

## Decoupling nuclear disarmament from nuclear energy

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*We explore the links that are made between nuclear energy and nuclear weapons by government actors and civil society. Without expressing ourselves on the nuclear power industry, we argue that in order to achieve progress in nuclear disarmament, it is necessary to decouple both.*

In spite of much effort to the contrary, nuclear energy and nuclear weapons are often closely related in our minds. Both appeal to the imagination, under the vocable of atomic in the early years, nuclear today. It is undeniable that the physics principle that lies behind both is the fission of the atomic nucleus, releasing large amounts of energy. Nuclear weapons soon have included the even more powerful mechanism of fusion into their designs but also for the generation of electricity fusion represents the ultimate goal of harnessing the atom. The remarkable parallel between military and civilian applications is a constant feature in the development of technology.

As progress moves on and specialisation sets in, the distance between the military and the civilian sectors increases. The supply chains become independent of each other and the intertwinement loosens, as it is also the case for fighter jets and civilian airliners, and may finally dissolve, as for tanks and cars. In a similar manner, the nuclear power plants that are necessary for energy generation and those for extraction of weapons-grade plutonium are optimised in different ways. Today, however, it may not yet be true for a newly nuclear-capable country. Nuclear power programmes worldwide remain therefore almost always under scrutiny of institutions such as the IAEA, and through the interpretation by the IAEA of its own mandate [IA11], the United Nations Security Council. These entities still look at nuclear programmes with various degrees of trust, often conditioned by a political context. From such appreciations can be understood the drive by the IAEA, most markedly since the tenure of Y Amano as its Director General, to ascertain the peaceful use of nuclear energy not only from the safeguards that are applied to declared materials in a given country, but also from the explicit absence of undeclared activities [IA10]. For some analysts the IAEA thereby stretches its mandate to that of a nuclear policeman, beyond the original intention of that of a nuclear bookkeeper and possibly also beyond its financial means [Du13].

From the NGO point of view, the same fundamental observation can be made. It is a striking fact that the all-out anti-nuclear movement remains the strongest civil actor against nuclear weapons. Examples abound: the broadly supported anti-nuclear stance of the Austrian population propelled its government into a leader for the HINW movement [AU15]. Together with more than a hundred other nations, it proposes to overhaul the NPT approach to nuclear disarmament, which is anchored in ideological calculations of deterrence and national security, and consider the devastating consequences on the lives of people and their environment as a more fruitful starting point instead, underpinning the NPT itself. Essentially it is a moral argument, but one that is possible to quantify through the global damage that would be inflicted by nuclear war. The HINW pledge is inspired by civil society and calls for negotiations by willing states on an international instrument that would delegitimise, prohibit and ultimately eliminate nuclear weapons.

A country such as France on the other hand sticks to its established opinion and refuses to open any discussion beyond its own reading of the NPT. Denying a role for HINW, it is not ready to involve NGOs in an advising role and accordingly, these try their best but so far do not succeed in putting HINW on the agenda [AL14]. The unchallenged and strong public consensus and support for nuclear power in France allows the president to preserve his prerogatives and gives him a free hand in maintaining nuclear deterrence as the national security policy. No electoral gain would be obtained from doing otherwise. Germany and Japan do not possess nuclear weapons and opposition to nuclear energy is equally outspoken. In the UK, both the expansion of nuclear energy and the renewal of its nuclear-armed submarines are up for public and parliamentary debate [SG15].

By the same token it also means that the NPT deal, aimed at separating the acquisition of nuclear power from that of nuclear weapons, has never really worked. By all its statements Iran pursues nuclear power but for many years suspicions for likely military interests have stubbornly persisted. In the absence of clear and unambiguous proof for these, a stand-off resulted that was expressed in a perceived lack of cooperation with the international community, while the political refusal to lend credibility to the declarations of the Iranian regime prevented any solution. Over the last months change has slowly come about when the administration of the USA agreed to engage in direct negotiations with the Iranian government. As long as diplomats and politicians identify the development of nuclear power with attempts at acquiring nuclear know-how for military purposes, such states of affair appear to be unavoidable and a nuclear-weapons free world will seemingly have to be preceded by the abandonment of nuclear-power generation altogether.

So the central question becomes the following: how can one decouple nuclear power from nuclear weapons in public and political perception and discourse, unless one agrees to abandon both?

Essentially it could be a political choice. Even if the scientific community takes on the development of a new generation of proliferation-resistant nuclear power plants, one does not need to wait for it and it is perfectly possible to define policies that allow for nuclear energy while eschewing weaponisation. While such policies can then be consolidated by implementing their verification by the IAEA, they must be based on public opinion and carried by public support, requiring an open and democratic society. For instance in Belgium and Switzerland nuclear power is commonly accepted, while possible diversion to nuclear weapons is not an issue of much concern. Both countries benefit from a public opinion that is well informed and that likely would oppose the political and financial cost of such a move. (The tactical nuclear weapons that supposedly are present in Belgium are governed through arrangements with Nato and the USA, without bearing on the local nuclear power cycle [Wo15].) In other places, however, the choice is made to closely link the support for nuclear power and nuclear weapons, as it is the case in France and India. In the absence of much public discussion, the nuclear status quo is largely taken for granted by parliament and government alike. North Korea is an example where military endeavours emanate from a nuclear power programme under tight political control with public scrutiny being implausible.

The political choice that is put forward in most if not all NWS (except perhaps in the UK) is the one of justifying nuclear weapons by the existence of an operational nuclear energy industry, as an advantageous extension of it and beneficial to national security. Again in France, the development of atomic weapons is entrusted to the CEA establishment, which has its own branch for research in basic nuclear physics as to underline the continuity. Also in the USA, fundamental science is carried out at military laboratories, far away from universities. So then if we want a NFWF, it would seem that indeed we need to phase out all things nuclear, as long as conventional politics in NWS effectively couple them.

But is this at all possible? Not only is there the often heard claim that one cannot turn back technological progress, but over the last years one has witnessed a growing although controversial momentum in favour of nuclear power in order to offset greenhouse gas emissions and mitigate climate change. For developing countries it may be the fastest way to produce electricity on a scale that is large enough to keep pace with the growing needs of the population. A resourceful and versatile society like Germany can afford to shut down its nuclear reactors and in any case it remains part of a broader energy network in Europe, but Japan may turn back to them out of economical calculation. Nuclear physics moreover has nowadays found its way into cancer research, food sterilisation, material characterisation, archeological dating and other fields.

The French ecologists of EELV explicitly tie together the civil and military nuclear sectors [Du07]. While they omit to comment on the advances that are achieved in radiography or nuclear medicine, they propose to eliminate nuclear weapons through the negotiation of a FMCT that would start by

undercutting civilian nuclear industry. It may steer the discussion into difficult waters in as far as nuclear energy generation is deeply entrenched in French economy and different interests, from political to commercial, align themselves in its wake. Support for an anti-nuclear alternative is small, while instead one might bring together a broader movement if one would be willing to include those who are in favour of weapon reductions but do not want to abandon the complete nuclear industry. A group around the former defence minister of socialist signature P Quilès promotes this opinion and carefully avoids the amalgamation with civilian nuclear efforts when calling for France to engage in disarmament and open a parliamentary debate [AL15].

The view by EELV and others that civilian capability factually shortens the path to the bomb may also ignore that a technical barrier of ten years of research and development does not match the half a century of political hedge that for instance Japan has been able to realise when it codified the separation of the two aspects in its Atomic Energy Basic Law of 1955. Providing the base for nuclear endeavour in the country, it famously restricts research and use of nuclear energy to peaceful purposes only. If the question is considered primarily as a political one, the stalemate can thus be overcome and the conditions created for a successful public debate. Surely there have been voices in Japan to see both nuclear dimensions in their continuity and the law indeed was amended in 2012 to include a reference to national security, provoking much controversy [Jo12]. One could also counter that the specific circumstances of the atomic bombings of the Second World War explain the strong public revulsion for nuclear weapons and that the political choice that prevails in Japan, therefore, is exceptional. Even so, if the law were to be revoked, Japan remains a signatory of the NPT and withdrawal from the treaty would come with a significant diplomatic price.

The case of Japan illustrates that the only viable solution for a responsible use of nuclear energy and science in a NWFZ is to change the dominant political and diplomatic discourse that makes them foster a military dimension. For doing so, however, one should take seriously the discriminatory approach that is encoded in the NPT. Albeit much criticised, it captures the reality that the task ahead for NWS and NNWS is not the same. Different nuclear applications and different degrees of their integration into society call for a different treatment. The examples above show how much the situation can vary from one country to another. Those who have acquired nuclear weapons and have rooted it in nuclear energy have to go a longer way in reversing their policies and public opinions than those who have renounced doing so.

Certain updates to the treaty provisions are arguably necessary to grant access to nuclear energy while making their diversion to nuclear weapons impossible, perhaps by better defining the types of reactors and the characteristics of enrichment plants that are accessible, ruling out the need for highly enriched uranium or the use of heavy water. These and other technical matters could be taken up by the NPT review conferences, restricting the space for political manoeuvre. Experience shows that normative initiatives along the lines of the BWC and CWC, as well intended as they may be like a Middle-East NWFZ, are much harder to come by. While the BWC and CWC perhaps can uphold a norm only because they do not touch upon the survival of the state as expressed in national security doctrines, nuclear disarmament treaties like Salt and Start have often been about factual categories and tables of hardware. The recent JCPOA with Iran likewise encompasses numbers of centrifuges in an attempt to deterministically quantify eventual break-out times.

Unfortunately the NPT review meetings do not succeed in finding much proper ground for this work. While the immediate diplomatic advantages for laying out a new vision are often unclear, first steps to change this have nonetheless occurred. The initiative for a fuel bank of low-enriched uranium in Kazakhstan that were to be managed by the IAEA would originally have put the worldwide uranium supply for power plants under international control, eliminating the need for national enrichment facilities [IA15]. The idea faced many hurdles and delays, probably because of the inability to gather enough assurances that no restrictions would be imposed that run contrary to the supply security of the participating states. The project has not been abandoned and still surfaces

from time to time, but its purpose has meanwhile shifted to provide a secure reserve against market disruptions without bearing prejudice to national fuel cycle capabilities.

The recent deal that has been struck with Iran, however, opens a window of opportunity to refresh the role of the NPT and place it in new frame. Most of all it shows that in an actual political crisis, the NPT is replaced by far more stringent conditions, albeit for NNWS only. As pointed out in a letter to president Obama by a group of North American scientists, the strong verification provisions of the JCPOA can become a model for improved inspection regimes worldwide [NY15]. The need for more intrusive instruments such as the Additional Protocol implicitly admits that the NPT rules by themselves are not sufficient and the JCPOA may constitute a welcome solution to this. If the region at large can be engaged the deal may even drive a Middle-East NWFZ and relaunch the NPT at the same time, which would boost the credit of Iran on the international scene [Je15].

Of course the picture cannot be complete without scrutinising the responsibility of the NWS. Ultimately their governments need to set the example and lead disarmament efforts, otherwise no NWC will ever make sense. A reminder is present in the fate of the CTBT, which cannot enter into force as long as countries as the USA and China delay ratification. One of the more promising ways to go forward is the pressure that can be levied by public opinion, relying on or strengthening the mechanisms of participative democracy, to enable and support policies that disentangle the knot that has unnecessarily tied together nuclear energy and nuclear weapons. An open and democratic society is a prerequisite but its efforts would need to be channelled into a debate on the relation between civil nuclear industry and military appropriation. As long as the issue is not taken up progress will remain difficult, any NWC movement may lose impetus and slowly dissolve into a general consensus that nuclear weapons are the unavoidable corollary of nuclear energy.

An example of these difficulties is given by the peace movement in western Europe. Driven by the Campaign for Nuclear Disarmament and the Bertrand Russell Peace Foundation in the UK and the Plowshares Movement in the USA, it stood at the forefront of massive protests against the installation of Pershing ballistic missiles in Europe from 1981 to 1987. As the Cold War came to an end, a lesser sense of urgency was perceived by large layers of public opinion. Those who like the Campaign for Nuclear Disarmament, while staying reluctant to nuclear power all the way, kept nuclear disarmament still in their focus, did so at the cost of a dwindling public appeal. An organisation like Greenpeace, by contrast, resolutely shifted its interests and activities away from peace to environment. Whereas it originally set out against nuclear testing in Alaska in 1970, more recently it appears less interested in matters of disarmament. It took advantage of the changing mood of times, it kept growing by firmly opposing itself to nuclear power while nuclear weapons fell to the bottom of its agenda.

Countries such as Germany and Italy have taken a clear stance against nuclear energy, while the UK and especially France have adopted positions that are more ambiguous, such that environmentalism went its own way and found shelter outside the main political parties. Nevertheless in France the EELV green party entered government from 2012 to 2014 and from the onset in June 2012 it asked for the organisation of a large debate and even a referendum whether the French public would approve that the government engage in the complete elimination of nuclear weapons under strict and efficient international verification [EE12a]. While it is most laudable that a party once it is in government kept to this position, which it reiterated in several of its resolutions [EE12b], still it could not weigh against the unwavering support by the socialist majority in government for nuclear deterrence and in the same run, for nuclear power.

The fragmentation of the European peace movement and the mediatised focus on environment instead have been difficult to overcome for those within civil society who still strive for nuclear disarmament. Most NGOs that work for a NWC have found themselves left far behind the more successful and dynamic initiatives such as the small arms or arms trade campaigns. Transforming

themselves into broad platforms such as Abolition 2000 and Ican, which are organisations of organisations and therefore almost by definition deprived of the direct and easy access that enables to rapidly mobilise public opinion, a tendency for institutionalism with associated professional structures dominates over innovative ways of thinking. As with stereotyped politics the relation between nuclear weapons and nuclear energy is seldom truly assessed. For example a human chain against the civilian and military nuclear sectors was set up in Paris in March 2013 by the network Sortir du nucléaire together with organisations such as Armes nucléaires stop, Attac France, Greenpeace, and others [CH13]. Among the political parties one could spot EELV, NPA, and Parti de Gauche. Ican together with Mouvement de La Paix, Observatoire des armements and the French section of IPPNW the same day organised a workshop in Marseille for a Mediterranean without civilian and military nuclear assets [EE13]. The rationale comes back over and over again [SO14].

So we are led back to the same conclusion, that the key resides in a proper articulation of the distinct components of the nuclear sector. Government actors as well as civil society would have to disconnect the civilian and military dimensions if a NFWF is to be achieved, whether the path will lead through a Middle-East NWFZ or through an international norm on HINW. The basic elements of their separation are contained in the NPT but political will is needed to make the choice.

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