Climate Mitigation and Awareness Division - LTS
Department of Communications, Climate Action and Environment
29-31 Adelaide Road
Dublin
Ireland
D02 X285

Via email only: climateunit@dccae.gov.ie

31st December 2019

Re. Public Consultation on Ireland's Long-term Strategy on Greenhouse Gas Emissions Reduction November 2019

Dear Sir/Madam,

I write on behalf of the Institute of Geologists of Ireland (IGI).

The IGI promotes and advances the science of geology and its professional application in Ireland; and ensures that its members uphold, develop and maintain the highest professional standards. A stated objective of the IGI is to *promote improvements in the law and take any other steps and proceedings as may be deemed necessary in the interests of the IGI and its members*. Accordingly, IGI makes the following observations and wishes to note the role of the geoscientist in achieving Ireland's energy transition.

5.1 Pathway to 2050

Question 2. What advanced technologies, across all sectors, could support a move to net-zero or negative emissions by 2050?

I. Development of shallow and deep geothermal energy can contribute to a decarbonised electricity system and provide community-based solutions to de-carbonised energy supply. Ireland has proven significant ground-sourced shallow geothermal energy resources and also has potential low-enthalpy (low-temperature) deep geothermal heat sources which are as-yet underexplored [1]. Geothermal energy developments have the advantage of potentially providing community benefits and thus improving their acceptability to communities in which they are located.

II. In order to fulfil the objective of the Paris Agreement of holding the increase in global average temperature to well below 2°C above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5°C above pre-industrial levels, CO_2 sequestration will play an important role. Carbon Capture and Storage (CCS) in suitable geological structures onshore and offshore, can be a significant element of achieving this. A report commissioned by Sustainable Energy Ireland, the Environmental Protection Agency, the Geological Survey of

[1] Proceedings of 'Deep Geothermal in Ireland – Past, Present and Future' Conference 6th September 2018, Geological Survey Ireland. Available at: http://spatial.dcenr.gov.ie/GSI_DOWNLOAD/Geoenergy/Other/Deep_Geothermal_in_Ireland_Workshop_Sept2018.pdf

Northern Ireland and Geological Survey of Ireland in 2008 estimated that the island of Ireland has a total theoretical storage capacity of 93,115 million tonnes CO_2, with the Kinsale Head depleted gas field potentially providing 330 million tonnes effective storage capacity[2]. CCS can form an integral part of Ireland's energy transition phase, during which CO_2 will still be produced by fossil-fuel fired power plants. Peatlands comprise an important element of existing carbon storage in Ireland and must be maintained as such.

III. Low-carbon technologies such as energy storage batteries, hybrid vehicles, solar panels and wind turbines all rely on a secure, sustainable and ethical supply of mineral resources. Lithium, copper, nickel and a range of materials encompassed by EU Critical Raw Materials[3] including Rare Earth Elements and Platinum Group Elements are of particular importance and barriers to their production could limit the production and adoption of low-carbon technologies. Ireland has a long history of metallic and other mineral exploration and extraction and is well placed to contribute to the continuing development of properly managed indigenous mineral resources.

IV. The Irish Centre for Research in Applied Geoscience (iCRAG), Geological Survey of Ireland and other Irish academic institutions are currently engaged in research regarding all of the above and are constantly developing their research themes to support the energy transition. As such, they represent a valuable resource for the Department of Communications, Climate Action and the Environment in achieving the aims of the Long-term Strategy on Greenhouse Gas Emissions Reduction.

We would be delighted to assist with any further queries you might have regarding any of the above.

Your sincerely,

EurGeol Cian O'Hora PGeo
On behalf of the IGI

[2] CSA Group (2008) Assessment of the Potential for Geological Storage of CO2 for the Island of Ireland. Report prepared for Sustainable Energy Ireland, Environmental Protection Agency, Geological Survey of Northern Ireland, and Geological Survey of Ireland. Available at: https://www.seai.ie/publications/Assessment-of-the-Potential-for-Geological-Storage-of-CO2-for-the-Island-of-Ireland.pdf

[3] European Commission (2017) Third list of critical raw materials for the EU of 2017. Available at: https://ec.europa.eu/growth/sectors/raw-materials/specific-interest/critical_en