PUBLIC CONSULTATION ON THE SCENARIOS FOR THE 10-YEAR FEDERAL DEVELOPMENT PLANS ELECTRICITY AND HYDROGEN

negaWatt Belgium – September 2025

Consultation 2025

Who is negaWatt Belgium?

NegaWatt Belgium is a non-profit organization founded in 2022 that pursues an energy-sufficient, fair and participatory energy transition in Belgium. To this end, we develop energy scenarios and submit them for debate.

The association is responsible for the development of the negaWatt BE scenario to 2050. The scenario was publicly released in June 2025, and the results are available on our website[1]. The answer to this consultation is partly based on the results of our scenario.

Comment 1: Sufficiency as a core driver, not only a sensitivity

We strongly recommend integrating energy sufficiency as a core assumption across scenarios rather than limiting it to a stand-alone sensitivity. The consultation document itself explicitly solicits feedback on sufficiency for buildings and transport (e.g. stakeholder requests to "create a sensitivity to assess the impact of sufficiency"). Treating sufficiency only as an optional add-on under "Decarbonization options" understates its systemic nature and its policy relevance.

Sufficiency should be reflected across all sectors, including the tertiary and industrial sectors, not only framed as individual behavioural change. It represents a political and societal choice that re-shapes service demand and technology needs. We therefore ask that sufficiency be included in the central results set (and not only as a post-hoc sensitivity), with explicit legislative and programmatic levers considered.

Comment 2: Tertiary demand – go beyond insulation and efficiency

We acknowledge the use of aggregated approaches for the services sector. However, modelling that relies mainly on floor-area evolution and efficiency (as described for the tertiary sector) risks overlooking structural sufficiency levers (space use optimization, service-level shifts, occupancy management, temperature set-points, digital sobriety in offices, etc.). These drivers are likely in a context of cost control and corporate social responsibility, and they can materially reduce useful demand beyond insulation alone.

1 www.negawatt.be/scenario

We recommend: (i) explicitly representing sufficiency in tertiary demand (with clear policy handles), and (ii) reporting a sensitivity where service intensity per m² and operational practices evolve towards lower energy-intensity trajectories.

Comment 3: Data centres – re-centering the "mid-range" and using robust trajectories

The report bases its assumptions on BCG's "The Power of Compute", citing a range from about 10.5 to 34 TWh by 2050 for Belgian data centres. Positioning a single mid-range point (e.g. around 18.5 TWh in 2050) should be justified against this wide band and contrasted with alternative international outlooks (e.g. by the IEA, leading to more modest demands depending on the scenario). Belgium's specific context (grid capacity, siting, cooling, and limited domestic primary energy resources) further argues for a cautious central case and multiple clearly documented trajectories.

We suggest: (i) presenting at least three trajectories (low/moderate/high) grounded in the cited range; (ii) reflecting governance, siting, and grid constraints in central values; and (iii) clarifying the link between AI-driven demand and actual project pipelines and policy frameworks.

Comment 4: Decouple "nuclear" and "non-domestic offshore wind" sensitivities

The consultation defines supply sensitivities where ambitions for nuclear and non-domestic offshore wind move in tandem. To understand their distinct system impacts, these options should be assessed independently as well as jointly. Decoupling them will provide clearer insights into network adequacy, flexibility needs, price effects and import dependencies.

Comment 5: Nuclear timelines and costs – ensure realism and transparent sensitivities

Timelines assumed for new nuclear capacity appear unrealistic in the Belgian context. For reference, in France the indicative commissioning dates discussed for new EPR2 units are already stretched: Penly around 2035, Gravelines around 2038, and Bugey around 2042 in optimistic cases. Belgium has no comparable mature pipeline yet, and first-of-a-kind projects are prone to significant delays (e.g. Hinkley Point C). A first lead-cooled SMR by 2040 (as announced by SCK) would also be highly speculative given the current TRL and licensing realities.

We recommend sensitivity analyses on nuclear overnight costs that acknowledge the technology's observed negative learning. As central references, recent EPR projects indicate very high specific costs (order of magnitude: ~€14,000/kW for Flamanville, ~€16,000/kW for Hinkley Point C, 2023 euros). Deviations around such a central value should be explored explicitly in the modelling, with transparent impacts on LCOE, CRM needs, and consumer prices.

Comment 6: Integrated energy system modelling and thermal storage

Limiting flexibility to a narrow set of end-uses (EVs, heat pumps, small-scale batteries) risks underestimating system integration benefits. The full range of cross- sector flexibility should be accounted for: power-to-heat (industrial e-boilers, high- temperature heat pumps), district heating coupling, short- and long-duration thermal storage for buildings and industry, process-level modulation, and logistics flexibility in transport. These options can materially reduce curtailment, peak residual load and balancing needs.

We ask that integrated thermal storage (short- and long-term) be explicitly modelled and reported, alongside sector coupling levers in industry, residential and transport sectors, with clear assumptions and sensitivities.

Comment 7: Emissions scope – include feedstock, international aviation and shipping

We welcome the dedicated discussion of feedstock and the clarification that international aviation and shipping are only partially covered by ETS accounting. To avoid misleading claims such as "fully net zero by 2050," these emissions should be systematically reported alongside territorial totals, with consistent treatment of bunkers and non-energy use. This is essential to reflect the significant demand for molecule-based energy carriers in these sectors and to assess their implications for domestic availability in the MOL scenario.

Comment 8: Report an energy independence/self-sufficiency KPI

Given recent geopolitical volatility, we recommend reporting an explicit KPI on energy independence for each scenario—covering both electricity and molecules. This should quantify import dependence (energy and capacity), domestic resource utilization, and exposure to external shocks. Such a KPI will help policymakers balance cost, climate, and resilience objectives.

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