New tricks for old dogs: modelling for storage

Mark Bentley *(Langdale, TRACS & Heriot-Watt University)*
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5.30pm Haughton Lecture Theatre, Museum Building, Trinity College

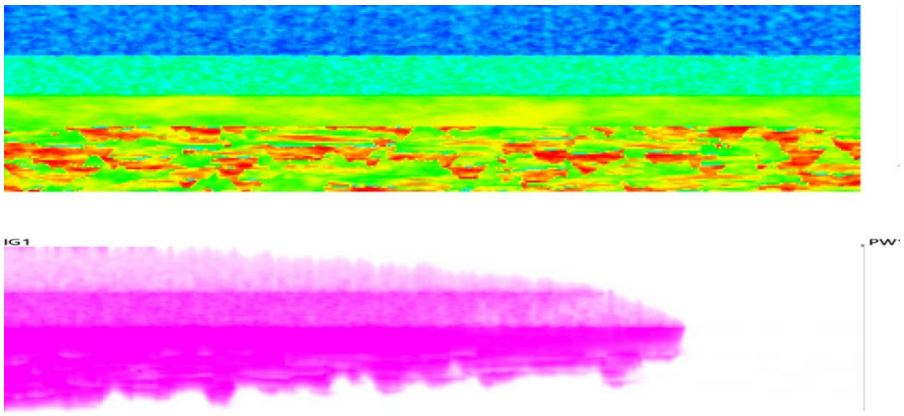
So CO_2 storage projects are not just gas injection schemes? For some of us this was a surprise and for a while it looked like future petroleum engineering work in the era of storage would be dull. Far from it.

The closer we look, the more tricky it is. We're engaging in multi-phase flow with a highly unfavourable mobility ratio and we are more than usually sensitive to reservoir heterogeneity, which we often struggle to model correctly for production projects. We also need to change our mindset from familiar concepts such as in-place resource volumes and recovery factor to less familiar ideas of storativity and storage efficiency.

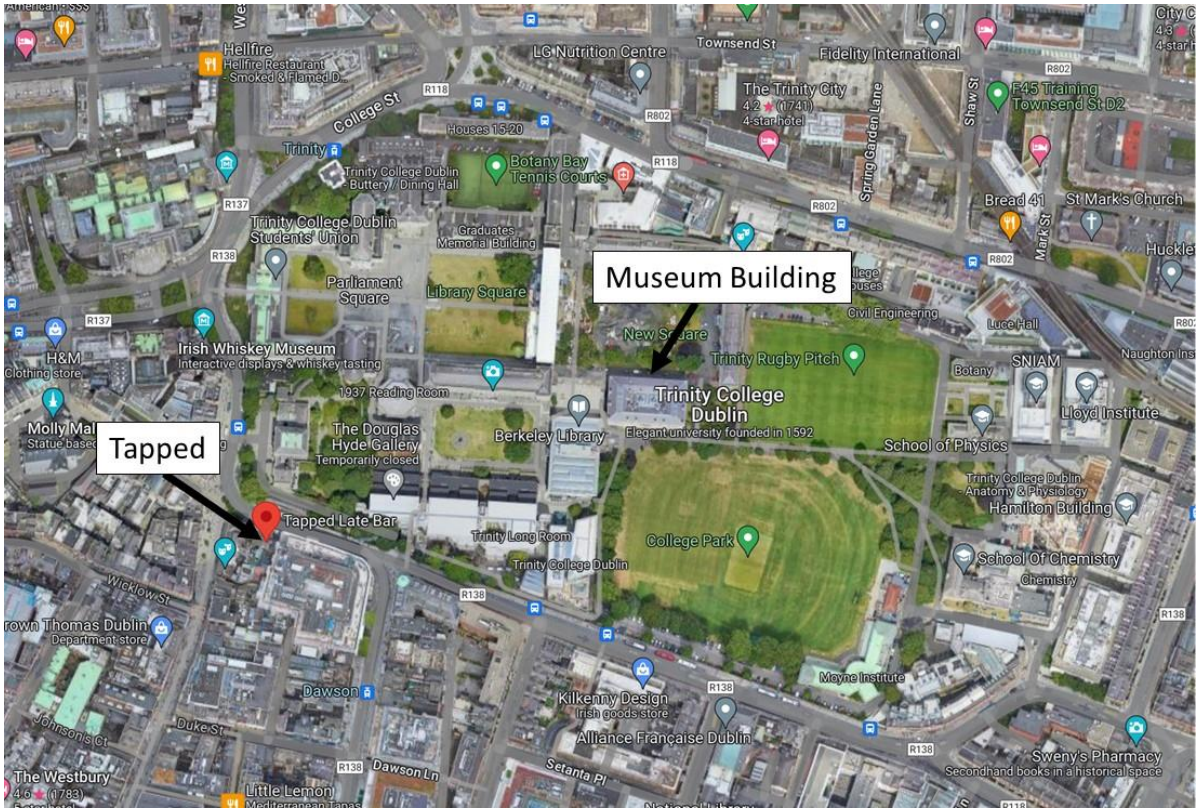
There is also the overarching issue of scale: both the scales we need to think and model at but also the scalability of storage projects themselves to achieve net-zero goals and whether this can be practically possible.

In this short talk I will share some experiences from colleagues working on the pioneering CCS schemes in Norway and now the UK, and researchers working on the underlying physics, chemistry and geomechanics of CCS schemes. No one is yet an expert, as so little has really been done at scale. I'll also offer my own perspectives as a reservoir modeller; to cut a long story short, it's going to be harder to get right than modelling for production.

Dull? Not at all …



Mark is a geoscientist who has spent most of his career making reservoir models and delivering training courses. His past was spent happily at Shell and TRACS and he now works independently as Langdale Geoscience. He was recently an SPE DL and is very grateful for the nice bag. He also holds a part-time post at Heriot-Watt University in Edinburgh.


Museum Building
Tapped
Hellfire
Hellfire Restaurant
- Smoked & Flamed D...
LG Nutrition Centre
Townsend St
Fidelity International
The Trinity City
4.2 (1741)
4-star hotel
F45 Training
Townsend St D2
College St
Houses 15-20
Trinity
Trinity College Dublin
Buttery / Dining Hall
Botany Bay
Tennis Courts
Spring Garden Lane
Shaw St
Bread 41
St Mark's Church
Mark St
Trinity College Dublin
Students' Union
Graduates
Memorial Building
Parliament
Square
Library Square
New Square
Civil Engineering
Luce Hall
Irish Whiskey Museum
Interactive displays & whiskey tasting
H&M
Clothing store
Trinity Rugby Pitch
Botany
SNIAM
Naughton Ins
1937 Reading Room
Trinity College
Dublin
Elegant university founded in 1592
Berkeley Library
Lloyd Institute
School of Physics
The Douglas
Hyde Gallery
Temporarily closed
Trinity College Dublin
- Anatomy & Physiology
Hamilton Building
Tapped Late Bar
Trinity Long Room
Trinity College Dublin
College Park
School Of Chemistry
Chemistry
Wicklow St
Department store
Dawson
Meyne Institute
Kilkenny Design
Irish goods store
Duke St
Johnson's Ct
Alliance Française Dublin
Dawson Ln
Setanta Pl
The Westbury
Little Lemon
Sweny's Pharmacy
Secondhand books in a historical space