CLEAN ENERGY SOLUTIONS CENTER
ASSISTING COUNTRIES WITH CLEAN ENERGY POLICY

Community Renewable Energy: Citizen Involvement in the Energy Transition

—Transcript of a webinar offered by the Clean Energy Solutions Center on 16 June 2016—
For more information, see the clean energy policy trainings offered by the Solutions Center.

Webinar Panelists

Christine Lins	Executive Secretary, Renewable Energy Policy Network of the 21st Century
Dirk Vansintjan	President, REScoop.eu

This Transcript

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Stephanie Bechler

Hello everyone, I'm Stephanie Bechler of the National Renewable Energy Laboratory and welcome to today's webinar which is hosted by the Clean Energy Solutions Center in partnership with Ren 21. Today's webinar is focused on community renewable energy, citizen involvement with the energy transition. 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 _____ and selected by technical experts. Before we begin, I'll go over some of the webinar's features.

For audio, you have two options. You may either listen through your computer or over the telephone. If you choose to listen through the computer, you may select the _____ and speakers option in the audio pane and if you choose to dial in by phone, please select the telephone option and the box in the right-hand side will display the telephone number and audio pane you should choose to dial in. If anyone is having technical difficulties with the webinar, you may contact GoToWebinar's help desk at 888-259-3826. If you would like to ask a question during the webinar, and we encourage that you do, you can use the questions pane where you can type that in.

If you're having difficulties viewing the materials through the webinar portal, you will find pdf copies of the presentations at cleanenergysolutions.org/training and you can follow along as our speakers present. Also, an audio recording and presentations will be posted to the Solutions Center training page within a few weeks and they will also be

added to the Solutions Center YouTube channel where you can find other informative webinars as well as video interviews with _____ on clean energy policy topics. Today's webinar agenda is centered around presentations from our guest panelists, Christine Lins and Dirk Vansintjan. These panelists have been kind enough to join us to discuss the launch of Ren 21's flagship report, Renewables 2015 Global Status Report and to find out what made 2015 another record-breaking year. Before our speakers begin their presentations, I'll provide an overview over the Clean Energy Solutions Center initiative, and following the presentation, we'll have a Q & A session where the panelists will address questions submitted by the audience.

We'll conclude with some closing remarks and a brief survey. This slide provides a bit of background in terms of how the Solutions Center came to be. The Solutions Center is one of 13 initiatives with the Clean Energy Ministerial that was launched in April of 2011 and is primarily led by Australia, the United States and other CEM partners. Outcomes of this initiative include support of developing countries and emerging economies, the enhancement of resources on policies relating to energy access, no-cost expert policy assistance, peer-to-peer learning and training tools, such as the webinar you're attending today. The Solutions Center has four primary goals.

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

A marquee feature of the Solutions Center provides ___ is a no-cost expert policy assistance known as Ask an Expert. The Ask an Expert program has established a broad team of over 30 experts from around the globe who are available to provide remote policy advice and analysis to all countries at no cost. For example, in the area of green growth strategies, we are very pleased to have Thomas C. Heller, executive of Climate Policy Initiatives serving as one of our experts. If you have a need for policy assistance in green growth strategies or any other clean energy sector, we encourage that you use this valuable service. Again, the assistance is provided free of charge and if you have any questions for our experts, please submit it in our simple, online form at cleanenergysolutions.org/experts.

We also encourage you to spread word about the service to those in your networks and organizations. Now I'd like to provide a brief introduction to today's panelists before we begin. First up today is Christine Lins, the Executive Secretary of Renewable Energy Policy Network of the 21st Century, Ren 21. They're a global, public, private multi-stakeholder network of renewable energy that convenes international organizations, governments, industry associations, science and academia as well as NGOs working in the field of renewable energy. Following Christine, we'll hear from Vansintjan,

President of REScoop.eu, a European federation of groups and cooperatives of citizens for renewable energy.

Dirk is also the co-founder of Barrier Co-Housing Project, and one of the largest energy cooperatives in Europe, Ecopower. And with those introductions, I would like to welcome Christine to the webinar.

Christine Lins Thank you very much Stephanie. Good morning, good afternoon ladies and gentlemen, depending on where you are. It's my great pleasure to be here with you today and I'm trying to make this small and so I will—it's my pleasure to take you through the main findings of this year's Renewables 2016 Global Status Report that provides a special feature on community energy and I'm going to take you through this in a nutshell. As you—

Stephanie Bechler Christine, one moment _____. We're seeing the presenter view with your notes on the split screen, so it's not showing the full slide.

Christine Lins Mm-hmm.

Stephanie Bechler If you wouldn't mind going to the view—if you go to the bottom of the page and just click the full view, that should, yeah.

Christine Lins Is it now good?

Stephanie Bechler Oh, it's still showing the presenter view and this will do if we can't get it to change. But we want to show the slides on full screen if possible.

Christine Lins Absolutely, and that's what I see… and what about now?

Stephanie Bechler No, we're still seeing the same.

Christine Lins Because, I have it big on my screen.

Stephanie Bechler If we could just go to the—go to webinar toolbar, you have an option to show the presentation.

Christine Lins Go to webinar toolbar? _____, okay.

Stephanie Bechler And so if you have the presentation up, it might just—do you have two monitors open right now? If you—do you have one or two monitors right now at your screen?

Christine Lins I just have one. Can you see it now?

Stephanie Bechler Okay. No.

Christine Lins Still not?

Stephanie Bechler We should go back to the other view. We can still see the slides from there, but—or you can try opening from the pdf version.

Christine Lins Mm-hmm. Okay, let me check. _____ pdf?

Stephanie Bechler And I can always run the slides for you if that's easier?

Christine Lins No, no I can open the pdf, no problem. Just a second.

Stephanie Bechler Okay.

Christine Lins Sorry for the audience, we will fix that in a second but it's all about providing you with a bigger image, I guess. So… bear with me in a second, there we are. Okay. Is that good now? Now we should just try to get rid of this.

Stephanie Bechler I'm still seeing the thumbnail view of the screens. Of the slides, pardon me.

Christine Lins What about now?

Stephanie Bechler No, we're still seeing the thumbnails of the PowerPoint.

Christine Lins My PowerPoint is not even open so it's not my screen.

Stephanie Bechler Unfortunately that's—here, let me try to reengage the share screen, maybe it froze for a moment. Hold on. That's perfect.

Christine Lins Excellent. So we are set to go, that's great. I'll take you through the main findings. Stephanie has already mentioned REN21 is a multi-stakeholder network of organizations working in the field of renewable energy. And our objective is to advance a global ____ transition towards renewables with _____ of the public sector, governments, international organizations as well as the private sector, NGOs, industry associations _____ in the field of science and academia. We have produced now since 11 years an annual overview on the global status of renewable energy. The Renewables Global Status Report which provides a very comprehensive overview of market industry policy investment trends in the field of renewable energy.

We are trying to link it also with an update about what happens in the field of energy efficiency as we think that demand and supplies and policies need to go hand in hand. And every year we have a special feature. This year's feature is dedicated on community energy because we want to showcase that the energy transition very often is in the hands of the people. The report covers all technologies from power, heating, cooling and the transport sector. The report is available for download free of charge on our website and all the information that is produced, that is gathered to produce the report, we work with a network of over 700 people from all around the world.

This information is then featured in the Renewables Interactive Map. So, 2015 in a nutshell was an extraordinary year for renewable energy, with the largest global capacity addition seen to date. There were 147 gigawatts of renewable power capacity added in 2015. That is the largest annual increase ever. Renewable heat capacity increased by 38 gigawatts-thermal and we also saw total biofuels production rise.

This growth occurred despite tumbling global prices for all fossil fuels, ongoing fossil fuel subsidies. We _____ the situation that governments

around the world spend $490 billion US dollars on fossil fuel subsidies compared to $135 billion on public support for renewables, so it's effective for. And also, despite policy and political instability, regulatory barriers and fiscal constraints. So, I mean, we have right now the European football championship going on, so we know that nations are competitive but that's not only the case with football, that's also the case in renewable energy. And actually when you look at the first two lines on my slide, you'll see that when looking at annual investment within renewables, power and fuels, in absolute terms, in 2015 the list reads China, United States, Japan, United Kingdom and India.

However, when you read investment in renewables power and fuels per TTP, then the list is a quite different one. It is Mauritania, Honduras, Uruguay, Morocco and Jamaica. And that already shows—and we're gonna see that a bit later on, the incredible advance of developing countries when it comes to renewable energy investments. When we look at total capacity installed, and there when we look at renewables power capacity per capita, we see that the list is still quite Europe dominated with Denmark, Germany, Sweden, Spain and Portugal, which also explains that these countries are having very high shares of variable renewables. I come to that in a minute.

So, what we do in the Global Status Report is we track the development of policy and fortunately, I can say that there is a lot that we could track over the last decade. We have nowadays 173 countries with renewable energy targets and an estimated 146 with support policies in place to support these targets. The majority of them, 114 are in the power sector, 66 in the transport sector and 21 countries for heating and cooling. Actually, when you look at the global map, you see that still policy makers focus on electricity.

Regulatory policies in the power sector cover over 80 percent of the world population, while regulatory policies in the heating and cooling sector cover 50 percent. That's the orange map on the bottom. And in the transport sector, 73 percent, the green map to the right. As a matter of fact, the transport sector is starting to take off especially electric mobility. In heating and cooling in Europe, we saw a lot of initiatives.

Renewable energy counted for an estimated 18 percent of the EU's total heating and cooling consumption. Europe has experienced the strongest growth in renewable energy used for heat of any region. But nevertheless, the market slowed down a bit in 2015 due to the economic crisis and the downturn in the _____ sector and lower oil prices, and generally the lower oil prices are making it more difficult for investments in transport and heating and cooling. Hopefully the new renewable energy directive that Brussels is currently preparing will further help to boost this sector in Europe and from there beyond. So, the success story in—of renewable energy clearly is the power sector.

Renewables accounted about 29 percent of global power generation capacity and 24 percent of global electricity demand. The most significant growth occurred in the power sector, with global renewables power capacity exceeding 1849 gigawatts, which represents an increase of almost nine

percent over 2014. We have a situation that in 2015, renewables made up an estimated 60 percent of map additions to global power capacity and represented far higher shares of capacities added in third world countries around the world. And in the EU for example, renewables accounted for 77 percent of new generating capacity, power capacity for the eighth consecutive year. Between 2000 and 2015, EU total power capacity increased from 24 to 44 percent.

And as of 2015, renewables were Europe's largest source of electricity. So, clearly in the power sector, the two champions last year were solar PV and wind. The solar PV globally 50 gigawatts of capacity were added for a total of 227 gigawatts and we had a situation that in 2015, the annual PV market was only ten times the world's cumulative solar PV capacity of _____ earlier. And that is also seen in the exponential growth which is portrayed on the graph, on the slide. And we have now an estimated 22 countries around the world that have enough PV capacity at the end of 2015 to meet more than one percent of the electricity demand with far higher shares in some countries.

Italy for example, it's 7.8 percent, Greece 6.5 percent and Germany it's 6.4 percent. The other champion last year was the wind sector. There were 63 gigawatts of capacity added, bringing the total global installed wind capacity to 433 gigawatts. Offshore added an estimated 3.4 gigawatts of grid connected capacity, which brings the world total beyond 12 gigawatts. Wind represented the largest percentage of new power capacity in the EU, with over 44 percent and wind power is playing a major role in meeting electricity demand in an increasing number of countries around the world including Denmark, where 42 percent of electricity demand are covered by wind in 2015.

Over 60 percent in four German regions, in four German _____. And for example, 15.5 percent in a country such as Uruguay. And that brings me already to some investment figures. Global investment in 2015 also reached a new record with $286 billion US dollars. It was an increase of five percent from 2014 and what we see, what we find interesting is that this investment is not equally spread, but we see that developing and emerging economies for the first time invested more. Their investment increased by 19 percent to $156 billion, whereas investment in industrialized countries decreased 8 percent to $130 billion.

And, so for the first time we had more investment in the emerging economies, which is encouraging because that's clearly that part of the world where there are still a lot of need for additional energy demand. However, a word of caution, we have seen last year that the most significant decrease in investment was seen in Europe, down 21 percent to about $49 billion. And also what we saw in 2015 for the first time, Chinese spending on R and D, on research and development challenged the one of the European Union. And that of course, is a first and is quite interesting _____. So, when looking at how money was spent, solar power was leading for money committed to in 2015.

It's _____ $161 billion. Interesting to note also that nearly the same amount was spent in developed countries versus developing countries, so we see that solar is really—with costs having come down and Korea has just launched a study on showing how much costs of solar and wind have come down over the last years. There's really becoming an option that is taken up in many developing countries. Second, wind, that has already more investment in emerging economies than there is in industrialized countries. And you see on the slide here, it was just these two sectors where investment increased.

However, in all the other renewable energy sectors, investment decreased. And that of course is a big problem I think especially when we talk about an energy transition with renewables, where in order to reach a high shares of renewables, the exportation of all renewable energy sources will be paramount. So when it comes to employment, global employment continued to increase by about five percent 2015. There are an estimated 8.1 million direct and indirect jobs in the renewable energy industry. And leading employers were China, Brazil, United States and India.

Then we are also portraying the illusion of city and local government policies. We see that cities around the world continue to work together to advance their common renewable energy goals. We have an initiative in Europe which is the Covenant of Mayors which already now has more than 6000 signatories. And we see that all around the world, the 100 percent renewable energy movement expanse. There were new members by—with—in Australia, in Canada, in the US that _____ with these commitments and as in other cities such as Amsterdam, Graz, committed to develop renewable heat sectors, while others including Cape Town and Banff in Canada adopted regulatory measures to promote renewables power.

And in the transport sector, some national governments introduced biofuel blend mandates as pilot initiatives in cities which is in Kenya, in Mexico and in Vietnam. So, as I mentioned initially our feature of this Renewable Global Status Report focuses on community renewable energy. We know that these initiatives have existed since the middle of the 19th century, but they have also evolved quite rapidly since 2008. For example, in Europe now we have more than 2800 energy cooperatives in operation, out of which 772 in Germany, 500 in the Netherlands and for example in Germany, the number of renewable energy cooperatives increased from 67 in 2008 to 772 in 2014. And we have a situation that almost half, exactly 46 percent of installed renewable energy capacity in Germany is owned by private individuals and farmers.

However, due to some recent changes in energy policy, the growth of these cooperatives has decelerated a bit, and I guess Dirk is going to tell us a bit more about this development. At the end of my presentation, just a quick note also on distributed renewable energy for access. We still have a situation that 17 percent of global population lack access to electricity. That's approximately 1.2 billion people and 38 percent lack access to clean cooking. So, we are also trying to shed a light on how renewables can effectively help

to overcome these issues and also there is little quantative information on distributive renewable energy markets.

And we're trying to quantify them a bit in order to provide some idea about what the sector presents. So we see that the solar PV markets for distributed renewable energy continues to flourish. There are 44 million off-grid pico-solar products sold which represent an annual market of about $300 million US dollars. And we have nowadays over 70 countries with off-grid PV capacity or programs to support off-grid PV in place. And we see that this is really starting to be an attractive market for entrepreneurs.

The estimate is that capital raised by distributed renewable energy companies was in the order of $276 million in 2015 and then there were about 160 million pay as you go companies in 2015. Some of the major ones you will _____ there on the slides, so really some development there. I mentioned it at the start—we consider it important to not only look at the supply, but also at the demand sector. And for the first time in the Global Status Report you find a map with—providing an overview on energy efficiency policies. Now we have a situation that 146 countries have policies in place, 128 targets for energy efficiency. So, all in all, renewable energy provided an estimated 19.2 percent of global _____ energy consumption.

This share is rising; however, this share is rising very slowly. We must not forget that all this figures, this figure for example or the other ones represented were for 2015. This _____ and final energy consumptions for 2014, that of course, does not yet take stock of the momentum we have after COP 21 in Paris where we have seen that the majority of countries have mentioned their—have mentioned renewable energy and energy efficiency initiatives as nebulous or in the _____ determined contributions in their _____. So we definitely do think that this share will continue to increase. However, and it is a fact that we had the largest capacity increase to date which for me is a clear indication that costs for renewable energy have come down substantially, making this technology's cost competitive with many conventional fuels.

However, we are not quick enough to address combating climate change. We see that renewables and energy efficiency were the reason why, for the second year in a row, global carbon emissions associated with the energy sector remain stable, while the global economy grew. But it is a matter of fact that the majority of the remaining fossil fuels need to be kept in the ground if we are serious about reaching the two-degree climate objective. And it is maybe necessary to put more emphasis on renewables in the heating and cooling as well as the transport sector. And I think in the future we will also have to look at electricity, heating, cooling and transport in a more integrated way.

And it will be needed to be smarter, more flexible systems that accommodate for centralized and de-centralized generation and of course, they are community based an important role. And with this, I thank you for your attention and hand you over to Dirk to explain us a bit more about community

energy in general, and initiatives that are taking place in Europe. Thank you very much.

Dirk Vansintjan Good morning. I'm taking over from Christine, thank you. Good morning everyone, wherever you are. Okay. It doesn't work. There's a problem with the slides, are not coming down. I have a problem with the slides, I cannot…

Stephanie Bechler If you go back to that previous dropdown, you can select full screen. Towards the bottom.

Dirk Vansintjan Yeah.

Stephanie Bechler Under the _____ modus options.

Dirk Vansintjan Okay.

Stephanie Bechler Perfect.

Dirk Vansintjan So, this interview is myself, I'm Dirk Vansintjan, I'm from Belgium from the Dutch-speaking north part of Belgium. And I've been active in the renewable energy sector since I was engaged in a co-housing project and you see the—a picture from the _____ place where I'm living, where I am now. So it's an old watermill site, it goes back to the Middle Ages and in 1985 it was more like a ruin and protected as a national monument. And that's where we started with our—first as an NGO and later an energy cooperative in 1991. And we started with the production of electricity in 1995.

This was not the first time this watermill was used for production of electricity because from 1907 to 1947 it produced all the electricity of the village close to the watermill. And this is something that happened all over Europe, and I suppose in some other parts of the world as well. That is that the electrification started fairly decentralized. And often already from the very beginning, as Christine mentioned, often in rural areas especially it was also led by citizens, by local entrepreneurs. Like in our mill and that in cooperatives who installed the electrical wires in rural areas where it was not profitable for private investors.

So, from this mill we encountered all obstacles that renewables encounter in Europe, so Belgium was—is—has a monopoly, a private monopoly. Had a private monopoly of Electrabel with eight nuclear power plants and when we told them we would produce 500,000 kilowatt ____ a year, they just said that well, we don't need it, we have enough. You will have to pay us for accepting this electricity. So that's when we created the sort of advocacy organization, NGO, with professors and universities, researchers and we—what we did, it was very easy, we translated the German feed-in tariff law and we had some parties in the Parliament who put it on the table here. And we got a—some support mechanisms so that it became feasible not only for our micro-hydro power plant but also for solar PV and wind.

So, actually the sector took off in Belgium in—at the end of the 90s. Then about 15 years later, 14 years later, we felt the urge to organize ourselves with

the energy cooperatives because since the sector—renewable energy sector grew, it became big business. And what we see also in the European level but also on the Belgium level is that the incumbent companies, they try to control this transition. They try to get all the wind turbines and PV installations and also of their sector organizations. So now the old incumbent companies, they control already the European Wind Energy Association, which is now called Wind Europe.

So we created our own federations for energy cooperatives in Belgium and on the European level and since the creation I'm acting as the President of this federation. I will give you a view of my own cooperatives created at my kitchen table where I'm sitting now. To give you an idea of what it can become. Most of the energy cooperatives are fairly young and small. They're just starting, like Christine mentioned in Germany that there are now more than 800 of these energy cooperatives.

On average, they have about 200 members. Well, my cooperative, Ecopower, we start in 1991 and we now have almost 50,000 members. These are the figures at the end of 2015, since then our membership grew. So you see the figures, I won't tell them, I won't read them. But here and there, you will see some Dutch, so we grew from an initial group of 10 people.

We grew to 1,200 when we installed our first wind turbines. And this is more or less the size of the older Dutch wind energy cooperatives. But then the market in Belgium was liberalized due to European directives and our general assembly, they decided that we would become a supplier of the green electricity we produced with our wind turbines, with our hydro power stations. And due to the fact that we were able to do this in the beginning at least, we didn't have to pay for using the grid. We were able to be the cheapest supplier and this caused an enormous—well, enormous, it just caused a growth of our cooperative. And since we only supply our members with electricity, so if one had to buy at least one share of 250 Euros, and on average they have four, you see that when you have about 50,000 members, this gives you about 50 million Euro equity.

Which is quite a lot of money, but it's small amounts from a lot of people. And what also helped that—was that we were able to give them for 11 years, six percent of dividend which is the maximum a cooperative can give in the Belgian—due to the Belgian legislation. So where we are now is that we have about 36 employees, I will show a graph later. And we have a market share of 1.5 percent of households. We don't sell electricity to bigger companies.

By the end of 2016, we will cover this—the—what our members consume, we will cover it with our own production. That's about 100 gigawatt hours of electricity and quite recently, a year and a half ago, we started with a production of wood pellets and briquettes from locally sourced wood. Especially as Christine mentioned, energy is not only electricity, it's also about heating, especially in a country like Belgium. So we also wanted to give our members an alternative for the fossil fuels like gas and oil. So, with these figures it seems we are the largest energy cooperative in membership in Europe.

This is the growth—a graph of the growth of our membership and the number of shares, that's the blue line. So, the last years it has slowed down a bit. This is because the electricity price on the _____ market now is quite low. And we can't lower our price of the electricity because it comes from our own installation, so we must now compete with commercial suppliers who just buy the cheapest electricity possible. They buy some Norwegian guarantees of origin, they add it, they shake it and then it's green electricity.

So we have to compete with them, so our growth is going a bit slower now. We're not alone. In the beginning we thought we are not alone, but it is more or less we—as a cooperative, we cooperate not only with other energy cooperatives but also we found our place in the International Cooperative Alliance and it's a European branch which is Cooperatives Europe, so now we are sector organization of Cooperatives Europe and the International Cooperative Alliance. But also on the Belgium, on the Flemish level, we were able to bring together all the cooperatives from all different ideological backgrounds for the first time in history. That's something we are quite proud of.

Back to Ecopower, this is a graph of the growth of the capital. You see also there that because we have—the growth of members is slowed down, also the capital has slowed down, the growth of the capital. But the—and the—what our installations are worth, that's the blue line. You see that it is a sort of stop and go action going on. So, sometimes we have to wait for permits and then all at once they are there, and so then, we are lacking some capital so we have to go to the banks anyway.

That's the growth—worth of our installations, the black things, they are the depreciations and the investments done. So you see it varies from year to year. And the red is the reserves we have, so we have about $3.5 million of reserve. Black is the profit, blue the dividend. So we provide our members, for last year with 1.5 million Euros dividend. Three percent on their shares.

The growth of our personnel, you see it's quite linear except for the last year where we started the wood pellet factory. And these are also make the gender balance in, well the balance is not _____ over there because all these _____ guys who work in the wood pellet factory. We are open, we are an open cooperative, you can always join us. But also, people can visit our site, education, “sensibilization” is essential for a cooperative. This is a group visiting our wood pellet factory, which is quite impressive.

This factory. We have invested in wind, in hydropower, in solar panels, especially on schools. We have about 200 installations on schools. They are quite small installations, fit to the consumption of the school. So in total it's a bit more than five megawatt installed capacity. So we have about 21 wind turbines for the moment.

The electricity we produce, you see how it's a sort of stop and go. It grows, it doesn't grow and then it grows back. That's the same figure. So most of our—the electricity we supply, about 80 percent comes from our own wind turbines and then solar and hydro, that's a smaller amount. And then what's very

interesting, and here we make the link to energy efficiency, so when a new member or client comes to Ecopower and he says we consume about 6000 kilowatt hours, the people on the telephone, they are trained to say, "what, that much? What's happening? How old is your deep freezer, your refrigerator, or what's going on? Do you have a water pet or a tropical fish or something?"

So from the very beginning we try to send some—to give them some advice to consume less and this is the effect. So from 2006, well if I go back to 2003 it was more than 4000 and now it's lower than 2,000 kilowatt-hours. You see the blue line, that's the people who didn't install PV panels on their roof. So they went—for them it went down from about 4000 to less than 3000. And the others, they installed solar panels, so this is the energy transition.

When citizens take initiative at home and together, and also they work on energy efficiency, so this is what happened. What—suppose all Europeans did what our members did. Well, this would be the effect. This is a slide, it's quite empty, it's about our approach. The ideal approach of Ecopower is that we work closely together with municipalities.

These are our names of municipalities in Flanders, where we have a close collaboration with. There are more than three ____ so these are more the exceptions than the rule in Flanders. Most of the Flemish municipalities, they joined the Covenant of Mayors and one of the things they have to do is to make a sustainable energy action plan. And when you—most municipalities, they just choose a company who makes it for them and then they make a plan and then they make a plan about—that there are possible some wind turbines or something. And then that's the ideal cocktail for having a committee against the plan.

And this is what's happening all over Europe that when you come with a plan from above, people are not—were not involved, they didn't participate in the making of the plan. That's the ideal way to raise opposition. But when you start with a white piece of paper with as much citizens as possible and the politicians in the background only watching, and you—and the people are convinced that they can do something and that they—that there is a possibility to seal the whole project and the plan, then you make a plan from the grassroots level and it's their plan. And in the municipalities where we have the time, because it takes some time, takes some years, where we had to—where we got the time to construct, to make this sustainable energy action plan with the citizens and with all the committees of the municipal council.

And with the municipal council, ending in a decision of the municipal council, well there you meet no objections afterwards when you ask for permits. Because everything what is done is part of the plan. So, but unfortunately this is—these are the exceptions, these municipalities. So I switch to the European level. So, we organized ourselves not only on the Belgian and Flemish level in REScoop, but also on the European level.

REScoop stands for Renewable Energy Sources Cooperative. But in fact, we also group other legal entities. Whenever—REScoop is an open group of citizens, this is important. It's not an investment club. Twenty farms installing 20 wind turbines in Germany, we can't call it a REScoop and they produce electricity for 30,000 households, well they should go after 30,000 members. That's our idea. So it's about citizens who cooperate on renewable energy and energy efficiency, might be protection, distribution, supply.

But also storage for instance, and other services, aggregation and so on. And in the Anglo-Saxon countries, they're often called community energy initiatives. They might be also trusts or not for profit organizations. On our website, you see there you can find quite a lot of information on how to start, how to—how we can help you. We are even solicited now by energy cooperatives from South Africa, from Brazil.

We are not looking for work, we have work enough in Belgium, but it might be interesting that we can expand our endeavors on a universal scale. So, our federation is very young. We are trying to organize all these grassroots initiatives because advocacy at the European level is very important. On the European level, directives are made and when we react to the implementations in member states, in fact we are reacting a few years too late. So, it is one of my tasks to convince all these grassroots levels of the importance of our federation and of the work that we have to do in Brussels.

It's especially difficult in the Scandinavian countries. They are not organized themselves on the member state level, so these efforts are ongoing now. We now represent about half of the known REScoops and we're still counting every day. There are being discovered new ones. When you—when we put them on the map and not all of them are on the map, but this gives the trend.

You see some—it's more like something from the north west of Europe, more than from the south. And especially it's not something where you can find in the east of Europe. I will go to that later on. So, some of these REScoops are very new as Christine mentioned. The slowing down of the growth of the rate, findings are that it's also, when you have about 800 new and about 50 old energy cooperatives across Germany, it might also be—the reason might also be that the space is filled with cooperatives.

And perhaps there's not room for more, many more energy cooperatives in Germany. So, but the tendering, the change of support mechanism has something to do with it as well. Some of them are very old, as I've told already, so there are energy cooperatives from the very beginning of the electrification in Europe. You can find—the most of them you can find in remote mountainous areas like in the north of Italy, there's a German speaking part in Italy. They are quite autonomous and there are—you can find about 60 energy cooperatives.

They work together very closely on all aspects of the electric—on energy methods. If you want to see the electricity grid and _____ of the future, just visit South Tyrol or the north of Italy and you can find it there. They own everything, they have production, hydro, they have wind turbines, they have

solar. They distribute, they supply their members and they have the cheapest electricity of the whole of Italy. And then yes, and we are completely absent or almost completely absent in Croatia.

We have some initiatives now. In Eastern Europe, cooperatives were corrupted during the Communist time. The Communist party took control and this is something which is quite impossible in a cooperative that is another entity takes control. So, but nevertheless, so cooperatives are connotated with Communism and we have a lot of work to convince, perhaps we have to choose a new name in Eastern Europe to convince the governments there that it's worthwhile. That citizens work together with their municipalities in the energy transition.

So, this energy transition is on the _____. It's a transition according to us, not only from fossil fuels but also from nuclear fuels to renewables. From wasting to saving energy, from centralized to more decentralized production. And a growing number of prosumers is present in Europe. They are private persons at home, 20,000 of our members installed solar panels on their roofs.

Flanders is one of—is at the same level I think with Germany, what that is concerned. But we also stress also to the European level that it's not only private persons with their PV panels on their roof. Some people don't have an own roof, people in apartment block, tenants. But it's also what people do together in energy cooperatives or in community energy initiatives. And this is the low price, the _____ always the price of PV is always going down.

This will also even make more prosumers all over the world. So, all over Europe, actually this energy transition which is ongoing, it is paid by citizens and more consumers. To give you the example, it's not paid by the big industry who consume more than all these small consumers together. Governments in Europe, they want to—they want their industry to stay and not to leave, so they guarantee them low energy prices. They have historically low energy prices now, even though the energy transition costs a lot of money because they—all the costs of this energy transition, the support mechanism is paid by the small consumers.

In Belgium, in Flanders it's 90 percent that is of the energy transition is financed by the consumers through their distribution tariff. We also pay for it as taxpayers because governments support investors. And we also, I think directly, pay for it because we have savings in the bank and Belgium—the Belgians, they have quite a lot of savings in the bank. They don't get anything for it, well 0.01 percent or something. And, but all these investors, they go to the bank and get our savings and invest and they get the return, guaranteed return.

For instance, for wind in Flanders it's eight percent return on investment. And that's about 200,000 Euros per year for wind turbine. So, and we don't get anything. So indirectly, we also finance the transition through our savings. And actually, this energy transition, and I'll come to the title of my presentation, is a unique opportunity for citizens to choose whether they stay

passive and undergo and are being squeezed out like as a lemon like they were in the past.

Or, to become active like the people in Ghent, you see on the picture and start an energy cooperative. So, when I look at the energy transition in Belgium now, you see there a picture of Germany and Christine said it, about half of the installations are owned by private individuals, farms, energy cooperatives, and the big utilities they missed completely the train. In Belgium, it's the reverse. Only four percent is owned by citizens. So, that's why in Belgium we say—well in Germany now, the big companies, they say it's our turn and the support mechanism is in favor of them now. Well, in Belgium we say the reverse, we say, it's—now it's our turn.

And the wind turbine that these companies in Belgium install and solar panels, that's low hanging fruit. The big problem is the wind turbines close to people, the older and the refurbishments of _____ energy efficiency and our Federal Planning Bureau and together with FITA which is also a public organization, research organization. They made a plan for making Belgium 100 percent renewable in—by 2015. It will cost 400 billion euro, but our savings now are 250 billion Euro, and the cost to import energy is about 20 billion Euro a year, so you see there is a business case. And, so it's not impossible to the astonishment of our four ministers of energy who ordered this study.

They didn't expect this. So, what is essential for the energy transition is public awareness that it is necessary. Acceptation and participation of citizens in the investments, so they should own the energy transition. That's why we say the energy transition should lead to energy democracy. And we have some recommendations—I'm almost to the end of my presentation.

These are the recommendations we gave Europe and also this, policy makers and citizens of Europe. For us, the wind, sun, biomass, water, they are common goods and they should stay in hands of citizens. Not especially, the wind blowing over a piece of land of a farm, the farmer doesn't own the wind. It's also the wind of his neighbors, of the people in the village nearby. So, we think that the exportation of these common goods should stay and should be in the hands of citizens.

We must keep production and the profits of wind turbines, for instance, is 200,000 Euro a year. It must stay as local as possible. Energy cooperatives are more and more an actor in strengthening the local economy as a counterbalance for _____ and all this agreements across continents. And we must also, what is essential, that is the market place, which is the transmission and distribution networks. According to us, they can't be privatized.

They should be in the hands of citizens, of prosumers. They can be public, but preferably not with politicians in the board, but with competent prosumers. And of course, to reach this we must strengthen our movement of course. So, that's a picture of an energy cooperative in—I've said this already. So, and this perhaps surprises you, what's our model.

Our model is not to create a multinational of energy cooperatives or one big energy cooperative who dominates the world. No, this is the model we favor. It's the strawberry model. So, one plant, give this plant some years and with all its sprouts, or how do you… runners, with its runners, that's the correct word, it will cover the whole field, it will cover your earth, it will cover the world.

It starts with people around the kitchen table. We can help them with professional advice of—we have mentors. These are the experienced people who did all the mistakes who over one—who overcame all the obstacles and who are willing to share their experience with others. We use European tools, European programs to forge tools for our members. To give you one example, it's the _____ _____ project.

Citizens who want to invest in renewables, but they often come too late with their money. They come when the wind turbines are up and running and that's two or three years too late. So, to overcome this problem, we are looking into the possibility of creating sort of, revolving cooperative fund to overcome this problem of local people who take initiative. A very interesting policy is made by the Scottish government in Scotland. They have—not only have a renewable energy target, but within this renewable energy target, they have a sub-target for community energy.

And to support the local initiatives, they also have a sort of fund, a revolving fund. And also, people helping the local initiatives. So, and when the project succeeds, it's a loan with an interest they have to pay back. When the project doesn't succeed because of several reasons, then it was a grant. And this works and it works so good that the community energy target was met five years before the deadline, and now the new Scottish government will double the community energy part in their renewable energy target.

So, this is an interesting policy in Scotland. So, we are not doing this alone. We forge—are forging a community energy coalition on the European level and it might be interesting to have this in the member states as well. So, it's not only us as energy cooperatives and part—we are part of Cooperatives Europe, but we are also teaming up with all the organizations that are working with municipalities like _____ and Climate Alliance and Energy Cities. With the environmental movements, Greenpeace, WWF, Climate Action Planet Earth. With the Consumer Federation, with _____ _____ Europe.

With _____ yesterday we had a meeting. We are also with World Future Council, joined us. So, all these organizations have some advocacy lobbying power in Brussels, but by bringing them together, we are doing a better job towards the European Commission, European Parliament __ Council. So, that was my last slide, now I think we can take some questions. I mute my mic, okay.

Stephanie Bechler Thank you so much for the presentation. I will take _____. We've had a couple of questions come in from the attendees, and if you haven't submitted a question, please do so in the question pane on the _____ toolbox. Our

first question is for Christine. One of our attendees, would like to know did the Status Report tackle any new types of fuel, such as hydrogen fuel for vehicles?

Christine Lins No, we have a section in the Global Status Report on transport, but let me clearly state that hydrogen is an energy carrier, it's not an energy source. And it can be either green, if it's produced with renewable energy, or it is not a renewable fuel if it's produced with coal or nuclear electricity. So we have a section on the Global Status Report about transport where we portray the different biofuels, where we portray the development in electric mobility linked with renewable promotion programs. We are planning to expand this section in the years to come, but there is nothing _____ on hydrogen.

Stephanie Bechler Great, thank you. Our next question is for Dirk. One of our attendees would like to know how would you explain the lack of cooperatives in the southern part of Italy on, I think it was slide 18. There just looks to be one cooperative close to _____.

Dirk Vansintjan Well, let's say that the—there is a strong cooperative tradition in Italy. But they—I asked them why is it—what's present in Italy is mainly the old historical energy cooperatives, and they—it has something to do with when you do some big investments in Italy, there is this dark side of Italy which is called the Mafia. Which, are very good in getting into it. So, whenever there's a new initiative, they'd rather focus on smaller PV installations than on bigger investments like wind turbines. That's one explanation I heard, but nevertheless, the past few years there have been new initiatives.

The cooperative movement, which was divided into a conservative Catholic side and a rather progressive socialist dominant side. They are working closer together now and they decided to develop the energy cooperatives also in the other parts of Italy. So we now have seen the creation of a few new energy cooperatives across Italy. Also a green electricity supplier, so yeah. That's the reason I find.

Often it is also—like in France for instance, there are not many energy cooperatives in France. The first cooperative wind farms were installed a few years ago. When there is a strong monopoly, in the case of France, a state monopoly, after so many decades of this state monopoly, well the French, they think electricity, energy is something that the state provides you at the cheap price. And people taking initiative and they are—they have to sell their electricity at the higher price, they're more like activists than—they're considered as activists. So, yeah, whenever there is a state monopoly or a private—strong private monopoly, it's—cooperatives have a harder—have a problem.

There has to be a good policy, the German feed-in tariff seemed to be a very good thing for citizens, and groups of citizens. But I think it was not the intention in the very beginning. But perhaps that's not why it's changed now, but yeah.

Stephanie Bechler Excellent. Another question for you is what have you learned about the most effective ways to share knowledge and expertise and practices that work well to make it easier for your new REScoops to form globally and accelerate their growth more rapidly?

Dirk Vansintjan Yeah, to give you an idea, our federation, we just hired a second person. So now, we are two and a half. So, the capacity of our federation to help outside of Europe is very, very limited. So, I promised to go to Brazil because they urged me and there's someone I know very well. And, but, so what we can do is talk about it like in this webinar, we—on our website you can find best practices from across Europe and different technologies and different tasks a cooperative can do.

Yeah, and I hope that sooner or later there will also be a federation in Africa and a federation in South America and one in Asia. We have contacts in Japan, in South Korea, we've been there to talk about energy cooperatives. We have grown contacts with the energy cooperatives which are more distribution cooperatives in the United States. They also date back from the 1930s. We have contacts in Canada.

So, there's something building up, but it's—we can't say we are ready to help everyone across the globe to set up an energy cooperative.

Stephanie Bechler Absolutely, and you mentioned Africa. Someone was asking about that specifically. Do you have any examples of a cooperative or is it still in the early stages?

Dirk Vansintjan We have two associate members from Africa, South Africa. One is, well, they are the ones who understand us, Dutch-speaking people. So they are Afrikaner, they created an energy cooperative. And the other ones are more linked to the drinking water, it seems that there are drinking water cooperatives in South Africa. So then—but these are very new contacts and we try to help them and we give them some advice with the small manpower we have.

So, and also from Brazil, they will come to Germany and Belgium to look what's happening here. So we—I brought these people in contact from Rio de Janeiro, I brought them contact with Brazilian cooperative movement. So that's one of the advices I give. Take contact with the cooperative movement in your country and they will—I'm sure they will be interested in developing this. And that's what happened in Brazil, the cooperative movement is now very interested in developing energy cooperatives across Brazil, they are quite strong.

And the _____ Foundation, they provide some money to come over and they also provide money for me to go there to talk to their political responsibles and so on. So, we try to do what we do, but our focus is Europe of course.

Stephanie Bechler Right, and another question is how likely are energy cooperatives to transform integrated community energy systems where local balance of supply and demand is possible through local exchange between households, rather than feeding this surplus to the grid? What could be the main challenges to realize this?

Dirk Vansintjan Yeah. Well… we are heading to complete new energy markets, so we all know with the—even—we're talking about, for instance about the block chain technology and how—peer to peer. So, in the future, it—technically it will be possible that citizens with PV sell to their neighbors without an energy company in between them. So, this is the future. And of course, there are the old companies who are—and the distribution companies who are fearing this future. They should prepare for this, but, well, even my own country they will try to stop this.

This is not possible, so the incumbents they want to keep their power. That's why, for instance in Europe, there's still a lot of research on fusion. Fusion reactors that it demands an enormous amount of money and _____. So it's not for—it's something that is not for citizens. So, big companies, they look for big solutions, whereas we think that the future of the energy lies in more decentralized.

So that's the struggle which is going on, it's about big companies trying to stay big and they are threatened by the technology that makes it possible that citizens take up a very active role and become a prosumer. So, yeah. That's—it will be a struggle. So, with technology a lot is possible. But, yeah. That's what I think about it now.

Stephanie Bechler [Laughs]. Thank you so much. And then we have one final question, this one is for Christine. If you haven't submitted a question yet, please do in the questions pane and we can always get it to the panelist after the webinar. Christine, has the Global Status Report looked into developments in forms of storage that can help deal with intermittencies such as vehicle to grid or smart charging?

Christine Lins Yes, there is another question that is touched upon in the transport chapter. However, we are very clear that this prospect in technologies such as storage, they really require more attention in the years to come. And we are planning to put a dedicated section on prospecting technologies in next year's report. There are varying views about as of when an energy system really needs storage, which is _____ examples of _____ for example in Germany. The _____ system operator who just recently said it's _____ very _____ renewables even going up 70, 80 percent so which is not needed.

Others have different opinions on this so, we will look into this in the future, it is touched upon in a nutshell but not in a very detailed way and the person who is asked for that should look out for it in the years to come.

Stephanie Bechler Great, thank you both so much. That is all I have for the questions today. Do either of you have any closing remarks before we go on to the attendee survey?

Christine Lins I would like to thank Dirk very much for joining us in this webinar. REN21 has—is supporting of course this community energy development we had this featured in this year's report. And, we look forward to working closer with the Community Energy Coalition in the years to come in order to help to spread the word from Europe also to a global perspective. As we see that these communities are now emerging in other parts of the world such as in the US, in Australia and if we can be of help, we will definitely join forces and help you on spreading the message.

Dirk Vansintjan Thank you. We will accept your offer. [Laughs].

Stephanie Bechler Thank you both so much. Thanks to all the audience who submitted questions, they were absolutely excellent. We are now going to go to the survey portion of our webinar. If you could please answer the first question on the screen. The webinar content provided me with useful information and insight.

Thank you very much. The next question, the webinar's presenters were effective. Thank you. Overall, the webinar met my expectations. Do you anticipate using the information presented in this webinar directly in your work and/or organization?

And the final question, do you anticipate applying the information presented to develop or revise policies or programs in your country of focus? Thank you so much for answering the survey, and on behalf of the Clean Energy Solutions Center, I'd like to extend a thank you to all of our expert panelists and the attendees for participating in today's webinar. We've had a great audience and we very much appreciate your time. I invite our attendees to check the Solutions Center website if you'd like to view the slides or listen to a recording of today's presentations, as well as previously held webinars. Additionally, you'll find information on upcoming webinars and other training events.

We are now posting the webinar recordings, the Clean Energy Solutions Center YouTube channel. Please allow about one week for the audio recording to be posted. We also invite you to inform your colleagues and those in your networks about the Solutions Center resources and services, including no cost policy support. Have a great rest of your day wherever you're calling in from, and we hope to see you again on future Clean Energy Solutions events. This concludes our webinar.