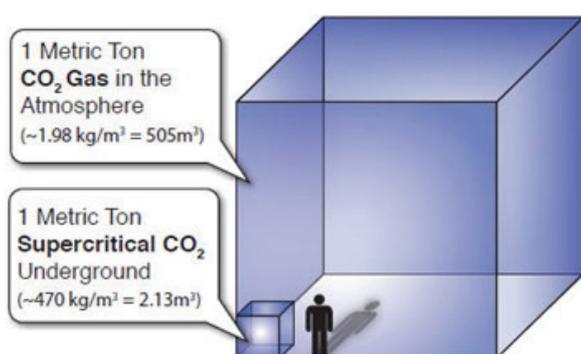


## News Letter nr 47 - Week 12 - 19.03.2013

### CRANKING CO<sub>2</sub> NUMBERS .... WILL THE LONGYEARBYEN RESERVOIR PERFORM?



The CO<sub>2</sub> accountants have been challenged and after months given a forecast from the depth of their calculators.

How much CO<sub>2</sub> can we inject in the Longyearbyen reservoir? Their answer after mind-bending cranking of numbers, *understandable or not*, sounds good;

**“there seems to be enough space for CO<sub>2</sub> in fluid phase”**, followed by a hint; “if the pressure is not too low or too high and we can access most of the space”.

Eighteen reservoir engineers, geologist and geophysicists assembled for the first of several key meetings on the March 12th 2013. The conclusions of this work will be essential for the CO<sub>2</sub>-neutral Longyearbyen vision. The question at hand is the volume in the reservoir that will receive the CO<sub>2</sub> from the Longyearbyen power station.

#### ***Is subsurface storage possible or not?***

The baseline CO<sub>2</sub> numbers have been put on the table, by converting the CO<sub>2</sub> emission of 60.000 tons/year into a required volume that will have to be injected into the reservoir over 20 years. In supercritical phase at a given temperature the power station emission equals around 2,6 million m<sup>3</sup> CO<sub>2</sub> per year in the reservoir. The same number in gas phase is more than 606 million Sm<sup>3</sup>. Not surprisingly, there is an enormous difference between fluid and gas phase, which questions the feasibility of gas injection.

The CO<sub>2</sub> accountants have eagerly returned to their calculators, with new challenges at hand. The volume required for fluid phase CO<sub>2</sub> injection is there, but how will the CO<sub>2</sub> fill this space? New, even more sophisticated models are required to predict the journey of CO<sub>2</sub> molecules on their voyage into their dark, rocky fate. With bright outlooks, we optimistically move forward in the hunt for technical solutions that will make the CO<sub>2</sub>-neutral Longyearbyen vision an irresistible opportunity.