

# **The Impact of Carbon Sequestration on the Costs of Electricity and Hydrogen in Europe in the Medium Term**

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Carbon sequestration is a distinct technological option to control carbon emissions, complementing other measures such as improvements in energy efficiency and utilization of renewable energy sources. The deployment of carbon sequestration technologies in electricity generation and hydrogen production will increase the costs of these energy carriers. Our economic assessment has shown that the introduction of carbon sequestration technologies in Europe in 2020, will result in an increase in the cost of electricity by 35-57% depending on the electricity generation technology; gas turbines will remain the most competitive option for generating electricity; and the competitiveness of the IGCC technology will emerge. When carbon sequestration is coupled with natural gas steam reforming or coal gasification for hydrogen production, the cost of hydrogen will increase by 14-16%. Furthermore, natural gas steam reforming with carbon sequestration is far more economically competitive than coal gasification. Finally, our analysis demonstrates that even with the deployment of carbon sequestration technologies, coal will not become an attractive fuel for the generation of electricity and the production of hydrogen; on the contrary, natural gas will remain the fuel of choice as it offers significant economic advantages.

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