l'Astrolabio
IL GIORNALE DEGLI AMICI DELLA TERRA

Why I Changed My Mind About Nuclear Power

by: Rosa Filippini

13-09-2023

Yes, I have changed my mind. Radically. I do not think this is a scandal - "only fools never change their minds", as someone once said - but in my current role as editor of Amici della Terra's journal, I feel I should explain why. Out of loyalty to the association's members and leadership, and, in any case, to make things clear to readers and those we engage with who, for years, have seen us "take sides" in favour of a non-nuclear future, albeit with the important distinctions that have set Amici della Terra's attitudes and actions apart from those of most environmental groups.



Some things have never changed

Amici della Terra was founded in 1978, riding the wave of anti-nuclear movements across Europe and the United States. We played an important role in opposing Italy's nuclear programme, working from within the Radical Party, which had entered Parliament in those years with a tiny but exceptionally determined group of MPs. Pannella and Bonino's strong commitment gave our initiatives great visibility and impact, both inside and outside Parliament. These included the collection of signatures in 1980 for an initial popular referendum on the laws and agreements underpinning Italy's nuclear programme. The referendum never took place because the Constitutional Court rejected the question. Yet I do not think it is an exaggeration to credit that mobilisation - popular, political and even academic - with the emergence of a broad, diverse body of anti-nuclear opinion. Or should I say blame it? That opinion cut across all governing and opposition parties, and the publishing world, and later became the majority view in the country following the Chernobyl accident.

That opinion - or rather, that sentiment - was also decisive in the emergence of the environmental movement and, later, the Green electoral lists. This certainly helped turn opposition to nuclear power into an ideological stance, far beyond my intentions as a young MP in Parliament's first Green group. The sudden success of the mobilisation and the post-Chernobyl referendum, together with the crisis and weakness of the political establishment at the time, dealt a fatal blow to Italy's nuclear programme, even leading to the early closure of existing power stations. This strong ideological bent did the Greens no favours politically: after their initial breakthrough in 1987, they experienced a steady decline from the 1990s onwards, overtaken in their approach by Beppe Grillo's populism.

I am not saying that we in Amici della Terra were immune to the ideology of "small is beautiful", or of decentralised, controllable energy production, whatever those notions might have meant then - or today. For us, however, the anti-nuclear campaign was motivated above all by opposition to closed, authoritarian systems and decisions shielded by official secrecy; by the demand for transparency and access to environmental data; and by opposition to politicians and scientists who considered themselves exempt from providing comprehensive public information and openly debating the future and expectations of communities affected by industrial projects. For years, our main commitment was to the independence of the regulatory and safety authority, which, 35 years ago, was merely a directorate (DISP) within the body promoting nuclear power. We secured its definitive separation as part of our most important environmental policy achievement: the approval of Law 61/94 establishing ANPA, the body coordinating the system of environmental agencies, later transformed into ISPRA. Subsequent reforms complicated matters, contrary to our expectations, but it is hard to imagine a return, in this field, to a regulator controlled by those it regulates.



Our remaining objections before the war

Our initiatives have had mixed and contested results. Yet, by maintaining this approach based on freedom, responsibility and informed judgement, the association has also benefited from the collaboration of many people from the opposing camp. Experts, technical specialists and scholars of the pro-nuclear "faith" - I say "faith" because ideology is hardly absent from the nuclear camp either - have also become leaders, coordinators and sources of inspiration for our positions on complex or controversial environmental issues. Their collaboration has shaped our views on nuclear power too, by filtering information, enabling more dispassionate assessments, exposing falsehoods and thus preventing us from making outlandish claims.

We have therefore never had any difficulty acknowledging that the environmental and safety standards adopted at nuclear power stations, at least in Western countries, are comparable to those of other high-risk industrial activities and are therefore acceptable. Nor have we had difficulty accepting that radioactive "waste", including high-level waste, can be managed safely. Indeed, it must be managed safely, together with the tonnes of radioactive waste generated by other activities, such as healthcare, which Italy certainly cannot do without. Our support for a national repository has always been clear, dating back to Mario Signorino's commitment to this goal when he chaired the National Environment Agency.

Over the years, our opposition to civilian nuclear power came to rest on a few fundamental problems arising from observation of the facts. Until a few years ago, these could be reduced to three general considerations:

- The theoretical prospect of "residual risk": a very low probability of accidents involving the release of radioactivity, which could nevertheless require an area to be sealed off for long periods, even solely as a precaution. The Fukushima accident heightened this concern: although the data show that the deaths and major damage were caused by the tsunami rather than the power station, the areas affected by radioactive releases remain subject to restrictions.

- The scale of the investment required to build each individual plant, partly due to the adoption of new, more effective inherent safety systems, such as those used in new third-generation power stations. Finland's Olkiluoto and France's Flamanville plants are cases in point: construction times more than doubled and costs more than tripled. For a long time, these factors led us to believe that nuclear power had failed the market test worldwide.

- The increased risk of nuclear proliferation through the spread of civilian nuclear power in emerging countries in Asia, Africa and Latin America. The cases of Iran and North Korea showed us how inadequate the Non-Proliferation Treaty was in addressing the changing balance of power between countries, and we hoped for a worldwide halt to new orders.

In ten years, everything has changed - beyond even our mistaken forecasts

In little more than ten years since the Fukushima accident, which seemed to have buried the prospects for nuclear development, many of our forecasts have proved wrong. And not just ours, nor just those concerning the future of nuclear power. Consider the last three years, with the pandemic and war in the heart of Europe: events that, ten years ago, might only have featured in science-fiction film scripts.

Climate action policies have gained considerable ground. With the 2015 Paris Agreement, the decarbonisation of economies, starting with electricity generation, became a recognised priority for the international community and the main supranational institutions. The fact that, in practice, these commitments are not being met worldwide, that the strategies pursued are proving ineffective, and that greenhouse gas emissions and fossil fuel use continue to rise despite massive investment in intermittent renewable electricity sources, is precisely the problem we face.

In particular, the European strategy intended to lead the global economy towards decarbonisation based primarily on new renewables, by demonstrating their feasibility and benefits in practice, is proving unsuccessful. The increase in greenhouse gas emissions in emerging economies far exceeds the hard-won, costly reductions achieved in Europe at the expense of European economies. This failure is compounded by the paradox of favouring technologies whose production chains, from mining to processing with high environmental impacts, are monopolised by countries such as China, which are responsible for exponential emissions growth.

Even Europe's emissions reductions are due, at least in part, to the relocation of industry to countries where environmental rules are weaker or non-existent, and where energy is cheaper and its price more stable because fossil fuels are used in the cheapest - and therefore most polluting - ways possible. Many emissions arising from European consumption have thus not disappeared; they have simply changed flags.

Into this troubled picture, made still more uncertain by the "unexpected" pandemic, came the "unforeseeable" invasion of Ukraine, the extraordinary resistance of its people and armed forces, and the surprising unity of Europe and other Western countries in supporting them. Despite serious contradictions, resistance and some opportunism, Europe is giving up Russian gas in record time, and there is a growing awareness that no supplier should ever again monopolise the European energy market.

Leaving aside the naivety of those who still believe, even in positions of great responsibility, that energy from turbines and solar panels is free, unprecedented energy price volatility has reasserted security of supply as an imperative and a priority of energy policy. An energy and environmental transition remains necessary. Yet, despite the European Green Deal's unrealistic intransigence, it is still taking uncertain steps in search of effective, workable political and technological answers.

In 2011, we thought nuclear power had received the highest levels of public investment in the history of energy. We had not yet seen the incentives for intermittent renewable electricity sources, the exemptions from environmental and landscape protection requirements, or the many simplifications of permitting rules - Italy has even made constitutional amendments! - approved in a political climate of emergency solely to promote the installation of a disproportionate number of wind turbines and photovoltaic panels.

Despite receiving unprecedented support, including from supranational institutions, over more than 15 years these technologies have failed to fulfil the expectation that they would replace fossil fuels. They have not provided an answer to the gas and oil price crisis, nor have they taken centre stage in the energy system. They remain supporting players alongside any other source of continuous energy capable of compensating for their inherent unreliability. Their contribution to global energy demand is set to remain marginal, at least until electricity storage systems achieve the "technological breakthrough" that so many have been awaiting for more than 15 years.

Nor should we be surprised that, despite the "clean" and "natural" image of turbines and panels, local communities - the people living outside cities - continue to oppose their intrusive impact. The main side effect of these technologies is extensive land occupation, which risks irreversibly turning the most valuable natural areas into industrial zones, without planning and with exemptions from every protection rule. Conversely, it is precisely its energy density, continuous output and limited land requirements that are bringing nuclear power back into favour.



Nuclear power has changed, and so have we

There is ample reason to re-examine our "remaining" objections to nuclear power. Let us consider them.

The prediction of inexorable decline was wrong. After Fukushima, nuclear development did suffer a setback, accompanied by a programme of stress tests on existing plants worldwide. Yet, apart from Germany and Italy, there have been no other cases of nuclear programmes and existing plants being shut down. Moreover, the recovery has been as substantial as it was unexpected: first in Asian countries and then, despite delays and unforeseen difficulties, across the world. This is clear from Alessandro Clerici's latest updated overview: in 2023, there are 422 operating reactors with a total capacity of 377.9 GW, while the total global capacity of reactors under construction as at 31 December 2022 is 59 GW across 32 countries (source: IAEA).

Reports on global investment in the low-carbon energy transition show that civilian nuclear power has retained a stable position among the main spending sectors, despite policies channelling capital towards renewables and electric mobility. This was true even before its inclusion in the European taxonomy, irrespective of the new political climate favourable to nuclear power that this decision has unquestionably created.

But the real test is only now beginning, with the results of Germany's controversial decision to close its remaining nuclear power stations while aiming for a zero-emissions future and, in the meantime, opening new lignite mines. The stark comparison between emissions in France and Germany, Europe's two leading examples of opposing energy strategies, will be the main benchmark for future climate and energy policies across the Union.

As for residual risk, it cannot be eliminated. But it is no longer exclusive to civilian nuclear power, and perhaps it never was. The world has already faced other major accident risks, such as those associated with the chemical industry. Yet humanity - and Italy - has not stopped producing medicines, detergents and disinfectants as a result. Instead, the chemical industry has been subject to new regulations and has invested in safety and environmental protection measures.

The same is happening in the nuclear sector, where research and new applications to improve the safety of fission plants - those operating today - have never stopped, and which also offers outstanding prospects for developing new, more efficient technologies for the future.

Finally, civilian nuclear power still provides one route to the proliferation of nuclear weapons. Yet it no longer seems credible that a decision by some advanced countries not to build power stations could curb this risk. The problem therefore remains, but it must be addressed at other levels.

Ultimately, the hope of equitable progress for all peoples depends on the use of complex technologies, with clean, abundant and low-cost energy remaining the main driver of sustainable development that does not destroy the natural environment.

I believe we are better off being part of this endeavour than standing outside it.

Energy Nuclear power Nuclear power in Italy Energy strategies

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ISSN 2421-2474
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L'Astrolabio is an editorial project of Amici della Terra

L'Astrolabio
A journal covering energy, the environment and resources
Registered with the Court of Rome
Court authorisation no. 189 of 22/04/1996
Editor-in-Chief: Aurelio Candido

Editorial and administrative offices:
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00153 Roma - Tel. 06.6868289
06.6875308