Fresh Energy for Japan's Tired Economy
Can a Turnaround in Energy Policy Bring the Turnaround for the Japanese Economy?

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Abstract

Japan has been in an economic dead-end for over a decade by now. On top of its economically disastrous situation came the twin natural disaster of the Tohoku earthquake and the Fukushima nuclear accident. Coming together on March 11, they necessitate a rethinking of long-heralded believes in Japan and a new way of thinking about the future.

This essay argues that Japan has to deal with the current situation not by simply rebuilding the past, but by using the current window of opportunity and investing in the future of an economy based on a renewable energy supply. The argument proceeds in two sections. The first part demonstrates how a return to the pre-March 11 status quo is made unthinkable by the ramifications of the natural disaster. The subsequent section conceptualises a future green energy policy as an alternative for the present system with its insurmountable inherent risks and inbuilt political weaknesses. At the same time, it argues that a green economy is not only a necessary recalibration of the current system, but also a chance to jumpstart the Japanese economy as a whole. Creating new jobs, correcting power asymmetries in energy politics, and attracting investment and innovation, a rethinking of current energy policy can be a first major step in bringing movement into wide sectors of the Japanese economy, ranging from manufacturing to distribution and trade. A new start for energy policy can thus lead to a new start for the Japanese economy as well as transform Japan - generally regarded as resource-poor country - into a

resource itself.

Bringing about a paradigm shift in energy policy, however, is no easy task politically (as former Prime Minister Kan's statement has shown all but too clearly) and comes at a cost: It requires heavy initial investments and acceptance of a landscape changing with the decentralisation of energy production. However, stressing the need for an open debate about the costs and benefits of a turnaround in energy policy, I argue that the initial costs are by far outweighed by future gains and that an honest discussion will lead to wide public acceptance of such a shift in energy policy. Simply imposing the costs of a turnaround in energy policy without explaining the costs and benefits of the policy shift in relation to each other will lead to rejection of the policy - and invite a back and forth similar to that in Germany.

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1. Introduction - Killing Two Birds with One Stone

Japan has been devastated by an unprecedented catastrophe. Japan has "lost" (evil tongues may say 'thrown away') two decades. China is on the rise as major competitor. The only thing on the rise in Japan is public debt. Fukushima is still far from normal. So far the bitter facts. The issue now is what lessons are to be drawn from those facts? First, being from the world's champion of wailing and complaining, Germany, has taught me that pessimism does not help. It only leads to overlooking opportunities. Even though wailing is not particularly Japanese, there is still the danger that all economic problems will fatalistically be excused by the earthquake. This will have two fatal consequences: for one, Japan will not address its underlying structural problem, which, *inter alia*, is betting on the wrong horse, namely an economy based on fossil energy; second, it leads to a situation in which the present unique window of opportunity to turn the tide is passing by unnoticed. Instead, already now Japan is returning to its usual political bickering under the, I think, twentieth prime minister within three years. It is focusing on re-building (thus that what was in the past), instead of creating something new.

But Japan is in dire need of something new. For two decades Japan has done little more than administering its past wealth and its present decay. Indeed, the biggest question of the time is how to put the Japanese economy back on its feet while simultaneously preventing another Fukushima from ever happening again. The essay's argument thus proceeds in two sections. First, I show that there can be no way back to the time before March 11: The lessons from the earthquake and Fukushima cannot be ignored, although many people from the old days' politico-industrial complex try hard to push aside the upcoming discourse on nuclear energy and the ties between ministries, politicians, and the energy industry. The second section then turns to the lessons to be drawn from this insight. It calls for acknowledging that nuclear energy can have no place in Japan. Instead, using the window of opportunity now, Japan can become a country with a sustainable living standard and simultaneously address the problem of its sluggish economy by investing in what unalterably has to become the future of energy policy.

2. The Look Behind - No Way Back

"Our nation should aim to become a society that can manage fine without nuclear power." This statement by former Prime Minister Kan thus proposes that in some distant future, by unspecified means, Japan should decrease its dependency on nuclear energy. Pretty much what the Green Party demanded in Germany in the 1980s. Not enough to wipe me off my feet, thus, but

clearly enough for some people in Japanese politics. Kan's attempt to break through the thinking ban on Japan's sacrosanct nuclear energy was quickly dismissed by the elder gentlemen in Japan's political and industrial circles. Thus, will it take another twenty years, just like in Germany, for Japan to dismiss nuclear energy and switch to renewable energy? I hope not. Japan can profit from having a look at Germany - which is not to say that Germany is the shining example of sound energy policy. Certainly not. But also by looking at what mistakes have been made: For instance, one decision to phase out nuclear energy might be enough. Phasing out the phase-out, just in order to soon after that phase out the phase-out from the phase-out, seems, at least to me, overly complicated.

But before looking at the German case to determine what might be the merits of a phase-out, I want to explain why Japan cannot just go back to its daily routine. The earthquake alone was devastating already, killing ten thousands. Yet, the man-made disaster of Fukushima came on top of this natural disaster (sure, the cause was not man-made but a natural disaster. Still, the accident was man-made in that nuclear power plants were built and not sufficiently secured). Man-made means preventable. 80.000 people had to leave their homes around Fukushima and might never be going back there. These people did not only leave behind their houses, but their lives as well. Only one such case should actually be reason enough to take every step necessary that something like this will never happen again, but 80.000 make an undisputable case. Thanks to the government's flexibility in setting the limits for radiation (for instance, by raising the limits for children by twenty times), life can go on without disturbing news that people might have been exposed to overly high quantities of radiation- except of course, the workers in Fukushima itself; however, those are of course heroes, not victims. But radiation does still affect wide areas for a long time to come. Farmers cannot farm anymore and fishers cannot fish anymore (at least they cannot make a living of it anymore), even in regions outside Fukushima. And this is not even to speak of the long-term health problems that might occur from radiation which are currently being researched by the Japanese government. This kind of damage does not appear on the electricity bill, and thus atomic energy lobbyists continue to emphasise how cheap nuclear energy is compared to new forms of renewable energy. It is a textbook example of a negative externality caused by one polluter, paid for by the entire society.

While the present sufferings caused by the nuclear accident are sufficient to necessitate a change of policy, the present situation of the nuclear industry also prevents a return to the previous status quo. The Atomic Village refused to acknowledge that any large-scale catastrophe might ever happen. Therefore, the maximum height of any tsunami wave anticipated by TEPCO

was 5, 7 m - the wave after the earthquake on March 11 was 14m high (Asahi Shimbun, 25 August 2011). And the occurrence of other major earthquakes in Japan is not a question of *if*, but a question of *when*. The only player in the game that appears to have understood these risks perfectly is the insurance industry. Why else would no single nuclear power plant on this planet have insurance coverage even though the damages caused by any accident are unimaginably high as can be witnessed just now?

While the man-made disaster of Fukushima is thus preventable by looking for alternative sources of energy, a natural disaster is not preventable, nor is there absolute protection against it. There is thus no way to circumvent the conclusion: nuclear power plants in a country such as Japan are time bombs - a fact that has long been well-known, but also well-ignored (Hamaoka Lawsuite, 2007). This first section thus illustrated that a return to the previous status quo is no longer viable in view of the knowledge that such a disaster can strike again anytime - no protection possible.

3. The Look Ahead - The only Way forward

Nikkeicho is asking for "a recovery philosophy based on a long-term perspective". Certainly, such a dramatic turnaround in energy policy requires forsaking present luxury for greater future gains and thus a good deal of long-term thinking. The statement is correctly put: Now is the time to ask the big questions; not the time for German pessimism and not for feeble attempts to simply rebuild what has been destroyed. The present situation has put future energy policy - a topic much ignored in Japan in its complacency about nuclear energy -on the political agenda. Japanese politicians and entrepreneurs now have a unique window of opportunity to initiate a real shift in energy politics. The next section thus turns to the question why a turn in energy politics would help to prevent future disasters and aid the economy at the same time.

Any debate about future energy policy needs to start with an honest cost-benefit analysis of alternative forms of energy. As said above, the costs of nuclear energy are grossly understated: No nuclear power plant has insurance and in case of an accident, however unlikely that might be, the costs for society are immense; both, in terms of health and money. Nor do any of the subsidies nuclear energy providers received for nuclear research appear on the electricity bill, nor do the costs of storing and disposing of nuclear waste appear on the bill (but are also secretly paid for by tax money). Moreover, owners of nuclear power plants often advance the argument of environmentally-friendly nuclear energy with low carbon emissions. What they conveniently tend

to forget, however, is the way in which uranium is won - namely under conditions very damaging for the environment and for the (mostly indigenous) population living in the surroundings. Which is not even to speak of the difficulty of storing nuclear waste safely for millions and millions of years to come, as witnessed by the immense problems in Germany: so far no place that would be safe enough has even been found and radiation is leaking from the present interim facilities. In one hundred million years, it will be long forgotten what 'Germany' and 'Japan' actually were, but our nuclear waste - it will still be radiating happily ever after.

Taking into account these hidden costs, renewable energy sources like photovoltaic and solar panels do not look so expensive anymore after all. Still expensive, yes, but one should not forget that those new forms of energy are still in their infant years and will become considerably cheaper given economies of scale and experience similar to that traditional sources of energy now command.

But how will a green energy sector help Japan's sluggish economy? Fate favours the bold, economics favour the first mover. Japan can be one of the first industrialised nations to switch to a renewable energy supply, becoming one of the prime producers and exporters of innovative energy technology. In Germany in 2010, almost 400.000 people were employed in the green energy sector, not only in manufacturing, but also in adjacent sectors such as distribution and trading (Blazejczak, Braun, Edler & Schill, 2011). Employment numbers in the sector are growing by about 14 % annually. Given the ever-growing investment volume worldwide in green energy - in 2009 alone it was about $150 billion - this market might presently still be a niche but is bound to be future mainstream. Every country will sooner or later need to invest in renewable energy. The current living standard of the industrialised nations is not sustainable for an ever-growing world population - in fact, it is not sustainable for the present population size of the Western world already. Only investment into renewable energy will make our living standard sustainable. But strangely enough, so far people turn their eyes to Germany, not to the country of the Kyoto Protocol when it comes to renewable energy. And indeed, Germany, with steady investment and support for the green sector of the economy, overtook Japan in the production of, for example, photovoltaic facilities and became one of the world leaders in the export of innovative energy-related facilities. Germany is already reaping the benefits in terms of employment and a healthy sector of the economy that contributed about $40 billion to GDP in 2010 with an ever-growing tendency. The green economy is precisely the push the sluggish Japanese economy needs.

Furthermore, coming back to the Atomic Village and the ties between industrial conglomerates, energy suppliers, and politics, investing in these new kinds of renewable energy has another positive effect: photovoltaic and solar panels, windmill parks, and biogas facilities are

all decentralised forms of energy. Typically, individuals or groups of people invest in those energy sources and build the facilities near to the area where the electricity is being used eventually. This decentralisation takes power out of the hands of power companies and decreases their leverage on price-setting and politics. Given the immense power vested in the oligopoly of Japanese energy suppliers this is already an end in itself. It is even more so when one considers what the oligopolists have done with that power in the past (see for instance the episode described above in which TEPCO prescribed its own security measures for its power plants - only regulated by METI which is thus simultaneously responsible for advancing and overseeing nuclear energy). This decentralisation will thus considerably help breaking up the Atomic Village. It will slowly transform current power companies from suppliers of energy to managers of local energy networks.

On the other hand, this already touches upon the problems associated with a turnaround in energy policy which cannot be ignored. It was exactly the silence about the disadvantages and the costs of forging a completely new energy policy that made the back and forth in German energy policy possible in the first place: In 2000 the first decision for nuclear phase-out was taken, in 2008 the phase-out was reversed, in March 2011 after Fukushima the reversal of the phase-out was taken back. It was a shameful back and forth and Japan would be well-advised to avoid such a situation and go through the entire discussion before embarking upon any policy adventures. *Nikkeicho* is asking for such a long-term perspective. Germany, on the other hand, did not think much further then how to replace nuclear energy with renewable energy by 2020. Right now, Germany is muddling through. Piece by piece information comes to the surface what still needs to be done in order to achieve the set objectives of doubling the share of green energy by 2020. For instance, thousands of kilometres of new electricity cable networks will have to be built which will be eye sores in the landscape; that much is for sure. Therefore, Japan needs to discuss thoroughly up front how to best achieve a sustainable energy supply from renewable energy sources.

First, the decentralised energy network that comes with solar, photovoltaic and wind parks necessitates a massive investment in electricity transport networks from the many sites of production (as opposed to one nuclear power plant) to where it is needed. Moreover, while nuclear energy is independent from any outside influences, wind parks need wind to generate energy, and photovoltaic and solar panels need sun to deliver energy. Thus, the transport network needs to be flexible enough to accommodate the peak production during windy hours of sunshine and also needs to encompass high-capacity energy storage facilities for electricity to provide for

dark hours without wind. Second, by not thinking far beyond 2020, Germany conveniently also ignored the problem of how to deal with waste from renewable energy facilities. To date it is still unclear how to dispose of solar or photovoltaic panels and how much that will cost. As above, Germany needs to figure out the details while going ahead. However, politicians have to come up with a solution soon if they do not want people to start digging in the panels in the woods like my grandfather used to do with the asbestos he found in his house. Without a clear solution to this problem, the problem of renewable waste disposal will become similar to that of nuclear waste disposal. Third, what is also still unclear but is obviously not important enough to do the calculations before deciding on the policy is the price increase of electricity. Speculations reach from $0 to about 5 Cent per kWh and anyone is invited to take a guess. For Japan, it might be a good idea to do some calculations up front and thus invite an honest discussion about not only the benefits, but also the costs of a new energy policy. About five cent more costs per kWh, for instance, will increase electricity costs for German households by about 20%. Only an open discussion, however, can lead to public acceptance. Imposing the costs of a turnaround in energy policy without explaining the costs and benefits of the policy shift in relation to each other will lead to resistance and rejection of the policy - and invite a back and forth similar to that in Germany.

Turning its eyes on Germany for what benefits a turnaround in energy policy might have as well as what mistakes should be avoided can thus be a fruitful exercise for Japan. However, what must not be forgotten in the discussion is the specific Japanese position to make use of renewable energy: It is an island country spanning from Okinawa to Hokkaido, encompassing subtropical climate zones of abundant sunshine as well as windy mountain and seaside areas. Therefore, in some significant aspects Japan is differing from Germany - in aspects that actually make the use of renewable energy even easier and more advantageous for Japan than for Germany. Japanese like to complain that they live in a country without any natural resources and consequently are dependent on nuclear energy. However, relying on renewable energy, Japan can make its geographical position and its climate one of its prime natural resources. It can utilise its southern areas for solar energy, the rest is much better situated for wind and water energy than any German region.

4. Conclusion - The Small Costs of Exploding Windmills

In conclusion, I want to come back to the initial question whether a turnaround in energy policy can bring the turnaround for the Japanese economy. No, it cannot. Even 400.000 jobs and

$40 billion of new investment will not solve all Japanese economic problems over night. However, creating a green economy is a first major step in this direction. A green economy will create hundred thousands of new jobs and will attract billions of new investment and a plethora of innovations. It will prove to be a powerful impetus to the economy and provide a sustainable, environmentally-friendly, self-sufficient supply of energy, transforming Japan itself into a natural resource. In the end, one must not forget that a turnaround in energy policy is a package deal and much more than only a nuclear phase-out. It is a broad investment in a future where renewable sources of energy replace damaging, dangerous and environmentally unfriendly fossil and nuclear energy.

The creation of such a green economy will create some initial hardships but these are easily explainable to the public in an open debate about the various energy forms: A 20% higher electricity bill may seem high at first, but viewed against all the hidden costs of nuclear and fossil energy in terms of tax money and environmental destruction is no more expensive. Having to build a completely new energy transport network for a decentralised energy supply might seem difficult at first, but seen as remedy for severe power asymmetries in Japanese energy policy will be a small inconvenience. And all these possible costs will fade next to the costs of Fukushima. Needless to say that if a windmill explodes there is no need to evacuate the surrounding 30km for decades to come.

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