Response ID ANON-W3ZQ-NN6F-D

Submitted to **Call for Expert Evidence - Climate Action Plan 2021**
Submitted on **2021-05-18 19:58:33**

About you

1 Name

Please provide your name, or the name of the organisation you are representing.:
Institute of Geologists of Ireland

2 Email

Please include a contact email address if you would like to receive a copy of your submission.:
siobhaneilis@mac.com

Carbon Pricing and Cross-Cutting Issues

1 What further opportunities exist within our taxation system, beyond measures already implemented and planned, to promote emissions reductions, either on an economy-wide basis, or in specific sectors?

Please provide details in the text box provided:

Not an IGI area of expertise.

2 What supporting policies might be required to offset the impact of any taxation changes on low income households or those most at risk from fuel poverty?

Please provide details in the text box provided:

Not an IGI area of expertise.

3 What further measures might be required in the planning system to realise the objectives of the National Planning Framework in respect of climate action?

Please provide details in the text box provided:

Use of locally sourced raw materials and technologies with local sources.

4 What specific additional measures might be required to promote sustainable growth in our urban centres, including to realise the potential of a “15-minute city”?

Please provide details in the text box provided:

Not an IGI area of expertise.

5 What specific additional measures might be required to promote sustainable growth in rural areas?

Please provide details in the text box provided:

Increased growth in communications networks for remote working.

Raw materials: Increased research and exploration for raw minerals critical for use in all other areas of climate action. Our exploration and mining history in Ireland shows the presence of minerals. Ireland has the right geology and good metal potential especially in respect of base metals, such as copper, lead and zinc, and also gold and silver. Mineral exploration in the late 1950s culminated in the discovery of the Tynagh (County Galway) deposit in 1961, to be followed shortly thereafter by the discovery of the massive sulphide lead-zinc deposit at Silvermines and the copper-silver-mercury deposit at Gortdrum, both in County Tipperary. These discoveries created an exploration boom in Ireland which culminated in the discovery of the Navan (County Meath) zinc-lead deposit in 1970 and which 50 years later is still an active mine, employing, directly and indirectly over 1,000 people.
Ireland produces more zinc per km2 than any other country in the world. All of the mines are within in the broader midlands area, thus the potential for more discoveries is quite high and most importantly unlike most other industries, mineral deposits can’t be moved to another location, hence minerals exploration and mining can play a significant role in the Just Transition within the midlands.

Further information on the history of mining in Ireland, environmental planning in mining and the need for minerals for the future is available in factsheets produced by IGI in 2021.

https://igi.ie/committees/minerals-information-working-group/

6 Are there further measures that the Government should take to channel private finance into low-carbon investments in Ireland?

Please provide details in the text box provided:

Schemes to encourage research and development in efforts to decorbonise the heat and energy sector such as geothermal and battery technology. For example, Ireland has a world-class zinc district and there is no research going on in Ireland's universities into utility-scale zinc-air-battery technology to store the energy generated by the sun, wind and wave. The US is way ahead of Europe in this research and application.

7 Are any changes required in Ireland's research policy to channel research funding into climate action-related topics?

Please provide details in the text box provided:

Encourage specific research in new technologies and the use of new resources. Ireland has an Science Foundation Ireland (SFI) funded applied geoscience research centre already with iCRAG. This is to be welcomed and further supported.
https://www.icrag-centre.org/
Geological Survey Ireland also has an active research programme which directly funds or partnership funds geoscience research in Ireland and the EPA and SEAI also fund climate action research topics. https://www.gsi.ie/en-ie/research/Pages/default.aspx

Collaboration across these bodies should be encouraged as should collaborations with other international research institutions.

8 Is there any additional information you would like to submit in relation to Carbon Pricing and Cross-Cutting Issues?

Please provide details in the text box provided:

Not an IGI area of expertise.

Electricity

1 What options are available to increase the penetration of renewable electricity beyond the 70% committed to in Climate Action Plan 2019?

Please provide details in the text box provided:

Offshore and onshore wind - but this will mean an increase in the use of metals, including Rare Earth elements, and an understanding of the offshore and onshore topography and subsurface. Geologists are best placed to contribute to this knowledge and understanding. We are encouraged by the ongoing government support for the INFOMAR project managed and run by Geological Survey Ireland and the Marine Institute to map the Irish marine territory, and the Tellus geophysical and geochemical mapping project, and the formation of the new Geoscience Policy Unit and Geoscience Regulation Unit in DECC.

2 What can be done to increase the uptake of offshore wind and solar PV in particular, in the context of the Programme for Government ambition?

Please provide details in the text box provided:

Increase education campaigns at all education levels. While sustainability is now an important part of the Irish Curriculum, more could be done to address the realities of how we meet our climate action targets. Education should be such that people can make informed decisions on what works for them, their communities and their country. Information on levels of emissions, the possible reductions made by each action, and the clear successes or results of these actions should be communicated to the people so that they can be part of making decisions on future plans.

3 What role does renewable gas have in the power generation sector?

Please provide details in the text box provided:

This is not an area of IGI expertise.

4 What role could carbon, capture and storage have in decarbonising our power sector?

Please provide details in the text box provided:

The geology of Ireland has the potential for carbon capture and storage but more work needs to be done on specific sites and specific geological settings. The IGI and it's members could be of support for further research in this area. Carbon capture and storage could play a role in decarbonising our power sector and be part of reducing gross emissions from some industry.

5 What other opportunities exist to support the decarbonisation of the electricity sector?

Please provide details in the text box provided:

Improved battery technology could play a role in make other methods more efficient. Again, this will require the use of more natural resources and greater investment at either an Irish of EU level in research and development.

6 What measures might be taken to improve the resilience of the electricity system to the impacts of climate change?

Please provide details in the text box provided:

Climate change is causing an increase in extreme weather events, groundwater flooding, and coastal erosion. Understanding of these and the subsurface is critical for the protection of the electricity infrastructure, particularly offshore or international connectors or supply lines. This requires the knowledge and experience of geologists and robust geological data.

Enterprise

1 What measures can be taken to accelerate the uptake of carbon-neutral low temperature heating?

Please provide details in the text box provided:

Education and information on the options for low carbon heating including the use of geothermal. Ireland has the potential for the use of geothermal heat for individual building, industry and district heating.

2 What measures can be taken to tackle high temperature heating in industry?

Please provide details in the text box provided:

This is not an area of IGI expertise.

3 What measures can be introduced to reduce to F-Gases in the Enterprise sector?

Please provide details in the text box provided:

This is not an area of IGI expertise.

4 How can we encourage the diversification away from cement in construction?

Please provide details in the text box provided:

Information and education on the use of other raw materials and other forms of 'cement'. Ireland, as a recently glaciated area, as a rich resource of available sediments for the construction industry and therefore, concrete products have become the method of construction and it could be argued that as they are locally sourced, are a lower carbon footprint than imported materials. Cement production is a high carbon dioxide emission activity but it could be used in conduction with carbon capture and storage to reduce overall emissions.

Please provide details in the text box provided:

5 What role could Carbon Capture and Storage (CCS) have in industry, and what steps would encourage its deployment?

Please provide details in the text box provided:

More work on the potential for Carbon Capture and Storage needs to be done for Ireland. The geology suggests that it is suitable but research on specific areas needs to be carried out. Its use in conduction with high emissions industry could be invaluable.

6 What other opportunities exist to support the decarbonisation of the enterprise sector?

Please provide details in the text box provided:

This is not an area of IGI expertise.

7 What measures should be taken to address the risks that climate change poses for enterprise?

Please provide details in the text box provided:

Information, education, planning and diversification.

Built Environment

1 Can Ireland exceed the target of retrofitting 500,000 homes by 2030? If so, how?

Please provide details in the text box provided:

This is not an area of IGI expertise.

2 How should Ireland’s training and education system scale to meet the skills requirements to achieve this target?

Please provide details in the text box provided:

This is not an area of IGI expertise.

3 Should Government consider bringing forward a phase out of the installation of fossil fuel boilers?

Please provide details in the text box provided:

This is not an area of IGI expertise.

4 Should further specific changes be made to Ireland's building standards be introduced to support the decarbonisation of Ireland's private and commercial building stock?

Please provide details in the text box provided:

Yes, in conduction with research on alternative materials at the construction phase and with the encouragement of the use of other heat and energy sources. Careful consideration needs to be given to any cost benefit analysis and carbon benefit analysis in using other raw materials.

5 What emerging technologies (e.g. in relation to heating, lighting, and/or building fabric) should be considered for use in Ireland's construction industry to promote further decarbonisation?

Please provide details in the text box provided:

Geothermal heat for private houses, industry and district heating. Recent work by Geological Survey Ireland, which shows the potential for the use of geothermal, is encouraging. New industry, particularly enterprises which need to be cooled, such as data centres, should be encouraged to investigate geothermal as part of their planning process. Deep geothermal requires financial investment but the reduction in emissions and as a sustainable and secure source of heating and cooling would be worth the investment.

6 What supports can we provide to assist the greater use of low-carbon building materials? How much consideration should be given to embodied carbon in construction materials?

Please provide details in the text box provided:

This is not an area of IGI expertise.

7 Are there specific technologies that should now be prohibited?

Please provide details in the text box provided:

This is not an area of IGI expertise.

8 What trade-offs between decarbonisation and air quality may need to be further considered in policy design?

Please provide details in the text box provided:

This is not an area of IGI expertise.

9 Are there specific household behaviour changes that should be considered? Should such changes be mandated by way of regulatory changes?

Please provide details in the text box provided:

This is not an area of IGI expertise. This is more of an educational and behavioral issue.

10 What specific further measures should be considered to promote decarbonisation of Ireland's existing commercial buildings?

Please provide details in the text box provided:

This is not an area of IGI expertise.

11 Is there scope to further develop and deploy district heating opportunities in Ireland?

Please provide details in the text box provided:

Yes, with the use of geothermal. Ireland, although not on a plate margin, has good potential for the use of geothermal. We have a geothermal gradient of 30 degree C per 1 km of depth (modeled and measured recently by Geological Survey Ireland. With further research and financial investment, the use of geothermal could transform the Irish heat sector. If heating is approximately one third of the Irish energy budget, this could make a significant improvement for our future emissions.

12 What specific approaches should be taken to accelerate decarbonisation of Ireland's public sector building stock?

Please provide details in the text box provided:

Lead by example - public sector buildings should be retrofitted or converted into being the prime examples of best practice in energy efficiency and the use of raw materials, including alternative materials.

13 What other opportunities exist to support the decarbonisation of the Ireland's building sector?

Please provide details in the text box provided:

Building requires the use of natural resources, but we require building for industry, infrastructure and housing. The source, life span and recyclability of the raw materials is important as is the efficient use of raw materials in conduction with heating and insulation. More work on information on the value of raw materials is essential to empower the population to make decisions on resources.

14 Are there further specific measures and policies, including through planning and building regulations, that might improve the resilience of our building stock to climate change?

Please provide details in the text box provided:

This is not an area of IGI expertise.

Transport

1 What further policy measures might be required to enable Ireland to meet the CAP 2019 target of 936,000 electric vehicles on the road by 2030?

Please provide details in the text box provided:

The target for electric vehicles in Ireland is part of an international target, but more natural resources are needed to meet this international target. EVs require 2-3 times more copper than ICE vehicles and require cobalt and lithium for the batteries. Ireland can play a part in this worldwide move towards EVs through mineral exploration and battery technology research including zinc-air batteries (Ireland is a leading source of zinc in Europe).

2 Is there scope to increase this target for 2030? What should the new target be?

Please provide details in the text box provided:

This is dependent on the raw materials and the battery technology.

3 What specific measures might be required in the commercial transport sector to encourage a change to EVs or other zero carbon alternatives?

Please provide details in the text box provided:

This is dependent on the raw materials and the battery technology.

4 What additional measures should be considered to promote greater use of public transport or active mobility options?

Please provide details in the text box provided:

This is not an area of IGI expertise.

5 What specific policies might be required to reduce overall passenger kilometres driven within the private car fleet?

Please provide details in the text box provided:

This is not an area of IGI expertise.

6 Is there scope to effect a change in the composition of the private car fleet to shift the vehicle mix away from higher emitting classes?

Please provide details in the text box provided:

This is not an area of IGI expertise.

7 Is there scope to further increase biofuel blends rates beyond those already planned under the 2019 Climate Action Plan?

Please provide details in the text box provided:

This is not an area of IGI expertise.

8 Are there any specific obstacles in the planning system preventing greater modal shift?

Please provide details in the text box provided:

This is not an area of IGI expertise.

9 Are there specific further measures that should be undertaken to increase the availability of electric vehicle changing points, whether in public areas or on private property?

Please provide details in the text box provided:

This is not an area of IGI expertise.

10 What could be done to make the public sector transport fleets more climate friendly?

Please provide details in the text box provided:

This is not an area of IGI expertise.

11 What changes should be considered in relation to the management of Ireland's road network (e.g. reducing speed limits, additional road pricing, or restrictions for specific vehicles in urban areas) to promote emissions reductions?

Please provide details in the text box provided:

This is not an area of IGI expertise.

12 What other opportunities exist to support the decarbonisation of the Transport sector?

Please provide details in the text box provided:

This is not an area of IGI expertise.

13 What specific measures could be undertaken in transport infrastructure to address existing and future locked-in climate change impacts?

Please provide details in the text box provided:

This is not an area of IGI expertise.

Agriculture, Land Use, Forestry and Marine

1 What are the opportunities to increase take-up of measures identified in AgClimatise and encourage adoption of other practices which reduce emissions?

Please provide details in the text box provided:

This is not an area of IGI expertise.

2 What policies and measures would be needed to support farmers diversify their farm activities to include opportunities such as bioenergy, vegetable growth, forestry, organic farming, etc?

Please provide details in the text box provided:

Soil is a critical natural resource from the Earth and an understanding of the soil geochemistry is important for smart farming, land management and potential pollution of water supplies. Work by geologists on soil will assist farmers in keeping soil healthy in the long-term.

3 What can be done to maximise the use of manure and silage as feedstock for biomethane generation in closed digesters and inject into the gas grid to offset natural gas?

Please provide details in the text box provided:

This is not an area of IGI expertise.

4 What specific measures can be taken in agriculture, forestry and land use to adapt to climate change?

Please provide details in the text box provided:

Understanding of the soil, groundwater and the subsurface will assist in the adaption to climate change. IGI and its members can be part of that adaptation process.

5 What can be done to increase sequestration through forestry (afforestation, extended rotations, and improved forest management)?

Please provide details in the text box provided:

This is not an area of IGI expertise.

6 What opportunities are there to rehabilitate our peatlands and wetlands, and what can be done to realise these opportunities?

Please provide details in the text box provided:

This is not an area of IGI expertise.

7 What measures would support increased sustainable management of grasslands, including those areas on drained organic soils?

Please provide details in the text box provided:

This is not an area of IGI expertise.

8 What opportunities exist for increased use of cover crops, incorporating straw into tillage and for the application of regenerative agriculture practices? How can farmers be supported to take up these practices?

Please provide details in the text box provided:

This is not an area of IGI expertise.

9 What sort of role could Ireland's marine environment (lakes, seas) have in delivering climate mitigation? What are the building blocks that need to be put in place to support the role of the marine environment in climate mitigation (e.g. a regulatory framework, measurement and accounting rules)?

Please provide details in the text box provided:

IGI members include hydrogeologists and marine geologists. Our river catchments and groundwater systems, particularly in increased groundwater flooding (turloughs in places like the Gort lowlands Co Galway) are showing the results of climate change. Understanding of these systems will allow for applied mitigation. The INFOMAR project, the seabed mapping project, is essential for understanding the seabed for positioning of offshore renewables, and for monitoring climate change in coastal areas. Knowledge and robust data sets are the first building blocks needed.

10 What other opportunities exist to support the decarbonisation of the agriculture, land-use and marine sectors?

Please provide details in the text box provided:

This is not an area of IGI expertise.

Waste and the Circular Economy

1 How can we ensure that measures support sustainable economic models (for example by supporting the use of recycled over virgin materials)?

Please provide details in the text box provided:

The circular economy works well for some resources but not with all, particularly metals. Some metals required for modern technologies including "green" technologies are not currently in use in sufficient quantities.

Recycling can never be 100%, there will be losses within circulation, depending on the metal some of it will be lost to the environment or ‘tied-up’ for a long time, and the adverse financial, energy and environmental costs of recycling will render it uneconomic and of course increasing demand, e.g. annual demand for copper will increase by 5% and lithium demand by >10%, will increase primary production.

2 What other opportunities exist to support the decarbonisation of the waste sector and through the circular economy?

Please provide details in the text box provided:

This is not an area of IGI expertise.

Public Sector Leading by Example

1 What opportunities exist for the public sector to step up its climate ambition?

Please provide details in the text box provided:

Not an area of IGI expertise.

2 What sort of practical changes would you expect the public sector to make in leading and delivering Ireland's climate ambition?

Please provide details in the text box provided:

Not an area of IGI expertise.

3 How can the public sector support wider society to change? In the short-term, medium-term, long-term?

Please provide details in the text box provided:

Increased use of data and expertise within the public sector to inform policy. In the geoscience area, the work by Geological Survey Ireland, the Geoscience Policy Division and the Geoscience Regulation Division in the Dept. of the Environment, Climate and Communications is guided by international best practice and robust data sets. These can inform information and education campaigns to empower the public to make informed-decisions on the use of raw materials.

4 What are the biggest barriers for the public sector in reducing greenhouse gas emissions and how can they be overcome?

Please provide details in the text box provided:

Not an area of IGI expertise.

5 What other opportunities exist to support the decarbonisation of the public sector?

Please provide details in the text box provided:

Not an area of IGI expertise.

6 What practical steps should the public sector take to adapt to climate change?

Please provide details in the text box provided:

Not an area of IGI expertise.

Just Transition

1 Which regions, sectors, or industries do you believe will be most adversely affected by climate policy in Ireland and over what timeframe?

Please provide details in the text box provided:

The midlands, due to the move away from Bord na Móna work, and the farming sector.

2 What types of supporting interventions should be considered by the Government to address the specific areas identified?

Please provide details in the text box provided:

For the midlands, alternative industries could be developed.

Ireland produces more zinc per km2 than any other country in the world. All of the mines are within in the broader midlands area, thus the potential for more discoveries is quite high and most importantly unlike most other industries, mineral deposits can't be moved to another location, hence minerals exploration and mining can play a significant role in the Just Transition within the midlands. With our rigorous planning and environmental controls and good labour laws, metals from Ireland would be a ethical source for metals for the future.

This requires exploration, geoscience research and engagement with the people of the area.

3 What specific further measures should Government undertake in order to realise the benefits of the low carbon transition, including in relation to supporting the development of low carbon sectors of the economy, including employment in these sectors?

Please provide details in the text box provided:

This is not an IGI area of expertise.

4 What specific investments should be considered to support a just transition in Ireland?

Please provide details in the text box provided:

Investment in geoscience research including in economic mineral exploration, groundwater protection and geothermal research and development in the midlands would be of benefit. Geothermal technologies are already proven in other EU countries with the same geological setting as Ireland, but it does require financial investment.

5 How should the State finance just transition initiatives and investments?

Please provide details in the text box provided:

This is not an IGI area of expertise.

6 What changes should be considered in Ireland's social welfare system to support population cohorts that might be more adversely affected by the low carbon transition?

Please provide details in the text box provided:

This is not an IGI area of expertise.

7 Are there specific issues for consideration in Ireland's further education, training and skills system?

Please provide details in the text box provided:

IGI would advocate for an increase in investment in geoscience education and jobs training. We believe that geoscience has a role to play in climate action and climate change mitigation. We understand the Earth and can be part of how we adapt to living in a sustainable way on the Earth.

8 What other issues should be considered by the Government to inform just transition policy in the 2021 Climate Action Plan?

Please provide details in the text box provided:

Quality of life, life in a post-pandemic Ireland, and the changes to transport, connectivity and working life.

9 What additional supports could be considered for regions that are most at risk from the physical impacts of climate change?

Please provide details in the text box provided:

This is not an IGI area of expertise.

Additional Information

1 If you would like to submit some additional Information as part of your response, you can now attach a PDF.

Please chose your file for upload:
Institute of Geologists of Ireland factsheet links.pdf was uploaded