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NECP Assessment

Carbon Capture & Storage in the National Energy and Climate Plan

Bulgaria

Criteria	Performance	Score
Implementation plan	Does not plan concrete implementation of CCS but does acknowledge its role in industrial decarbonisation and has created a legal framework to support CCS projects. Bulgaria will also host to the first full-chain CCS project in Eastern Europe (ANRAV).	
CO_2 capture	Does not report on process emissions to be abated with CCS.	
CO_2 storage	Does not report on geological CO_2 storage capacity.	
CO_2 transport	Does not report on planned CO_2 transport infrastructure.	
National government funding	Does not foresee the allocation of national funding for CO_2 capture, transport or storage.	
Other relevant initiatives	Does not mention any additional measures to support the deployment of CCS.	

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CCS IMPLEMENTATION PLAN

Bulgaria's NECP recognises the necessary role that CCS plays in industrial decarbonisation, specifically to reduce process emissions in hard-to-abate sectors, but has no strategy for its deployment, despite a legal framework being in place that allows for the development and operation of CCS projects.

Following several stakeholder consultations, recommendations were made for further exploration of CO_2 storage sites in Bulgaria, as well as economic incentives and de-risking schemes for future CCUS projects. While the NECP does not commit to implementing the recommendations, the Net-Zero Industry Act's transposition allows for improved permitting procedures and priority support for investment in decarbonisation technologies like CCUS, which the NECP acknowledges.

Although CCS is only briefly mentioned in the NECP, Bulgaria is host to the first full-chain CCS project in Central and Eastern Europe, the ANRAV project. Its aim is to link a HeidelbergCement plant in the coastal region of Varna through a pipeline system with offshore permanent storage under the Black Sea. ANRAV is projected to start operations in 2028, capture 800 $MtCO_2$ annually, and develop a CO_2 storage site that is to become available to industries in the region.[1]

CO_2 TRANSPORT

Bulgaria does not report on planned CO_2 transport infrastructure, even though emission sources are dispersed and generally far from identified storage sites[2], making a coordinated plan all the more necessary.

CO_2 STORAGE

Bulgaria does not report on geological CO_2 storage capacity. The country is currently assessing potential onshore storage sites, but these are not mentioned in the Plan.

Independent analyses have found storage capacity of 2.6 $GtCO_2$ in saline aquifers under the Black Sea and several onshore geological formations potentially suitable for CO_2 storage.[3]

A new storage project, Beli Net Zero, was also launched under the Innovation Fund in 2024. It aims to be the first onshore carbon storage site in Eastern Europe and allow for the storage of CO_2 imports from third countries.

NATIONAL GOVERNMENT FUNDING

Bulgaria does not foresee the allocation of national funding for CO_2 capture, transport or storage. The NECP only mentions EU funding that could support the deployment of CCS projects, such as the Innovation Fund and InvestEU programmes.

1 Anrav Project - About
2 CATF - Carbon Capture & Storage in Bulgaria
3 CO2 pull market analysis - ConsenCUS

RECOMMENDATIONS

The final Bulgarian NECP makes little progress compared to the draft version in addressing the role of carbon capture, transport and storage in the country's decarbonisation strategy. While Bulgaria acknowledges the role that CCS can play in reducing industrial CO_2 emissions, the technologies remain largely marginal in the country's long-term climate policy. Bellona therefore encourages the Bulgarian government to:

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 CO_2 capture needs—primarily to address process emissions; mapping CO_2 transport infrastructure; assessing national CO_2 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 ENGAGE WITH EXISTING RESEARCH AND CCS PROJECTS

Build on the momentum of ongoing CCS projects across Europe and incorporate insights from current research institutions and lessons learned from Bulgaria's first-mover project into a national implementation plan for CCS.

3 DEVELOP APPROPRIATE SUPPORT MECHANISM AND PRIORITISE PUBLIC FUNDING FOR HIGH-CLIMATE-VALUE CCS APPLICATIONS

With no or fewer scalable alternatives and where CCS offers a higher mitigation potential and therefore the highest climate value[4]. Targeted policy instruments and support mechanisms need to be developed to incentivise CCS deployment, specifically addressing cross-chain risks inherent to CO_2 transport and storage and offer sufficient derisking potential to drive private investment.

4 STRENGTHEN REGIONAL COOPERATION

Enhance cooperation with neighbouring countries like Romania and Greece to accelerate regional decarbonisation efforts while leveraging Bulgaria's large offshore storage capacity.

FURTHER RESOURCES

Mapping Carbon Technology Startups and Projects in Central and Eastern Europe | The Recursive, 2023: https://therecursive.com/carbon-removal-companies-startups-map-cee/

Examples From Bulgaria On Carbon Capture, Use And Storage Were Presented At The Bulgarian Pavilion At Cop28 | Ministry of Environment and Water, 2023: https://www.moew.government.bg/en/examples-from-bulgaria-on-carbon-capture-use-and-storage-were-presented-at-the-bulgarian-pavilion-at-cop28/

4 CCSL_briefing.pdf

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