance standards, you want to make sure that the market place is able to finance this shift from inefficient to efficient products. You need to have a very strong monitoring verification and enforcement because this will deliver your return on investment. Your design and implementation of supporting policies needs to be coordinated both in time and in investment terms so that it is part of the overall finance plan. And many countries also are speaking with us and very eager to establish environmental management policies.

This is not just simply collecting [indiscernible] [0:51:14] lamps but this is also looking at the entire life cycle of a lamp and what a country would like to encourage or discourage in terms of the material that's used in products and that is collected later on. There are costs to this. And so this cost me to be rolled into any financial planning and you know really discuss ahead of time to coordinate. And finally each implementation level for a policy will require training and support of any officials or civil society participants. So training and support has to be built into the financing plans as well. Next slide.

Probably, most important in terms of financing is finding the political will and the long term commitment to make sure that the transition isn't just started and then stopped or started and interrupted but that it has a good smooth financing plan all through the projected period of the transition. We find that regional, international, and cross-border communication can help lower costs. These types of collaborations maybe — in terms of testing they could be monitoring programs. They could be a consistent consumer label that would appear across the region especially when countries are small and in geographic proximity products move across borders and so having a common label may help to reduce cost. Likewise, any kind of harmonization that can be done with phase out deadlines can help reduce cost and certainly in terms of capacity, such as setting up testing laboratories, training personnel, setting up other resources that will be needed for the program. And also even having a common funding structure that could be replicated across countries can help to not only reduce cost but ensure the sustainability of the transition. Next slide.

Section four of the tool kit focuses on ensuring product availability and conformance. The major concern here is that the proliferation of low quality goods, low quality of lamps certainly messes up for a country being spared of competition. For those manufacturers and importers and distributors who make the effort to bring in high quality products, low quality products in the market place not only cost confusion but they can mean a bad impression amongst consumers and that really can slow down or put up a new barrier to program success. Also low quality goods can threaten health and environmental objectives and really cut into the benefits and savings that we're anticipating from the program. So this chapter, \_\_\_ section is all about monitoring verification and enforcement activities and schemes. Next slide.

I would say if minimum energy performance standards are the corner stone then MVE, monitoring verification and enforcement is sort of a foundational part of the integrated policy approach. Next slide.

So what are we talking about here? Basically you have to lay out a rational, what your values are, what your objectives are and take a look at how the MVE scheme is going to support the minimum energy performing



standards. There should be program entry requirements. There should be some baseline that all manufacturers, importers, distributors, all complied with and they all understand. The procedures and practices for handling of non-compliance had to be clear with everybody. They should be discussed in advance. They should be very clearly aligned with standards enabling programs and the timing of all these needs to be coordinated. Finally any regional collaboration should be worked out both on the standards and on the build up of the testing capacity. So laboratories need to be part of the discussion to set up MVE programs because they'll be doing a lot of the work. And we don't want to put a burden on them before they're prepared to process the volume of request that they will have. Next slide.

With ensuring the product availability and conformance one every important aspect of this is that MVE Programs give the policy makers a lot of feedback. They can assure that the programs that they put in place are working but they can also point out areas that are weak and need to be improved. Eventually the results of this is good consumer protection and hopefully the confidence in the delivery of efficiency will increase amongst the society as a whole. Next slide.

Section five is a very important section of the tool kit. it looks at safeguarding the environment and health. As I've mentioned before, it looks at an entire product life cycle and the management of those products in the market place. A lot of information in this chapter is based on life cycle analysis that look at carbon materials and water consumption footprints. We do address the issue of mercury in lamps and how mercury in lamps is a somewhat different issue from mercury emissions from fossil fuel combustion. This chapter has many very practical suggestions on how to explain these difficult technical issues to consumer. Next slide.

Mercury is one of the elements that is essential for the manufacture and operation of fluorescent lamps. Mercury added lamps don't release mercury into the environment unless the lamp itself is broken. So a lot of the guidelines that are offered focused on how to help consumers understand how to handle and properly install lamps to prevent any kind of breakage. But we also give guidelines for collection and recycling and different methods of doing this. We have some very interesting private sector partners and civil society partners who are suggesting methods for setting up collection and recycling systems. One of the principles is extended producer responsibility in the life cycle of the products. How this gets worked out in each country really differs. It depends on the geography of the country, the distribution methods, the level of consumer action and responsibility, and the availability of manufacturers to participate from the beginning of the planning of any kind of environmentally sound management scheme. Next slide please.

We have a number of diagrams and tool kit that explain how materials move through all different phases of manufacturing operation and end of life. One of the goals is to see if in sustainability you can bring the materials right back around and back into the same industry or into a similar industry. And so there are different approaches to this. I won't go into detail here. But one of the more important things to plan in your community is how to create a sustainable funding in mechanism for any system that is set up; how to fully get the whole community cooperation; how to back up the scheme with adequate legislation and finally of their problems . How they kind of—enforcement that's appropriate for the level of, the level of penalty that you need to ensure cooperation with the system. Next slide.

The last chapter in the tool kit is on communications and engagements. The success that any program that is going to phase out lamps really depends on advanced communication, very clear objectives and communication campaign to raise awareness, to educate consumers . Not just consumers but everybody in the supply chain and everybody who will be participating in any kind of collection and recycling activity and any sales in the system. The focus on the communication is really to change end user behavior, to promote general public acceptance and also to support the phase in as it moves through a number of time periods and different activities during those time periods. Next slide.

So, communication is one of those very important supporting policies. Next slide. Each county has to take look at the audience that will be targeted in their campaign. They have to have credible understandable and authoritative messages. Of course these are very dependent on culture and social attitudes. There are also a number of concerns that may arise in different local markets based on who the players are in the market and what their motivations are. So basically you have to craft messages that address all of these local needs and get the main message across.

To do this, basically campaigns will break their audience into what they are called market segments. So you may focus on early adaptors with one set of messages. You may focus on civil society and another set of messages and it really depends on how the society is structured how you will develop your campaign. In each part of the campaign, it's very important to have collaboration with all partners including manufacturers, trade associations, distributors and retailers. And finally the message needs to reach, also socioeconomic groups and again there may be different emphasis on wording, different emphasis on graphics, different types of images to reach all the different groups. Next slide.

So we've walked through the six sections of the tool kit. I hope that you will take the time to download the version in the language that's most appropriate for you. Take a look at our e-books when we have them

available and we'd be happy to answer a few questions now, either directly about the tool kit or in general. Gustavo Mañez is still available so both of us can answer questions. Thank you so much for your attention.

Vickie Healey: Catherine. Great. Thank you so much. We have just numerous questions coming in. So I'm going through a few with the time remaining that we have for you and Gustavo Mañez to answer. And then any questions that we don't get to within the time frame of the webinar, if it's all right I'd like to send those to you and Gustavo Mañez to answer offline if that will be okay.

Catherine: Certainly.

Vickie Healey: Okay good. The first question coming in that we need to address in the SEAD initiative which is the Super-efficient Appliance Directive I believe. Anyway, the SEAD initiative under the clean energy ministerial have an activity that focuses on energy efficient street lighting and the question is, are there any top connection with enlighten efforts in street lighting?

Catherine: At this point we're cooperating with the agency's Super-efficient Equipment and Appliance Deployment initiative I believe. And what we're doing because our tool kit is focused on the incandescent lamps for general purposes. What we're doing is referring people to seek for its street lighting tool kit. In the future, as Gustavo Mañez mentioned, we're going to have a global policy dialogue on lighting in mid 2013 and at that time we'll see what our stakeholders think about moving into other areas of lighting. We don't want to duplicate efforts but we want to build on each other's efforts.

Vickie Healey: Great. Thank you. The second question from the same attendee is, would it be a factor to consider a global LED lighting award towards market transformation? And second part to that question is area there any, are there reward efforts out there regarding lighting?

Vickie Healey: Well, this is where I would really turns thing over to SEAD, SEAD is set up that focuses on encouraging the market to really exceed the possibilities that it has now. SEAD has a number of awards. Already I know they just awarded a television for I think perhaps too manufacturers for their very highly efficient televisions. I think that the SEAD program is considering lighting but within the enlighten initiative we focus more on policy and we're really very focused on developing countries and helping those countries achieve efficiency as fast as possible. And also there is United Nations Environment Program. We're looking for every quick reductions in greenhouse gases. So while I think awards program are very commendable and we certainly will cooperate. At this time the

enlightenment initiative is really focused on policy and not on technology specific initiatives.

Vickie Healey: Alright. Thank you. Next, question, kind of interesting. How has the cooperation been from lighting manufacturers other than Philips and [indiscernible] [1:06:26]? Is the institute brand agnostic?

Catherine: Yes, United Nation is agnostic. We don't promote one brand over another. We're very grateful for the support that Altzman and Philips had provided. We are completely open to other manufacturers participating as long as they, you know, are behind the principles of the program and can participate actively with in kind support. We are definitely open other manufacturer. We are in fact looking for additional support from high efficiency producers of lighting. Yes.

Vickie Healey: Okay. Thank you. I believe you mentioned [indiscernible] [1:07:18] in your labeling slide. But a question has come in, is lighting Africa or [indiscernible] [1:07:25] which is the global operative lighting association part of the expert panel regarding standards and trade barriers for some of their products for Sub-Saharan Africa and also in Asia?

Catherine: I'm going to hand this question to Gustavo Mañez if you could bring him in.

Gustavo Mañez: Yes Vicky.

Vickie Healey: Yes. Hi! I can hear you. Thank you Gustavo Mañez.

Gustavo Mañez: Hi! Yes, so in terms of [indiscernible] [1:07:55], we are just starting our new collaboration on the field of lighting which is to corporate lighting and the goal is basically to do the same that were doing with lighting which is to promote more activities, policy activities in countries, the developmental policies which call for the faster deployment of efficient lighting solutions. So the same void that we are working on red lighting, were trying to work with [indiscernible] [1:08:23] on all lighting issues. Obviously with a target of Sub-Saharan Africa come early [phonetic] [1:08:32] but also South Asia.

Vickie Healey: Okay. Thank you so much. This question is regarding the specific chapter with the tool kit. So I'll go ahead and present the question and then let me know if it's something you can answer now or if you'd rather dig in a little bit. But section three chapter 1.4.1 fails to mention that there are two competing POA's and NDFs for CFL and three competing POA's for LED from Kenya while on most countries there is only one POA per region. Does the GEF protocol bodies will not comment on the quality of CDM's projects. Would you think that enlighten might be a politically neutral body to compare the effectiveness of CFLs and LED products [indiscernible] [1:09:31] with CDM?

Catherine: That is a very detailed question. I would appreciate it if you could send that question to us and we will reply to the listener.

Vickie Healey: Okay, that sounds great. Yeah. I was looking into that and I thought it might be something to dig into, you just said so. I'm sending that question. Okay, do you have a comment?

Catherine: No.

Vickie Healey: Okay, our next question is awareness and education is a must of course but about uncontrollable bad behavior. In my country 25 percent of the population recycles, what is the risk for the environment if 75 percent are unable to recycle their mercury and lead. I'm sorry I'm just trying to get through a little bit of the wording out there.

Catherine: Maybe what the question is about is if I could just perhaps summarize it is how to encourage greater participation and doing more responsibility in terms of handling and disposal of lamps. Is that a good summary of the question?

Vickie Healey: Yeah. And at the end they are saying to be clear is that not too risky to distribute billions of mercury in lamps when this kind of situation is in place.

Catherine: This is one of the questions that's raised in the workshops that we conduct in each country that is presently riding in national efficient lighting strategy. It's certainly is something that the regulators are aware of and they do need to weigh the risks and the benefits. So, what I can say with great enthusiasm is that this is taken very seriously by governments that we are working with. And we're also very pleased to have the cooperation of a number of organizations that are set up in the public sector to support effective and more productive recycling efforts. So I can't give you details you know in this quick webinar but it is something that we go into in depth in the tool kit and then we're going to be having a series of more detailed webinars and I would suggest that if people could send us their emails, if they're interested we'll let them know when we're going to conduct the more in depth webinars and the first one actually will be on environmentally sustainable management and will have a number of guest panelists for that.

Vickie Healey: I'm sure that that's really something to look forward to. So thank you for that additional information. Okay, next question comes from actually, Ahmed. Excuse me if I mispronounced anyone's name. Ahmed Maharma [phonetic] [1:12:36], from the ministry of energy and mineral resources in Jordan and he is asking about the financial resources assigned for financing the program initiative and how much the UNEF shared in these

resources will be? How much of the UNEF share will be in these resources?

Catherine: I'm going to direct this question to Gustavo Mañez. If you could...

Vickie Healey: Okay.

Gustavo Mañez: Thank you very much for that question Ahmed. So, UNEF and the enlighten initiative contribute financially to the development of the national efficient lighting strategy whereby, the country identifies its objectives in terms of efficient lighting, its minimum energy performance standard, the quality control mechanism, the supporting policies et cetera. All this other mechanisms that we've been going through in the description of the tool kit. Now we assigned, approximately 120,000 dollars to support countries all of which 50,000 dollars go directly to the country itself to set up its national committee that will develop this strategy to hire experts within their country. And then UNEF also hires international experts and special aides that will support the country in the development of the strategy during the process of one year. That is in a nutshell how the financial contribution is dedicated.

Vickie Healey: Okay, great. Thank you so much. Let's see. We'll just go—there are so many questions you're going to have a lot of questions coming like, after this webinar let's see. Okay, I'm going to jump over to this question hour. Basically rather than going to CFL's why not, why don't we just go directly to LED?

Catherine: Gustavo Mañez is going to answer this question.

Vickie Healey: Oh okay.

Gustavo Mañez: Thank you so much. And this is also a question that we are hearing a lot in the national and regional workshops that we are attending to. I've mentioned before the example of Japan with a target of only using LEDs by 2020. Major distributors like Ikea more aggressive target, only LED in their shops by 2016. Now, we see that LED's are dropping their price dramatically every year, approximately 20 percent. However, immediately the [indiscernible] [1:15:43] to LED may not be wise given the price issue. Maybe it's wiser to wait a few years more after the price has dropped a bit more and until we are very clear concerning the quality of LED products that we can find in the market. We'll make reference before to the importance before of management verification on enforcement systems. Ten, fifteen years ago when CFL started being deployed in markets, we faced a lot of consumer opposition to this technology because the proper systems, proper quality control mechanisms were not put in place. We would not like that with the LED transition happen the same. So I think it is wise to work, it is wise for countries to prepare their policies, their

mechanisms for this transition but maybe to hold a bit of time. Maybe three, four, five years until this transition is complete.

Vickie Healey: Okay, Great. Thank you Gustavo Mañez. And just to follow up on the LED thing, this question comes in asking, do you know of plans to promote the general advantages of energy efficient lighting including LED lights and solar lamps to the broad public in Sub-Saharan Africa?

Gustavo Mañez: I am not aware of overall programs for the whole of Sub-Saharan region. I know that there are a number of countries which are doing, which are quite actively engaged in the deployment of CFLs market transformation activities. I am aware that there are three countries which have phased out using regulatory tools, the inefficient incandescent lamps and those are Ghana, Senegal, and I think what Ethiopia has done is a technology prohibition of inefficient incandescent lamps. Then other countries are doing the deployment of CFLs. Thanks to the support of international donors. But again for us this is not a sustainable solution unless they are minimum energy performance standards that sets a barrier that set out a baseline whereby inefficient products will not be allowed down the line in the future. We will see this return effect. There's a high chance that people after this large supplement programs will come back to use inefficient incandescent lamps simply because they are cheaper.

Vickie Healey: Okay. Great. Thank you so much. By the way, I just want let our panelists know that we are getting a lot of interests through the question pane regarding your next webinar on environmental management. So I think we have good attendees that are going to the upcoming webinar. Let's see. The next question...

Gustavo Mañez: If I may respond to all these public requests, the webinar on environmentally sound management will be hosted on the 12<sup>th</sup> of December.

Vickie Healey: The 12<sup>th</sup> of December. Great.

Gustavo Mañez: It will actually be two days, 12 and 13 to cover—we will divide the world in two and one will be on the 12<sup>th</sup> and the other webinar will be on the 13<sup>th</sup>.

Vickie Healey: Perfect.

Gustavo Mañez: We will have this information updated in our site soon.

Vickie Healey: Okay. Great. And I'll be sure to send out the information to all of the attendees today in their interest so that they can find the information easily and climb up to the webinar. Let's just take a couple of more questions. This one is, how can I find out more about regulations per country that have phased out incandescent lamps?

Gustavo Mañez: This question is going to be answered by my colleague Catherine.

Vickie Healey: Okay. Thank you.

Catherine: If you're interested in learning country by country what their regulations are, we have a global policy map on our website. You can click on each country and the regulations are divided into the four areas that we showed to you in our integrated policy approach. So for those countries that have minimum energy performance standards where we were able to find those standards online. We actually have a link to them. So this is a unique resource. You do need to click around through it to find what's available and I just want to say that for now we are only looking at the inefficient incandescent lamp phase-out programs. But we also do have this very interesting information that we discovered on environmentally sound management and some of the supporting policies and communication programs in many countries. So this will be updated once a year. The website presently reflects the situation about six months ago when we completed our first round of research on this.

Vickie Healey: Okay, thank you Catherine. And I think we have time for just one more question and then we'll wrap up the webinar. And the question is, the tool kit looks like it has a lot of information but how would my country know where to begin?

Vickie Healey: Well, that's a great question. We can provide remote support to countries that want to contact us directly. If a country wants very intensive support, we encourage them to join our global partnership program. We are actively seeking support from donors, from bilateral donors, from foundations, from manufactures so that we can reach out to more countries. So, I would encourage you, if you are seeking support for answers to questions and how they get started to get in touch with us and also if you're listening in as a potential donor or supporter of the program, if you have particular countries that you're working with and would like to support them and work with our program, we also encourage you to get in touch.

Vickie Healey: Thank you so much Catherine and Gustavo Mañez. And with that I will be sending you the remaining questions from our audience regarding the webinar and additional information that they'd like to know about. And so, at this point I'd like to offer both you, not only I want to say a hearty thank you to both of you but if you have any closing remarks or additional comments you like to make, it's okay to make this at this time.

Catherine: Thank you. I think Gustavo Mañez may want to say goodbye.

Vickie Healey: Okay. So, thank you so much.



Gustavo Mañez: Thank you very much Vicky. And it is a pleasure to be working with the Clean Energy Solution Center and with [indiscernible] [1:23:19]. I think this is a fantastic initiative and we look forward to more webinars.

Vickie Healey: We do as well. Thank you so much. And with that I just want to make a couple of closing remarks in behalf of the Clean Energy Solution Center. First of all again, I send a hearty thank you to both of you Gustavo Mañez and Catherine for presenting this fantastic information today. And also thanks to our attendees who are participating in today's webinar. You've been a great audience, lots of terrific questions and we very much appreciate your time here and your interest.

Several of you have asked about receiving a copy of these slides and we have made them available to you on the Clean Energy Solution Center website. So if you will see a link that is provided on this particular slide, if you go that link you will find PDF copies of the presentation from today's webinar at that location. And we also invite you to visit back in the near future. In the next few weeks will be having an audio recording of today's webinar and you'll also find information not only on today's presentation but previously held webinars as well as information of coming webinars and other training events.

And again one last thought, we invite you to inform your colleagues of this and your networks about the Solution Center and resources and services including the UNEF Club [phonetic] [1:24:49] policy support. And of course please inform your colleagues about the enlighten initiative and this fabulous tool kit that they have set together. With that I just wish you all a great rest of your day and we hope to see you again at a future Clean Energy Solution Center events and this concludes...