The countries of Visegrad Group (V4) are close both geographically and in terms of their historical and political developments.

The history of geological evolution V4 territory stretches back to time of Hercynian and mainly Alpine orogenic stages that agglutinated initially more or less independent areas firmly to each other. Geological evolution doesn’t respect state boundaries and traditionally good collaboration of geologists gives a good chance to understand building and evolution of underground. Good political relations give a chance to store CO\textsubscript{2} in deep close-boundary geological structures, what could cause a doubling of monitoring and consequently enhancement of storage site safety.

Compared to 1990, the GHG emissions decreased in V4 countries. However, the increasing industrial growth and changing energy market urge to evaluate different options of reducing CO\textsubscript{2} emissions, including the assessment of the potential geological storages.

An assessment of storage possibilities and capacities of individual V4 countries were studied within the framework of EU GEOCAPACITY (www.geocapacity.eu) and CO2NET EAST (http://co2neteast.energinet.com) projects supported by European Commission Sixth Framework Programme (FP6). The main objective was to assess the European capacity for geological storage of CO\textsubscript{2} in deep saline aquifers, oil and gas structures and coal beds.

**Capacity estimation was performed according to methodology proposed in the EU GeoCapacity Project.**

- Estimation of CO\textsubscript{2} storage volume within deep brine aquifers and for technologically restricted structures the attention was aimed at vertically closed structures with suitable depth, sufficient sealing and significant pore volume capacity.

- Possibilities of CO\textsubscript{2} storage within depleted/depleting hydrocarbon fields were analysed from the viewpoint of proven Ultimate Reserves (UR), depth range and production history. CO\textsubscript{2} replacement of oil and gas, respectively, has been calculated separately, due to differences of their formation volume factor specification.

- For the purposes of CO\textsubscript{2} storage, the unmixed pit coal measures are interesting, especially due to the enhanced coal-bed methane recovery (ECBM) possibilities. CO\textsubscript{2} storage capacity in coal seams denotes the quantity of CO\textsubscript{2} that could replace CBM. For this purpose, the CBM is defined as producible gas in place accessible for CO\textsubscript{2}-ECBM (PGIPCO\textsubscript{2}), which differs from conventional PGIP. The storage capacity is a function of PGIPCO\textsubscript{2}, CO\textsubscript{2} density at standard condition and exchange ratio of CO\textsubscript{2} to methane.

**GeoCapacity maps of Sources & Sinks**

<table>
<thead>
<tr>
<th>CO2 Sources M\textsuperscript{2}yr</th>
<th>Natural CO2 Sources</th>
<th>Pipelines</th>
<th>National Boundaries</th>
<th>Aquifers</th>
<th>Hydrocarbon Fields</th>
<th>Coal Fields</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.001 - 1.000</td>
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<td>1.001 - 2.000</td>
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<td>2.001 - 5.000</td>
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<tr>
<td>5.001 - 10.000</td>
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<td>10.001 - 12.000</td>
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</tbody>
</table>

**Visible capacity:**

- Barter quality reaction site and source - sink match

**Theoretical capacity:**

- Realistic capacity: PRACTICAL Applies economic barriers to realistic capacity. Admitted source site selection, economical 
  scale, technological and water resources availability. 

- Realistic capacity: EFFICIENT Applies technical cut off based on theoretical considerations including regional water resources availability and economical 
  scale.

**Visible capacity PRACTICAL:**

- Applies economic barriers to realistic capacity.

**Visible capacity EFFICIENT:**

- Applies technical cut off based on theoretical considerations including regional water resources availability and economical 
  scale.

**Theoretical capacity includes large volumes of “inaccessible” storage capacity, which are not assessable or feasible or economic cut off applies - 10% trap.**

**CO\textsubscript{2} emissions and storage capacity (M\textsuperscript{2}yr):**

- Poland
- Czech Republic
- Hungary

**CO\textsubscript{2} emissions and storage capacity (%):**

- Poland
- Czech Republic
- Hungary