

REN21 Renewables 2014 Global Status Report: Another Record Year for Renewables

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Presenter

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Sean

Hello everyone I'm Sean Esterly with the National Renewable Energy Laboratory and welcome to today's webinar which is being hosted by the Clean Energy Solutions Center in their renewable energy policy network of the 21st century, also known as REN21. Today's webinar is focused on recently released renewables 2014 Global Status Report.

And, one important note of mention before we begin our presentation 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 collected by technical experts.

And before we begin I'll go over some of the webinar features for audio, you have two options. You may either listen to your computer or over your telephone. If you do choose to listen to your computer, please select the mic-in-speakers option in the audio pane. This will eliminate the possibility— the possibility of feedback and echo and if you choose to dial in by phone, please select the telephone option and then a button—I mean, box on the right side on the right side will display the telephone number and audio pin that you should use to dial in.

Panelist you just have to please mute your audio device if you are not presenting. And if anyone has technical difficulties with the webinar, you

can contact their helpdesk at the bottom of that slide, the number is 885 259 3826.

And we encourage anyone from the audience to submit questions at any point throughout the webinar. If you do have a question, you can type that into the question pane in the Go to Webinar panel, and it will be submitted to me through that also if you are having difficulty viewing the material through the webinar portal, you will find pdf copies of the presentation at cleanergysolutions.org/training and you can follow on as the speakers present. And also an audio recording of the presentations will be posted within about a week of the printout—today’s broadcast.

And today’s webinar agenda is centered on the presentation from our guest panelists, Christine Lins. And Christine has been kind enough to join us to discuss the 2014 edition of REN21’s Renewable Global Status Report, which provides the comprehensive and timely overview of renewable energy market, industry investment and policy development around the world.

Now before the speaker begins their presentation, I will provide a short informative overview of the Clean Energy Solutions Center initiative and then following the presentations, we’ll have a question-answer session where Christine will address questions submitted by the audience and then we’ll have some closing remarks and a brief survey.

I will try to provide a bit of background on how the Solutions Center came to be. The Solutions Center is an initiative of the Clean Energy Ministerial and is supported through a partnership with U.N. Energy. It was launched in April of 2011, is primarily led by Australia, the United States, and other CEM Partners. Now comes with this unique partnership includes support of developing countries through enhancement of resources on policies relating to energy ____, no cost policy assistance and peer to peer learning and training tools such as the webinar you’re attending today.

Now the Solution’s Center’s four primary goals. The first goal is to serve as a clearinghouse of Clean Energy Policy Resources. Second goal is to share policy best practices, data in an outfit tool specifically clean energy policies and programs. Third goal is to deliver dynamic services, that enable expert assistance, learning and peer-peer sharing of experiences, and lastly, the center fosters dialogue that merges policy issues and innovations around the globe. And our primary audience is energy policy makers and analysts from government and technical organizations in all countries. We also strive to engage with the private sector, NGO’s and civil society.

One of the more key features that the Solutions Center provides is it’s expert policy assistance known as “Ask an Expert”. And, this valuable service has establishing broad teams of over 30 experts from around the globe who are available to provide remote policy advice in and out to all

countries at no cost. So for example in the area of renewable policy in market design, we're very pleased to have David Jacobs, a research associate at the institute of Advanced Sustainability Studies, serving as our expert. So, if you have a need for policy assistance in the renewable energy, policy and market design sector, we do encourage you to use this useful service. Again, it's provided free of charge. To request assistance, simply submit your request by registering to our Ask an Expert feature at cleanergysolutions.org/experts. We also invite you to spread the word about this service to those in your networks and organizations. So in summary, we encourage you to explore and take advantage of the Solutions Center's resources and services including the expert policy assistance, the day to days of clean policy and resources, subscribe to the newsletter, participate in webinars like this one.

And now I'd like to provide the introduction to today's distinguished panelists. We have with us today Christine Lins who is the executive secretary of the Renewable Energy Policy Secretary of the 21st century, and has more than 18 years of working experience in the field of renewable energy sources. And with that introduction, I'd like to welcome Christine to today's webinar.

Christine

Thank you very much, Shawn, good morning, good afternoon, ladies and gentlemen, it's a great pleasure for me to be here with you today, I'm just trying to get ready. I have my screen here ready here with you; it's my pleasure to introduce renewables 2014 Global Status Report to you today at this webinar organized by the Clean Energy Solutions Center. REN 21's global status report is launched today at the first annual Sustainable Energy for All forum in New York and we are happy to share the latest trends about renewable energy with this distinguished audience.

So, first released in 2005, the annual renewable global status report provides a comprehensive and friendly overview of renewable energy markets, industries, investments, and policy developments. It enables policymakers industry invest in civil society to make informed decisions. Developing this report, we relied on a network of over 500 contributors, researchers from all around the world to contribute data and this gives a comprehensive review as I mentioned on markets, industry, investment growth, policy landscapes. We have a feature this year focusing on the last decade of renewable energy progress and last but not least, the renewable energy, that the renewable global status report covers all renewable sectors including power capacity and transport and now I'm now going take you through the main findings of the report.

As you see on the slide, the evolution of renewable energy of the past decade has surpassed all expectations. Global installed capacity and production from all renewable technologies have increased substantially. Renewables power capacity excluding hydropower saw a sevenfold increase during the past decade. You see there on the slide, an increase of 85 kilowatt from 2004 to 560 kilowatt to 2013.

In this decade, cost for most technologies have decreased significantly and as you will see later today, support policies have continued to spread throughout the world. Development in the early 2000's showed upward trends in global renewable energy investments capacity and integration across all sectors. Yet most mainstream projections did not predict the extraordinary expansion of renewables that was to unfold in the coming decades. We had a situation that numerous scenarios, protected levels of renewable energy for 2020 that were already surpassed by 2010.

And today, renewable energy technology is not only seen as a tool for improving energy security but also as a way to mitigate greenhouse gas emissions and provide direct and indirect social benefits such as jobs, etcetera. Over the last ten years, continuing technology advances in rapid deployment of many renewable energy technologies have demonstrated but the question is no longer whether renewables have a role to play in the provision of energy services but rather how we can best increase the current base to achieve the high shares of renewables in the near future providing full energy access to all by 2030.

So, where do we stand with renewable energy in the world today? Today, renewables provide an estimated 19% of global final energy consumption. The renewable share and final energy consumption remains at about a level with 2011 even with the share of modern renewables increased. And this is because of rapid growth in modern renewable energy is tempered by both slow migration away from traditional biomass despite the fact that we see that the share of traditional biomass has decreased it still is a rather slow decrease. And also we have the situation that global energy demand is rising so the overall share that renewables provided by the energy consumption is somehow increased somehow moderated by its development.

And that brings me already to the sustainable energy for all campaign by the UN secretary general which says the objective of doubling the share of renewables by 2030 from 2010 levels so we talk about an increase from 18 to 36 percent and in order to reach this we can see that clearly see that we cannot continue with business as usual. We need to increase efforts to speed up renewable energy deployments and we also need more action in the field of energy efficiency in order to meet demand because clearly that we have a positive impact on the reaching of the renewables objectives.

What we do in the global status report is that we give an overview on the global renewable energy champions both in terms of annual investments and capacity additions as well as in total capacity installed. For the sake of time, I am now not going to go through the entire table but I'll just point out the first two lines out here on the slide, the first line that I circled the two lines that I circled in red the first line gives an overview on investment in renewable power and fuels. In annual investment, in 2013 and we see the champion countries being China, the United states, and the united kingdom and Germany. So those renewable energy champions that we

tend to know and then for the first year first time this year, we did an exercise that we put investments in relation to GDP and then you see that actually a whole different group of countries is emerging. So when looking at annual investments compared to GDP we see that the champions are Uruguay, Mauritius, Costa Rica, South Africa and Nicaragua. And this is clear indication, highlighting the rapid advancement of renewable energy in developing countries something I think very interesting. I will come back to that later today and also very encouraging because clearly it's the developing world that has that is hankering for additional energy capacities, power capacities and also reduction of costs. We see that renewables are really making their way into energy mixes in developing countries.

When looking at total capacities installed very clearly see the again a very diverse picture when you then compare renewables capacity installed per capita we clearly see that different new countries are leading that will be it can be explained by the fact that 42% of the global hydro renewables capacity is located in Europe compared to less than 17 percent of the global electricity demand in that region. This already shows that we have very high renewable shares and these high renewable shares also explain the need for increased detention of integration of renewables in the energy system something that is currently under discussion a lot in markets such as Europe.

So now let me take you quickly through the different sectors Power, heating and cooling as well as transport... in the power sector, renewable energy comprise 26.4% of global power generation capacity and over 22% of global electricity was produced from global energy in 2013.

The most significant growth occurred in the power sector with growth global renewables power capacity exceeding 1560kilowatts. That's an increase of more than 8% over 2012 and in 2013 renewables accounted for more than 56% of net additions to global power capacity and presented a far higher share of capacity added in several countries. For example in European Union, 72 percent of all newly built power plants were renewable spaced. The [00:14:37] unintelligible] are achieving high levels of penetration in several countries for example for 2013, wind power makes over 33% pf electricity demand in Denmark and about 21% of electricity demand in Spain and in Italy solar PV met 74.8% of total annual electricity demand. So we see that we are not anymore talking about small contributions of renewables but we see that renewables are becoming mainstream energy source China's new renewable power capacity in 2013 has surpassed fossil fuel and nuclear capacity for the first time. So we see, it's not only examples on one city countries but also from other countries all over the world that show the rapid update of renewables.

As far as heating and cooling is concerned heat from modern biomass, solar and thermal sources account for small but regular rising growth of

shares in the global heat demand amounting to an estimated 10%. The use of modern renewable technologies for heating and cooling is still however limited relative to the vast potential. I think this is also something which we have to be careful about because when talking about doubling the shares of renewables in final energy consumption heating and cooling plays a big role and many of our discussions tend to focus on the electricity sector and there was not enough attention on heating and cooling.

There are however encouraging best practice examples such as Denmark, for example who bans the use of fossil fueled fired boilers in new buildings as of 2013 and aims for renewables to provide almost 40% of total heat supply by 2020. We have the situation and examples where countries really put in place measures to promote renewables in the energy sector. As far as transport is concerned, liquid bio fuels met around 2.3 % of total transport fuel demand. There is also a growing interest in other renewable energy options in the transport sector. And furthermore, the limited but increasing initiatives link electric transport systems with renewable energy particularly at a regional level.

I am now going take you through the main findings of the different technological areas highlighted in the global status report I forgot to say in the beginning that the report including an e-reader, key findings, recommendations for policy makers as well as all the graphs can be downloaded free of charge from the REN21 website REN21.net and you get the whole information package there.

When it comes to hydropower, about 40 gigabytes of new hydropower capacity was commissioned in 2013 increasing total global capacity to around 4% to approximately 1000 gigabyte installed and the and global hydropower during the year was under an estimated 3750 terabyte-hours. Modernization of ageing hydropower facilities is a growing global market. some countries are seeing a trend towards smaller reservoirs and multi turbine projects and we also see that there is an increasing rate of provision on the potential of hydropower to complement other renewable technologies such as reliable wind and solar power. so and this is always a beauty when we talk about renewable energy we don't talk about only one technology but about a basket of different options.

The solar PV market's had a record year 2013 adding about 39 gigawatts for a total of approximately 139 gigawatts of capacity installed. For the first time modern PV capacity was more PV was added than wind. China's also particular growth accounted of only 1/3 of global capacity added followed by Japan and the United States and solar is starting to play a substantial role in electricity generation in some countries. I earlier mentioned for example Italy 7.9% of electricity I demand provided by solar. But we also see that no prices are opening new markets from Africa the middle east to Asia and America.

As far as wind power is concerned, more than 35 gigawatts of wind power capacity was added in 2013 bringing the total, about 318 gigawatts however for several years the market was down to 10 gigawatt compared to 2012 reflecting primarily as the flop in the US markets. Offshore wind had a record year with about 1.6 gigabyte added almost all of it in the EU. And we have a situation that wind generated about 140 billion kilowatt-hours in China during 2013. Which is an increase of 40% compared to 2012 and such exceeds nuclear generation for the second year running. And globally, wind power by the end of 2013 the capacity was enough to meet an estimated 3% of total electricity consumption. So, also they are quite impressive figures.

Global CSP capacity was up nearly 0.9 gigabyte in 2013 to reaching 3.4 gigabytes while the united states and Spain remain the market leaders markets continued to shift to developing countries with high levels of inspiration. Beyond these leading markets the capacity nearly crippled with projects coming online in the United Arab Emirates, India, and Japan. And we notice a trend towards larger plans that was maintained to take advantage of economists' scale while improved design and manufacturing techniques reduced cost.

In the field of Bioenergy, demand continued to grow in the heat power and transport sectors total primary energy consumption of biomass reached approximately 57 EJ in 2013. out of which almost 60 percent were traditional biomass. Heating accounted for the majority of the biomass used with modern biomass capacity deriving about 1 percent to an estimated 296 gigabytes per month. Global bio power capacity was up by an estimated 5 gigawatts to 88 gigawatts and the demand for modern biomass is thriving and increasing the national trade in solid biofuels including woods, pellets, something that's be explained in further detail in the status report.

As far as geothermal is concerned, the net increase of geothermal was about 455 MW bringing the total capacity to 12 GW. The use of low temperature feeds for both power and heat continues to expand increasing the application of geothermal energy beyond high temperature locations and when it comes to the lead countries for geothermal electric energy generation capacity these are United States, Philippines, Indonesia, Mexico and Italy and countries that added capacity and New Zealand, Turkey, United States, Kenya, Mexico, Philippines, Germany, Italy, and Australia.

In the field of solar hot water and air collectors there, you see the capacity increased and reached estimated 330 gigawatts by the end of 2013. As in the past years, China was the main market accounting for more than 80% of the global market. And in the field we also see a trend that goes going larger domestic system and we saw the trend, this trend continued as did the growing interest in the use of solar thermal technology for district heating, cooling and industrial applications.

So, now after having taken you to the main findings on the different technologies a couple of words on jobs and investments and policy frameworks as far as job are concerned, job creation has come to the forefront of the policy making debate. Today over 6.5 million people work directly or indirectly in the renewable sector. Renewable energy employment could be used to advance, to warn more countries but the bulk of employment remains concentrated in just a few namely in China, Brazil, the United States India, Bangladesh, and some EU countries, China remains the largest employer in the sector with 60% employment concentrated within solar PV and the market shifts that we notice in general towards jobs in the installation segment of the value chain installation and maintenance. When it comes to investments, 2013 was an interesting year job renew investments in renewable power and fuels not including in hydropower projects larger than 50 megawatts was an estimated 214 billion US dollars which is a decrease of 14% relative to 2012 and which is 23% lower than the record holder 2011. However, we see that investment in renewable power possibly out-pays fossil fuels for the 40 year rally and the second line here is the decline in investments after several years of growth was due in part uncertainty of incentive policies in Europe and the United States to retracted reductions in support in some countries and now last but not least to reduction in technology cost such as the next slides nicely illustrates. Because there you see that actually what we did is we compared increase in solar PV capacity I mentioned that we had an increase of 39 gigawatt compared to 2012 and then it puts in relation the increasing capacity with the decrease in investments.

Even as globally investments in solar PV declined, by nearly 22 percent, relative to 2012, new capacity installations increased by more than 32 percent. These still cost reductions throughout the last year as seen in wind and PV make renewables attractive for new markets. In developing countries where there's a strong need for electricity generation capacities and where energy demand is increasing and I think despite the challenging situation for the industry, related to this development the overall cost reduction of renewable technology is a very good signal and it's a very good news for expansion of markets.

Further, despite the overall downward trend in work investment, there was significant exceptions at country level for example Europe's renewable energy investment was down 44% in 2012 and despite the overall decline in China's investment for the first time China ever invested more in renewable energy than did all of Europe combined and invested more in renewable power capacity than in fossil fuels. We see in 2013 a clear shift in investment moving east to Asia and Oceania. The parts in dark blue on the graph that show an increase in investment including the Americas excluding the US and Brazil, the most notable shift was in Japan where investment in renewable energy excluding research and development increased by 80% relative to 2012 levels and other countries that increased

their investment in 2013 included Canada, Chile, Israel, New Zealand, United Kingdom and Uruguay. So and then also in this slide you have the share of investments between developing countries and between developed countries. As far as policy is concerned, by early 2014, at least 144 countries had renewable energy and targets against 138 who had renewable energy policy support in place. Developing and emerging economies have led the expansion in the recent years and account for 95 out of these countries with policy support from 15 in 2005.

As in last year's most renewable energy policies in active revised during 2013 focus on the power sector [00:28:30.20] unintelligible] portfolios done that are the most popular instruments, public competitive bidding, tendering a game for the prominence, a number of countries turning to public auction rising from 8 to 55 countries as early 2014. Targets and policies supporting renewable energy heating and cooling are steadily increasing so you see on the slide that in 2013 we have 19 countries with heat obligations of mandates in place and 63 countries had implemented policies for consumption of biofuels for transport. in 2013 however there was an increasing focus on revisions to existing policies and targets including retroactive changes with some adjustments made to improve policy effectiveness and efficiency and others meant to curtail cost associated with the supporting the development of renewables at the same time it was of course not so good news but at the same time some countries explained its support and in adopted its ambitious new targets.

Particularly in Europe, new policies are emerging to advance and manage the integration of renewables into existing energy system including the support for storage demands of management and smart trade technology So the status report provides a detailed overview on the different policies in place and here on this slide for example here you will see the number of countries having enacted the different policy instruments and what we also do we show a bit on how a renewable energy policy framework's evolve over time. In that graph we see lower income, lower middle income as well as upper middle income countries featured the fastest policy update during the last decade whereas the high income countries that is the line in dark orange, are the ones with the slowest update of course also resides from the fact that these are the countries that already have most comprehensive policy frameworks in place. And again here, we show the map of the world with policies in place we that the dark orange ones are the countries that have enacted policies between 2010 and early 2014, we also see fill of the map, we see some large parts that do not yet have policies in place so, there is still quite some way to go.

Energy excess in the use of distributed renewable energy also something tracked by the global status report.in these areas we see that progress is made on all developing continents except Africa, because the population electrified is bigger than the growth in total population in Africa however the population growth exceeded the rate of electrification and there are still only 43 % of its population electrified. So clearly see where there are

still a lot a long way to go. We can also notice that new business and finance models for rural energy market is emerging as the potential for rural energy markets is being recognized. And last but not the least, technological advances enable the integration of mini grids the ICT applications for power management and services. And so there are new technological opportunities that are gaining ground.

In conclusion, I would say that the global perception of renewable energy has shifted considerable as nicely illustrated by a recent cover of the New Yorker. Today, renewables have the right in the mainstream and are the preferred energy source of the general public in many parts of the world. Also the findings presented on the global status report clearly document advances achieved during the last decade. It is clear that we need to move faster and more deliberately if we are serious in doubling the global share of renewables by 2030 and about ensuring access to clean and sustainable energy for all people by 2030. For this to become reality, current thinking needs to change continuing the status quo of perpetual apologies and actions is no longer sufficient instead, technology development, finance models as well as stable and predictable energy policies needs to systematically linked across the public and private sectors in order to support and thrive and be energy sufficient and we clearly see that we need to create more emphasis on integration of renewables, of creating a leveled playing field via the energy sector. I'm thinking there about the topic of addressing cost in fuel subsidies which has still by far natural amounts are spent in renewable support and also by insisting on stable and predictable policy frameworks capable to sustain an increasing investment levels. To pay attention to the heating and cooling sector and last but not least, to improve energy data and to monitor the advancements in achieving better energy transition. For this to happen, close collaboration between all actors from the public and the private sector will be needed to make this transition to renewables a reality soon.

And with this I would like to thank you for your attention, thank the Clean Energy Solutions Center for hosting today's webinar, and thank you as well for spreading the word. Again, go through our website where you'll find all information about the Renewables status report. You're very welcome to use that for your own communication and I would also like to announce that we will be running, after the launch of the report today, a series of regional webinars where we will be able to go in further depths in development in the different parts of the world and with this, I would like to thank you for your attention and to my colleagues in the Clean Energy Solutions Center for handling the discussion and questions.

Sean

Great. Thank you Christine and I would like to remind the audience that if you have any questions for Christine, you can submit those to the question team in the Go To webinar window and simply type those in to submit them. And we did receive a question. The first one is in regards to the map, which Heather put up back up for us. We're just wondering, what the white color in the map, what that represents...

Christine

Well, the light blue is the countries with no policy and no data and again, this is I said, I should've said that show developing and emerging countries with renewable energy policies so of course, the fact that the US Australia Europe are all in white that does not mean that they do not have any policies this was really just a map showing on how the emerging and developing countries are quickly catching up with making policy frameworks.

Sean

Thank you Christine. And could you talk a little bit more maybe about the regions that you see having the potential the most growth in renewables in **the next decade?**

Christine

When we know and different studies show that there is much renewable energy potential in all parts of the world basically. We have a situation where especially in Europe and the US we have faced some kind of support in the last couple of years. This is on the one hand due to already quite high shares of renewable but this is also due to the fact that these parts of the world they have enough energy electricity capacity installed and the promotion of renewables is largely also about the replacement of existing fossil fuel rate capacity by renewable energy sources which is something that especially with ageing capacity the capacity of coming to age is something that will happen also in the future and in many other parts in the world, the situation is a bit different. In the Emerging countries and the developing countries, there is an increased need for additional energy generating capacity and we see the renewables will cost structures come down. Really making their way into the energy systems of these countries and so when you actually look at where this year. The biggest increases were in Asia and Australia excluding China and India I refer to Japan with its capacity investment increased which of course is also a direct implication of the change in intervening energy capacity after the Fukushima accident. And then we also see that the Americas excluding the US and Brazil sorry, Latin America we see an increase in renewables. We also see the last couple of years featured an increase in many announcements on the field of renewable energy policy in the MENA region in the Middle East. I think something that is very, very interesting. A decade ago nobody would believe that the International Renewable energy arena will be based in the United Arab Emirates in Abu Dhabi. And that these countries actually start thinking about a way to preserve their own fossil fuel resources maybe for export and generate their energy needs with abandoned available renewable energy in their countries. I think also, we are going to see developments in China. Ten years ago, China started putting in place a renewable energy law but basically not a lot of development. But nowadays, China is a champion in most areas not only in the field of manufacturing but also as I mentioned 1/3 of PV capacity installed is installed in China. So we see that the Chinese are not only very active, on the task of development level and China is also really advancing on investment and on deploying renewable hydro OPV in their own country. So I think we are going to continue to see the further spreading of renewables also from a market perspective its interesting

because we had the situation a couple of years ago, that renewables has been concentrated on some countries and now the picture is much more diverse, and we will definitely also see the emergence of renewable energy in Africa. The maps that you see there on the screen actually show quite many spots - dark brown or orange spots in Africa. These are regions where policies were only recently enacted. We are at the moment, for example working together with ECREEE the Economic commission on Renewable Energy and Energy efficiency for Western Africa. And a ECOWAS status report for the ECOWAS region. And we will probably shed the light on these developments in Autumn this year. So clearly, I think there will still be and log of developments happening on the African continent where we will also next year be hosting an international renewable energy conference in October 2015 together with the South African Government in Cape Town South Africa.

Sean

Thank you Christine. Next question we have, as based on your analysis, for this report, are there, what major or underlying policy and market characteristic allowed for successful increases in the renewable energy deployment, what were the major ones. Do you know this?

Christine

As I mentioned the main policy framework that we have seen actually deployed in 2013 are in the power sector and they are currently there is the most popular. Actually we have 98 countries in place for renewable petroleum standards, as the most popular instruments but what you have seen as a very interesting development I think is number of countries turning to private auctions actually rising, yes now actually 55 countries are now put to place with very good results and very interesting economic results as well. For example, auctions in Brazil and bringing prices down and overall I would say I see the emergence of different instruments and what we see as being the most important is that whatever policy framework a country decides to deploy it is important that this policy framework is stable and predictable and what you've seen in the past specially in some European countries where the policy framework was changed and sometimes it was changed retroactively and there we see either this is detrimental to the market because it makes investors nervous, investments at the end should stay for a long time and so an investor has to learn to calculate with the return on investment. If the policy framework is changing rapidly then that creates a lot of insecurity but we see that different countries are having success with different instruments there is no one size fits all solution. We of course also see that with the evolution of technology and reduction of costs, policy frameworks need to be adapted in order to take note of the technology improvements and cost reductions. and we see again something that we slowly see emerging but still, I would say at a relatively low pace, the emergence of policies in the heating and cooling where still there is a long way to go and still a big challenge.

Sean

Thanks again Christine. And that is actually the last question that I've received from the audience and so I was wondering if you want to talk a

little bit about your regional webinars and what it would entail in case our attendees would like to go to one of those.

Christine

Yes, I mean it is now in the third year that we are working together with the Clean Energy Solutions Center on a series of webinars is a great way of engaging with an audience in addition to the many presentations at conferences etcetera that we are going and what we said, what we started last year, is to propose a series of regional webinars for different regions of the world so we will have one for China, for India, for North America, for Latin America, MENA region, for Africa, for Europe, and for Australia and Oceania of course, we will provide insights in regional developments and set the global findings a bit in context with regional developments because we can see the global developments renewables can often inspire the discussion and debate in the region and also put things into context. And what we do, we basically present an overview, a quick overview on snap overview on say, on the global situation. I can have somebody from our network presenting the regional context and then engaging the audience with discussion and debate about regional specifics of renewed support. I think we are allowed to announce to finalize the schedule for these webinars, which will take place in the course of May, June, July, August, and some of them are in early September. They will be announced in the Clean Energy Solution Website and if you like today's webinar, we encourage you and invite you to spread the word and invite your colleagues to join for some of these.

Sean

Thank you Christine. And now before we move on to the quick survey for the audience, Christine, if you have any closing remarks or final statements you want to make, go ahead.

Christine

No, I think I said it, www.REN21.net/csr you'll find also all the graphs that were presented in today's webinar for your own use. We're very happy if you'll help us spread the word about global renewable developments As I Said I think it's an encouraging development that we saw last year. Actually, there's still a long way to go. If we are to reach this sustainable energy for all objectives by 2013 and if we are having rapid advance towards a renewable energy future, we are looking forward to today's launch of the sustainable energy for all decade here at this first annual sustainable energy forum at United Nations, New York.

And we look forward to engaging with many of you on the continued promotion of renewables. We also, our network is an open one so, if you want to contribute, our Global Status Report, don't hesitate to contact us. We'll be happy to see how we can collaborate with you for the next editions to come. And with this, I would like to thank again the Clean Energy Solutions Center for facilitating today in this webinar and wish you all a good day. Thank you very much.

Sean

Thanks Christine, and we did actually have a couple more questions come in and since we have time, it would be great if we could adjust those

quickly? And, Christine, the first question that I just got is, Where are mainly, where are renewable energy technology being produced.

Christine When you look at employment, this is related to the production, we see that more and more countries are putting in place, also policies to promote local land reparations and also creation of jobs in countries but right now we have a situation that the main market where renewables are produced are China Brazil United States India and some European countries so these are the key markets. Again as we see, there is a shift of a way of manufacturing to installation and maintenance. And as the renewable technologies are deployed, In a decentralized way, there is also a lot of job creation in the field of maintenance and installation in different parts of the world.

Sean Thanks Christine. We have a question regarding net metering come in. With network metering having grown by 186%, do you see net metering as a main trend in the long run as you know by energy crisis are more and more approaching grid parity?

Christine Yeah, I would say that of course, technology, very clearly for the solar PV, net metering is a great policy instrument As the person who asked the question mentioned, as we're moving towards grid parity, it's an easy policy instrument but mainly applicable for PV technologies, building integrated technologies. We will need different support in other fields such as in hydro and in wind and in [00:51:35.00] unintelligible]

Sean We have a question out here data collection methods. You collected data for the report. You either get them directly from the government or take data from a third party?

Christine Thanks for that question. We were working as I mentioned in the beginning with a network of over 500 contributors from all around the world. So we are using standardized questionnaires that we send out. Lots of it is based on voluntary contributions from people both from the private and public sector. We also We also do work with regional contributors and technology contributors so as to ensure that we have coverage of the main countries and markets ensured. And what we actually do is take formal data and also informal data from the industry which is very important for us because this report of this year portrays the situation of renewable energy up to the end of 2013 and so, for that period there are no official data and we actually need to work with data coming from the private sector. An up to-date accurate through crosschecking and validation of different other sources, we actually ensured that we are able to give an adequate picture on the market and policy situation. One must not forget that we are producing the job sense resort since 2005, so there is some expertise in data gathering. But of course we are also from year to year improving the coverage, the contributors and HD data availability. We struggled, still with the availability of data we forward the distribution of

renewable energy in developing countries so there are still gaps. We also work with different international organizations on closing these gaps.

And that's why also my invitation to anybody who would like to contribute to join our network because it is really through this concerted, joint effort that we are able to give an accurate picture of the market. But I am proud to say that the Global Status Report has established itself as key reference report for renewed energy trends and development and this is lasts with you through the great contributions that we received from all around the world so we are very thankful.

Sean

And Christine, does the latest REN21 report address the state of electricity network system upgrade that may be required to effectively integrate renewable energy technologies?

Christine

Yes, we give also an overview on this topic but I will also draw your attention to the feature of last year's report which was exactly focusing on system transformation and the need of how electricity systems have to hold in order to [00:55:12.00] unintelligible] in the future of the 2013 global status report thus dedicate the future on storage.

Sean

And now we move along to our audience survey. And so we have a very brief survey, just three questions for you... for the audience to help improve future webinars. So, Heather you can go ahead and lay that first question. The question is, the Webinar content provided me with useful information and insight. The second question, The webinar's presenters were effective and the third and final question is, overall, did the webinar meet my expectations.

Great and thank you for answering our survey and on behalf of the Clean Energy Solutions Center, I would like to extend a hearty thank you to Christine Lins joining us today and to our attendees for participating in today's webinar. Very much appreciate your time and we do invite you to check the Solutions Center website over at the next week if you'd like to view the slides and listen to our recording of today's presentation. As well as our previously held webinars. Also, we will be announcing the schedule for the regional webinars REN 21 webinars that Christine spoke about and so we'll have those and you can register for those through the Clean Energy Solutions Center as well. And so we also invite you to inform your college and those in your network about the Solutions Center resources and services including the no cost policy support. And with that, I hope everyone has a great rest of your day we hope to see you again in future Clean Energy Solutions events. And this concludes our Webinar.