

# Japan Crushes Resistance to Restart Nuclear Power Plants

**Thierry Ribault**

*Summary: This article reviews the Abe administration's moves to crush opposition to nuclear power and restart the first nuclear reactors since the closure of all 54 nuclear power plants following the triple meltdown of March 11, 2011. The author punctures official claims of an economic crisis resulting from post-3.11 import of fossil fuels, the basis for the Abe restart program. Likewise, claims that preserving a share of the energy mix to nuclear power is essential and inescapable in order to avert or alleviate climate crisis. Finally, the author considers the implications of government policies for the possible creation of a Japanese nuclear weapons arsenal.*

On August 11, 2015, the n°1 reactor at Sendai nuclear power plant, located in Kagoshima Prefecture in south-west Japan, was reactivated, and one month later Kyushu Electric Power inserted 157 fuel rod assemblies into the n°2 reactor planned to restart in mid-October<sup>1</sup>. The Abe administration seeks to make this moment decisive in its energy strategy, insisting that nuclear power is “vital” for the future of the nation, in ways that recall statements between 1931 and 1945 that the invasion of Manchuria was also “vital” for the Empire. The pragmatic criticism levelled against such an approach with regard to the future of Japanese energy by the former Prime Minister Koizumi Junichiro, who pointed out that Japan had managed to rebuild itself after the Second World War *without* Manchuria, had no impact. Koizumi has become one of the leading actors of the pro-renewable energy elite, which includes the pro-solar billionaire Son Masayoshi, CEO of Softbank. Adamant about its national-nuclearism, the Abe administration seems to adopt the rule that

whatever is furthest from the truth is also what is most communicable. Such has been the case with the raising of the thresholds of unacceptability with regard to the radioactive contamination of both the population and nuclear workers. The administration has also denied the health effects associated with the Fukushima Daiichi nuclear disaster, despite the evidence of an epidemic of thyroid cancer. Moreover, evacuated people are being sent back into contaminated zones, a decision accompanied by a “risk communication” policy relayed and supported internationally by handpicked UN experts<sup>2</sup>.

Naturally, there has been tension, including within the government itself, and notably from political and industrial groups that favour promotion of renewable energy, mainly biomass and hydroelectric power. Even some of the most ardent defenders of nuclear power within parliament or government have changed their views to favour renewable energy. It is a (discreet) war of succession in terms of economic interests whose long-term outcomes are unforeseeable. It is certain, however, that with the reactivation of Sendai's n°1 reactor, Abe and his collaborators have won a battle in the *clique struggle*. They have achieved this largely thanks to a tool classically used in politics: blackmail. In this case, this blackmail has several facets: first, blackmail about the threat of trade deficit; second, about the threat of climate change; third, about the exploding costs of non-nuclear electricity and the threat of decreasing income for the giant power companies from nuclear power, and, finally, about the threat of an atomic bomb.

All the ingredients of the Abe administration's

approach to the power plants were actually fully elaborated in the following passage extracted from the Prime Minister's response at the plenary session of the House of Councilors in January 31, 2013: «The Policy established by the former administration to halt the operation of all nuclear power plants by the 2030's lacks a concrete basis and has engendered anxiety and distrust among the municipalities that have accepted nuclear facilities and cooperated with the national government's energy policies, the international community, industry, and the remainder of the Japanese people. Therefore we will carry out a zero-based review of their strategy for energy and the environment and will establish a responsible energy policy which also ensures a stable supply of energy and reduces energy costs.»<sup>3</sup>

Thus, from the “zero-based review”, to the energy cost reduction guarantee, the security connoted “stable supply”, and the demagogic and manipulative argument according to which the Japanese people lost confidence and became anxious *because* “the policy established by the former administration to halt the operation of all nuclear power plants by the 2030's” lacked a “concrete basis”, and not simply because of the explosion and the meltdown of three nuclear reactors that were supposed to be eternally safe, every single argument of the Abe administration is an inversion of the actual truth.

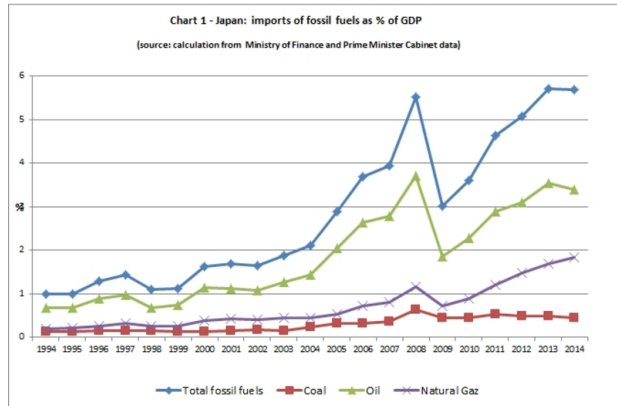
Let us examine in detail the content of each of these facets of the blackmail before drawing conclusions on the nature of the authoritarianism of the Abe administration on one hand, and the effectiveness of individual and collective action to fight this administration on the other.

### 1. The threat of trade deficit

In 2013, for the first time in three decades, the Japanese balance of trade was in deficit by a total of 11.5 billion yen. 7 billion of this was

attributed to the relocation of Japanese industries to other parts of Asia - not connected with the Fukushima disaster - and 4 billion to the additional cost of petrol and gas to produce energy no longer supplied by nuclear power plants. However, from April 2015, the balance of trade was once again in surplus, with petrol purchases dropping by 51%, petroleum products by 38%, and liquefied natural gas by 12%.<sup>4</sup> The following months were slightly negative, but the weaker yen policy of the Abe Administration (since December 2012) helped reassert the value of exports which substantially increased: in July 2015, the percent change from the same term in the preceding year was 7.6% for exports (of which machinery was 8%, electrical machinery 10.5%, transport equipment 10.4%), imports were -3.2% (of which -29% for mineral fuels), and the trade balance was -72.2%.<sup>5</sup>

Actually the growing share of imports of fossil fuels in the Japanese GDP is not new; indeed, it has been steady since the 1990s (Chart 1). The trend was halted in 2009, to restart in 2010, with a new peak in 2013 at a comparable level with that reached in 2008 (5.5%), but still lower than the levels reached during the oil shock of 1980 (6.6%). For petrol and coal, 2014 shows a reverse trend toward low levels, and even though we don't know what the future will be, according to METI, prices of liquefied natural gas could be halved between 2014 and 2015. The data made public for the first half of 2015 suggest an extension of the fall in fossil fuel imports against GDP to 3.9% (against 5.7% in 2014). Considering the trade balance in the first semester of the year, the 2015 trade deficit could be four times lower than that of 2014.



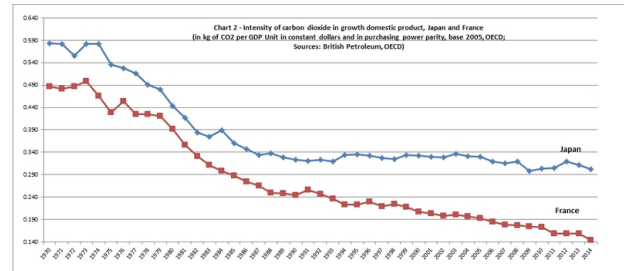
The results of a study by the energy economist Bernard Laponche in 2014<sup>6</sup> confirm that the claim of a relationship between the termination of nuclear power and expansion of the Japanese trade deficit is groundless. According to Laponche, if “the energy bill (net import of fossil fuels) truly increased 46% between 2010 and 2013, 6% of this hike is due to changes in the energy system, namely the fall of nuclear electricity production, while 40% is due to the rise in imported fuels, particularly petrol, whose rising international price was unrelated to the fall in nuclear power production in Japan” (p.61).

*Our first conclusion then is the following: Stopping the use of nuclear power in the wake of the Fukushima disaster did not have the expected disastrous impact on the Japanese balance of trade, and the loudly proclaimed “wealth drain” did not occur.*

## 2. The threat of climate change

Since 2007-08, the intensity of Japanese GDP in carbon dioxide has been 1.8 to 2 times higher than in France, compared with 1.2 times during the 1970’s (Chart. 2). In the long run, this intensity has been falling in both countries, with some temporary reverses. This was the case in 1973, 1984, 1994, 1998, 2003, 2008, 2010, 2011 and 2012 in Japan, and in 1973, 1976, 1991, 1996, 1998 and 2003 in France. In Japan, CO2 intensity resumed its long-term fall in 2013 and 2014. Thus, this was not Japan’s

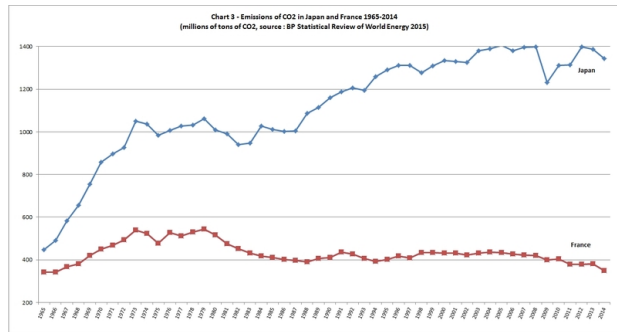
first re-intensification in carbon dioxide emissions, and the shut down of nuclear power was just one element affecting a long term trajectory of declining CO2 intensity.



On the other hand, with few brief exceptions, the absolute value of CO2 emissions has not stopped increasing in Japan since the 1950s (Chart 3). Not until 2009, right after the 2008 “Lehman shock,” did a significant decrease occur, before recovering to cruising speed in 2010. A new peak was reached in 2012, before the fall in 2013 and 2014.

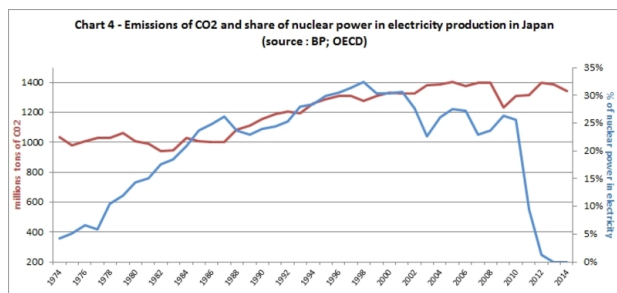
In France, for more than the last three decades, the absolute level of carbon dioxide emissions remained roughly constant, even higher than the level reached at the end of the 1950s, while the intensity of carbon in GDP fell steadily from 1974.

Thus, if the oil shocks did tend to slow down CO2 emissions in the short run, in countries like Japan and France where production is highly energy intensive, the nuclear shock did keep total emissions, in absolute value, on a quasi-continuous ascending curve, despite promises to reduce emissions in both countries on the basis of nuclear power in a world threatened by global warming.



Despite a significant increase in the use of fossil fuels, the total amount of CO<sub>2</sub> emissions in Japan did not increase after the Fukushima disaster at the speed estimated by experts and by ardent nuclear defenders: energy savings kicking in, compensating for 28% of the nuclear electricity fall between 2011 and 2014, and the increased use of renewable energy are the two main factors behind this development. Thus, although coal and oil consumption rose after 2010, they did not reach pre-2008 crisis levels. CO<sub>2</sub> emissions in Japan, of which 40% are related to the production of electricity, maintained an identical trajectory before and after the Fukushima disaster. And, from 2012, they returned to their 2002-2008 level, that is about 1.4 billion tonnes of CO<sub>2</sub>.

The disaster did not therefore precipitate Japan into a sudden and unstoppable increase in carbon dioxide emissions; rather it reinforced the upward trend experienced prior to the disaster, from the period of “recovery” that followed the 2008 crisis.



To sum up, the fall in the share of nuclear power in total electricity production in Japan in

2011 (12%) and 2012 (1%), did not lead to a proportional rise in carbon dioxide emissions (Chart 4). On the contrary, during the recent period, a drop in CO<sub>2</sub> emissions has been observed: 0.9% in 2013, 3.1% in 2014. Finally, it can be noted that the increase in Japanese nuclear power plants between the 1960s and the 1970s coincided with one of the largest increases in CO<sub>2</sub> emissions in the country – the volume increasing by 2.4 times between 1965 and 1973 against 1.3 times between 1973 and 2014. Several periods will follow where the growth of the nuclear power share into electricity production will go with the growth of CO<sub>2</sub> emissions, particularly 1974-1978, 1982-1984, 1990-1997, 1999-2001, 2003-2006 and 2007-2008.

*Therefore, our second conclusion is that, in the long term, the development of nuclear power never halted the almost uninterrupted increase in Japanese carbon emissions. In an economic system founded on a double energy dependency, the growth in both nuclear power's share of electricity production and CO<sub>2</sub> emissions may run in parallel and articulate with each other rather than the opposite, contrary to what one might anticipate.*

### 3. The threat of exploding prices and costs of non-nuclear electricity

Between 2009 and 2014, electricity prices for Japanese households and small and medium size enterprises, and for big companies rose respectively by 24.4% and 35.6% (table 1). This increase has been presented by the government as a second disaster following the triple earthquake, tsunami and nuclear meltdown of March 2011. However, once again, to impute such price increases to the nuclear power stoppage is to forget the past, since the price levels reached in the early 1990's were equivalent to current levels which are being touted as a “record”. It also involves correlating in an unsound way the rise in

electricity prices and the nuclear power stoppage while, when viewed in comparison with France, where the share of nuclear power in electricity production is between 75% and 77%, a country giving priority to nuclear power is also put at risk of high electricity price hikes: between 2009 and 2014 electricity prices in France grew respectively 44.6% for households and small and medium size enterprises, and 40% for big companies, that is, a greater increase than in Japan.

**Table 1 - Comparative prices of electricity in current €/kWh including VAT**

**(sources: METI** (<http://www.meti.go.jp/press/2015/07/20150714001/20150714001.html>), **Eurostat (1** ([http://ec.europa.eu/eurostat/statistics-explained/images/1/18/Half-yearly\\_electricity\\_and\\_gas\\_prices,\\_second\\_half\\_of\\_year,\\_2009-2011\\_\(EUR\\_per\\_kWh\)-fr.png](http://ec.europa.eu/eurostat/statistics-explained/images/1/18/Half-yearly_electricity_and_gas_prices,_second_half_of_year,_2009-2011_(EUR_per_kWh)-fr.png))) **et (2** ([http://ec.europa.eu/eurostat/statistics-explained/images/6/6e/Half-yearly\\_electricity\\_and\\_gas\\_prices,\\_second\\_half\\_of\\_year,\\_2012-14\\_\(EUR\\_per\\_kWh\)\\_YB15.png](http://ec.europa.eu/eurostat/statistics-explained/images/6/6e/Half-yearly_electricity_and_gas_prices,_second_half_of_year,_2012-14_(EUR_per_kWh)_YB15.png))))

	Households and SME		Large enterprises	
	Japan	France	Japan	France*
<b>2009</b>	14.89	12.10	10.10	6.50
<b>2014</b>	18.53	17.50	13.70	9.10
<b>Growth 2009-2014</b>	24.4%	44.6%	35.6%	40.0%

\* excluding VAT

According to the projection released by Japan’s Ministry of Industry in April 2015, nuclear power will be produced at a cost of 10.1 yen per kilowatt-hour in 2030 against 8.9 yen in 2011. This will make nuclear energy the least expensive source of energy compared to coal (12.2 yen), gas (13.4 yen) and renewable energy (solar: between 12.7 and 15.5 yen; wind: between 13.9 and 21.9 yen).<sup>7</sup> The

estimate of the cost of nuclear energy takes into account compensation for accidents, aid to local governments and costs related to the security of nuclear plants. The costs incurred by a nuclear accident have been greatly reduced by government experts to take into account the introduction of security standards that are much stricter and more reliable than those in place before the Fukushima disaster. According to their calculations, the authorities have thus halved the likelihood of a major accident.

Moreover, the estimated cost of the nuclear kilowatt-hour is based on the statements of investors in security made by electricity companies. However, shortly after publication of the figures, these companies revealed that their actual expenses would be two and a half times higher than those declared 30 months earlier and would reach at least 2.4 trillion yen.<sup>8</sup>

Yet it is on the basis of these cost estimates that the Japanese “energy mix” for electricity production by 2030 was defined in April: 20% to 22% for nuclear power - which implies either overturning the existing rule on shutting down reactors after 40 years of use or the building of new reactors - and 22% to 24% for renewable energy.<sup>9</sup>

As we will see below, by making the energy issue a *security* issue, the government legitimizes the preservation of a large share of nuclear power in Japan’s energy mix. Particularly it allows justification of an arbitrary increase in the energy self-sufficiency rate from 6% now to 24% in fiscal 2030. Since this energy self-sufficiency rate is structurally defined as the share of renewables *and* of nuclear energies in the total primary energy supply, reaching the 24% target means, *mechanically*, to increase the share of nuclear power to 11% of total primary energy supply, with the balance (13%) coming from renewables largely insufficient to compensate

by themselves for the decrease of fossil fuels. In other words, the self-sufficiency rate target is nothing but a tailored-made guarantee that nuclear power will be assured a substantial share in the Japanese energy mix for the coming decades. Abe's renewable energies policy appears to be simply a back up to legitimize this necessity under the cover of «clean» energy to save the climate, and «independent» energy to save the nation's sovereignty from foreign fossil fuels providers.

According to a study by the Mitsubishi Research Institute conducted in December 2014 for the Ministry of Environment, by 2030, approximately 31% of Japan's electricity production could be generated in the form of renewable energy, including solar, wind, geothermal and hydroelectric power, as opposed to approximately 2% in 2013 (excluding large hydro)<sup>10</sup>. The Ministry considers that the guaranteed feed-in tariffs of renewable energy could drop sharply and be maintained, even with a significant production of renewable energy, to a level below that estimated by METI. Moreover, the substitution of renewable energy for fossil fuels could save between 11 and 25 trillion yen by 2030. However, during the development of its energy plan, METI neither took these figures nor studies into account; their findings have also gone unheeded.<sup>11</sup>

*Thus, our third conclusion: first, there is no correlation between the rise in electricity prices and the nuclear power stoppage; second, the cost estimates of the different energy sources made by the Japanese government have been arbitrarily distorted to make a false case for the economics of nuclear power.*

#### **4. The threat of decreased income from nuclear power**

In addition to its unconditional support for the reactivation of nuclear power plants, the Ministry of Economy, Trade and Industry (METI) is moving to cut back on subsidies to

local governments with idle nuclear plants.

Under the current system, local governments receive grants whose amounts depend on the operational performance of their reactors during the two preceding fiscal years. From 2013, municipalities have received grants based on an across the board deemed operational rate of 81% while all reactors were suspended for safety inspections in the wake of the 2011 disaster. This rate corresponds to the full operational rate except for the regular inspection period once every 13 months. Starting in 2016, the reference period will be reduced to one and a half years. Unless the reactors concerned are reactivated, the operational rate will be reduced to the rate before the March 11, 2011 disaster; that is, 70% on average. According to METI, this adjustment whose goal is clearly to press for reactivation, is "aimed at ensuring fairness" with regard to municipalities which have already reactivated their nuclear reactors.

*Consequently, in municipalities such as Mihama in Fukui prefecture - at the heart of what is referred to as the "Nuclear Ginza" - where 40% of tax revenues are attributable to nuclear power and where subsidies will be halved owing to the dismantling of several reactors - politicians are under pressure to support the reactivation of reactors in their territory.*

#### **5. The (real) threat of atomic bombs**

Owing to the fact that its nuclear fuel recycling programme has shut down and its plutonium stockpile accumulation continues to cause international concern, Japan has been under "pressure" - to the extent possible - to use its fuel reserves in its reactors. Thus, US Under Secretary of State for Arms Control and International Security, Rose Gottemoeller, recently told journalists that Japan should complete its pending fuel recycling programme and burn plutonium as a fuel called MOX in its reactors: "If there is going to be a plutonium

reprocessing program, the flip side of it is that there has to be a very vigorous MOX program and that the MOX actually has to be burned in power plants.”<sup>12</sup>

The question remains, however, whether Japan can restart the 18 reactors needed to burn the plutonium it holds, and specifically whether the Rokkasho reprocessing plant can actually start up.

The desire to guarantee legitimacy to the existence of a centre for storage, plutonium extraction and reprocessing and MOX production at Rokkasho, located in northern Japan, is not new. Indeed, this reprocessing chain, built in partnership with AREVA from 1993, has never become operational and its fuel storage capacity will soon be saturated: 2834 tonnes of fuel are now in the factory’s pools, 90% of the available capacity on the site. Using Rokkasho’s infrastructure is the sole action that could guarantee the sustainability of this 20 billion euro gem whose dismantling costs are estimated at an additional 80 billion euros. This is taking place within a context in which there is a sharp decline in Japanese demand for plutonium used in breeder reactors (the Monju reactor has experienced a series of accidents and has produced electricity for only one hour over the last 20 years) and for MOX in conventional reactors.

Japan currently holds 157 tonnes of plutonium, of which 100 tonnes are located in nuclear power plants. The remaining 57 tonnes have been shipped to reprocessing plants and 45 tonnes have been separated (35 tonnes are stored in France and the UK). These can make 5000 nuclear bombs. Rokkasho’s reprocessing capacity could enable the annual production of eight tons of separated plutonium, sufficient to make 1000 atomic bombs.

The question that nobody asks, but that we believe requires attention is thus: beyond its civilian use, does Japan intend to make a non-civilian use of its plutonium reprocessing and

production plant?

The amendment to the “Atomic Energy Basic Law” that was quietly passed on June 20 2012 stated that, henceforth, “*the nuclear energy policy of Japan has to contribute to national security*”, sheds light on this issue. Further light is shed by the more recent vote on security laws, extending the possibility for intervention of self-defense forces in conflicts abroad in the name of strengthening the Japan-US alliance in matters of security. Defense minister Gen Nakatani thus recently acknowledged that these laws paved the way for a “theoretical possibility” for Japan to transport nuclear weapons during logistical operations. However, he reiterated that the country would not engage in this type of intervention given the “non-nuclear principles” to which Japan has been committed.<sup>13</sup>

We noted, in a paper written in October 2012, that: “*this new context is not characterized by Japan’s technological capacity to build a nuclear weapon within a limited period, but rather by the fact that, drawing on the opportunity for the reform of its Nuclear Regulation Authority in the wake of the Fukushima disaster, Japan is establishing a legal framework adequate for the recognition and activation of such capacity. The next step could be a reform of Article 9 of the constitution, consistent with the bigger political role that the United States intends to see Japan play in Asia, notably with regard to China. Although the development of Japanese military nuclear reactors is only a mere potentiality, it provides a strong argument to its neighbors who also aspire to “nuclear sovereignty”, resulting in the escalated accumulation of nuclear weapons.*”<sup>14</sup>

Three years later, it is no longer necessary to evoke the likely scenario. Indeed, the Japanese constitution has been revised by Abe administration fiat challenging the pacifist stance on which Article 9 was premised. The

considerable resistance to this revision has had little impact on the political regime that some do not hesitate to describe as a “dictatorship”.

According to Hasebe Yasuo of Waseda University, one of the three constitutional experts invited in June by the Japanese parliament to speak on the constitutionality of security laws, the latter “undermine legal stability”. Hasebe also pointed out that, “There is this enormous distance that is hardly understandable from a commonsense point of view between the words and terms in the security bills that are seemingly limiting the conditions for use of force.”

He also questioned the remarks made by the Vice President of the Liberal Democratic Party, Masahiro Komura that “constitutional scholars never fail to stick to the words in Article 9 of the Constitution”. “Does this mean”, asked Hasebe, “that Mr. Komura is going to say that he wants to wield political power without sticking to the Constitution? That is fairly scary.”<sup>15</sup>

Reacting to a formulation in the safety laws which states that “the intentions, capability and scale of the aggressor will be taken into comprehensive consideration before a decision is made over whether to allow for use of force” Kobayashi Setsu of Keio University, another constitutional expert, noted that “essentially, the statement is urging the public to give carte blanche to the government over the operation of the military by leaving everything to chance. It is the idea of a dictatorship.”

This seems to have been unwittingly confirmed by Nishi Osamu, an expert from Komazawa University and member of the group of private advisers to the Prime Minister who contributed to the formulation of the security laws. Nishi argued that “there is no small number of people who deem the bills to be constitutional”, adding that “Constitutional debate is not about deciding something by majority vote.”

A group of Japanese parliamentarians recently revealed that even before debate on the details of the security bills inside the ruling coalition took place, meetings were held in December 2014 in the United States between Japanese representatives and US military forces in which Kawano Katsutoshi, chief of staff of the Self-Defense Forces Joint Staff, stated that “the new security legislation would be ready by the summer of 2015” and that the construction of a new military base to replace U.S Marine Corps Air Station Futenma in Okinawa Prefecture was considered under “a positive view.”<sup>16</sup>

*Thus, our fifth conclusion is that the articulation between civil nuclear power and military nuclear power sheds some light on why, with 53% of Japanese opposing the security laws,<sup>17</sup> these laws were nonetheless passed into law, and why, with 57% against reactivation of the Sendai nuclear plant,<sup>18</sup> reactor n°1 has nonetheless been reactivated.*

## Conclusion

It is therefore under the banner of blackmail that the Abe administration has reactivated the n°1 reactor at Sendai nuclear power plant. In Japan as elsewhere, by trying so much to present nuclear power as the Swiss army knife of all good public energy policy - anti-CO2 emissions and anti-global warming, anti-increases in electricity prices and costs hikes, anti-trade balance disequilibrium and anti-energy dependency - planners refuse to adapt reality to the truth, willfully choosing to shape the latter on the image of the former, constantly presented as immutable in order to ensure full exercise of authority. In so doing, they submit everyone to the tyranny of threats.

“We need the security bills to avert war”,<sup>19</sup> Abe declared in front of the *hibakusha* - the victims of Hiroshima and Nagasaki in August. This is just one additional element in the *national operation to secure* - through fraudulent means as well as by threatening violence - and with



the consent of victims, renunciation of all forms of personal or collective action that could thwart the state's authoritarianism.

In his speech on August 6 on the occasion of the ceremony commemorating the 70<sup>th</sup> anniversary of the Hiroshima atomic bombing - for the first time since his ascension to power - Prime Minister Abe made no mention of the "three non-nuclear principles" that ban the production, possession and import of nuclear weapons into Japanese territory.

While representatives of citizens' associations and bomb victims have expressed their "hope that this year will not become a turning point towards war", others have not failed to draw attention to their "hope for the realisation of a world free of nuclear weapons."<sup>20</sup>

It is questionable, however, whether such "hopes", like those of the 160 Satsumasendai demonstrators who opposed the reactivation of reactor n°1 - supported on the occasion by former Prime Minister Kan Naoto, a convert to anti-nuclearism since 2011 - and those of the valiant owners of the five cars which momentarily blocked the entrance to the power plant, have the ability to significantly alter the political orientations we have outlined above.

In an interview on "the state of urgency and legitimate defence" that took place a year after the Chernobyl disaster, Günther Anders raised an interesting question: "what lies at the core of hope? Is it the belief that things will get better?" His response is as true today as it was then: "we must not raise hope, we must prevent it. For no one acts through hope. All those who hope abandon improvement to another entity."<sup>21</sup>

The time has come to speak of reprehensible actions in the nuclear field, and having hope will no longer be an alibi. In the atomic age, hope ceased to be virtuous. If to struggle is to have eyes open, it is not hope which can sustain the ability to resist in a padlocked

situation, but the right to exercise legitimate self-defense against nuclear violence.

Hope tends to be "synonymous with cowardice" and it is from their intimate knowledge of this identity that nuclear blackmailers derive their force. For as long as their opponents remain hopeful, they will remain frighteningly harmless.

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## Notes

<sup>1</sup> Mainichi, September 11 2015 (<http://mainichi.jp/english/english/newsselect/news/20150911p2g00m0dm004000c.html>).

<sup>2</sup> While, unofficially, the radiation exposure limit has been raised for the population, contaminated zones under 20 mSv a year having been progressively reopened to the public since April 2011, the last being the town of Nahara in Fukushima Prefecture where 7,400 residents have been “allowed” to return home permanently in early August (Asahi, June 17 2015 (<http://ajw.asahi.com/article/0311disaster/fukushima/AJ201506170090>)), Japanese nuclear plant workers will officially also “be allowed to be exposed” to more than twice the current level of radiation in emergency situations, according to the Nuclear Regulation Authority’s Radiation Council. The radiation council announced in a report released July 30, that their radiation exposure limit will be raised from the current 100 mSv to 250 mSv in emergencies (Mainichi, June 17 2015 (<http://mainichi.jp/english/english/newsselect/news/20150630p2a00m0na018000c.html>)).

As for risk communication, it is defined by UNSCEAR experts as the «interactive exchange of information and opinions concerning risks» (p.15). More precisely: “Risk communication is a key component of the risk analysis process, and is linked closely to risk assessment and risk management. Proactive risk communication, coupled with public involvement in the remedial process, is critical to the success of any remedial activity. Addressing public health concerns is a major communication challenge. The building blocks of an effective risk communication strategy are trust, transparency, ethics, technical accuracy, values, credibility and expression of caring.

Different types of messages may be more - or less - suitable for different audiences (e.g. the general public, policy-makers, decision-makers, the mass media). Fears and perceptions need to be addressed - even if they are not commensurate with the actual risks. It is of utmost importance to prevent reactions that themselves carry risk (such as self-administration of potassium iodide), to allay unnecessary fears (such as avoidance of breastfeeding because of health fears), and to promote healthy coping mechanisms (such as social solidarity)” (*Health risk assessment from the nuclear accident after the 2011 Great East Japan Earthquake and Tsunami based on a preliminary dose estimation*, World Health Organization 2013, p.87.) In practical terms, risk communication policy in the Fukushima context consists in educating people to the nuclear culture and to encourage everyone to get used to a contaminated environment through educational workshops on radioactivity and cancer at schools, the dissemination of handbooks teaching how to manage life in a contaminated environment, and TV commercial campaigns on the virtues of fresh products from the contaminated areas.

As for the health effects of the Fukushima disaster, while experts from the UN Scientific Committee on the Effects of Atomic Radiation (UNSCEAR) have been emphasizing since March 2011 that in Fukushima as in Chernobyl, the social and psychological impacts on health would be greater than the direct effects of radiation, they have also been asserting that “Radiation exposure following the nuclear accident at Fukushima-Daiichi did not cause any immediate health effects” and that “It is unlikely to be able to attribute any health effects in the future among the general public and the vast majority of workers” as was concluded during the 60th session (<http://www.unep.org/NewsCentre/default.aspx?DocumentID=2716&ArticleID=9518#sthash.xGWznT4.dpuf>) of the Vienna-based UNSCEAR, on May 2013. A more recent report from IAEA

reaffirmed the same stance, asserting that, “Because the reported thyroid doses attributable to the accident were generally low, an increase in childhood thyroid cancer attributable to the accident is unlikely” (...) “However, uncertainties remain concerning the thyroid equivalent doses incurred by children immediately after the accident”. According to the report, those uncertainties are largely due to a lack of reliable personal radiation monitoring data immediately after the disaster started, when radioactive iodine and other radioactive materials were spewed into the environment (Japan Times September 1<sup>st</sup> 2015 (<http://www.japantimes.co.jp/news/2015/09/01/national/science-health...cers-unlikely-rise-extent-radiation-exposure-unclear/#.VfauSigQDKE>)).

Echoing such prophecy and uncertainty based science, the Fukushima Medical University Health Survey identified 98 residents 18 years old and younger diagnosed with thyroid cancer and 14 others diagnosed with possible thyroid cancer, but asserts that no causality relation with the Fukushima accident can be established (Mainichi, September 1<sup>st</sup> 2015 (<http://mainichi.jp/english/english/newsselect/news/20150901p2a00m0na002000c.html>)). A child in Fukushima Prefecture has been diagnosed with thyroid cancer in the latest health survey, which began in April 2014, and seven others are also suspected of having thyroid cancer but have not received a definitive diagnosis. They all tested negative in the first survey. “Despite the new results, I don’t think we need to change our previous view” that they were not affected by radiation, said Hokuto Hoshi, who heads the panel (Japan Times, February 13 2015 (<http://www.japantimes.co.jp/news/2015/02/13/national/fukushima-child-tests-positive-for-thyroid-cancer-in-second-survey/#.VfbPyigQDKE>)).

<sup>3</sup> Source: Energy White Paper 2013, Outline June 2013, Agency for Natural Resources and

Energy.

<sup>4</sup> *Le Monde*, April 22, 2015 (<https://apjff.org/about:blank>).

<sup>5</sup> Ministry of Finance, July 2015. ([http://www.customs.go.jp/toukei/shinbun/trade-st\\_e/2015/2015075e.pdf](http://www.customs.go.jp/toukei/shinbun/trade-st_e/2015/2015075e.pdf))

<sup>6</sup> Les cahiers de Global Chance, n°36 novembre 2014 (<http://www.global-chance.org/IMG/pdf/gc36p47-65.pdf>).

<sup>7</sup> *Asahi*, April 28, 2015 (<http://ajw.asahi.com/article/0311disaster/fukushima/AJ201504280045>).

<sup>8</sup> *Asahi*, July 10, 2015 (<http://ajw.asahi.com/article/0311disaster/fukushima/AJ201507100068>).

<sup>9</sup> *Asahi*, April 29, 2015 ([http://ajw.asahi.com/article/behind\\_news/social\\_affairs/AJ201504290056](http://ajw.asahi.com/article/behind_news/social_affairs/AJ201504290056)).

<sup>10</sup> The first proposed strategy report by the *Institute for Sustainable Energy Policies* (ISEP) after 3.11 for Japan's mid to long term reorganization of domestic energy was titled “unplanned electricity stoppage to strategically shift energy”. It was released in March 2011. The strategy involves a shift towards a diversified energy policy to stabilize energy supply, work towards energy self-sufficiency, and curb global warming. The report sets a goal of reaching 30% renewable power generation by 2020 and 100% by 2050 (<http://www.isep.or.jp/en>).

<sup>11</sup> Mainichi, February 21, 2015 (<http://mainichi.jp/english/english/newsselect/news/20150221p2a00m0na018000c.html>).

<sup>12</sup> Mainichi, August 10, 2015 (<http://mainichi.jp/english/english/newsselect/news/20150810p2g00m0dm066000c.html>).

- <sup>13</sup> Mainichi, August 5, 2015 (<http://mainichi.jp/english/english/newsselect/news/20150805p2g00m0dm085000c.html>).
- <sup>14</sup> Reporterre, October 2, 2012 (<http://www.reporterre.net/L-oligarchie-japonaise-reve-de-la>).
- <sup>15</sup> Mainichi, June 10, 2015 (<http://mainichi.jp/english/english/newsselect/news/20150610p2a00m0na014000c.html>).
- <sup>16</sup> Mainichi, September 3, 2015 (<http://mainichi.jp/english/english/newsselect/news/20150903p2a00m0na003000c.html>).
- <sup>17</sup> Mainichi, May 25, 2015 (<http://mainichi.jp/english/english/newsselect/news/20150525p2a00m0na016000c.html>).
- <sup>18</sup> Mainichi, August 10, 2015 (<http://mainichi.jp/english/english/newsselect/news/20150810p2a00m0na005000c.html>).
- <sup>19</sup> Mainichi, August 11, 2015 (<http://mainichi.jp/english/english/newsselect/news/20150806p2a00m0na021000c.html>).
- <sup>20</sup> Mainichi, August 11, 2015 (<http://mainichi.jp/english/english/newsselect/news/20150806p2a00m0na021000c.html>).
- <sup>21</sup> Günther Anders, *La violence: oui ou non. Une discussion nécessaire*, Éditions Fario, Paris, 2014, p.30.