**POTENTIAL SITES FOR CO2 GEOLOGICAL STORAGE IN LATVIA**

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**History of Geological Exploration**

Latvia is situated in the north of the Baltic Sea Platform, where the Baltic Syncline, the Latvian Fold and the Northern Trough belt form the design of the entire basin. The central part of Latvia is the basin of lower and upper part of the sedimentary clay of an interaural accumulation.

The sedimentary cover is represented by the Vendian, Cambrian, Ordovician, Silurian, Devonian, Carboniferous and Jurassic deposits (Fig. 2), the thickness varies from 300–800 m in the southern part as much as 1,800 m in the northern part.

The sedimentary cover is subdivided into the Bajocian, Cambrian, Ordovician and Jurassic strata.

Deposits of the Carboniferous system occur all over Latvia. It comprises the Ordovician, the Devonian and the Lower Permian. The deposits of the Carboniferous system are subdivided into the following strata:

- The Bajocian deposits.
- The Cambrian deposits.
- The Ordovician deposits.
- The Jurassic deposits.

The total amount of the viscosity of the basement rock is very small. The main part of the carbon dioxide is captured into the Ordovician and Jurassic deposits.

Only two Latvian legal highs are present, which are subdivided into the Bajocian and Cambrian strata. The Bajocian strata is subdivided into the Bajocian basaltic and the Cambrian strata is subdivided into the Cambrian basaltic and the Cambrian basaltic.

**Geological Framework**

The Latvian Carboniferous system is subdivided into the Bajocian and Cambrian systems. The Bajocian system is subdivided into the Bajocian basaltic and the Cambrian system is subdivided into the Cambrian basaltic.

- The Bajocian basaltic is subdivided into the Bajocian marine and the Bajocian terrestrial.
- The Cambrian basaltic is subdivided into the Cambrian marine and the Cambrian terrestrial.

**CO2 Industrial Emitters/Sources**

In 2005, the Latvian Register of Greenhouse Gas Emission Units included 121 active sources of CO2 emissions. The emissions of CO2 from these sources were 4.46 to 265, including 22 CO2 sources with emissions exceeding 14,900 t CO2 per year.

**Latvia’s Storage Potential**

The assessment of CO2 storage capacity is due solely to geophysical studies in Latvia is based on evaluation of 35 potential source rocks. The capacity estimates in turn are based on five geological surveys have been carried out until now. These studies include the following:

- The Bajocian basaltic and the Cambrian basaltic.
- The Bajocian terrestrial and the Cambrian terrestrial.
- The Bajocian marine and the Cambrian marine.
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- The Bajocian marine and the Cambrian marine.

**Economic Evaluations of source-to-storage site**

The North Bajocian and Bajocian basaltic structures are situated in western Latvia, up to the west from the CO2 source – TEC. The top of the reservoir is located at a depth of 1,000 m.

- The North Bajocian and Bajocian basaltic structures are situated in eastern Latvia, up to the east from the CO2 source – TEC.

The total body of the reservoir is located at a depth of 1,000 m.

**Conclusion**

The potential CO2 storage capacity was subdivided into the Bajocian and Cambrian basaltic structures. The Bajocian basaltic is subdivided into the Bajocian marine and the Bajocian terrestrial. The total body of the reservoir is located at a depth of 1,000 m.