

Japan Renewable Energy Foundation Launching Experts' Meeting

'A New Roadmap to a Post-Fukushima Renewable Energy Future'
Special Session

Sep 14, 2011

(Tetsunari Iida & Tomas Kåberger gave brief welcome remarks.)

Masayoshi Son

Thank you very much for coming all the way to Japan. I really appreciate your effort, and I know that you have been working all over the world regarding this renewable energy for a long time. I am a newcomer, so I would like to learn from you. But, I really want to have a passion together with you to make our global environment so much better so that it's sustainable, so that we can make our children live happier for long, long time. For that matter, the world is all connected; the water, the air, the environment, temperature, all of those are connected. We all have just one economy or one society. It's a common matter for all of the people around the world. I think that this severe accident in Fukushima made a lot of attention to the people thinking about the environment even more deeper and more seriously and to tell you the fact that until March 11 of this year, I never thought about energy. I was busy doing my stuff. But, as one of the citizen, I started seriously thinking about this. For example, the crazy idea of Asian Supergrid, I want to know what you felt, and I would like to learn from you what are the key points we should consider to make that crazy idea come true. If anyone of you have any suggestion or opinion or any comment, I would like to know.

Steve Sawyer

We have just finished a session of ABB grids in the other room and my opinion anyway and I think the consensus among the panelist was that the first thing to begin to realize that vision will be to reform the situation here in Japan, unbundling the transmission from the utility generators and independent distribution companies and really introduce the market-based system which you have done wonderfully for the telephone industry. Now, let's do the same with electricity system. Unfortunately, one of your first and biggest partners has a different set of issues, but it's the same problem. There is no real functioning electricity in market in China. We need to get that operational, and then it could be a tremendously productive and convenient way how it's going to work.

Masayoshi Son

Yeah, I totally agree with you. The key to this success is unbundling the grid and also creating the market system so that free-trade start happening. Those are definitely the key. I totally agree with you. Thank you.

Stefan Gsanger

Thank you very much. From World Wind Energy Association, Stephen Gsanger. We will have soon World Wind Energy Conference in Cairo, and it will be, well, very closely together with the next Desertec Conference. You mentioned yesterday also this Desertec concept or Mediterranean plan as an example, so as I am now also a lot working with colleagues in Northern Africa, I am familiar with the challenges that implies. It is, of course, a very nice long term vision to have more stability, more connection. It doesn't only have economic and technical dimension, no doubt. But, I also see the main challenge is to start harvesting renewables in Northern Africa. I think we have to see how we can help that and the situation in many Northern African countries is that they are really just starting - a little bit like Japan, - of course Japan is a much richer country. To also see something] parallel with your mobile phone business, when you started that, I guess, you thought from beginning also how to connect mobile phone network with outside, international, but it's not on top. At first you want to have clients in the country and as much coverage as possible. And as renewables need land space, I think from my view point, it will really be important to have first the focus on how the local level, the decentralized levels can be reached so that the substance, the energy can be harvested, then of course not to forget about the long term vision which also has this very nice side effects like world peace and stability. Thank you.

Masayoshi Son

Thank you so much. I totally agree with you. We have to have a long term vision, but we have to at the same time in parallel do the immediate thing that whatever we can do in the local market and both should happen simultaneously. I totally agree with you. Thank you.

Mycle Schneider

Thank you very much. Mycle Schneider, independent consultant based in Paris. I also think that what we will see over the next few years is a very major shift from virtually integrated logic of power production where the basic role was to rain kilowatt-hours onto consumers towards a situation where we will have a more horizontal system, where we have the distribution of roles between consumer and producer, thatwill radically change. I do believe that probably the investments in grid systems have to anticipate that kind of development over the next few years and that probably the closest and most urgently needed system is that adaptation to horizontal logic. So smart grid logic, decentralized. Renewables have this wonderful capacity of being decentralized and accessible to a lot of people. So optimize this very specific capacity of renewables to be close to people, and then, if we can't make it that way, then the larger systems, interconnection, etcetera are a nice backup. But I do believe that what will happen very, very quickly is this shift from vertical to horizontal logic.

Masayoshi Son

I totally agree with you. I mean, the telecommunication and the internet industry, in the early stage, mainframe computers by IBM, and Fujitsu, whatever, those were considered safer. They were considered with much more centralized architecture with professional control and so on. But history already proved that whenever there is a disaster, internet is safer, that it's no longer the centralized network, but totally decentralized. I don't think that the electricity grid immediately becomes decentralized like internet, very quickly, but the direction-wise, with smart grid and all the decentralized power generation, the network should also be decentralized. I totally agree with you. This is the kind of thing I hope the Japanese government gets it.

Amory B. Lovins

You raised here a very important analogy about resilience, and we talked a lot about the cost of super grid, and it's significant, but it's a rather small fraction of the total cost of the system. What is even becoming more important, especially in a country with earthquake and typhoon and from time to time one has solar storms, is the resilience of the system because it's so vital to every aspect of our lives that we have reliable electricity. So, in the United States, the military is getting off the commercial grid altogether and moving to a system of netted, islandable fractal microgrids, which can normally interact with the big grid around them, but can also break into fractal pieces and standalone at need. Then combine this with a new demand-side flexible resources and demand response, very IT enabled and efficiency, and you find that a lot of the existing transmission lines may actually be freed up for other uses, and we may need a lot less new transmission than we thought.

Meanwhile, the solar and wind and other renewables are evolving in ways that let them work well even with a less than optimal resource like with lower wind speed. So, instead of having most of the wind in Hokkaido, Tohoku, and most of the load in Kanto and Kansai, we can start to envisage more diverse, distributed supply that still works quite well in the locality. So, we have these two semi-contradictory trends operating at the same time. But it is becoming clearer that the netted islandable microgrid architecture is the fundamental enabler of resilience against all kinds of disruption, accidental or deliberate. I think this will become even more important than cost. And it's a very different conversation than the electricity companies are used to.

But, I think we will look back on this period and say, "Some of the big grid schemes were premature. We haven't thoroughly studied the interplay of all these issues. some transmission will turn out to be a good idea, some will prove to be unnecessary. It's a bit like in your business - all the black fiber we still have from having overbuilt the backbone - and we need to be conscious of that risk as well. I would encourage a policy that enables and requires always to save or produce electricity to compete fairly at honest prices, no matter which kind they are; supply or demand side, what technology they use, how big they are, where they are , or who owns them. And this is pretty much the opposite of present Japanese energy policy. But it would produce, I think, a much sounder result with greater resilience, lower cost, and better performance.

Eric Martinot

Yeah, thank you. I think we should not underestimate the problems with developing wind power in Japan because of the grid issues. You mentioned, and we have all talked about the problems with the interconnection and so on and unbundling and utility regulation, which are all very serious. But we may not be able to see a lot of wind power development in Japan without unbundling or at least some serious attention to transmission issues even with a strong feed-in tariff. We won't be able to go so far. You have mentioned the link between Hokkaido and the Mainland and the fact that there is very little transmission along coastal areas, it's all the central area of the island, and you have to connect windy coastal areas with the center through new transmission building, and the idea of the super grid or much stronger grid interconnection in Japan is going to be critical for any amount of wind power here.

We could even entertain the ideas of offshore slowing wind, let's say, which actually avoid some of the transmission issues, if you connect directly to coastal cities from offshore locations. But, the geography of the existing transmission systems are all oriented towards the nuclear power plants here, and unless you locate all the wind farms at the nuclear power plants, you'll really have to go well beyond that. And that to me is a 10-year issue, I mean, the Asia Super Grid is maybe a 20-year issue in terms of thinking about how this will develop. But, over the next 10 years something has to happen here with respect to transmission.

I also wanted to make a couple of points in general about the foundation and strategies and some of the things we have been talking about here in these last 3 days. I think the foundation will be very important for Japan. I applied you for doing this now.

I devoted my life for the last 22 years to renewable energy. I am committed to seeing the world entirely from renewable energy in a long term. I really welcome this initiative and I think it's extremely important. I think you did a very good job of explaining the foundation and its function and structure to the audience on Monday. I think a couple of things we need to emphasize more in terms of strategy, in terms of the foundation and perhaps even your own thinking. One of those is the role of households in distributed solar, as was mentioned before but really, solar is the most important for Japan of all the renewable technologies in my view, and a lot of that is going to be distributed in rooftop solar. How do we do that? What are the new business models?, Even NTT now has a subsidiary 'NTT Facilities', and they are becoming an energy service utility for apartment buildings. And to think about the role of households and condominium associations and different business models - we've heard mentioned in this conference about leasing solar so that households themselves don't have to pay for it. They pay a monthly fee for it, and those types of business models. And the emphasis on, rooftop solar, and distributed as well as large-scale megawatt projects, so I think that's one thing that deserves more emphasis in our thinking and discussions.

A few other technologies, you know, that we haven't really mentioned very much, pumped-hydro, very important for integration with wind power. And Japan has a lot of pumped-hydro resources planning, and developing a lot of pumped-hydro in conjunction with nuclear. So if nuclear plants are cancelled, that frees up pumped-hydro to use as storage of the variable renewables, and that's, I think, even developing more pumped-hydro in addition to what's

planned would be very important adjunct to wind and solar that we see. We haven't mentioned that at all really in these 3 days that I've heard.

Geothermal, also, very important technology, if the policy issues with geothermal on public land and international forest can be resolved. I don't know if that is possible.

Ocean energy has not been mentioned at all here. It could be very important for Japan. It's still under development. It's still more of a fringe.

But in general, I think these other things should be in the mix for the integration of renewable energy and electric vehicles together as an integrated system, and integrated technical institutional system has not really been discussed adequately here. That deserves a lot more emphasis. We have heard a lot of really interesting talks about electric vehicles and batteries and storage, but the connection with renewable energy still needs to be much, much stronger in our thinking and how we actually do that.

My final point is concerning the magnitude of investment in renewable energy today. I think we really need to emphasize to the public. When we speak in public, and we have events like Monday, especially public in Japan, which has very little exposure to the renewable energy. Japan was the leader 10 or 15 years ago, but no longer is, and this idea of renewable energy sort of being in the fringe, I think, we are guilty sometimes of perpetuating that idea, when we should have beensaying to the people, "Look, renewable energy is a \$200 billion a year business. \$200 billion was invested in new renewable energy capacity last year, and that's more of an investment in all other forms of power generation combined. So the majority of our investment globally now in energy is going into renewable energy." Nobody really appreciates that except, we all understand that, everybody in this room understands that, we know that. But no one else knows that and even just pictures of solar fields and wind farms and showing these as mainstream business, hard asset investment today. Banks are investing in it. Actually, the risk of the wind farm is lower than US Treasury bond today, right?

Masayoshi Son

Especially, now. Even compare with the European bonds. Maybe, Japanese bond is also...

Eric Martinot

These are hard bankable investments that the mainstream is investing in, and we need to show those. We need to show – I think more emphasis on that I think also in terms of Monday and so on. These are hard bankable investments that are profitable, low risk, everybody is doing. Non-commercial banks are doing worldwide and to really get that message across to people in a big way, and you can carry that message, you can really do that, and that's going to change people's thinking. Once, we have that, then all sorts of other things were possible. Even maybe winning the war between nuclear and renewables, I don't know. We will see how that turns out. Okay, thank you.

Masayoshi Son

Thank you so much.

Sven Taske

Sven Taske of Greenpeace International. I have two short remarks get into the remarks from the previous speaker; one is I think Japan has a huge opportunity right now to fill out the framing renewable energy of feed-in law with some content in order to kick start renewable energy market here. I think mobile phone companies as such as yours can play a very important role in the rollout of decentralized power as a step one and then step two sort of more centralized from larger grids and that's communication because with the modern system, we merge basically the electrical system with the internet. We do need a lot of information in order to operate the grid differently in the future and therefore mobile phone companies have a very important role to play in the information. I think the upcoming

discussion about the feed-in tariff is a very good opportunity to finally kick start the market. My final remark on solar is, I think, one of the biggest problems in solar PV right now is that they still have the label that they are expensive. It's not the case anymore. The price went down more than 50% in the last 12 months and in fact in my home country Germany, we have grid parity, which means for the same price or cheaper to produce your own solar electricity than buying it from the utility by next year. Germany has half the solar radiations than Japan and lower household prices, so I would even say that it's already grid parity here if you would have a competitive market for PV, which you don't have right now. Japan has been the world leader in PV, unfortunately, dropped the bone in 2005.

Masayoshi Son

Thank you. I really understand. I appreciate it.

Ahmad Hadri Haris

I would like to mention about South East Asia (ASEAN) region. About 30 years ago, we (ASEAN countries) have decided to initiate the ASEAN Power Grid, to be implemented by the power utilities through a cooperation called HAPUA. Until today, we never really have moved forward under this initiative. But slowly we realize that the ASEAN countries (power grid) are already somewhat interconnected and that was purely driven by commercial reason. This is because when the power utilities realized that it makes economic sense to interconnect (to purchase and sell power instead of building new power plants), they will then do it. Thus, it is an opportunity to bring the (unbundling) experiences of what you have done for the telecommunications sector, in order to drive (the Asia Super Grid idea) from the commercial point of view so that the Japan power utilities can appreciate the benefits and see the perspectives. And TEPCO which is the largest power utility in the world has recently suffered tremendously because of Fukushima, not only from their financial point of view, but also from their reputation. This is the opportunity for the Foundation to convince TEPCO to change on how they conduct their (power) business and also build their new reputation as a green power leader in this region. Of course, often when we want to do a structural reform, there is a need for a strong champion. We have seen this in Europe and California (USA) of such champions emerging to change industry and public perceptions and acceptance towards renewable energy. Perhaps you have the opportunity to be the champion in Japan and even in Asia. Because often such reform needs to have someone who is well respected and can speak to the government and industries (and they will listen). In doing so, you do not need to know everything because there will be many advisors (and experts) that will help you, but we do need a champion.

Masayoshi Son

I feel becoming a champion with you. I have lots of advisor now. What I think as you said a key to the next step is unbundling. Unbundling distribution grid and power generation. The way I understand now, most of the European countries are already unbundled. You have gone through all the big debate and after all the debate, the consensus is unbundling is better for the people, better for the industry, and better for more fair and open to everybody. Now, Japanese government needs to understand it. Japanese media needs to understand it. What is the most important next step we should do in Japan, how can you advice to make that happen because that is the key to I think everything for next step.

Amory B. Lovins

I think this is actually one of two central reforms, the other being to start rewarding the electricity providers for cutting your bill not for selling you more energy. This is perhaps a longer conversation, but we have done this reform now in 14 of the United States, and it's under consideration in half of them. It has a profound effect on utilities' culture and their behavior when they have aligned incentives with their customers.

Another thing we do now in 13 states is that saved electricity is allowed to bid into the supply side auctions, and compete fairly against the supply, so in the latest auction, the demand-side offerings won 94% of the bids. Now, perhaps, the best way to mobilize the Japanese

government of whatever political complexion for both this reform and the removal of the conflict of interest between the utility and the grid operator would be to mobilize the Japanese business leaders. I am very pleased to see already that some of your peers are coming out from Keidanren's old consensus and joining you in the renewable revolution. I don't know enough about the Keidanren politics, but you would know better than anyone how best to make a coalition of diverse business leaders from all political groupings - leaders who could say the Japanese prosperity and success and national security require this.

Masayoshi Son

As you know, Keidanren is a key word here. They are the group of the large enterprise, and they have a lot of influence to the Japanese government and policymaking. The chairman and vice chairman and all these key members for the last 20 or 30 years is all the key vendors to the power companies for uranium, and oil, and gas, and also the plant itself, so they have very much vested interest to keep the traditional organization and nuclear support and so on. But, now, after the nuclear accident, some of the politicians start saying unbundling is the next important step, definitely required for Japan to reform, so some of them already understand that. But, there are still majority of the politicians, and policymakers, and so on, they are still resisting to even discuss about this. I really want to get your advice what is – so we need to really get what happened in Europe or other countries wherever the unbundling has happened and what is the result of that so that it's no longer just a theoretical discussion the fact that this improvement has happened.

Tomas Kåberger

I think we have a good vendor argument if you can let Bo to comment.

Bo Normak

Vendors being against change is strange, because for vendors change means new business. I would like to make one more comment on this unbundling grid because experience of Europe, as I know from many countries, is that we have been discussing for 10 years what value we should put at the grid because this is a critical issue, I mean, what value do you put because a lot of the grid, you can say, it is grid-off. But, that I think to not to spend 10 years.

Dorte Fouquet

A move to an energy system change at the order you are aiming at, with rapid deployment of renewable energies and increase of efficiency needs also a complete overhaul of legislation, new administrative procedures for permitting and planning and the like. Apart from capacity needs for the legal profession in the government and in administration in general you need a lot more qualified lawyers and legal specialists all over the economic and society sector dealing with energy. Therefore, the curriculum and training content for young lawyers needs a thorough reform and a push forward sustainability and renewables. I think it would be wonderful if you could engage the training and qualification of lawyers.

Wilson Rickerson

This is a room of consensus so far, and most of the participants in this conference support a rapid transition to renewable energy. We haven't had much opportunity yet for cross dialogue with stakeholders that have different perspectives, such as representatives from the utilities or from government. After Fukushima, the German government fundamentally reevaluated their nuclear policy and decided to accelerate their nuclear phase out. In order to support their transition to an energy future built on renewables, they started a series of national dialogues to bring everyone into the room -- both those for and against - and work through the practical issues of a post-nuclear energy system. It's a potentially messy but necessary process. The Foundation is uniquely positioned to play a convening role for different elements of society around the topic of energy transition. Engaging parties who have not been involved in this process yet and figuring out a way to structure an ongoing and productive discussion would be a very interesting next step.

Gunter Pauli

I have bit of a strange equation here. I am not an engineer. I am not an energy expert. I am an entrepreneurial spirit, and I indeed believe that innovation is going to be the key, but innovation for an entrepreneur is very often very delicate navigation between fantasy and vision. You will immediately have engineers coming to you and say, "You are in fantasy world. That's not possible." That's great because at least we are trying to push the engineers to get into the vision world because they are in the reality. I believe that what is very important for the foundation is to be able to distinguish between these navigations from fantasy to vision to reality. That requires risk assessment, but that also requires innovative science, and then we realized that actually change always happens in the periphery...

Gunter Pauli

I had great privilege of knowing the new president of the FDP. And when Philip Rosler was going to be thrown into this big debate about what do we do - for or against nuclear, join the consensus or not join the consensus. I had a session with him very simple and I said, "What you want, nuclear or reduce taxes?" He said, "Reduce taxes." I said, "Then let's choose it." "You are not going to be for or against nuclear. As a politician, you shouldn't talk like that. As a politician, you should say what today is very popular in everyone's mind, 'Can I reduce taxes, yes or no?'" Now, when he got it, decision was made and 4 days after he became the Vice Chancellor, Minister of Economics held the party, he joined, he gave the green light that they can join the exit. , The FDP agreed. I think it's very important if we talk to politicians, we talk the language of the politicians; we talk to the entrepreneurs, we talk the language of the entrepreneurs. I am very bad in talking to engineers. I failed talking to engineers all the time, but I do know how we can talk to the politicians. I think the German case was one in part because they realized they would cut taxes.

Masayoshi Son

Good point.

Anil Terway

Thank you. Yes, following on what he has just said, I think to win over your friends in the Japanese heavy industry, I see two clear arguments which have to be made. One, Japan is already paying the highest for electricity as it is, so unless you can show that the new move, the renewables, they are going to drop the prices, you would not go into renewables. I think we have heard enough evidence in the room over the last 2 days saying that renewable costs have come down substantially, by the time you fix up your rules, it'll all be grid parity, definitely in the case of Japan. The second rationale is going to be energy security, I think. As for nuclear, you have to import fuel, so energy security is going to be vital, and it's been vital in the Japanese industry right through. The next argument obviously is renewable is all domestic, so it is perfectly secure also, so two arguments you have to use continuously to win over friends and increase the number of people on your side and be able to make the tools.

Masayoshi Son

Yeah, that's the good point. Japan is already highest in cost of the energy, so if the renewable becoming lower in cost, Japan has the best opportunity to reduce the cost. I totally agree with you. Also, the domestic production of the energy is the national security, as you said, Japanese are so much dependent on overseas sourcing, so it's very good point.

Amory B. Lovins

Get the lower cost by unbundling and competition and let renewables take the political credit.

Eric Martinot

You are looking for arguments as to why Japan should unbundle the transmission system. I don't know which ones will be the best, but here are three, so the first obviously is Japan is one of the few remaining OECD developed countries without any independent transmission operator.

Masayoshi Son

Okay. That's a good point. On the OECD country, other than Japan which country is still bundled?

Male Audience

Mexico.

Masayoshi Son

Mexico is still bundled.

Male Audience

Parts of the US.

Masayoshi Son

Part of the US.

Male Audience

Much of the US is already unbundled.

Masayoshi Son

Part of the US and Mexico, France...

Masayoshi Son

Independent regulatory...

Male Audience

Independent Regulatory authority.

Male Audience

But, it's a 100% subsidiary.

Masayoshi Son

As long as grid is independent of the electricity companies...

Male Audience

Yes, they were against renewable [Unclear] and photovoltaic. They have...

Masayoshi Son

Does the France...

Male Audience

Yes.

Masayoshi Son

Okay, good. Just Mexico and part of the US is still bundled. All the other OECD countries – how many countries...

Male Audience

Korea is bundled, still?

Masayoshi Son

Korea is unbundled.

Male Audience

It is unbundled.

Masayoshi Son

Unbundled. China is unbundled.

Male Audience

It's like the French.

Male Audience

Except they keep buying generators now, but they are unbundled.

Masayoshi Son

It is important as you said, in the OECD countries, most... How many countries in OECD...?

Male Audience

Thirty.

Male Audience

Thirty.

Masayoshi Son

So, out of 30; 28 or 27 countries, they feel democracy in their countries. So already super majority is unbundled, and Japan is one of the country that is still not unbundled even after the Fukushima accident, and most expensive country for the electricity. What is the reason for continue to be bundled?

Eric Martinot

Japan is one of the last, and maybe you should say that Mexico may soon unbundle, so Japan should not unbundle after Mexico.

Eric Martinot

The traditional argument for unbundling has been economic efficiency at least in US. I remember the early days in California in late 1980s, early 1990s, the argument was economic efficiency, competition, all these things. And they managed to do it by compensating the losers in some way at least that there were some stranded assets and funds and so on for the stranded nuclear power plants. They restructured the whole system and created funds, and in some sense, there were some partial compensation., I don't know if California is the best case because in 2000, lights went out as a result of restructuring, so maybe not the best model. But they have remedied that now.

Masayoshi Son

That's great. We need to get all these examples and facts of the history before unbundling and after unbundling what has happened in the price of the electricity and competition in the market and fairness, efficiency, did it fail supplying electricity compared to the past. People still say that bundling is better for the safeness, whatever the argument that there are traditional incumbents in Japan trying to protect their argument then we should have counterargument. Well, in the most of the OECD countries, that was not the case. Before and after, it actually improved. We need those facts with examples.

Eric Martinot

Let me just to finish my point though, I mean, the argument that we are making now all of us is essentially that in order to have renewables, you have to have unbundling, so that sort of in contrast to the other two arguments that, that sort of default, right, okay to have a lot of wind power, to have renewables, we must have unbundling. But, I am not sure if that's the right argument to make or not. Japan really wants renewables, and it needs to unbundle, but that's going to resonate as much as some of these others.

Stefan Gsanger

I think what I want you to say is that in '97, start of EU level liberalization of the electricity market, but it took at least 10..., I mean that was in paper. It took at least 10 years to get it

something substantial. In most countries they have more or less, but some of them, we heard France is still the same company,o, that was very important. That refused other countries, and it was a different legislation, EU directive. The Members States have to guarantee grid access, this is very important to understand. I wouldn't say that now situation is the same here, but I just want to also put the question up whether it might be, whether it's exactly the right bundle ground to start with unbundling, which is a broader bundle ground than just guarantee grid access for renewables.

Masayoshi Son

Yeah, I think both needed in parallel. But, if the unbundling happens, of course, the grid access comes naturally. But, as you said, it takes a little bit longer debate for unbundling, and we need immediate guarantee to access.

Male Audience

It's very interesting. I dare to say that the success of renewables with new investors, new independent power producers rather than push and supported the drive to liberalize the market. Because before that there were no competitors, but now you look at European countries have hundreds of thousands of independent power producers, so that helped a lot. It's something that of course supports each other but just want to make...

Thomas B. Johansson Unbundling is indeed very important and it must be recognized that there would be fights over such changes. Of course there are losers and winners. To win those fights, a starting point is to be clear about why we are interested in renewables.

Obviously Fukushima provides one strong argument in support of more renewable energy; however, it is not the only one. Other strong argument for renewables can be derived from energy security aspects, local jobs and industry, local health and environment, and climate change mitigation, all in comparison to conventional alternatives such as fossil fuels. For all such reasons, expanding renewables should be supported. Of course, energy sufficiency improvements offer another avenue towards the same set of objectives. To make the case, one has to go in public in general to make it clear that the public understands all the benefits of renewable energy expansion and why it is a good idea to go for renewables. To seek out and identify why renewables are good, in each prefecture and each benefit for each council to explain this and convince this message, and to sustain it over time. This would be an important part of the whole story.

Masayoshi Son

Yeah. Just for your reference, in Japan, there are 47 prefectures - local governments, and out of 47; 35 governors join my initiative, so already over 70% of the state governors join my initiative that I initiated for renewable energy, so if there was a presidential vote, I would got already super majority vote.

Tomas Kåberger

Thank you very much as executive board chairman responsible for time and order, I must review this session. I think this session has summarized much of what has been said during the week. The Japanese opportunity for fast development is there because many [Technical Difficulty] prefers status quo and no changes, when it is changes that brings up new markets and more profits for them, too. And the rest of industry by possibly enjoying lower prices as a result of competition and new sources of electricity will lower marginal costs. I think we have clearly demonstrated – having that feeling is also little worrying because if you fail, you can't complain over anything but yourself. I think we do face the challenge in the foundation and in our efforts that when the international support visible in this room and good ability to find allies within Japan, I think we could succeed. Thank you very much.

Masayoshi Son

I am so happy and grateful and I really thank you. After the Fukushima, I felt so sad, so small about myself that how small I am to help this chaos and tragedy, but as one human being how small it is, when you got friend, when you got people who share the same spirit and try to help those tragedy and look forward to bright future helping each other, we are not alone in Japan, we are not alone from the disaster, we can prove to help each other. I am so grateful. Thank you so much.

[Female Speaker]

Thank you very much.

Masayoshi Son

Thank you.

[Female Speaker]

We are really, really happy about the discussion.

END