

**Carbon Sequestration Leadership Forum**

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# **Task Force on Review of CO<sub>2</sub> Storage Efficiency in Deep Saline Aquifers**

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# Origin of the Task Force

The Task Force was established at the CSLF meeting in Washington, D.C., USA, November 5, 2013, to review the published literature since the IPCC Special Report on CCS (2005) and CSLF report (2007) on the efficiency of CO<sub>2</sub> storage in deep saline aquifers



# Background of the Task Force

- Various methodologies have been developed since 2007 for estimating CO<sub>2</sub> storage capacity in deep saline aquifers at regional and local scales, the most used being USDOE's, applied mostly in North America, and CSLF's, applied mostly in Europe
- Storage capacity estimates are of two types:
  - Volumetric (or “Static”), based on pore volume
  - Dynamic, based on injectivity and pressure build-up, usually using numerical modelling



# Storage Efficiency

Published values of the Storage Efficiency Coefficient  $E$ , defined as *the amount of  $CO_2$  stored in a unit of aquifer pore volume*, vary in a wide range, from  $< 1\%$  to  $> 20\%$ , depending on assessment scale, rock lithology, depositional environment,  $CO_2$  buoyancy and mobility, capillary forces, and other medium and storage characteristics, including number and spacing of injection wells



## **Task Force Mandate**

**Critically review, compile and report on published literature since the CSLF (2007) report on “CO<sub>2</sub> Storage Capacity Estimation” on the efficiency of CO<sub>2</sub> storage in deep saline aquifers and applicability of the various published values for the storage efficiency coefficient E**



# Task Force Timeframe

- **November 2013: Task Force established**
- **Spring 2015 CSLF TG Meeting: Submission of final report**



## **Background to Status**

- **The International Journal of Greenhouse Gas Control has decided in the summer of 2014 to produce a Special Issue marking the ten-years anniversary since the IPCC Special Report on CCS, with a publication deadline of late spring 2015**
- **The Special issue will comprise review papers on various CCS subjects on which significant progress has been made since 2005**
- **One of the review papers is on “CO<sub>2</sub> Storage Efficiency in Deep Saline Aquifers” to be authored by Stefan Bachu, who is Associate Editor (for CO<sub>2</sub> storage) of the journal**
- **The publication deadline coincides with the Task Force timeframe for completing this action**



## Status

- **Consequently, Dr. Stefan Bachu made the decision to disband the CSLF Task Force on the same subject**
- **The CSLF TG Action Plan on this subject will be accomplished through the publication of the review paper in the IJGGC Special Issue**