

European Nuclear Incentive Program

Save the Climate's response to the European Commission's PINC consultation

<u>Subject</u>: The Euratom Treaty requires that the European Commission publish a nuclear indicative program (PINC) periodically. The latest PINC dates from 2017 and is largely obsolete.

<u>Presentation of Sauvons Le Climat</u>: it is a French association (NGO) whose aim is to propose rational, voluntarist, realistic and efficient policies to fight global warming via scientific and Cartesian analyses for leaders, decision-makers, and the general public. Save the Climate is fully independent of any financial interest.

As we know, the decarbonization of Europe will predominantly entail a transfer of fossil fuel based energy sources to electricity. Producing the large quantities of electricity needed will be a considerable challenge insofar as the electricity will have to be low carbon; available reliably and safely; affordable for the economy and the consumers.

Europe has made a massive commitment to the promotion of renewable energies. Only wind and solar energy have significant development potential while other renewables (hydro, biomass, etc.) have limited growth potential in Europe. Renewable energies are part of the solution, but they will not be sufficient, as the current feedback from Germany and Spain proves in several respects:

* Solar photovoltaic and wind power are intermittent and weather-dependent energy sources. They are unable, on their own, to meet the needs of a developed country in real time. They must therefore be supported and/or backed-up by various means such as dispatchable electricity production, energy storage, demand response, etc.

This is not a figment of the imagination but a well-known reality, a paroxysm of which is illustrated by the episode of "anticyclonic greyness" ("Dunkelflaute") which occurred in Germany at the beginning of November 2024, lasting more than 10 days. This episode combined a very low mean wind production, which dipped to a low value of less than 1% of the total installed wind power capacity in Germany, with a very low daytime photovoltaic production due to the "greyness" phenomenon. Such an episode is bound to recur, with wind shortages of up to 2 weeks being regularly observed, almost every year in Europe.

* Also, wind and photovoltaic energies are quantitatively incapable of powering a large, developed country such as Germany on their own. This is indisputably demonstrated by the country's plan to import considerable quantities of carbon-free hydrogen, produced by electrolysis in sunny countries. However, in addition to the geopolitical dependence that this implies, this strategy presents great difficulties and material uncertainties, in particular regarding the hydrogen transport. Pipeline transport is conceivable only with nearby countries. Otherwise, transport in the form of H2 at -253 °C or combined in molecules such as NH3 has to be considered. But one thing is certain: these transports imply very large energy consumption and will be very expensive, greatly increasing the cost of the MWh of hydrogen delivered to Germany. Beyond its costliness, which is almost certain, this solution's viability is greatly uncertain.

* In addition, there is a major technical and operational uncertainty: there is currently no experimental proof that real large grids such as those currently operated can operate stably and safely with very high penetration rates of wind and/or photovoltaic electricity. The underlying reason is well known and results from the fact that these sources of electricity are not connected to the grid synchronously like alternators, but via electronic means that do not bring inertia to the electricity system.

An in-depth analysis of the Spanish blackout of April 28, 2025 remains to be done, but it can already be noted that the Spanish grid operator (REE) had warned in early 2025 of the risks of production cuts due to the instability of the Spanish grid in these circumstances. This is all the more so since this grid is weakly interconnected to the rest of the European grid, via France. It is thus in a more fragile situation. Just before the incident, the combined share of wind and photovoltaic power exceeded 70% and frequency and voltage recordings show very rapid, large amplitude variations of both parameters. This incident represents a major event that should be taken as a precursor for the rest of Europe, from which it is imperative to draw full and objective conclusions.

In short, wind and photovoltaic renewable energies, the only renewable energies with a high growth potential, do not offer the guarantee that they will be able to meet the needs of developed European countries, whether in terms of quantity, security of supply, or production costs: their mandatory backup by dispatchable means of production and/or energy storage facilities and the need to greatly expand the grids to connect them, greatly increase the overall cost of the electricity system and as a result that of the electricity produced. This limits their worth.

Yet, there is another proven means of producing carbon-free electricity namely nuclear power, which is capable of permanently producing large quantities of dispatchable electricity at a competitive cost. In addition, thanks to their large size, nuclear power units provide the grid with considerable inertia, which is essential for its stability. Neither wind nor photovoltaic power can do so.

Finally, in the context of the taxonomy investigation, the report published by the JRC at the request of the Commission explicitly stated: 'The analyses did not reveal any scientific evidence that nuclear energy causes more damage to human health or the environment than other electricity generation technologies already included in the taxonomy as activities supporting climate change mitigation'.

Despite its major advantages, the nuclear option has been ignored for too long and was even rejected or at least held back within European bodies. In view of the major challenges and difficulties we are facing in the fight against global warming, it is high time and urgent to restore nuclear power to its legitimate place, as the 14 EU Member States grouped together in the "European Nuclear Alliance" have expressed and are demanding. These Member States intend to develop and continue to operate nuclear power facilities. In doing so, they are merely exercising the sovereign right of each Member State to choose its energy mix.

This implies a radical review of previous policy, which must at last return to conforming with the Euratom Treaty, notably through:

* Technological neutrality, i.e., treat on an equal footing and in all their aspects, all the very low carbon electricity production technologies, of which Europe will have an essential and growing need.

* A revision of the Taxonomy, the current version of which imposes artificial limits with no scientific grounds on the development of nuclear energy, thereby limiting its financing possibilities.

* A revisal of the access to existing financing mechanisms, from which nuclear power is currently excluded. All the more so because the very long operating life (60 to 80 years) of nuclear facilities is not conducive to private financing, which requires short payback times. Financing by institutional banks or by the Member States is therefore essential and should no longer be considered as undue aid contrary to the rules of competition, while nuclear power provides essential services to the European electricity system, a service for which it is currently poorly or not at all compensated.

* The non-discrimination of the rules for the remuneration of nuclear electricity versus those of wind or photovoltaic electricity.

In conclusion, it is time to realize that Europe does not have a decarbonized energy future without a sufficient proportion of nuclear power to guarantee its security of electricity supply, at a sustainable cost. Indeed, more than half of the EU Member States want to resort to nuclear power whether they are already operating reactors and plan to continue or are new to the technology.

These countries must no longer be held back in their legitimate and rational decarbonization objectives. On the contrary they should receive appropriate provisions from the European Community. This is indeed an industrial policy that is vital for the future of the continent and must no longer be hampered by competition considerations that are unfounded: nuclear power is not a competitor to renewable energies. Europe will imperatively need both to have enough low-carbon electricity to continue to be a continent with a developed standard of living.

Copyright © 2025 Association Sauvons Le Climat