



9 September 2023

Some comments on the Draft Deloitte Report “Nuclear Ecosystem 2050” as presented on the 5 and 6 September at DG ENER in Luxemburg.

General comments:

1. The first priority to foster a future role for nuclear energy in the European low carbon mix in 2050 is to have a long term positive conducive political climate, at EU and national level, allowing the nuclear stakeholders to make their investment decisions. For sure it is for each Member State to decide or not to recourse to nuclear energy (as per art 194.2 of the Lisbon Treaty), but we all know the importance of the EU framework in this field. In the last decades the EU signals have not been positive for nuclear, even to the contrary. The EU’s Green environmental policies have led to binding targets for (intermittent) renewables sources, inducing the unfair treatment (not neutral playing field) of nuclear energy, particularly when it comes to numerous EU financing mechanisms and instruments supporting the development and deployment of decarbonized energy sources. Contrary to what was said by the ENER Director at the end the workshop, the European Commission, as guardian of the Treaties, has to promote nuclear energy, respecting the promotional dimension of the Euratom Treaty. Then, it is for Member States to decide or not to use it.

2. The figure of 100 GW for nuclear in 2050 used in the report is coming from the PINC 2017 and was used in the Clean Planet for All scenarios in 2018 – leading to a share 80% renewables and 15% nuclear in the electricity mix in 2050. The world has much changed over the last three years, going through the Covid and energy crisis, leading to a social crisis. The German Energiewende, spending 500 billion Euros over 20 years in subsidies for renewables, for nearly no win in decarbonization (385 grCO₂/kWh in 2022 compared to 85 in France), is the counterexample of what to do. We see an increasing interest for

nuclear energy in a number of countries worldwide, including in EU Member States. A few months ago, a majority of EU Member States have launched the pro-nuclear Alliance “targeting” 150 GW of nuclear in 2050. At the ENEF meeting in 2022, weCARE reacted to the presentation done by Deloitte, claiming that the “target” for nuclear in 2050 should come from a profound strategic analysis of the needs (demand) and means for a fully decarbonized electricity production, looking at system level and optimizing the balance between the three pillars of a sound energy policy: economics/affordability, security/reliability of supply and respect of environment.

We do not see all this reflected in the draft report.

This being said, the study even using the 100 GW “target” is useful to understand the drivers of the ecosystem, as the outcomes can be scaled up as appropriate. But the report must clearly state that this figure of 100 GW is only a working hypothesis and does not reflect what are today the strategic views of Member States and even less what might be the reality in the coming decades. In other words, this report should not be a “confirmation” of the 100 GW of the PINC 2017 or the Clean Planet for All 2018. weCARE expects that the next PINC will be based on a prior deep strategic system analysis of the future demand for decarbonized, affordable and reliable energy, contributing to a sustainable European society.

3. The report mainly concludes that in 2050, most of the nuclear reactors in the EU will be large GEN III types and some SMRs (probably GEN III also), and that therefore investments should go primarily in that direction.

weCARE agree with this view. After twenty years of nuclear bashing and standstill, it is necessary to start building new reactors to be ready for the phase out of the actual fleet after the LTO up to 60 years, using technologies at hand.

BUT it is highly important that the report also fosters the development of GEN IV (fast reactors – large and SMRs) for the future long term decarbonized supply of energy (electricity and heat). Within the next twenty years a number of prototype and demonstrators need to be built and public authorities, at EU and national level, need to ensure the financing.

Specific comments:

On Financing:

4. Financing is related to the investment appeal. And investment appeal is related to the cost of a project and the return on investment. While noting that nuclear investments are done for 60 to 80 years perspective, they are very capital intensive, even more when counting the financing costs (during construction) over and above the overnight capital costs. As demonstrated by the IEA (Projected Costs of Generating Electricity reports – last one in 2020), the discount rate plays a major role in the financing costs. Therefore, a recommendation should be added to the report in the section on financing, asking the public authorities, at EU and national level, to interact with financing institutions (public and private) and other stakeholders (investors and utilities) to ensure a fair treatment of

the discount rate for nuclear energy on equal footing with other decarbonized means of producing electricity.

5. A more complex issue is to integrate the value added of ancillary and other services provided by decarbonized dispatchable electricity production means versus intermittent sources. This added value should be considered in strategic planning and investment decisions at EU and national level. The last report of IEA, mentioned above, integrates that dimension by introducing the notion of VALCOE – beyond the standard LCOE.

6. EU financing means have over the last years excluded any support for nuclear related projects. The last in row is the NZIA (still under discussion). Now that the Taxonomy recognizes the sustainable character of nuclear energy, all financing mechanisms and instruments of the EU have to treat nuclear on equal footing with other low carbon sources.

On the Fuel Cycle and Waste Management:

7. On the fuel cycle, the report focuses mainly on the front end and the availability of the resources and fuel fabrication. It is important to also make recommendations on the back end and in particular on the recycling potential. The report mentions reprocessing and recycling of Plutonium in MoX fuel, as already done today and which may be scaled up, but much more should be said for the longer-term perspective, in line with the third comment made above. Closing the fuel cycle just makes sense from a best use of resource perspective. Reprocessing and use of Plutonium in fast reactors ensure a full independence of the EU for thousand years in terms of fuel supply. Combined with advanced partitioning and transmutation (of minor actinides) it reduces the duration and radiotoxicity of the ultimate waste, reducing the dimensions of the final deep geological repositories. Public authorities, at EU and national level, need to ensure the financing of research, development and demonstration in closed fuel cycle technologies and GENIV reactors, with means commensurate to what is done for other low carbon technologies.

On Decommissioning (and waste funding):

8. Decommissioning is a non-issue. There is consolidated industrial experience already in the EU. Funds are collected during the operation of the reactors and accumulated (as for waste management) – a rather unique situation in industry – which makes LTO also of interest from that perspective. The notion of “polluter pay principle” leads to the final responsibility of the state as the “representative” of all the consumers who benefited from the low cost and fully decarbonized nuclear generated electricity for decades during plant operation. These consumers already contributed to the funds through their electricity bills. In case these funds are not sufficient, it is the state which has to complement, using taxpayer (and so consumer) money. It is just a matter of good sense.

9. An important comment was made during the workshop that weCARE fully support. It will be important that all Member States use the same rule for the free release of decontaminated material, in particular resulting from the decommissioning process. This will drastically reduce the amounts of radioactive waste to be treated and so reduce the overall costs of waste management and burden on the long term.

We remain at your disposal for any further information/interaction you would like to get from/with weCARE.

Yours faithfully,

Marc Deffrennes
weCARE

marc.deffrennes@hotmail.com

weCARE is a Brussels-based alliance of NGOs campaigning in Europe for Clean, Affordable and Reliable Energy. The weCARE website (<https://www.wecareeu.org/>) describes the aims and specific activities of the alliance and lists the current member organisations: Sauvons le Climat FR, Patrimoine Nucléaire et Climat FR, Terrapraaxis UK, 100TWh BE, Ekomodernist FI, Jihocesti TatKove CZ, Institute for Sustainable Energy PL, 18for0 IE, European Association for Energy Security SK, Stichting Energietransitie en Kernenergie NL.

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