






NECP Assessment

Carbon Capture & Storage in the
National Energy and Climate Plan

Luxembourg



Criteria	Performance	Score
Implementation plan	Policy measure 523 "Framework for Action for the Deployment of Carbon Capture, Utilisation and Storage Technologies" plans to support CCUS deployment but lacks figures or a timeline.	
CO₂ capture	Does not report on the volume of process emissions to be captured.	
CO₂ storage	Does not report on geological CO ₂ storage capacity.	
CO₂ transport	Does not report on planned CO ₂ transport infrastructure, but does claim to plan its development "if necessary" and in collaboration with regional and European stakeholders.	
National government funding	Plans to introduce two dedicated state aid schemes for industrial decarbonisation, including for CCUS.	
Other relevant initiatives	Does not mention any other measures to support the deployment of CCS.	

CCS IMPLEMENTATION PLAN

In its NECP, Luxembourg recognises the importance of CO₂ capture for the decarbonisation of hard-to-abate industries, in particular where electrification or the use of hydrogen is technically or economically unfeasible. CCUS is specifically considered as a solution to tackle industrial process emissions.

Luxembourg therefore plans to support CCUS projects through dedicated policy measures. The most important one of these is PAM 523 “Framework for Action for the Deployment of Carbon Capture, Utilisation and Storage Technologies”. Through this measure Luxembourg plans to assess the potential of CCUS technologies and support their deployment in industries like cement production. CO₂ transport infrastructure would be developed “if necessary” and in collaboration with regional and European stakeholders.

This measure unfortunately lacks any figures or timeline for implementation, making it difficult to assess how the government plans to essentially support CCS projects. Moreover, none of the planned policies make a distinction between CCU and CCS. This could be problematic as in most use cases of CCU the CO₂ is ultimately released into the atmosphere, contributing to further global warming. According to the EU Emissions Trading System (ETS) Directive, only a small number of CO₂ utilisation cases can be considered as leading to emission reductions. As a result, industries relying on CCU will still be required to surrender allowances under the EU ETS. Planning for CCU without ensuring it results in the permanent storage of CO₂, therefore, will not enable these industries to decarbonise and avoid carbon costs.

CO₂ CAPTURE

The NECP does not report on the volume of process emissions to be captured. While the draft NECP included a policy measure to quantify ‘unavoidable emissions from certain sectors’ providing an estimate of the volumes of CO₂ that would require technological abatement, this measure was removed from the final document.

In addition, PAM 523 estimates that the amount of CO₂ emissions captured by 2030 will not be significant and will be limited to small-scale pilot projects, but that a more significant amount may be captured after 2030.

NATIONAL GOVERNMENT FUNDING

Luxembourg has two dedicated measures for funding decarbonisation projects that include carbon capture. The first, PAM 516 “Aid scheme for undertakings – environmental and climate protection”, plans to revise the country’s state aid regulation to allow funding of decarbonisation projects, including CCUS. The aid could take the form of a capital grant, a repayable advance or an interest subsidy.

In the draft NECP, this policy measure also listed Carbon Contracts for Difference (CCfDs), which are used to guarantee investors a fixed price that rewards CO₂ emission reductions above the current

price levels in the EU ETS. The final document has removed mention of this tool.

The second measure, PAM 519 “Enterprise aid scheme – research, development and innovation”, is a funding scheme that supports the R&D side of decarbonisation projects like CCUS.

RECOMMENDATIONS

Luxembourg has improved upon its draft NECP by expanding the number of policy measures dedicated to carbon capture and by addressing CO₂ storage on top of utilisation. Importantly, the final NECP also plans to introduce national government funding for CCUS. However, the final document reverses some of the commitments outlined in the draft, namely the measure to quantify process emissions in given industries and the introduction of Carbon Contracts for Difference as a funding and de-risking tool for CCS projects. The NECP also lacks the distinction between storage and utilisation of CO₂, which is necessary to deliver net emission reductions. Bellona therefore recommends the following measures:

- 1 DEVELOP A CCS IMPLEMENTATION PLAN**
In collaboration with industry, academia, and civil society, build upon existing research and data to establish a comprehensive strategy for deploying CCS to enable the full decarbonisation of its hard-to-abate industries. It must take a holistic approach to the entire CCS value chain clearly identifying CO₂ capture needs—primarily to address process emissions; mapping CO₂ transport infrastructure; assessing national CO₂ storage potential; and specifying how much of that storage can be made commercially available and by when. A medium to long-term, comprehensive plan will send a strong signal to stakeholders driving private investments and encouraging and facilitating the engagement of civil society and academia in the debate around CCS development and deployment.
- 2 PRIORITISE PUBLIC FUNDING FOR HIGH-CLIMATE-VALUE CCS APPLICATIONS**
With no or fewer scalable alternatives and where CCS would come with a higher mitigation potential and therefore the highest climate value.¹
- 3 ENSURE ROBUST ASSESSMENT OF CCU**
Ensure that CCU products are assessed based on their full lifecycle emissions to ensure clear climate benefit.
- 4 STRENGTHEN REGIONAL COOPERATION**
Enhance cooperation with neighbouring countries, particularly the Netherlands, Belgium and France, that are making significant strides in CCS deployment to build expertise and accelerate decarbonisation efforts. This is particularly important given the lack of CO₂ storage options on the territory of Luxembourg.²

1 Bellona Europa & E3G, 2023, Carbon Capture and Storage Ladder: Assessing the climate value of CCS applications in Europe, https://network.bellona.org/content/uploads/sites/3/2023/07/CCSL_briefing.pdf

2 [CATF_European-CO2-Storage-Report_July-23.pdf](#)



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