**Monitoring and Evaluating Green Public Procurement Programs: Benefits, Case Studies, and Recommendations**

—Transcript of a webinar offered by the Clean Energy Solutions Center on 25 September 2013—
For more information, see the clean energy policy trainings offered by the Solutions Center.

## Webinar Panelists

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| **Graziella Siciliano** | Oak Ridge Institute of Science Education Fellow, U.S. Department of Energy |
| **Robert Kaukewitsch** | European Commission |
| **Hyunju Lee** | KEITI |
| **Aure Adell** | The Eco-Institute |
| **Shabnam Fardanesh** | Greenhouse Gas Reduction and Sustainable Acquisition Coordinator, U.S. Department of Energy Office of Sustainability Support |
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| Sean Esterly | Hello everyone.  I'm Sean Esterly with the National Renewable Energy Laboratory and welcome to today's webinar hosted by the Clean Energy Solutions Center.  We're very fortunate to have a great group of panelists today.  We have Graziella Siciliano, Robert Kaukewitsch, Hyunju Lee, Aure Adell, and Shabnam Fardanesh joining us.  These outstanding speakers will be discussing key findings from the recently published SEAD guide for monitoring and evaluating green public procurement programs.  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's resource library as one of many best practices resources reviewed and selected by technical experts. |
| | Before we begin, I just want to 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 chose to listen to your computer, please select the "mic and speakers" option in the audio pane, doing this will eliminate the possibility of feedback and echo and if you select the "telephone" option, the box on the right side will display the telephone number and audio PIN you should use to dial in.  Panelists, we ask that you please mute your audio device while you are not presenting and if anyone has any technical difficulties with the webinar, you may contact the Go To Webinars Help Desk at 888-259-3826.  Now I encourage anyone to ask questions throughout the webinar.  To do so, you may submit your questions in the 'question' pane in the Go To Webinar panel. I will then present those questions to our panelists during the question and answer session.  If you are having difficulty viewing the materials through the webinar portal, you can find PDF copies of presentations at cleanenergysolutions.org/training and you may go along as our speakers |

present.  Also, an audio recording in the presentations will be posted in the Solutions Center training page within a few weeks.

Sean Esterly    The next slide just shows the agenda that we have prepared for you today which is focused on providing an overview of current practices, highlighting international practices and summarizing lessons to improve effectiveness of procurement, monitoring, and evaluation.  Before we begin with the presentations, I just want to provide a short informative overview of the Clean Energy Solutions Center initiative and then following the presentations, if we have time we will have a question and answer session and then wrap up with closing remarks and brief survey.

Next slide provides a bit of background on how the Solutions Center came to be.  Solutions Center is an initiative of the Clean Energy Ministerial and is supported through a partnership with UN-Energy that was launched in April 2011 and was primarily led by Australia, the United States, and other CEM partners.  Outcomes of this unique partnership includes support of developing countries to enhance 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 are attending today.

The Solutions Center has four primary goals.  It serves as the 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.  Third, the Solutions Center strives to deliver dynamic services that enable expert assistance, learning, and peer to peer sharing of the experiences.  Then lastly, the center fosters dialogue on emerging policy issues and innovation around the globe.  Now our primary audience is energy policy makers and analysts from governments and second co-organizations in all country.  We will also strive to engage with the private sector, NGO's and civil society.

Now all the market features that the Solutions Center provides is the expert policy assistance just known as "asking expert."  It's a valuable service offered through the Solutions Center at zero cost.  We have established the broad team of over thirty experts from around the globe who are available to provide remote policy advice and analysis to all countries.  In area of energy efficiency, we're very pleased to have Christine Egan, Executive Director of Collaborative Labeling and Appliance Standards Program serving as our expert.  If you have a need for policy assistance on efficient appliances or any other clean energy sector, we encourage you to use this beautiful service.  Again, this assistance is provided free of charge and to request assistance, simply submit your request by registering through our "asking expert" feature at cleanenergysolution.org/expert.

We also invite you to spread the word about this serve to those in your networks and organizations and we encourage you to take advantage of

the Solutions Center Resources and Services including the expert policy assistance, subscribe to our newsletter, and participate in webinars.

Now I would like to provide brief introductions for our distinguished panelists today. Our first panelists today will be Graziella Siciliano who is an Oak Ridge Institute of Science Education Fellow at the U.S. Department of Energy. Graziella will provide an overview of the super-efficient equipment and appliance deployment initiative**.**

| Sean Esterly | Following Graziella, we will hear from Robert Kaukewitsch of the European Commission. Robert will be providing an overview of the EU green public procurement. |

Next, we will hear from Hyunju Lee of KEITI. Hyunju has worked with the UNEP-led ASEAN+3 green public procurement and Ecolabelling Project, which began earlier this year in collaboration with China and Japan. Hyunju will present a case study on monitoring and evaluating programs in South Korea.

Then we will hear from Aure Adell of the Eco-Institute who will give an overview of the SEAD guide for monitoring and evaluating green public procurement programs.

Then following Aure, we will hear from Shab Fardanesh who is the Greenhouse Gas Reduction and Sustainable Acquisition Coordinator at the U.S. Department of Energy Office of Sustainability Support. Shab will present a U.S. case study reflecting the implementation of a monitoring and evaluation system.

With those introductions, please welcome Graziella to the webinar.

| Graziella Siciliano | Thank you. Thank you everyone for joining the webinar today. I am Graziella Siciliano from the U.S. Department of Energy and I have served as coordinator for the SEAD procurement working group. Just to tell you a little bit about the initiative**,** the Super-efficient Equipment and Appliance Deployment or SEAD of the Clean Energy Ministerial is a voluntary international government collaboration. Its primary objective is to advance global market transformation for energy efficient products. SEAD participate in government's works together to develop common technical foundation that would enable faster and an easier adoption of a cost-effective public efficiency policies and programs. The initiative's broader market transformation efforts include collaborative work on awards, incentive program, and procurement in an effort to enhance global markets for highly efficient products. Next slide please. Thank you. |

SEAD procurement activities support market transformation by leveraging the bulk purchasing power of private and public sector buyers to signal market demand for highly efficient products in the market. These efforts are focused on developing effective policy instruments and advancing energy-efficient procurement practices.

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The SEAD procurement working groups has a range of activities that provide the research and tools needed by policymakers to develop and implement procurement programs that reduce energy demand and greenhouse gas emission. Today, the SEAD procurement program has focused on accelerating the procurement of energy-efficient streetlights, sharing best practices for energy-efficient procurement, cataloging energy purchase requirement, and lastly including the monitoring and evaluation of green public procurement programs. This webinar will be focusing on these last activities, specifically we'll be discussing some of the insights that have emerged from a work on the SEAD procurement monitoring and evaluation guide which provides an overview of current practices, highlight international examples including the key cities in monitoring and evaluation practices in different countries and make recommendations to improve the effectiveness of procurement, monitoring, and evaluation practices.

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| Graziella Siciliano | With that overview, I announce to turn it over to Robert Kaukewitsch from the European Commission. Thank you. |
| Robert Kaukewitsch | Thank you very much. Hello everyone. Good afternoon here in Europe, good morning in the U.S., and good evening, I think already, in Asia. I want to give very short information about what we're doing on monitoring green public procurement in the EU but first of all I would like to thank SEAD for organizing this webinar. SEAD and the Commission had started working together more in the beginning of this year by exchanging informations regularly, which is very helpful because we are working on a lot of similar issues. Please go to the next slide. Hold on… |

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We have a political target in the EU. It's from our communication public procurement for a better environment in 2008 and we set this target to have 50% of tendering procedures to be green by 2010 and this should be following the number and value of green contracts as compared to the overall number and value of contracts. "Green" meant in this context is compliant with endorsed common "core" GPP criteria for ten product groups. "Core" means something like rather basic green, not dark green, and it should be based on an analysis of a representative sample of tendering procedures.

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The results, we had already two of these monitoring exercises. One was already from the year 2008 where we looked only at the seven most advanced member states and at the ten first product and service groups that the Commission has developed EU criteria for and the results back

then were that we have for this member states achieved more or less the 50% targets, while two years ago when we made another study and for the whole of the EU with 27 member states, the 50% target was not met. We had more or less a quarter of tenderers, which we're considered to be green according to our definition. You must know for those who do not know about the EU process, the use of these criteria is of course voluntary, so we try to encourage member states to use the criteria but they don't have an obligation to do that.

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The approach that we have chosen so far had a couple of shortcomings and I don't want to hide them. The big problem is that we have lack of statistics on green procurement also, in general on procurement within the EU. We could not base it on real tender evaluations that could have been much too costly to look at all different tenders but we had to rely on self-reporting and this is of course including the dangers of a possible biased outcome that we might have more public authorities who are very green, who are keen on participating in such surveys, more likely that they are participating than those who are not so green. We had a low response rate in a couple of countries and since EU criteria are only recommendations, member states have different criteria that they're using, so the definitions are different and that makes it complicated to say what is really green. What is green in one country might be considered green in another country.

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I just want to say what the next steps are. We have two new policy documents which are talking about GPP among other things. One of them is a Seventh Environmental Action Programme for the years from 2014 onwards which will finalized by the legislators very soon and we have the recommendations from the European Resource Efficiency Platform. This is a high level group with member states representative, other commissioner, industries, NGO's and so on and so forth, and they are all calling not only for more GPP but also for a more solid monitoring system to really see where we are on GPP and with the Commission we are having and advisory group with the member states and with stakeholders wherever we will be discussing on how to set up a good monitoring system in the couple of months to come. There are a lot of initiatives going on in different member states and we would like to bring them all together in order to safe resource it but also to have more comparable outcomes.

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Robert Kaukewitsch    I'm already at the end of my presentation but you can see here how you can reach me and before I pass on to the next presenter, I just want to underline how much I appreciate the works done by SEAD and also the speakers later on who had worked on the monitoring guide of a very high

quality and very useful.  If you are public authority, you could really learn what other pit-holes—pit falls of what you do have to think about if you set up monitoring systems, so I only recommend to everybody who hasn't read it yet to read the SEAD monitoring and evaluation guide.  Well thank you, so I pass on now to Hyunju Lee.


Hyunju Lee    Thank you.  Thank you so much Robert.  My name is Hyunju Lee…

Hyunju Lee    My name is Hyunju Lee.  I am from KEITI, Korea Environmental Industry and Technology Institute.  My presentation will focus on Korea's green public procurement, which was featured in monitoring and evaluating green public procurement published by SEAD in cooperation with Eco-Institute.  Before I start my presentation, let me give you a brief overview on the mainstream of work in my office.  We have a section in charge of green public procurement, another section working on business green public procurement, and the other conducting public outreach activities to raise public awareness.  Okay.  Let me start my presentation.

In Korea there is a centralized public procurement agency named Korea Public Procurement Service.  According to the procurement act, the Korea's Public Procurement meeting certain condition usually large-scale procurement should be commissioned to decentralized procurement agency.  This process is usually conducted through online E-procurement system.  For instance in 2012, the volume of public procurement done through Public Procurement Agency account for around 30% of the entire public procurement in Korea and in the collaborative value it amount to eighty-nine billion U.S. dollars.  The rest of the public procurement can be done by Individual State Agencies.

While the public procurement in Korea has a dual system, the green public procurement is mainly initiated by Minister of Environment as part of promoting green purchasing policies.  As you can see in the slide, green public procurement was first introduced in 1994 in the Act on Development and Support of Environmental Technology but until 2004, actually the green public procurement remained inactive because it was stipulated in the Act only as a recommendation and there was no system in place in monitoring the preference or evaluating the impact.  In 2004, Minister of Environment enacted the actual encouragement of the purchase of Green Product, which laid a legal foundation of the green public procurement and took the fact from the following year.

You will see more detail about this legal basis.  As mentioned this Act serve as an umbrella encompassing several green purchase and policies, including green public procurement and voluntary agreement with business on green procurement.  The main objective of this law is to boost green consumption as a means to achieve sustainable development in Korea.  According to the law, state agencies including central and the local government, public institutions and public schools are obliged to produce

and submit an annual implementation plan for GPP and most of the performance report to the Minister of Environment.  The Minister of Environment actually do not step or impose quantitative target for GPP to any state agencies.

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| Hyunju Lee | Green Product defined by the Act includes the product-certified criteria set by Korea Eco-Label, or Good Recycled Mark.  In principle, the product complying with other environmental criteria set by Minister of Environment is also allowed to answer Green Public market but actually it is not working on the ground for the time being.  There are in total one hundred and fifty product groups and sixteen product groups for Korean Eco-Label and Good Recycled Mark per each and there are more than nine thousand products and two hundred and forty-seven products for each label. |

Let me show you a selective list of green product covered by the Korea Eco-Label.  If you see the slide, there is a group for office supplies, electronic devices, also there are furniture equipment, construction material, and stationery.  When it comes to monitoring in Korea, there are several key actors engaging in the implementation of and monitoring green public procurement.  First of all, Minister of Environment is in charge of overall management including producing need to long-term national green purchasing action plan and develops some policies.  KEITI which is affiliated with Minister of Environment is the actual implementing organization of green public procurement in Korea.  Its main task is to compile plan and data through the digitalized system, conduct training for procurer, and monitoring and evaluating the impact of GPP.  Public Procurement Service and KEITI have set up a coordination mechanism that we provide a list of green product on a regular basis to PPS, while PPS handle for us the purchase of green procurement data from state agencies executed by PPS so its state agency does not have to submit the procurement data commissioned to PPS to us.

I think one of the most notable features of Korea green public procurement is that we have established a digitalized monitoring system.  This monitoring system is connected with public procurement services, E-procurement system so that the procurement data executed by PPS is automatically transferred to our system, GPIS.  The procurement data done by the respective state agency can be also unloaded by individual organization to the system—I think I missed this slide… In terms of monitoring, we have developed a few indicators.  First of all, we count the number of state agencies submitting the plan and performance record since we are reported by the selected umbrella organization, so we are managing only eight hundred and sixty-four organizations.  It is greatly convenient in terms of logistic and looking—based on our experience around 95% of the organization are in accordance with their obligation to submit the data.  The second indicator is that we monitor the actual purchase of green product and services in those unit and economic values.  Then, the last

indicator is that we calculate the percentage of green purchase in relation to the total expenditure in those product groups.

This slide shows the general overview in green public procurement in economic value. If you see this graph, you can see there is a significant increase after the adoption of the Act, what I mentioned before, so we concluded that the adoption of the Act and the introduction of green public procurement in Korea played a significant role in up-taking the volume of the sale of Green Product. For instance, in 2012 the total amount of green public procurement is about one thousand seven hundred and twenty-seven billion Korean won which can be translated into 1.6 billion U.S. dollar. In addition, we have also calculated economic, environmental, and social impacts of green public procurement. For instance, for the past eight years, green public procurement for the selected item which is 19 product groups resulted in 1.71 million tons of $CO_2$ equivalent emission reduction and created more than ten thousand jobs in Korea. We also calculated economic benefit based on the saving made from the $CO_2$ equivalent emission reduction.

Hyunju Lee   These two graphs technically do not show the scientific correlation between green public procurement and the green production in total per se but I think these two graphs show strong interrelation between the two. For instance, if you see the graph on the left, you can see the rising number of companies producing eco-labeled product as well as the number of product itself. The number of certified product rose 3.8 times and manufacturers increased still 5.4 times by 2002 compared to 2004. In addition, the graph on the right side shows that the volume of green production soared more than sixteen times by 2012 compared to 2004.

Finally, I am going to discuss the key lessons we have learned. First of all, we have believed that one of the success factors in Korea's GPP is that we took a combined approach of green public procurement and Eco-Labeling—this reminds me that I think I missed a slide before… yes here [Laughs]. Sorry about that.

So, basically in Korea, we have two groups of Green Product, one is certified by Korea Eco-label while the other one which is certified by Good Recycled Mark. So, we have believed that this kind of interrelated approach was a success factor in using Green Products here in Korea. Second success factor is that we monitor the green public procurement record through digitalized monitoring system, which is connected to PPS E-procurement system and it really makes us—make the monitoring process easier and convenient and this could have been possible because several key stakeholders including Minister of Environment, KEITI, PPS and other State agencies have coordinated in a way to produce the best result and the third success factor is that KEITI is investing a lot of time and money to raise the conduct study of procurers from State agencies. So, for an instance, we provide an intensive training for procurers and the Minister of Environment annually produce the guidelines for

implementing GPP and also how to monitor it. Finally, Minister of Environment and KEITI are providing some financial and reputational incentives, so for instance the State Agency with a great performance can get a bonus at the end of the school year and also the out performer can be awarded by the president.

In the meanwhile, we also have some stumbling block and limitations for the further development. First of all, not many State agencies in Korea appoint staff who is charge of GPP. So, not every organization submit their implementation plan or performance record and we have to really reach out to some of the left out people to implement GPP that is orientation. The other one is that until recently—until 2010, we have monitored only selected group of Green Product for calculating the percentage of GPP in relation to the entire procurement due to some technical problems, but we are trying to fix that problem and develop further. So, starting from 2013 we decided to monitor the full range of Green Product group. The other limitation is that, as I mentioned, the Minister of Environment do not start on national target and actually starting on national target can show the government commitment for the post direction, but that is missing for the time being. Finally, there are other procurement regulations imposed to State agencies. For instance, socially responsible criteria where energy-efficient appliance criteria so for the time being those kinds of criteria are not coordinated so a lot of state agencies find it difficult to deal with any regulation imposed by the different agencies. So, we are trying to coordinate our GPP with other procurement regulations. So, yeah, for—so, for the time being, we are trying to stimulate the public demand so that the entire volume of green public procurement can even be—even a quarter or increase by diversifying the product growth and we are recommending that we may introduce progress indicators for each State agencies to communicate the overall progress and compare the progress indicator among each institutions. It may help us—help State agencies to perform better. Finally, as I mentioned, we are trying to coordinate with other existing green and social procurement standards. So, this is my—this is the end of my presentation and I have to excuse myself for leaving a bit early and thank you very much. I am going to pass the floor over to Aure.

Aure Adell    Thank you very much and thank you to all of you that are participating and so, far we cannot hear. I hope you have many questions later, then we can interact a bit more. I'm going to present basically the—a bit of summary of the monitoring guide that we produce for SEAD where you will find the case from Korea explaining more in detail and also the next case from the U.S. energy department and other longer case studies from France, UK and Chile to complement the presentation. So, as already been said, this guide has been produced, commission by SEAD, which is under the clean energy ministerial and with the coordination and support of CLASP.

The first thing that when we think of why monitoring GPP programs, of course, this is to track policy programs, but there are other good reasons to monitor GPP. On their one hand to raise compliance in a way that we keep each agency accountable especially we publish the results, if we keep them inside it's a bit more difficult, to kind of put a bit of pressure on agencies, but by monitoring how everybody's doing, we can raise compliance or at least promote it. It also helps to target support to really identify, which areas we can improve, what departments are doing worse or for which further groups there's less implementation so that we can really think as responsible of promoting GPP programs in general, which actions could be more effective to improve results, and also of course to legitimize actions. Many times, we—there are policies around that have nice targets or commitments, but then there's no followup and there is no communication of implementation so it kind of weakens a bit the real commitment of the government or at least it doesn't communicate to the rest of the society either the public—private sector or the regular citizens, but if we promote green public procurement to really encourage that other economic factors also implemented, then we really achieve that or support our actions if we kind of monitor and demonstrate how we are doing in our own publicities.

To select which monitoring system to implement, there are many factors that we have to take into consideration. One is the policy objectives, what we said we will do and achieve and that affects the monitoring system and also who are we covered. It's very different like the European Commission that covers or tries to monitor implementation in all the member states and within the member states, not only the central government, but also the local level or if we monitor only for our own organization, then it's also very difficult what we can do or not or how we design our monitoring system and also, which procurement procedures we have in place, which other policies might affect GPP or have commitments, and which tools are already in place that also affect, but I think one of the main elements is the policy objectives, what we say in our policies that are our objectives. We classify them from all the policies we analyze. We classify those policy objectives into four. The first two are more kind of practical objectives and the other two are more like the final objectives. So, the first one would be to embed GPP in operations. Like for example in the UK, the framework for sustainable operations of the government state, this is the old kind of policy framework and now, they have the green government's commitments, but in that one, they said within the objectives of the policy that the permanent secretaries have to have the SPP, the Sustainable Public Procurement, commitments incorporated into their performance objectives or that they have to use this flexible framework, which was a kind of metrics to progress in implementation of SPP. They had to use it to monitor progress. So, these objectives were more of procedural type of embedment in operations. The other one, which was already mentioned by Robert, is more to increase to actual increase on procurement of Green Solutions products or services. The example from the commission was this fifty percent of all tendering

procedures should be green.  Then, more of the final goal that we all want to reach with the green public procurement is the reduction in all of environmental impacts.  Sometimes, it's only set in the policy.  That's kind of the final goal, but sometimes it's also specified in a concrete quantitative objective.  Like, for example, in the Spanish GPP action plan, they had some procurement objectives all linked to objective two, but also some environmental impacts objectives like reducing the energy consumption by nine percent in 2010 or by twenty percent in 2016 from buildings, for example.  Another objective that is normally mentioned in green public procurement Policies is to transform the market or to accelerate market transformations and here is an example from the Canadian policy of green public procurement that says that the application of the policy will lever the purchasing power of the federal governments and thereby strengthening greener markets and industries.  So, these four are kind of the different policy objectives and if we want to measure how we are progressing in each of the different objectives, the monitoring system will be very different.

If we take the first one, the first goal to embed GPP in operations, this is what was done in most cases "repetitionally" so to say.  There are quite some examples.  Most of them are based on surveys, which ask for kind of more subjective questions on how you are implementing, where you are implementing green criteria, which kind of information sources you use, and so on, but there are other options to do that, which is with interviews or reviews.  In those procedures, you get much more information and much more detail also of what is working well or not, which various people are facing, but of course, it takes much more time and in general, because this is more of the operations, but it also doesn't show you if it's really translated into actual green procurement.  It's recommended that you complement the more subjective or general procedural monitoring with another quantitative analysis, that's what they do in Sweden, for example.  Since 2004, they have a monitoring system in place that they monitor every three years and it's a mix of a general survey to procurers to get general information and which also serves to raise awareness between the procurers and then, they do a quantitative analysis by sampling tenders from a centralized database that covers the whole country and all the levels of administrations and they analyze these tenders to see if the criteria have been introduced or not.  Going to the last kind of objective, the market transformation, this has been rarely done and rarely monitored.  On the one hand, because there are no specific objectives or targets, it's normally said like a general sentence, but not with real numbers there and also because it's very difficult in some cases to isolate GPP like the procurement of the government and how it has influences market transformation compared to the procurement of the civil society or the private sector and also, from other instruments that are in place that might affect greening of the market if there are—I don't know—like taxes reductions of Green Products or things like this.  There are other instruments that can affect the transformation of the market so it's somehow difficult to really isolate the effect of GPP.  So, that's why it

hasn't been done so often and also because, as I mentioned at the beginning, we don't only monitor to see programs in achieving objectives, but also to keep agencies accountable and to target the support. When we analyze the market, we don't see how which one is doing in house. We go to the market and see how the market has changed so we can—we don't— we lose all these benefits of monitoring, which in terms of cost effectiveness might be not so interesting for public authorities. Here, we just put one example from the Catalan Government and made a small review because they are the certifying body of the EU, the European Eco- label and they also promote green public procurement. It's the same department but that's both things. So, they check a bit the progression of numbers of companies that have Eco-label products all that asked the Catalan government to have the Eco-label and how this was related with major procurement activities and they saw a kind of relation when looking at the cleaning products because after two major contracts, one from the city of Barcelona and the other one from the Catalan government, the number of companies certifying their products increased and even—it's not only that increase, it could be for other reasons, but some of the companies included in their kind of promotional material or in discussions we had with them that they've said that they've complied with the green procurement criteria in the region. So, there really was an effect of the tendering activities and market influence, but the approach that is kind of winning more adoption is to really monitor the level of purchase of green procurement.

There are a lot of methods and it depends on many different elements that we have to consider, which are summarized in these graphics and I will go a bit through each one of them. So, the first one is to see what we monitor. Do we monitor tenders? Do we monitor the actual purchases? Do we do a mix of both? When we monitor tenders, it's faster and you need less input, but then you lose some of the procurement activities. When you do purchase, you have all the purchasing independently of the tendering process or the purchasing process that has been followed and also you can calculate more easily the environmental benefits, but then, it requires much more that the tracking of the input from more people or either different people in the departments and also the suppliers to provide information on that. So, there are pros and cons of each approach. The indicators are normally percentage either in units or in money. I put the European because I'm more used to that, but in economic terms and also, what is important is to determine the scope. Do we cover all the procurement activities regardless of what their product groups are or do we prioritize some? The general practice is to really prioritize because then you kind of target your actions also probably because you have policy objectives or because you have a standard criteria or because it's centrally procured so you start from that. So, in general, in the guide, we recommend that to do a prioritization of product groups and start focusing on some of them and then enlarge as the system become more robust and solid.

We have to define "Green." Robert also mentioned that it is a difficulty in here. Sometimes, we can look only at one criterion to define "Green." For example, if it is a certified with one Eco-label like in Korea or even Energy Star, sometimes you can use multiple criteria, but it has to be energy-efficient and it has also to not have certain chemicals or has a lower noise emissions. The more criteria we put, the more complicated it is to monitor if it's compliant or not, but also if we only select one criteria, we might kind of give the wrong message to procurers and say 'Well, if you comply with this, that's all you need to do.' So, it's also a balance of how complicated you will want to be the system. If it's multi-criteria, it's more complicated, but also if we want to really "incentivate" to go farther also through the monitoring. Kind of the key aspects on all of that, you can have a varied—decide your approach and the indicators and define "Green," but then, the most important thing is to track the data to really collect that in an efficient way and for that, from all the experiences analyzed for the guide, we see that it's crucial to really integrate it into already existing assistant systems and if that requires to adopt the systems, then it's better than just build a different method to track to really—it's important to see what's in place and see how that can be adopted to tract green procurement activities.

Some examples could be to adopt the financial system—the budget system to click if there—if that purchase is green or not. Some others are just through the electronic tendering or purchasing platforms. For example, the government of Chile in their tender platform and online shop, they have some specific fields that identify a tender as green or not or sustainable or not and then they monitor it automatically because it's all the tenders that are published in that electronic tendering platform. So, with a little bit of modifications of the forms that were already in place, they can track easily and cost-effectively how they are doing. There are some limitations to their system, but at least in terms of facility or cost-efficiency, it's one of the best. It can also be a form that goes together with the tender. That's what the Malta government does. Prior to any tendering, government agencies have to fill up forms where they put the general information for the tender like the amount of money, tender procedure, tendering agency, selection criteria and so on and so forth and there's also a section on green procurement or like the government of Austria, they—because they cover all the administrations in the country, the central and the local, what they've done is to provide some online forms that are voluntary to complete and that you can complete while you prepare your tendering form or your tendering documents and then to gather automatically the information as the tenders are produced and not having to wait until the end of the year. Also, another option is, in the tender itself, to include some reporting requirement especially if you asked suppliers to report or to identify if the tenders are screened or not. One example is from the Basque country, it's a region in Spain. They have a summary table within the tender that says even the subject matter, selection criteria, specifications, work criteria, or special contract clauses; they've introduced social or environmental criteria. We don't know which

ones, but at least it's a way of identifying if the criteria introduced any environmental—if the tendering include an environmental criteria and we can see also a bit of the evolution. It doesn't say which criteria, but you can say 'Okay. In 2009, they were putting more as contract clauses and less as compulsory technical specifications. In 2010, we've seen a progression and the criteria are much more compulsory in the selection criteria or in the technical specification. So, we don't know really the label of green, but at least we see that there's a progress in there and finally, how you compile all these data? You normally—if you have different organizations or departments that are tracking internally the record, then you have to compile them all together. For that, the best for what we've seen in the cases is to really integrate it with all the reporting tools already in place in the organizations, use electronic and standardized systems because they've had the manipulation of information that is faster, and it's nice, so to say, to provide immediate feedback so that each department that it's producing or inputting the data they can see how they are performing. That was one example from the UK government. They changed a bit their monitoring systems and now, what they do is they provide a spreadsheet where everybody inputs data in there and they automatically see how they are doing in relation to the targets that have been said and also in the long run because they started their notes from one year to the other about maybe five or ten years ahead so they cannot see which is the trend that should follow and how they are performing against that and finally, the other aspect that it's winning like kind of more interest, but it's not so often done, is to calculate the environmental benefits to really be able to communicate.

Okay, with green procurement, we are achieving all these environmental impact reductions. This can be done in two ways; one is the based on the purchased products, what we are buying. So, for that, we need to monitor products and not tenders because if not, we don't have the information and then on that, it can be a direct evaluation meaning that we really look at the environmental characteristics of each product that we purchase. So, if we buy computers, each of the different modules—models of the computers, which environmental characteristics they have, and how they are better compared to a baseline model or the models that were before or using a proxy saying, 'Okay, we are not going into the kilowatts hour that each computer is consuming, we take if they are energy-efficiency or Energy Star-certified for example. We take that as a general reference and we use a proxy value to estimate. The good thing of doing that is that we can calculate an approximation of the purchase, but we have to be aware that by doing so, the more one agency buys, the more the environmental benefits it seems and we might be losing the opportunity or we might kind of discriminate against those that are really buying less, which is kind of the ultimate environmental benefits. If you buy less products and if you save all that of producing those products and also what it would imply to use them. So, we really need to be careful about that so that we don't forget the final system that can positively portray those that are reducing consumption and those that are also buying great. One example that is in

the guidelines from the city of Vienna in Austria where they have green procurement plans in this many years ago and normally, they don't calculate the environmental benefits, but they did one of calculation where they estimated the energy they sealed to savings of different product groups that they have been buying organic food, energy-efficiency lamps, water-saving solutions and so on, and they use proxy values to estimate the environmental reduction and the other option is to—oh, sorry—and the other option is to go to the environmental performance that we can do with products that consume energy or that consume water or that generates waste. We can kind of indirectly evaluate if our green procurement practices are having an impact and the good part of that is that we have the real results. We can buy energy-efficient computers and then leave them on and not really reduce any energy consumption. So, through the calculation based on the product estimates, then we can say, 'Oh, we've been saving so much," but then if you actually see their energy performance, 'Okay. No, we haven't saved anything because we are doing something wrong.' So, the good thing of monitoring through the performance is that we had the real results. The downside is that there are many different factors that can influence performance and it's not only how many products and how we use them, but it also depends on the volume of activity and other changes that might be in place. So, you know, it's an indirect evaluation and one example is like in the United States, they have this platform, the federal automobiles statistic tools where they have to input a lot of new information on the vehicles they have like the fleet they have, fuel consumption and other kind of data that comes from different regulations, but with that they really see how they are improving which fuel types they are implementing—if they are really diversifying their vehicles, the fleets are becoming more efficient. So it's an indirect way of monitoring and showing how the green procurement policies have been implemented. So to sum up a bit or to give some final remarks, I would say that there are many different monitoring benefits or benefits of monitoring GPP. There are many different approaches really depending on what is your own situation in terms of policy objectives, in terms of systems in place, other policies that might influence regulation tools to track the expenditures, etc. So it's really important to integrate all GPP within these already existent mechanisms and to do that to involve the relevant stuff. In many cases, green procurement is promoted from the Environmental Ministry or the Environmental Department and we come up with nice solutions and ideas but then it's very difficult to translate because there's no tracking system that compiles the information we are asking for or it requires a lot of time and efforts so we really need to involve the staff in procurement, the staff in budgeting and the staff of other tracking systems to really define a system that works and is efficient and is not a burden to the people who really are compiling the information. It is really important if we want to have an impact to report results if it stays in house, then we achieve much less impact and of the benefits that we mentioned in the beginning to set tiers to evaluate progress. Sometimes we have a general like the 40% to 50% in 2010 of the commission but there's a few year to go. So if we really seek kind of steps

process even if we don't perform so well at the beginning, we can still create them next year if we can do best and it's in that way to help communicate the progress and also to motivate those that are doing a bit worse and to implement accompanying measures. Hyunju already mentioned that there are some incentives from the government they are providing. In the presentation, I didn't go through them but in the guidelines there are other actions like economic incentives or reputational incentives. The link of your monitoring with environmental management systems or other systems in place within the organization that can help implement the monitoring, so really have this in mind when we define not only how to monitor but also how to promote better results and reporting.

So that was all. In the link you can find the guide and the accompanying materials and also if you want to write to me or call, I'm most of the time now in Quebec so here is my telephone in Quebec or if not you can also write and call to the office. That was all. Thank you very much and I pass the floor to the last presentation to Shab.

Shabnam Fardenesh     Thank you. Good morning everybody, my name is Shab Fardenesh with the Department of Energy and today I am going to give you a brief overview of the department's sustainable acquisition program and its associated regulation. So, the next slide please.

Just as a quick overview, in the following slides you'll see where they come from but what DOE and other agencies are required to do is reduce their waste, promote nontoxic or less toxic substances, implement conservation techniques, and reuse materials and recycle to reduce what we are putting into the waste stream. In the following slides you'll see where all this—if we can please, yeah—this come from legislative, executive, and department regulation. There's a whole list of this. The next slide please.

The federal government spends about five hundred billion dollars annually. Manufacturers therefore are especially interested in offering products and materials that meet federal requirements. So, by specifying the sustainable acquisition requirements in all of our purchases, we financially encourage manufacturers to produce healthier sustainable products and materials, and here are some examples of where we've had some influence in the past and where we continue to, you know, build on that. Advance to the next slide please.

Sustainable acquisition really covers a very wide variety, it supports green building, water efficiency, management of electronics, fleets and all of that of course is supportive of reducing our greenhouse gas emissions which is required under Executive Order 13513 and in there each site— and I'll talk a little bit more about this as we move on but our big thing is to reduce our greenhouse gas emission in scopes 1 and 2 and scope 3. Scope 1 and 2 are direct and scope 3 are indirect emissions. Each of our sites is also required to come up with site sustainability plans to show in

each of these areas how they will reduce their greenhouse gases.  If we can please advance to the next slide.

So, sustainable acquisition is an activity that really helps across many organizations within DOE.  It affects what we purchase or cafeteria services, construction, remodeling of building, custodial and fleet services, landscaping, and so on.  Thank you.

So as far back as 2005 DOE has issued orders and currently it is DOE Order 436.1, which has been in effect since 2011.  This order really requires the sites, the DOE sites to really look and see how to properly strategize in reducing the greenhouse gases and to ensure that their meeting on their environmental requirements.  So the way to do this, that has been going on for many years that has been successful is DOE sites has been asked to use an environmental management system which we're going to talk a little bit more about—we refer to that as an EMS and that becomes the platform for the each site to meet as greenhouse gas reduction goes which is outlined in the site sustainability plan.  The EMS is not a single document but it's really a set of procedures, structures, and management of the environmental issues.  It's really a way to strategize.  Ok, then the next slide.

So there's three pillars the way we look at it in building an effective sustainable acquisition programs  We're gonna look at each of them.  On pillar 1, it's really use an EMS to strategize.  Pillar 2 is to integrate the requirements and specifications into our contracts and pillar 3 is about the actual purchasing.  So we're gonna start with pillar 1 in the next slide.  We're going to look at the EMS and how to develop an effective EMS and implement it to include sustainable acquisition.  So EMS helps sites to address environmental aspects of their operations and activities.  It builds a framework for the site sustainability goals, which we refer to as SSP to reduce the greenhouse gas emissions and to integrate sustainable acquisition into the EMS.  It's important for the site as their building the teams to ensure procurement staff or represent it.  Also to make sure that they integrate the site sustainability goals into their EMS so that they align everything together, and then lastly it's following the "plan do check act" model which is really you plan it, you do it, you check it, and then you come back you act on it and then you go back into the planning, you have to keep circling.  This confirms that there's a good integration of sustainable acquisition into the plan.

In the next slide, we will see how it would work.  So, in the top right hand, the first box says prioritize products.  In that one what we're doing is doing a landscape survey to see what we have and then how do we prioritize cause each site is unique to itself so it's really important to look at their unique situation and what works for them and where they will have the biggest impact.  It's not really at one site; it's all that the strategy is very similar across the board.  The second step is to set goals to transition to products and decide which ones will have again the biggest

impact, where you can really affect your goals and meet them through your actions. Then in pillar 2 as you'll see here what you do then is identify the purchasing system so for in our case it would be in our contracts and then the next step for the pillar 3 is to choose the products that best suit the organizations and evaluate these efforts and report them and then you go back and you do another landscape survey and see how you're doing and the cycle continues.

So in pillar 2 what we do is we are looking in specifying the requirements into our contracts. In our next slide you'll see that there are requirements to ensure that sustainable acquisition is included in at least 95% of our contract. The requirement covers energy and water efficiency, bio-based and recycled content, non-ozone depleting, non-toxic, registered EPEAT electronic equipment and other environmentally preferable attributes. In this one there's an examples, so if a site is looking to lease space, this is the way that they can look at their contract and what we have is we have specification and contract template language and the Federal Acquisition Requirement 52.223 that they can then incorporate into their leasing contract. So one thing to look at is the sustainable acquisition requirements incorporate would be ENERGY STAR/FEMP lighting for example. These are the things that would really benefit the owner of the building as well because they really reduce cost, but for the employees' I mean bio-based cleaning products and carpet paint these things are also good for the health of the employees. Recycling service is also another one.

Okay, in pillar 3, we're looking at purchasing goods and services that meet the sustainable acquisition requirements. So, the first thing we do is we ask our sites to see if they actually need to make the purchase. So, the best thing they can do is not purchase then after that is to look and see if there is something that they can re-use, that's another way to reduce our waste stream and if they have to purchase, then we ask them to seek products that conserve resources, same energy lower water use, and reduce health and environmental impacts and also implicate the life cycle information for both upstream and downstream impacts. And to bring all this together DOE has a Sustainable Acquisition Working Group that meet every other month and what this group does is they review the products and they share the information so in other words we're kind of like the yelp or view but an internal one to say, 'This product was really great it met my….' I give it four stars if it met all of our requirements, the cost is reasonable, the performance is great or it wasn't and what they also do at this is they share experiences and success stories. So this really helps bring everybody together and making sure that they understand what is out there, what isn't, what the requirements mean, whatever changes are, this is a great way for all of us to communicate within the sustainable acquisition community at DOE.

In the next slide there are big laundry lists of resources that are scientifically used for the various areas. So here Aure talked about fleets.

The alternative fuel, the ASDC is based on and the [Indiscernible][1:13:47] program really talked about what aspects of the fleet you need to know that supports sustainable acquisition and meets your requirement and again it goes back to reducing the greenhouse gases and it also goes on for bio-based products. Now, not all of this are DOE, some of them are GSA, some of them are managed through EPA. There's a wide variety but all of the federal government uses the same one to get the information.

Now what we did at DOE, we did something, we have a voluntary program called the GreenBuy Program and I'm gonna talk a little about this to you. This was the way that we are not only recognizing our sites for achieving better than the norm but also it helps them navigate through all of that. So, the GreenBuy program was launched in 2010. It recognizes the sites where the green purchasing that extends beyond the minimum compliance requirements. It also recognizes the sites that purchase products to save energy, conserve water, and reduce health and environmental impacts. Like I said it's optional. This is a voluntary program but it's seems to have had very good response from our sites.

In the next slide I'll tell you a little bit more about how it works. So, what we did through the sustainable acquisition working program is we developed a list of products that are most typically used by the DOE sites and then those products what we did is we looked at their attributes and to make sure that they meet the requirements that are all out there as you can see it the energy efficient, water efficient like you know EPEAT's recycle and then what we did is we wanted to see if within each those areas and products that we purchased are there products that are better than the designated levels, and if there are we put that on the list. We put the best of the greenest that we can on the list. So, the reason we did this is to encourage our sites to purchase the greenest available but also one that meets our requirements and meets the performance and it's something that's been tested. So, the way the GreenBuy program works is all the sites have to do is purchase from that list and if we go to the next slide we'll talk a little bit more about you know you can see a little bit more about that. So there are 50 products that are listed there and they're categorized in 7 different categories. So a site will look at their category pick a product and then that will automatically nominate them for the GreenBuy Recognition Program and if you want to see the product you can go to the hss.doe.gov website and its listed there. The categories are in the next slide they cover cafeteria, construction custodial, grounds/landscaping and you can see this. They basically cut across all the operations and then within those there are products that we think are the greenest that is available on the market.

In the next slide we will see how it works, so to get an award there's three levels. There's the gold silver and bronze. For the gold level       Site has to purchase nine products from five different categories and three of those must be FEMP or Energy Star. For the silver, it's six products in

three categories with two FEMP or Energy Star and then bronze level. Its three products in two categories with one of them being FEMP or Energy Star. And what's notable here is there's no recognition for achieving the same level two consecutive years in a row except for the gold level, which is the highest. Also, DOE sites may only report up to three of the same products on the previous year and this is done to encourage them to go to the other products, and you know obviously. So, that the nomination isn't automatic. So once they report on which priority product they purchase then that will nominate them if based on this categorization, and that is really it.

On the next slide, this tells you about our team and what's in the DOE framework and our office is The Office of Sustainability Support. We are the ones who lead the EMS and the GreenBuy Program. The Sustainability Performance Office oversees the department sustainability goals that are required under 13514 and Executive Order 13423 for the greenhouse gas reduction goals. FEMP is in charge of our energy related goals and we also have a Procurement and Contracting office that provides guidelines to the sites on regulation and procedures and the contact for each of them are on the following slides. So, I am listed in the first and then for each of the other offices we have the contacts and that's it. I would like to thank everybody for their time. I don't know if any of you are going to question but—

Sean Esterly          Yeah we have a couple minutes and I just like to first thank each of the panelist for those great presentations and if you have a few minutes for questions. I'll start with the first one, which is directed towards Robert, and that question is what are the parameters to finding GPP in the EU?

Robert Kaukewitsch   Okay, well I mentioned it in my presentation that we had in 2008, the communication public procurement for better environment, in there we said that we want to achieve a 50% target for ten product groups. The first ten product groups we have developed criteria for the rather straightforward ones, construction, transport, foods, IT and so on so forth and we said that they must meet the so-called core criteria that we have developed. We have also comprehensive criteria, more ambitious criteria but then the devil is in the detail because Aure mentioned that in her presentation. You go for a single criterion or you do your goal for multiple criteria, and we had a lot of our criteria. We have a very long list of requirements and they have a very different importance. If you look at buildings for example, there are a lot of ways to define a green building. The most important element at the moment is surely still energy efficiency, but how do you weigh if somebody is good on energy efficiency but not good on water efficiency, not well on handle the substances in their materials. You see, they're not green anymore, so this is very debatable and it has to be very well thought through and in the design of the monitoring, something we'll be discussing also in the coming month.

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| Sean Esterly | Right. Thank you, Robert and the next question is why does the GreenBuy Program include several products that are beyond their required designation level? |
| Shabnam Fardanesh | The reason is that the market has moved at a faster pace than many of our requirements in our regulations, so in many cases, the new norm for the green level is at a much higher rate than what is listed as a designated level in our regulation. So, since those products are available so readily, we prefer to include them on our priority product list. One example would be 30%—the regulation is for recycle paper is at 30% and you'll see that in the market fifty and even a hundred percent is readily available, so that's the reason why. |
| Sean Esterly | Alright, thank you Shab. The last two remaining questions are both directed towards Hyunju Lee, unfortunately she was not going to be able to make it for the Question and Answer Session, so I just want to let the attendees know that presented those questions, I will e-mail those along to her and she will provide responses via email directly to you. So with that, those are the last questions and I just want to thank everyone again for the great presentations and we'll move along to the attendee survey. We have three short questions for you to answer. Heather if you could go ahead and pull up the first question and that question is     The Webinar content provided me with useful information and insight. |
| | The second question   The Webinar's presenters were effective. |
| | The final question      Overall, the Webinar met my expectations. |
| | Alright very good that completes our survey. I just like to—we have a couple of minutes, I would like to provide the panelists with an opportunity for any closing remarks that they might have, maybe we could go on the order that they had presented,  So Graziella if you have anything or Robert and then we move on to the other panelist. |
| Graziella Siciliano | Nope.  I just want to thank everyone for participating today. |
| Robert Kaukewitsch | This is Robert.  I just want to say that I definitely would like to get in touch with Shabnam and with Hyunju regarding the criteria development because you are developing a definition of green criteria.  We're doing it as well and I suppose that there's a lot of stuff that you are doing that we are doing here on the other side of the Atlantic as well so that an exchange could help us reduce resource use. |
| Sean Esterly | Aure or Shab if you have any closing remarks? |
| Aure Adell | Yeah, I would like to say thank you again for being there and of course, again the presentation is only the highlights but in the guide that's available in SEAD website, they will find much more insight of the pros and cons of each kind of monitoring system and more recommendation of how to improve their systems and how to design accompanying measures |

that can improve not only the system but also the reporting and the results of the monitoring.  So, thanks again.

Sean Esterly          Alright and thank you again to our panelist.  On behalf of the Clean Energy Solution Center and also to our attendees for participating in today's webinar, I had a great audience and very much appreciate your time and I invite our attendees to check the [Solutions Center website](#) over the next few weeks.  If you'd like to view the slides and listen to our recording of today's presentations as well as any previously held webinars.  Additionally, you will find information on upcoming webinars and other training events and 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.  I hope everyone has a great rest of your day and we hope to see you again at future Clean Energy Solutions Center events and this concludes our webinar.