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Towards Green Growth in Germany:

From “energy wende” to Green Jobs

Your Excellency Kan-San,

Ladies and Gentleman, Dear green friends,

Dear Ms. Müller, Dear Ms. Kawai,

Dear Ms. Bosse, Dear Mr. Kajiyama, Dear Ralf,

thank you very much for inviting me to this distinguished round of experts. It is an honor to be a guest in Japan. It is neither my first nor my last time here, because I gain a lot from our mutual exchange here. Japan and Germany are two of the world’s leading countries in technological and societal change. We have many things in common and still a lot to learn from each other.

Therefore, let me express my sincere gratitude to the organizers of this event, the Heinrich-Böll-Stiftung, the Japanese-German-Center Berlin and Fujitsu. There couldn’t be a better time to get our minds together on the topic of “Energy Innovation” and it’s potential for countries like Japan and Germany. Both are highly-industrialized countries and both have shown the world a will to set course to new frontiers, although they had different reasons.

Distinguished guests,

following the contributions by Mr. Naoto Kan, Ms. Kawai and Ms. Müller, I will bring in a focus on the opportunities that lie in what Germany calls “Energiewende” – or “energy wende”, as Peter Altmaier, our new Minister for the Environment, put it recently. For me this is a sympathetic way of verbally merging the two challenges of today into one big opportunity.

On the one hand it’s our common task to stop runaway climate change before it is too late, to distribute our responsibilities fairly among the nations and to cooperate in order to find the best policies and technologies for what Ralf Fücks once called the “Green Industrial Revolution”.

On the other hand we find the German consensus to “wende”, to fundamentally turn around from what we thought is carved in stone. The simple mindset that what fuels our society comes from the power plug or originates at a gas station is not valid any more. Now, our society has lifted the curtain and sees the problems behind the old ways of producing energy for heat, power and transportation. The disaster of Fukushima, when all those human-build security measure where not enough, also horrofied Germany. It was this fatal March of 2011 when the perspective on risk changed. What a majority of citizens had already expressed was now lifted to the top-levels of industry and government: that there is no alternative to a nuclear phase-out.

I went into politics 30 years ago, because I desperately wanted the "energy wende". As minister of the large state of Northrhine-Westphalia and as a member of the German Bundestag me and the Greens fought for it persistently. We introduced the Feed-in-Tariffs with the revolutionary Renewable Energy Source Act (EEG) in 2000. Then we made a pact with the large energy industry. This was the first nuclear phase-out compromise. We convinced them, that working against each is not an option in times of difficult decisions: the majority of Germans wanted a phase-out (already in 2000!) but many experts, politicians and businesses were very skeptical. I was asked countless times: "Do you really want to substitute a high-tech nuclear power plant by an inefficient solar panel?" I used to say "yes" and now I am still saying "yes" – but back in the days I had a feeling of hope, now I feel assured and more confident than ever.

What has changed over the course of all those years? How did 2011 become the year of an all-party-consensus on "wende"? Some might say it was the simple reversal from what Chancellor Merkel did in 2010. After she scraped the nuclear phase-out, she was confronted with massive demonstrations. Hundreds of thousands of people protested against her new Energy concept (and this already before Fukushima!). The outrage could not have been bigger. Hence, out of fear from public unrest – and with final comprehension of the matter – we got a second nuclear phase-out. I tell you this not to brag, but to put in perspective what Fukushima means to us Germans. It was the final trigger at a loaded weapon. Fukushima, which seemed to be a new beginning in Japan was a culmination-point in Germany. But we got to this point not by chance, but

by the overwhelming success of an entire new industry branch. This success and the nuclear phase-out are two sides of the same coin. The renewable energy revolution is the backbone of the German “energy wende”! And like the back-bone of a child, it needs to grow, it needs some protection but it also needs training to become strong and hold the whole body.

Ladies and gentleman,

let me give you some prominent examples of how successful this exciting new sector is. A decade ago, we planned to have 12.5 % Renewable Energy in the power sector by 2010. In reality we got 17% in 2010 and recently we crossed the 20 %-limit. This boom has created a large amount of new jobs, “green jobs” thanks to the Renewable Energy Source Act. Almost 400.000 people work in this sector today. About 120.000 related to biomass and slightly less in each solar and wind. However, many jobs were lost recently in the solar industry due to a massive uncertainty, originating in many political changes of the Renewable Energy Source Act. Nevertheless, we expect over 500.000 green jobs within the next decade. And this number does not include all those “ordinary” craftsmen which contribute to the “energy wende” by insulating homes or building a smart grid and those working in the related service industry. But highly educated people find there place in this branch as well: 32% of the jobs are obtained by people with a university degree. Soon, everybody might know somebody who works with Renewables!

Just last week, I felt this change very strongly when representing the Greens in the German Conciliation Committee. There, we tried to broker a deal on the latest amendment to the Renewable Energy Source Act between the federal government and the federal states. All this was necessary, only because the conservative CDU prime ministers of some eastern states were not willing to accept deep cuts in PV-tariffs proposed by their own party. There is a large solar-industry in some of those states – but for the first time, these green jobs became a significant argument in the debate!

This change has two parents. One is the constant persistence of the grass-root movements, greens and idealists, who pushed politicians over years to the point of passing strong legislation in 2000. The other is the power of innovation – both social and technological.

When Carl Benz and Gottlieb Daimler invented the car in 1886 – thereby laying foundation to what is somehow part of our national pride, part of the Western way of life and also part of the environmental problem – already 20 years had passed since Werner von Siemens was among those, who invented the electric dynamo. We all know the dynamo from our bikes but it is also the foundation of today's wind power. Sometimes we just have to look a little closer to see, that a big step into the future has already been made. Japan is seen as the "country of energy-efficiency". Thus, I am excited to learn more about innovations you may take for granted. And by the way, it was also a German (Otto Hahn, 1930) who discovered nuclear fission 80 years before our society completely agreed

to phase-out this technology. This shows how technological and social innovation have to get together in order to move forward.

Distinguished guests,

there is one aspect of societal innovation I find particularly important and I would like to share this one with you. Jeremy Rifkin framed it like this: "*The ability to tap, generate and distribute power now shifts from the exclusive province of governments and lease-holding corporations toward individual actors and communities.*" I think that just like social media is changing our democracy (towards more participation, constant feedback and increased transparency), renewables will revolutionize the bedrock relationship between producer and consumer.

The boom in solar energy is largely based on the small-scale segment. Germany and Italy both saw an investment of more than 20 billion US-dollars last year. Globally, over 70 billion US-dollars of investment in small-scale photovoltaic contributed to 30% of the total investment in solar. In Germany, about half of the PV-market right now consists of decentralized, small-scale systems below 100 kWp (kilo-watt-peak). If you ever have the chance to travel through Germany, preferably by train, you will notice thousands of solar panels on roofs of small houses. Already today, on sunny and windy days, we have so much renewable energy production, that they can fully supply the country for some hours. Nowadays, it is by far more beneficial to invest in onshore-wind rather than in coal-fired power plants.

The big corporations try to make up for lost time and start their own renewable investments. But it is “too late” to turn back this progress: The production of energy is right now being handed over to the people. Over one million people in Germany are now “prosumers” – they consume and produce energy. They don’t want the big profits that corporations strives for, because for them, 3% is enough. This is a great example how energy and financial sustainability go hand in hand.

In the old days, when you talked about energy in Germany, you meant the “Big Four” – the oligopoly of the big energy corporations. Now on the contrary, there are around 10.000 companies in the solar sector alone. Many farmers turn into “energy-farmers” by means of wind or biomass. Small towns, who are traditionally on a tight budget, generate new income by lending space: you can count on over 50.000 € for one large windmill. While it is a challenge to hear and coordinate all these new voices, it is also an enormous empowerment of the middle-class. All this was possible through the Renewable Energy Source Act and is the reason why it is highly recognized in Germany until today.

This it what some call “energy democracy”. It poses new challenges to politics, industry, and communities. Our grids need to be smart, we have to invest more into research and development of energy storage in order to enable people to use their own electricity, even when the sun is not shining, and we have to think about a new energy-market which is able to deal with fluctuating power generation and a large amount of partially or fully self-sufficient households.

But “green growth” in general and renewable energy in particular are not just a good thing for ordinary citizens – industry profits as well! While the German energy-intensive companies are already largely exempted from energy-fees and the cost-apportionment, they also save money at the European Energy Exchange. Renewables have led to a sharp decline of 15-20%, leading to a situation where nowadays energy is cheaper in Germany than in France, the UK or Italy. Contrary to uranium, coal or gas, the sun and the wind do not write a bill afterwards. This is why energy corporations like RWE – whom I know them very well, because the company is situated in my energy-intensive home region in western Germany – aim at 20% renewable in their portfolio.[1] Angela Merkel aims at 35% and we Greens want 45% renewable power production by 2020. I would say: The industry finally wants to catch up with society, and this is a good thing!

The old saying from Ghandi holds true until today: First they laugh about you, then they fight you and then you have won. I think it is clear whom I mean by saying “they” - the well-established part of German industry, or what I would call, with all due respect, “the fossil industry” Peter Teruim, CEO of RWE has announced a 150 Million investment[2] in solar power plants outside of Germany. Johannes Teyssen, CEO of another German energy giant, E.on, said recently: “We came to the conclusion, that

[1] http://www.ksta.de/bedburg/erneuerbare-energien-investitionen-in-sauberen-strom,15188480,16423670.html

[2] http://www.sueddeutsche.de/wirtschaft/strategiewechsel-bei-rwe-energiekonzern-baut-keine-atomkraftwerke-mehr-1.1385386

investment in Renewables, decentralized generation and energy efficiency is more attractive."[3]

To both men I shout out loud: Welcome to the club!

Resulting from this, one could think – going back to Ghandis theory – that we have won. But I am cautious. Just because we are now all sailing on the same ship doesn't mean we agree on the same course. Various challenges await us in Germany. Let me point out some to you:

1. We need new grids to connect our regions and let the fluctuating Renewables flow.
2. There is the need for an new energy market design, which is solid enough to deal with decreasing shares of fossil fuels and rapidly increasing shares of renewables.
3. We have to think about new capacity-mechanisms, because some fossil power stations will have to continue operate for a limited time as backup to the renewable (as long as we don't have the right grids and storage capacities).
4. The European climate and energy policy, especially the emission trading targets need to be coherent with our German ambition.
5. First movers like Germany are only successful, if they engage followers without losing their advance completely.
6. The public needs to be part of the "energy wende" in order to keep the approval ratings for this transformation high.

[3] http://www.handelsblatt.com/unternehmen/industrie/grossbritannien-eon-investiert-in-erneuerbare-statt-in-atomkraftwerke/6453538.html

These are six out of many challenges that await us in Germany and we are aware of the fact, that the whole world is watching.

Ladies and Gentlemen,

Let me give you an example of what kind of new quests the “wende” holds for us. The geography of Germany dictates a differentiation in renewable energy production. Some northern states already produce the largest part of their power from wind-mills, despite delays in the build-up of offshore capacities. The southern states, which are more affected by the nuclear phase-out, are catching up, but their strength lies within photovoltaic. While we are happy to have both – wind and solar – in Germany, we need a grid that enables us to transport this power over hundreds of kilometers. At the same time, a more decentralized production of energy also calls for an improved distribution network. Just recently, the Federal Grid Agency published a first grid-development-plan on how to manage this gigantic project. The proper inclusion of the public in this process is one of the big challenges we all face. To keep it this way, we need to communicate clearly where the costs and benefits lie. Rising prices for oil and gas will lead to increasing costs to heat our homes and use energy. Politics will have to find ways to distribute the burden along the capabilities of all parts of society. But on the other side, our society as a whole currently gains almost 7 billion Euro in saved fossil imports.

Despite all the fear, despite all the risks, and despite all the opposition, Germany's power supply has remained stable and reliable. It is natural that a society, that has never thought about black-outs, is now troubled by the risk. It was a grim picture, painted by skeptics. "The lights will go out in Frankfurt" or "you will have to import electricity generated by nuclear power in France." But during the last winter, France had problems with their power plants and needed to import Germany electricity!

So is the nuclear phase-out going to work? I am confident it will. The growth of the renewable energy sector has given anti-nuclear campaigners a new argument that has proven very powerful in Germany. The traditional arguments against nuclear power are well known:

- Number one: Nuclear power is too dangerous. Tschernobyl and Fukushima prove the point.

- Number two: We don't know what to do with the radioactive waste. After more than fifty years of nuclear power generation there are still no safe storage facilities.

- Number three: Nuclear power can be the first step toward nuclear weapons. Just look at North Korea, Pakistan or Iran.

Now, there is a new, economic argument against nuclear power.

- Nuclear energy is an impediment to economic growth. It impedes innovation, stalls new investment and obstructs job creation in the renewable energy sector!

Therefore, a nuclear phase-out is always a renewable entry – and the other ways around. Germany has made its decision and I am sure, Japan will do the right one as well. I have collected signatures against the restart of the two nuclear plants in Oi. I will try to meet with Governor Nishikawa and I continue to argue for the necessary energy innovation.

Japan can be a wonderful example for us. You have managed to live with power rationing and fear. But you have also shown how to stand up after everything seems to stand still.

The topic of my speech was “Towards Green Growth in Germany” and I would like to give a humble advice to all, who are also striving for green growth: Go the hard way to find a collective consensus on what has to grow – like renewables – and what has to shrink. We cannot serve two masters. The nuclear age is coming to an end and a new era of renewable energy and energy efficiency is beginning. Many old problems connected to fossil fuels, like conflicts and wars, will naturally fade if we turn to the sun and wind. This transition will present us with new challenges, but also with great opportunities. I believe that this “energy wende” will make our people safer, our economy stronger, protect the climate and makes our society more democratic.

Thank you very much for your attention!

For questions and feedback, please feel invited to contact me.
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