

Shale Gas Revolution in China: Game Changer for Coal?

Woodrow Wilson Center

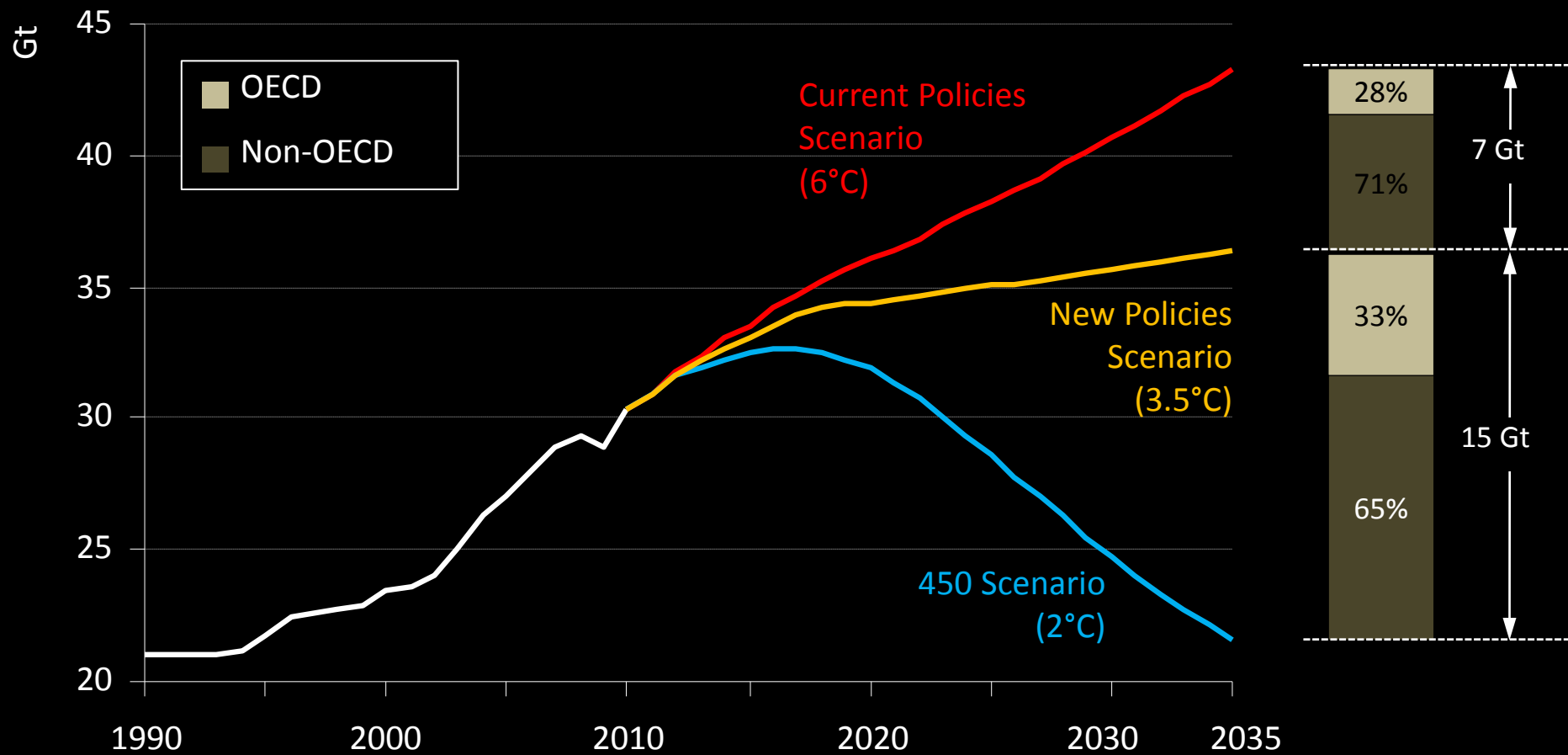
Briana Mordick

Staff Scientist

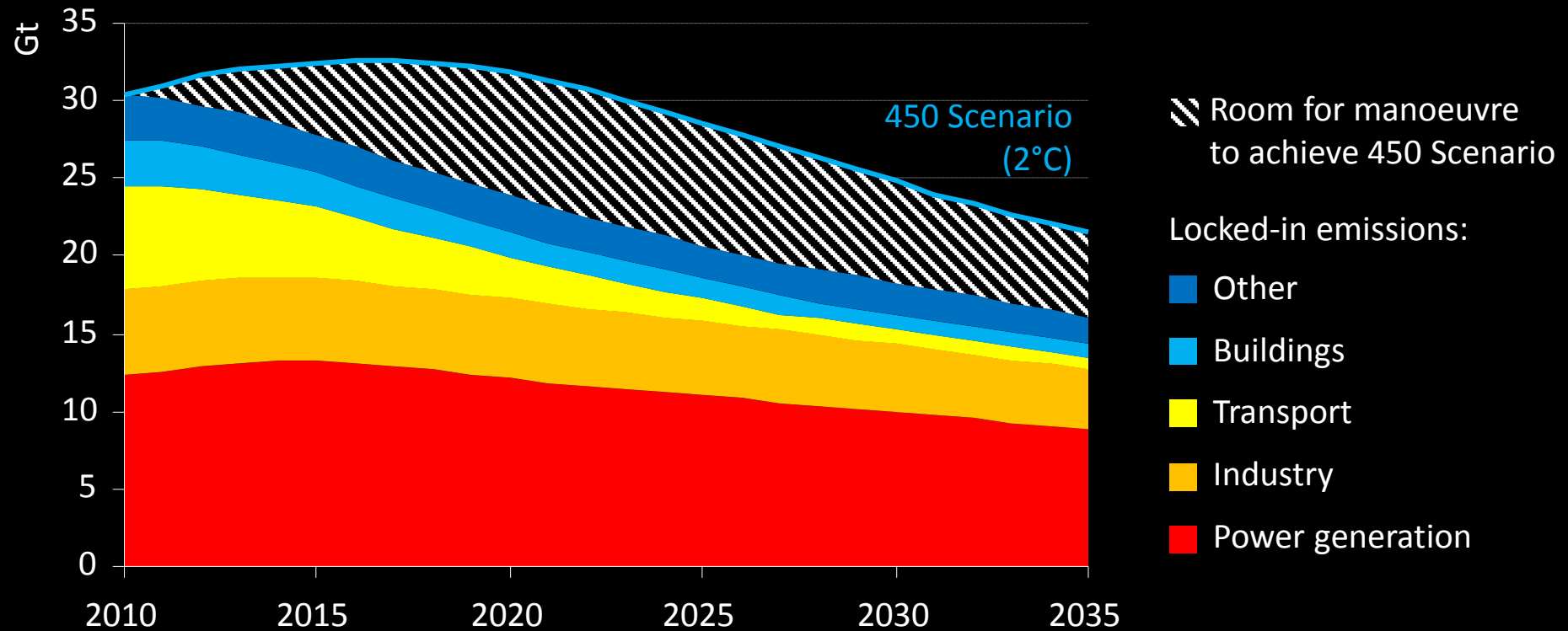
Natural Resources Defense Council

15 March 2013

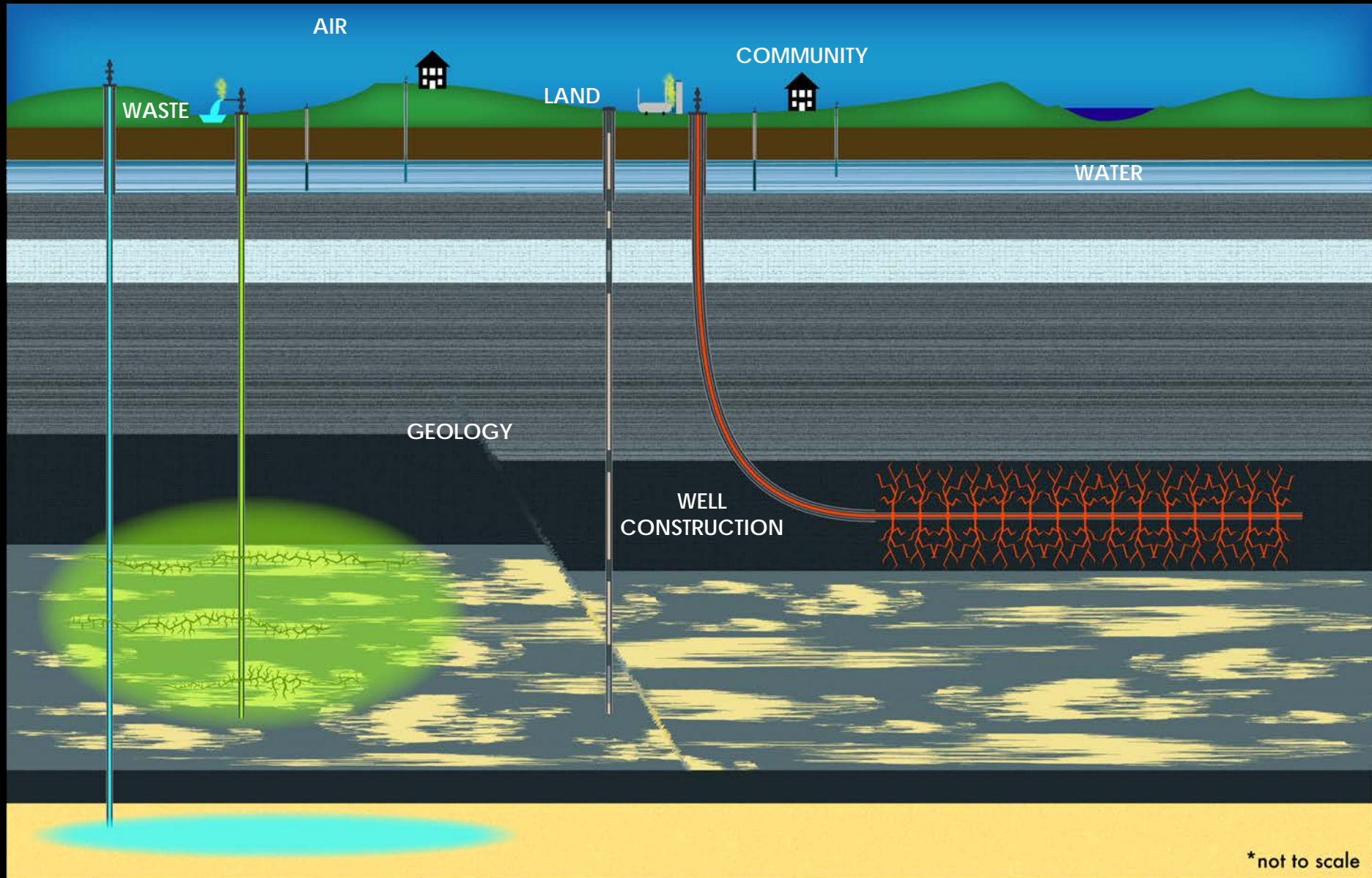
WORLD ENERGY-RELATED CO2 EMISSIONS BY SCENARIO



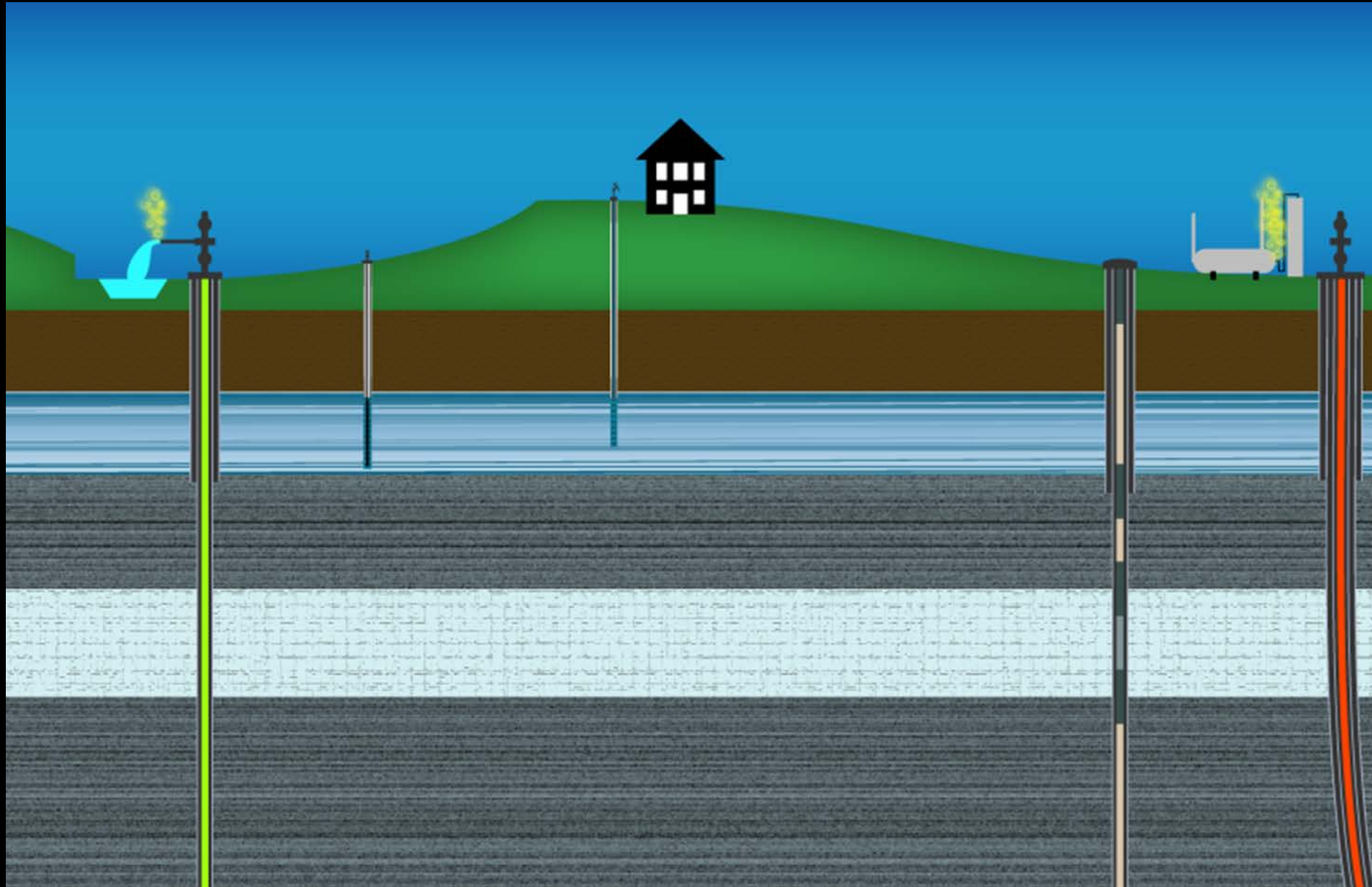
450 SCENARIO LOCKED-IN EMISSIONS



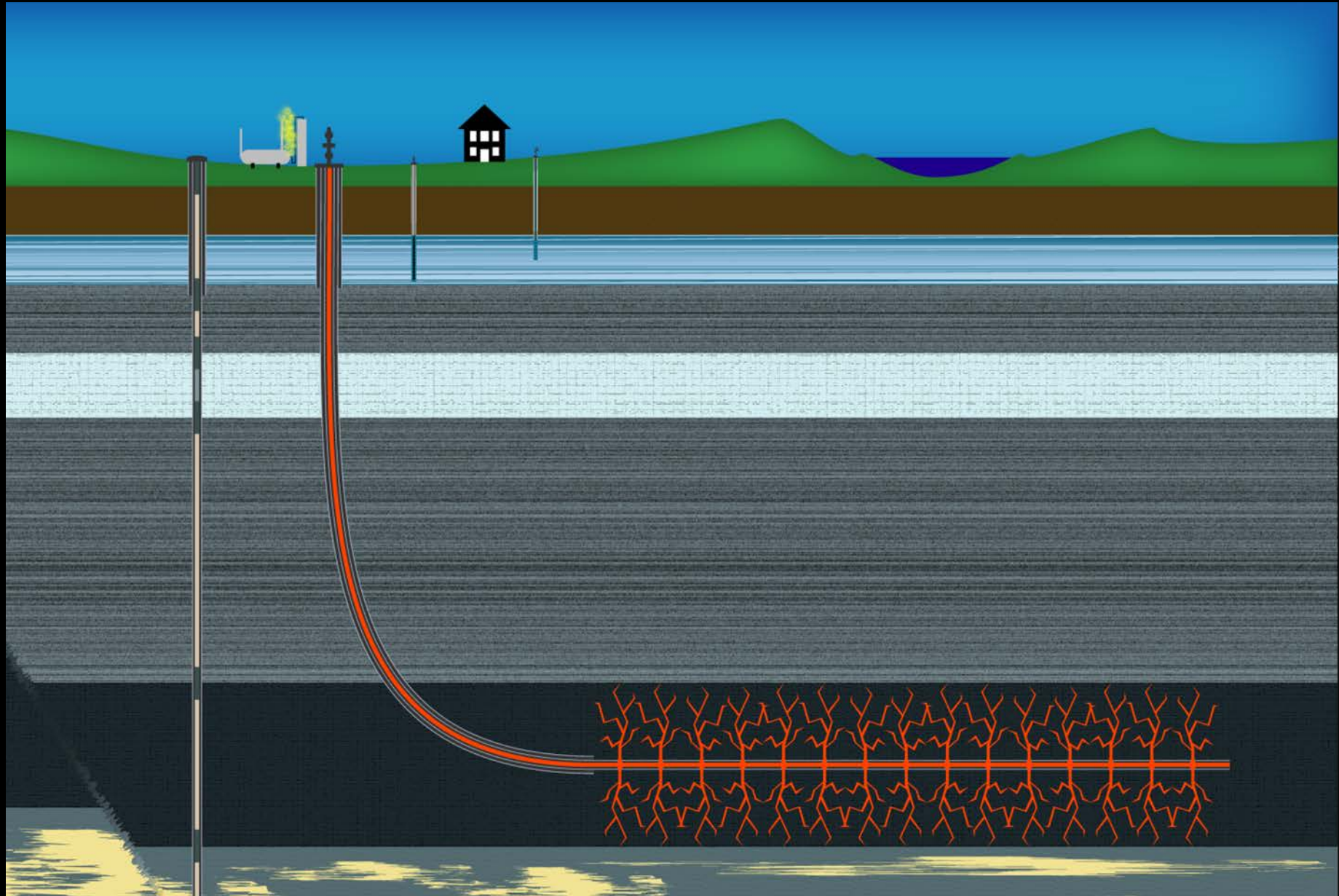
ENVIRONMENTAL RISK



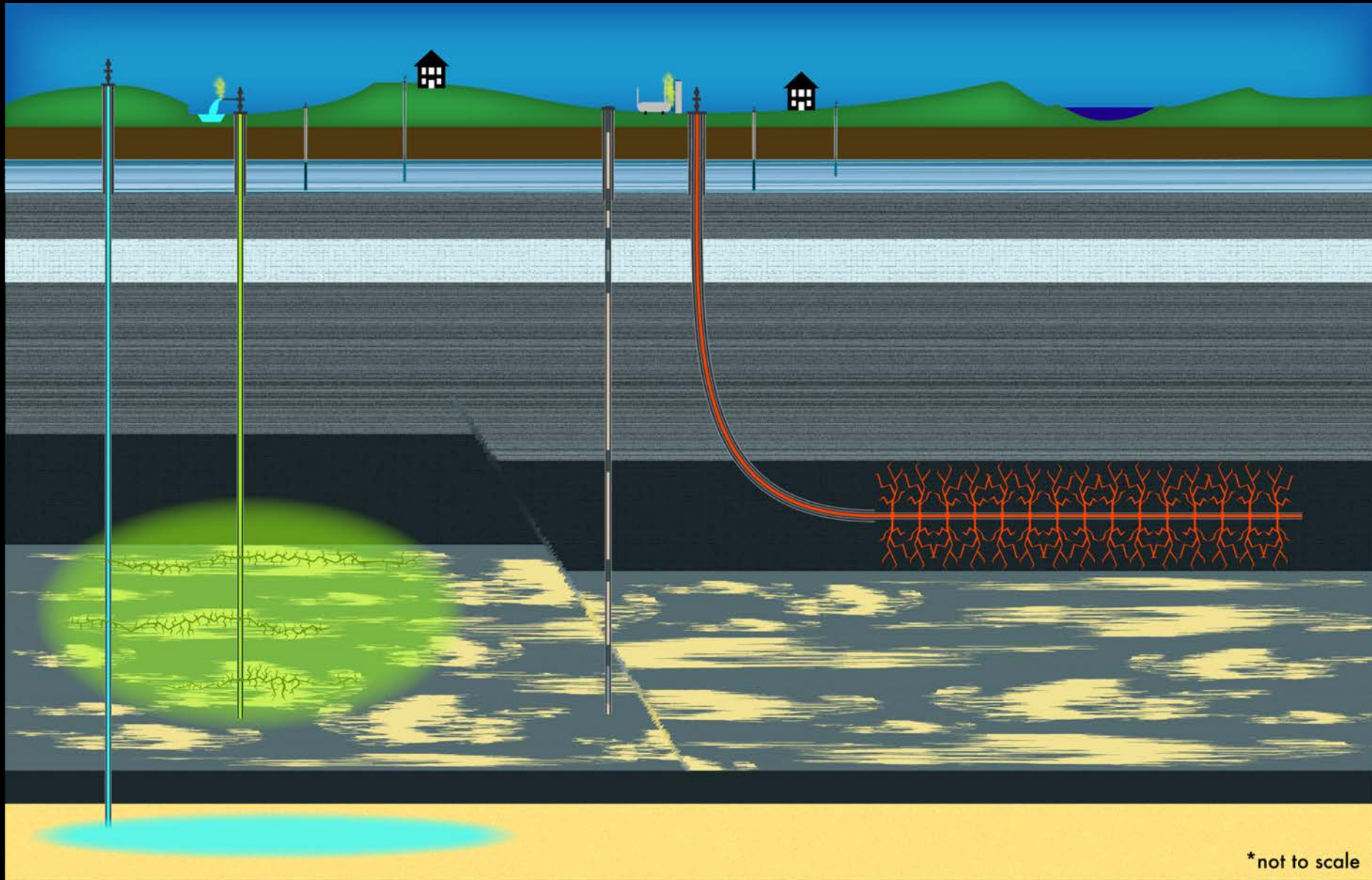
AIR EMISSIONS



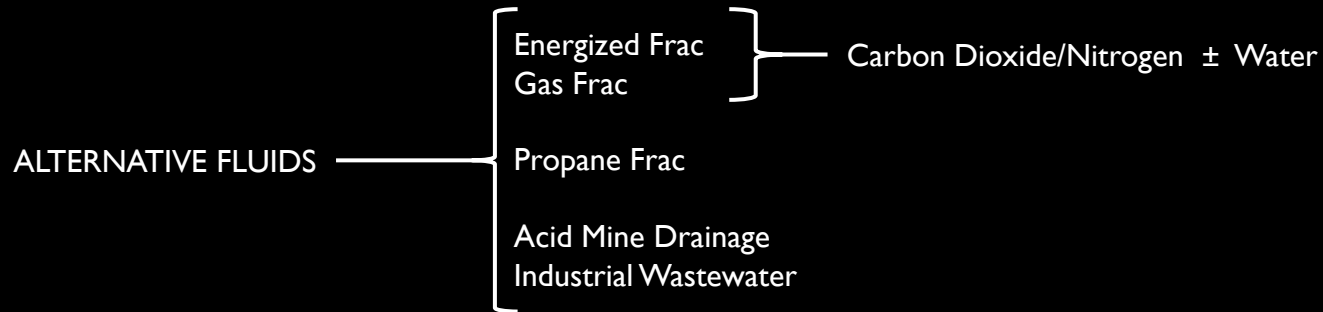
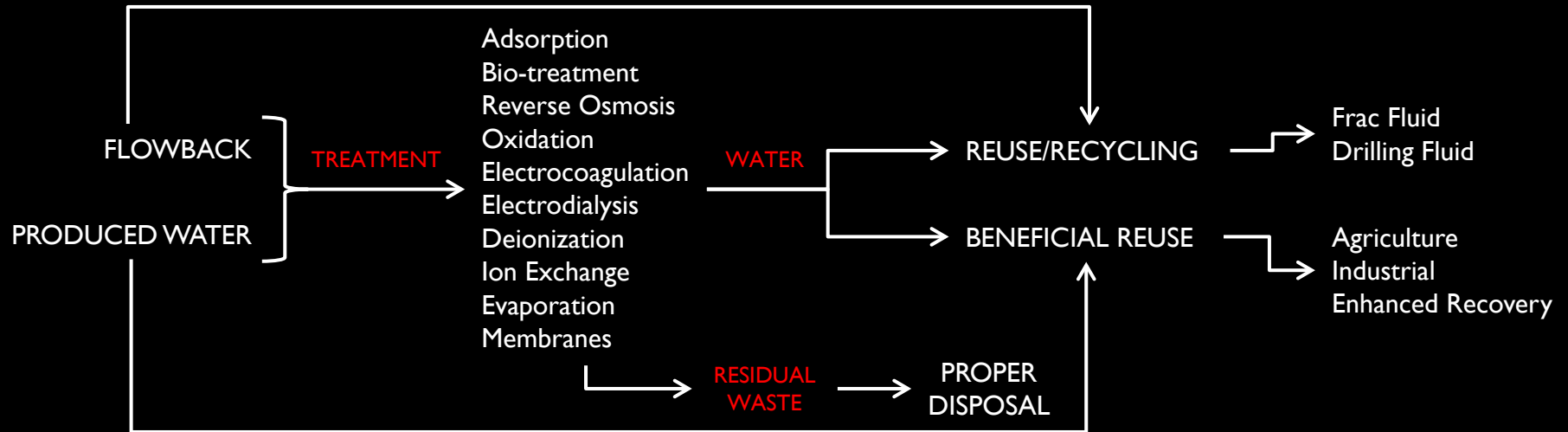
WELL CONSTRUCTION



WASTEWATER HANDLING



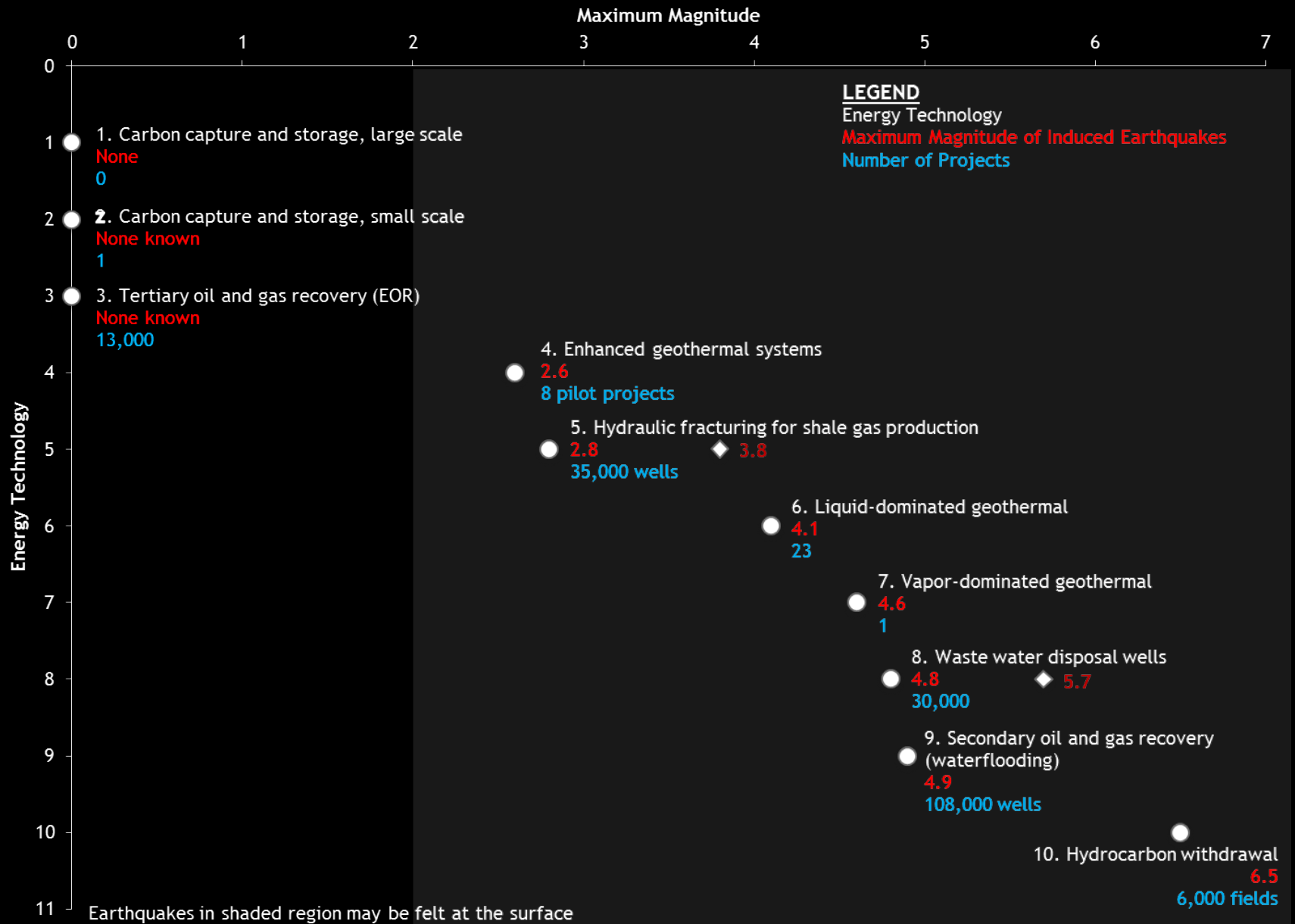
STRATEGIES TO REDUCE FRESH WATER USE/WASTE WATER



IMPROVED FRAC DESIGN & EFFICIENCY

INNOVATIVE DRILLING & FRACTURING TECHNIQUES

INDUCED SEISMICITY



Sources: National Research Council, 2012, Induced Seismicity Potential in Energy Technologies, Prepublication Version, 300p.; British Columbia Oil and Gas Commission, 2012, Investigation of Observed Seismicity in the Horn River Basin, 29p.; Cochran, E.S., Sumy, D.F., Keranen, K.M., Abers, G.A., and Savage, H.M., 2012, Coloumb Stress Modeling of the 2011 M5.7 Oklahoma Earthquake Sequence, AGU Fall Meeting, San Francisco, 3-7 December 2012.

