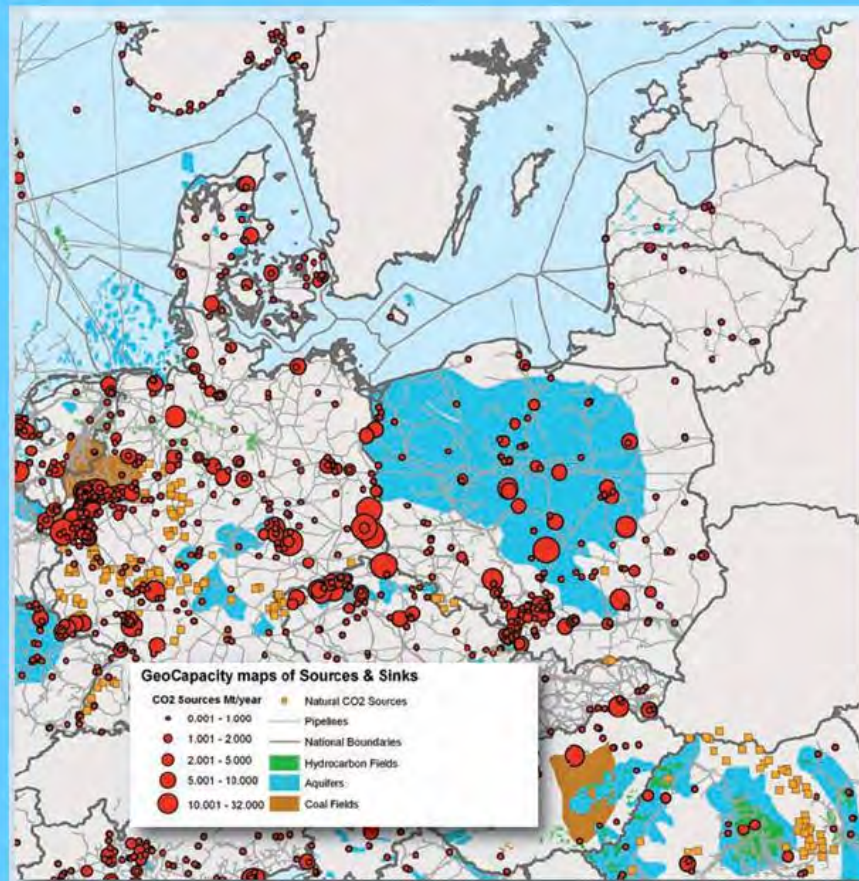


# Geological potential of CO<sub>2</sub> storage in Lithuania, Latvia, and Estonia - an integrated approach



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**Uldis Nulle, Inara Nulle (LEGMC, Latvia)**  
**Alla Shogenov, Khazbulat Shogenov (IGTUT, Estonia)**

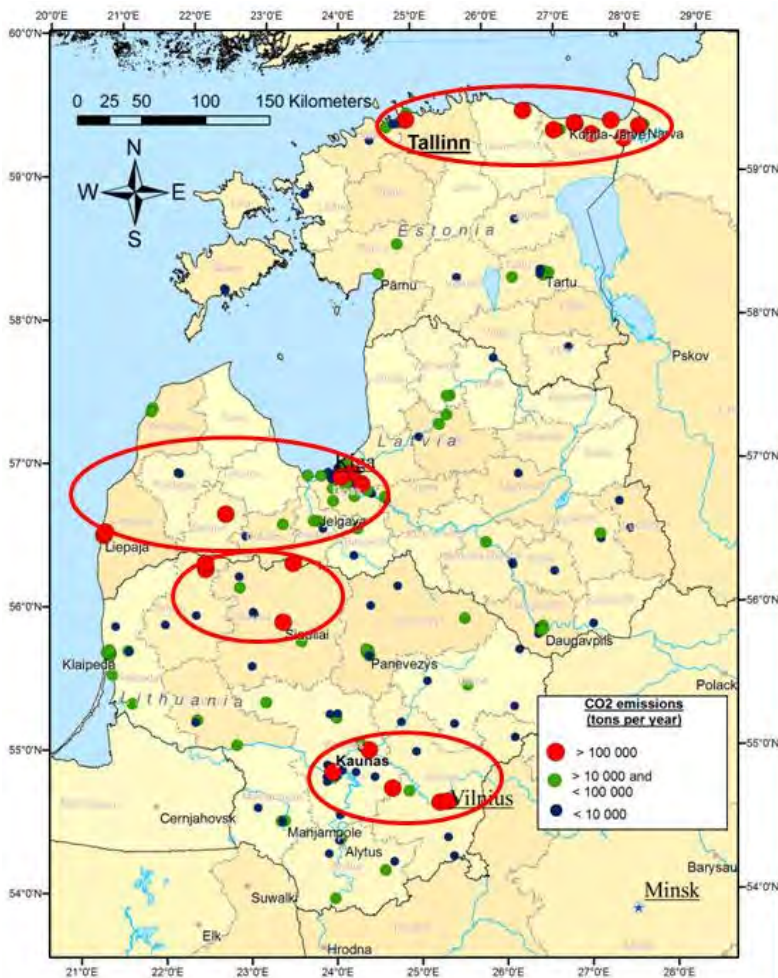


**EU GeoCapacity**

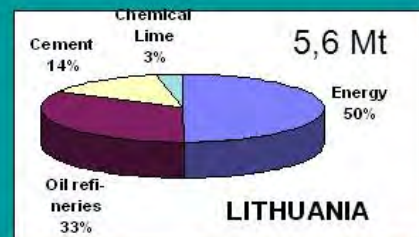
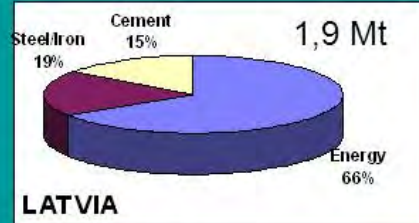
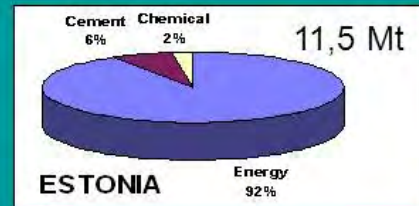


SIXTH FRAMEWORK PROGRAMME





## Major CO<sub>2</sub> sources in the Baltic region, 2005



### CO<sub>2</sub> sources registered in EU ETS

### in 2005 and 2007

Year	Big sources (>100 000 tonnes CO <sub>2</sub> )			All registered in ETS sources		
	2005/2007			2005/2007		2005
	Million tonnes	Number of sources	Share in all ETS emissions, %	Million tonnes	Number of sources	ETS share in total GHG emissions
Estonia	11.5/ 14.5	9/9	91.3/94.6	12.6/15.3	41/47	59.3
Latvia	1.9/1.9	6/5	63.8/65.7	2.98/2.89	89/89	26.7
Lithuania	5.6/4.8	9/9	84.8/80	6.6/6	89/93	32.5

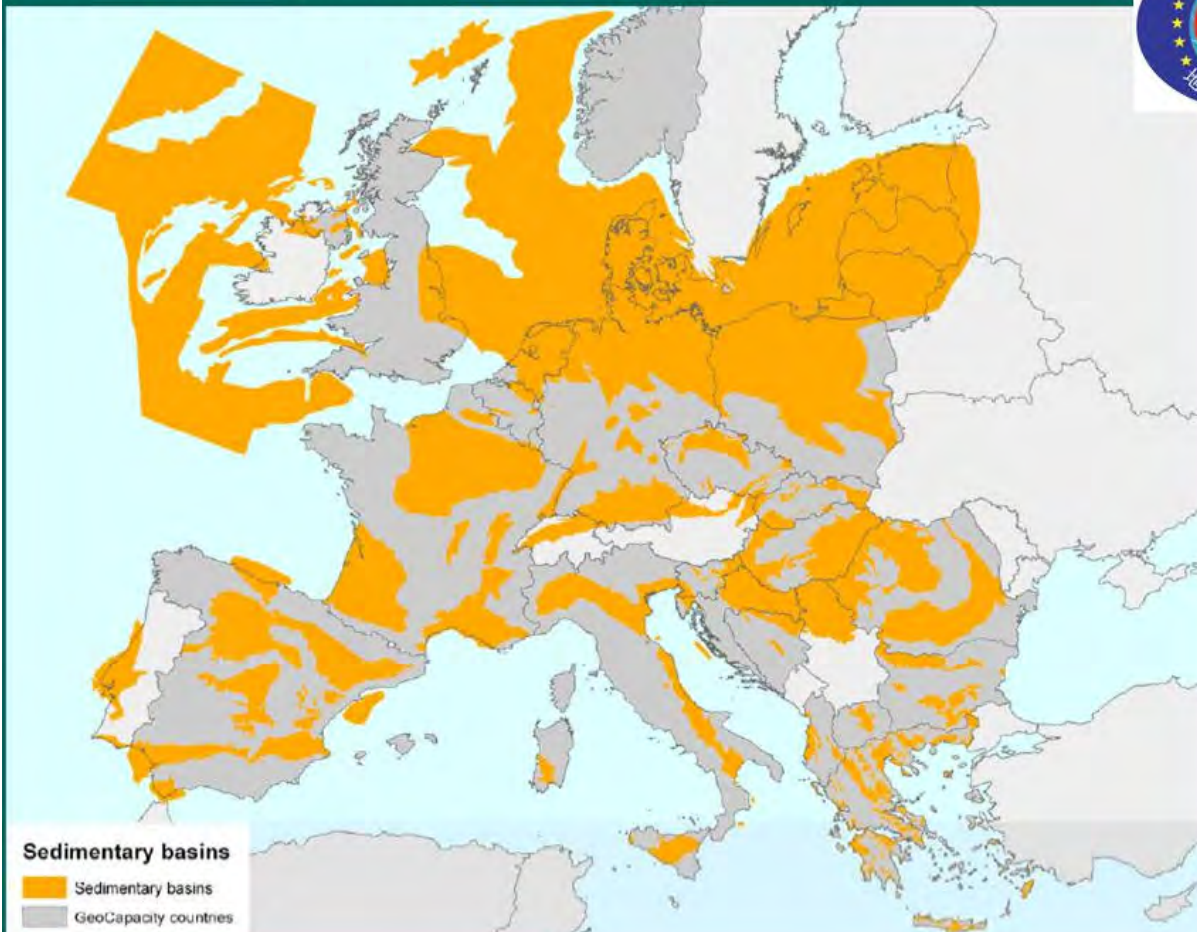
Total greenhouse gas (GHG) emissions and CO<sub>2</sub> emissions per capita.

Year	Total GHG emissions			CO <sub>2</sub> emissions per head	
	In CO <sub>2</sub> equivalents, million tonnes	Reduction compared to 1990, %		Tonnes CO <sub>2</sub> /capita	Place in world rate
	1990	2006		2004	
Estonia	41.6	21.4	54.6	14.1	16
Latvia	26.4	11.6	56	3.87	90
Lithuania	49.4	23.2	53	3.07	100

Share of sectors (%) in greenhouse gas (GHG) emissions in countries.

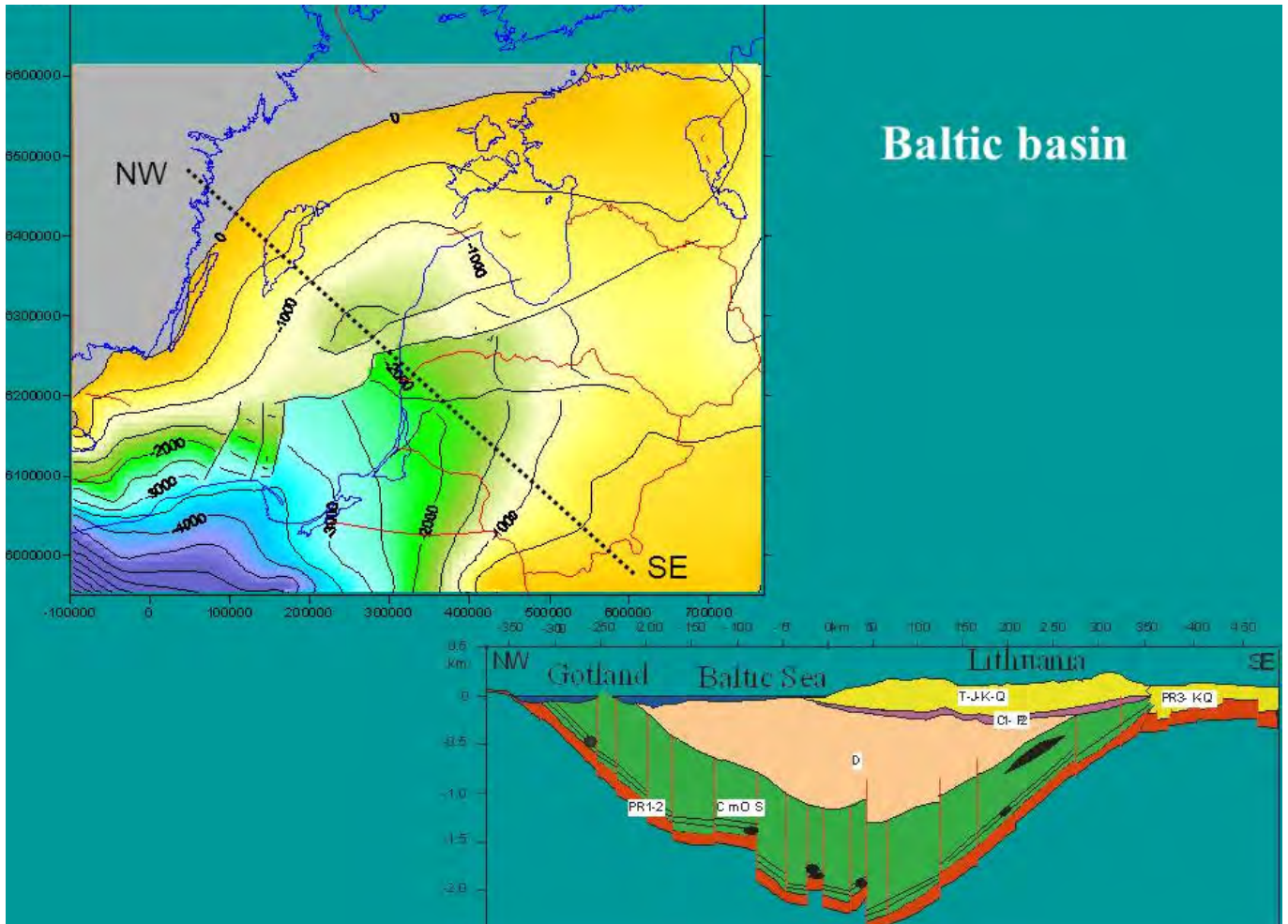
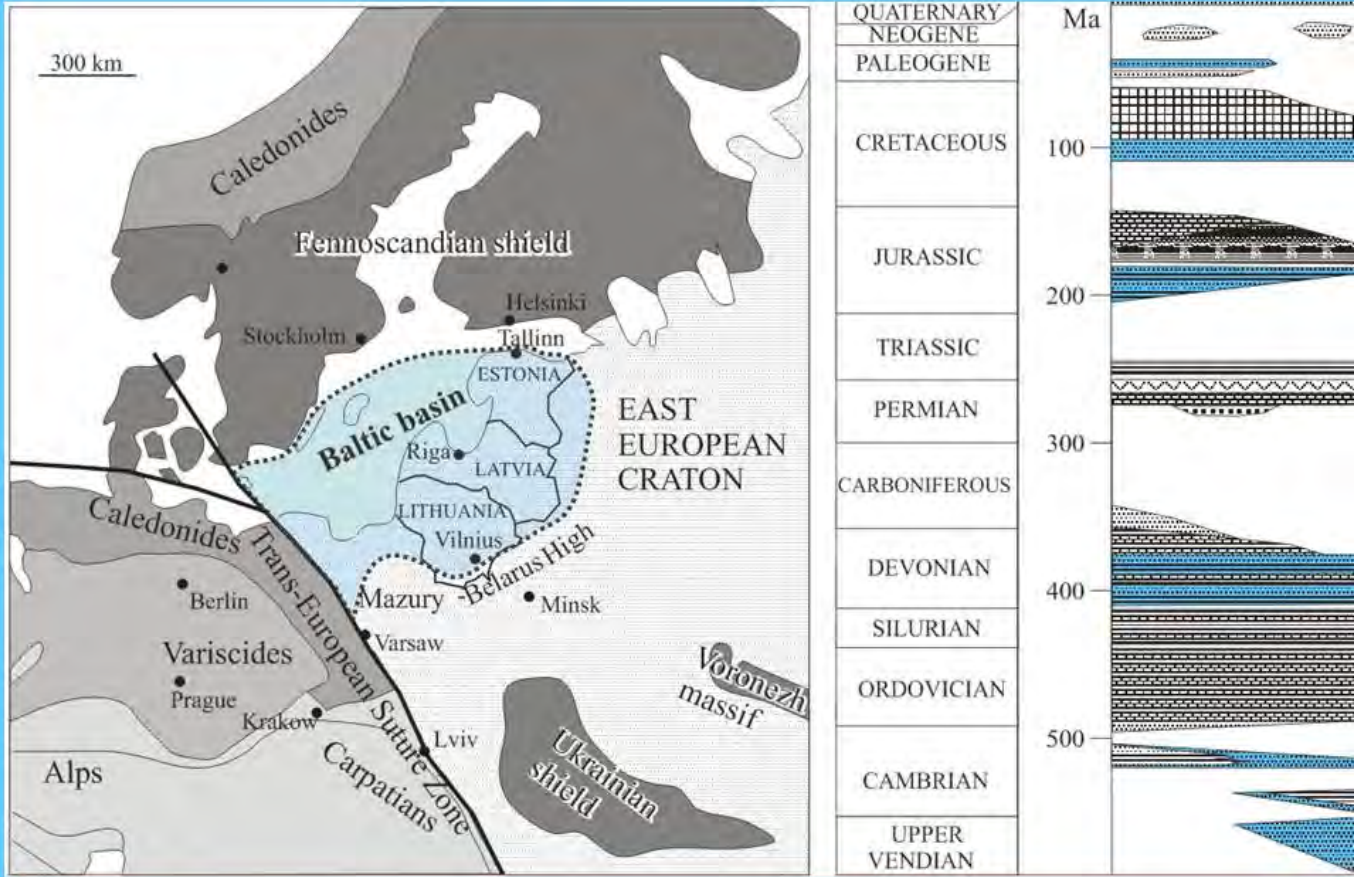
Emissions	Estonia	Latvia	Lithuania
Energy (fuel combustion and emissions from fuels in all sectors, including transport) Fuel combustion in transport	89	72	58
Agriculture	5.7	17.7	17.9
Industrial processes	2.7	2.5	16.6
Waste	2.5	7	6.8

## Sedimentary basins of Europe



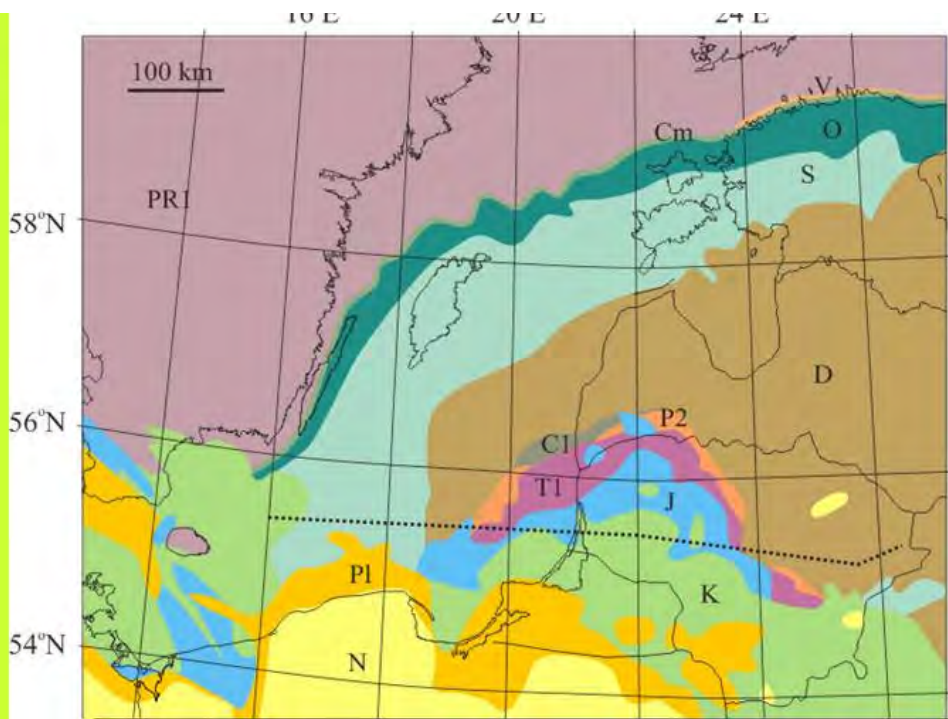


# Tectonic framework of Europe

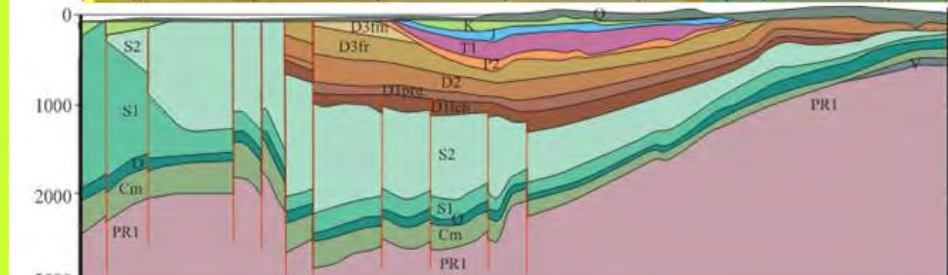




Pre-Quaternary geological map

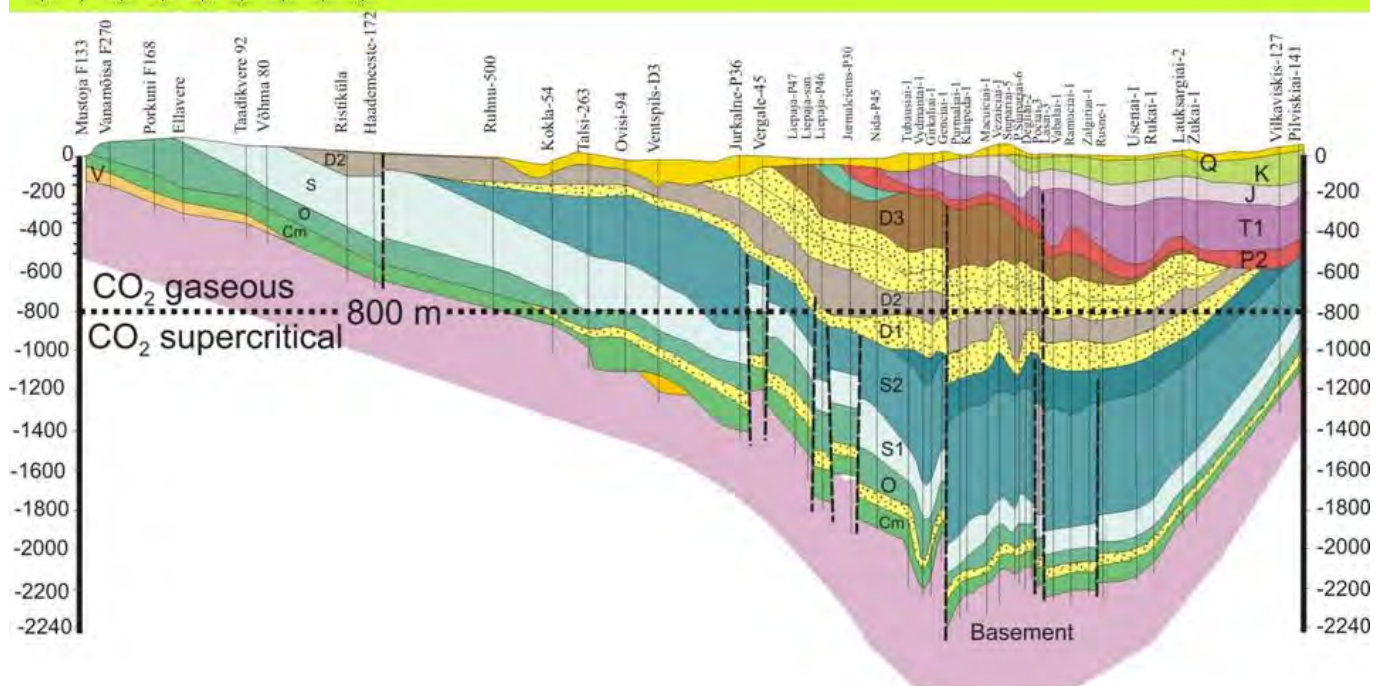
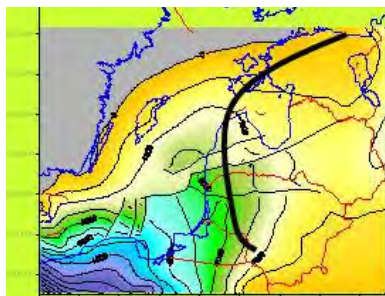


Cross-section



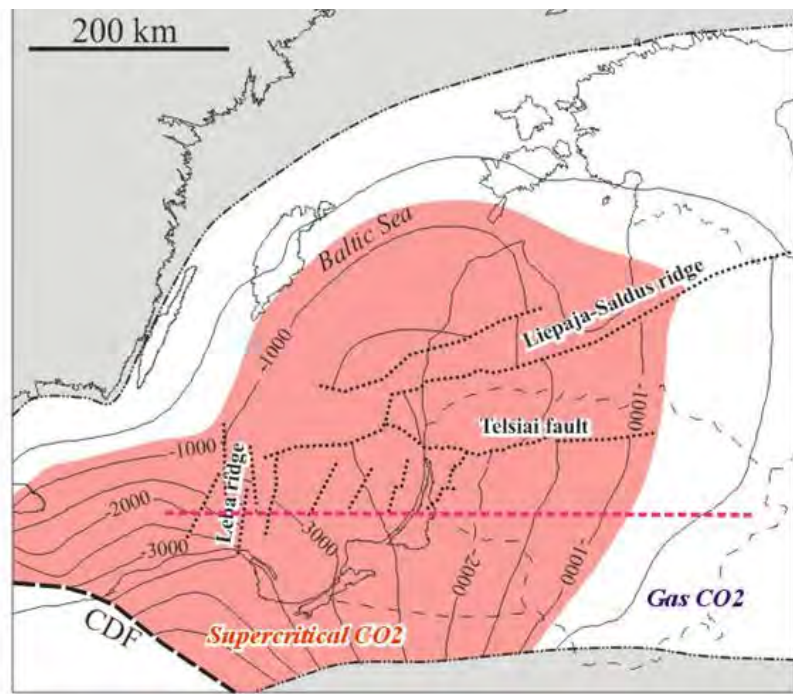
## Geological cross-section North-South

Major aquifers are shown in yellow

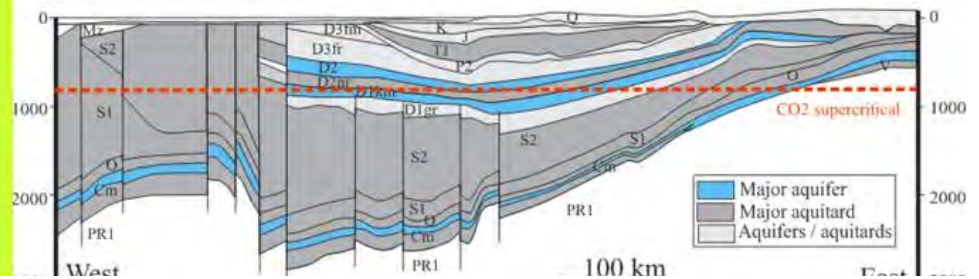




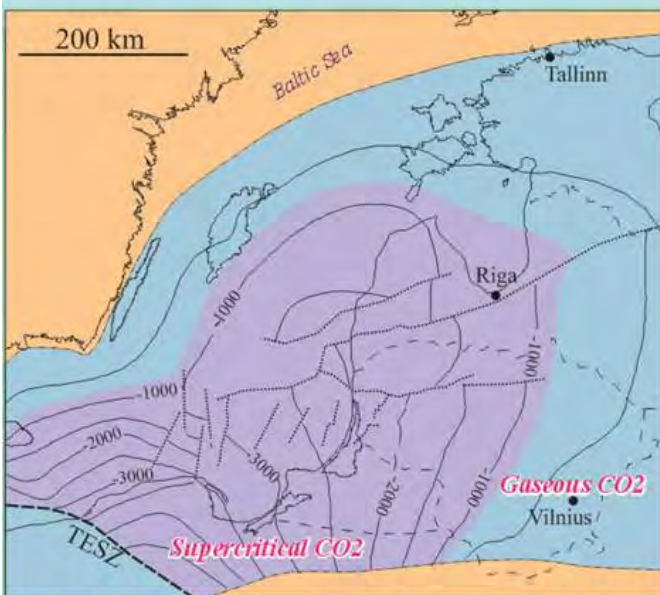
Top of Cambrian reservoir



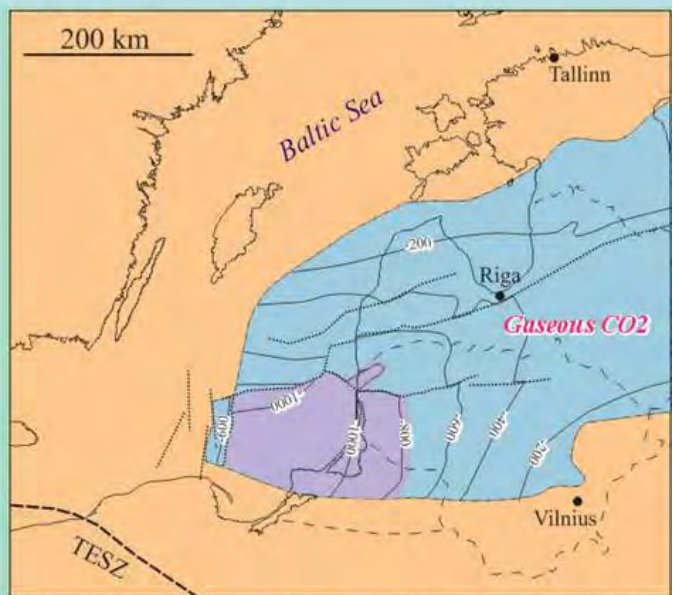
Geological cross section W-E



## Avaluation of the CO2 storage capacity of the Baltic basin

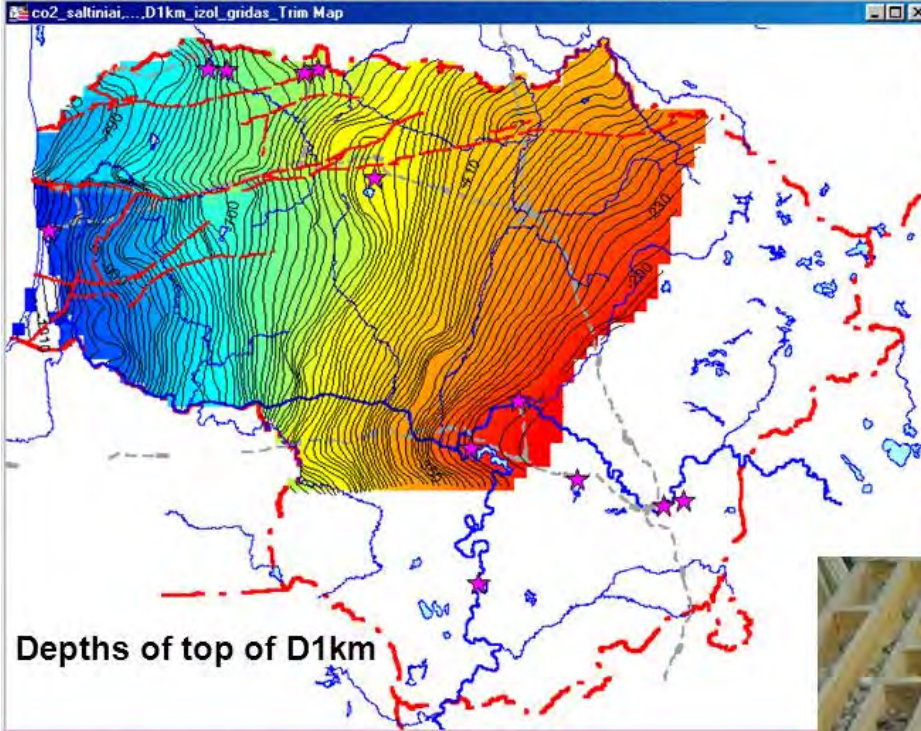


Depths of top of Cambrian aquifer



Depths of top of Lower Devonian aquifer

# Lower Devonian D1km reservoir capacity



Average thickness – 150 m  
Average porosity 26%  
Average permeability 2-4 D  
Net-to-gross 0.65  
Composition quartz with minor feldspar (10-15%)