Lithuanian renewable energy landscape: CCUS, hydrogen and geothermal

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Abstract. Lithuanian energy landscape is changing because of as strong push to reduce carbon emissions and reliance of fossil based energy production. EU climate directive promotes investments into carbon capture and storage technologies along with renewable energy resource development. CCUS, hydrogen and geothermal are some technologies which could promote reduction in carbon emissions and along with reducing dependence on fossil based energy sources. Lithuania already has large potential for carbon and hydrogen storage and in past had a working geothermal power plant for district heating.

In this work we revisit the carbon storage potential in Lithuania subsurface and also provide a high level estimates of potential of generating hydrogen energy from depleted hydrocarbon fields using in-situ methods. We also evaluate the prospects of development of geothermal energy production from deep Cambrian reservoirs where temperature above 85 degrees C have been documented.

Keywords: CCUS, Hydrogen production, hydrogen storage, carbon storage, geothermal energy.