

# working notes

*facts and analysis of social  
and economic issues*

## Integral Ecology: Five Years On?

“Everything is Interconnected”: Laudato Si’, an Ethical Framework to Guide Environmental Policy?

A Reflection on the Experience of Climate Justice in Ireland

Meet the New Boss; Same as the Old Boss – The Subsidisation of Natural Gas as a Decarbonisation Pathway in Ireland

High Nature Value (HNV) Farmland: Getting Results from Farming for Biodiversity

Designing Within a Culture of Sustainability

## **Working Notes**

Facts and analysis of social and economic issues  
Volume 34, Issue 86, June 2020

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**Printed by:** Colorman Ireland

**Design:** [myahdesigns.com](http://myahdesigns.com)

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# Letter from the Director of the Jesuit Centre for Faith and Justice

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As we go to press with this issue of *Working Notes*, we at the Jesuit Centre for Faith and Justice are keenly aware of how the theme of “Integral Ecology” might appear distant from the pressing concerns of the pandemic. But appearances can deceive.

While Pope Francis does not mention the risk of novel coronavirus in *Laudato Si'*, his leitmotif of “rapidification” (§18) describes perfectly the kind of ecosystem pressure that allowed what we now call Covid-19 to jump from its original source into the human population. In his ground-breaking encyclical, Francis teaches us that everything is interconnected (§70). Integral ecology is not just a framework that allows us to consider the relationship between decarbonisation and just transitions, but between markets in Wuhan province and nursing homes in Westmeath.

The Society of Jesus in Ireland and elsewhere has been hard hit by this virus. We have lost a number of men to Covid-19. They will be sorely missed and deeply grieved. Others have been afflicted with this horrible disease but have thankfully recovered. Jesuits around the

world are working to address this crisis with almost 500 different Jesuit works supporting at least 3 million people. With so many people on the frontlines, it is impossible not to worry about the toll of this disease for our Society. But the work that is being done is of the highest value and consequently we accept this risk as part of our call to respond.

This response varies from place to place; with our concern around the pandemic not limited to within the boundaries of our island. In Ireland, the Jesuit Refugee Service is eager to resume its work of accompaniment in Direct Provision Centres. Until such a time as that is possible, they are running the national hotline to support those seeking asylum who have been affected by Covid-19. Jesuit relief works in the camps of South Sudan, which was recently documented by Newstalk radio,<sup>1</sup> are addressing the immediate public health needs of people living in a time of fragile peace after years of conflict. Jesuits around the world are

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<sup>1</sup> Susan Cahill, *Moving Forward Documentary on Newstalk*, <https://www.newstalk.com/documentary-and-drama-on-newstalk/moving-forward-documentary-newstalk-1015197>.

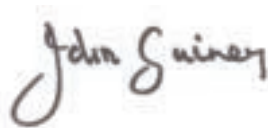
also joining a call, as part of a comprehensive response in the global south, for a decisive and transformative debt cancellation program.<sup>2</sup>

We are all connected. We know this in a visceral way when a loved one dies. The pain of separation is a testimony to the bond that was shared. As we go to press, we know that many who appreciate the work of the Jesuit Centre are heavily burdened by grief. Our prayers are with those who are suffering. Our commitment to live out the Christian faith in pursuit of social justice is intensified in this trying time.

Dr Ciara Murphy was planning this issue long before Covid-19 surfaced in Hubei Province, but the pieces she has assembled reflect in their diversity how any realistic response to the crises we face must be understood in their complexity and approached humanistically. The damage caused by rapidification cannot be undone by more productivity or efficiency. A different logic must prevail. It is five years since Pope Francis published *Laudato Si'* but his message has renewed relevance in this era of *Covidtide*. Francis teaches us that "We must regain the conviction that we need one another, that we have a shared responsibility for others and the world, and that being good and decent are worth it" (LS' §229). Another word for this shared responsibility is love, which is not just a private virtue, but a public

commitment. Policy shaped by love is an integral component of any just response to the crises we now face. The pandemic reminds us, painfully, that we are not in control. We do not know what tomorrow will bring. We have today. We can draw upon what we learned yesterday. But the only way we can hope for a better future tomorrow is if we face it together, in solidarity. Integral ecology, which insists that the problems of the environment and the problems of society are intricately linked, has never been more relevant and more promising.

I commend this issue of *Working Notes* to you and I hope it provokes fertile thinking and inspires loving action.

A handwritten signature in dark ink, reading "John Guiney". The script is fluid and cursive, with the first letters of the first and last names being capitalized and prominent.

Fr John Guiney SJ

<sup>2</sup> The Jesuit Conference of European Provincials, *Solidarity and the Coronavirus Crisis*, <https://jesc.eu/wp-content/uploads/2020/05/Solidarity-and-the-Coronavirus-Crisis.pdf>.

# Editorial

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In May 2015 Pope Francis published *Laudato Si'*,<sup>1</sup> his Encyclical Letter on Caring for our Common Home. Five years on, his appeal to every person on this planet remains as relevant.

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<sup>1</sup> Pope Francis, *Laudato Si*. [http://www.vatican.va/content/francesco/en/encyclicals/documents/papa-francesco\\_20150524\\_enciclica-laudato-si.html](http://www.vatican.va/content/francesco/en/encyclicals/documents/papa-francesco_20150524_enciclica-laudato-si.html)

“The urgent challenge to protect our common home includes a concern to bring the whole human family together to seek a sustainable and integral development, for we know that things can change. ... I urgently appeal, then, for a new dialogue about how we are shaping the future of our planet. We need a conversation which includes everyone, since the environmental challenge we are undergoing, and its human roots, concern and affect us all.” (LS’ § 13-14)

This issue of *Working Notes* is facilitating this dialogue by bringing together a selection of voices from across different sectors in Ireland. Through an integral ecology lens, we can see that “the human environment and the natural environment deteriorate together” (LS’ § 48). Only through finding and developing solutions that address these issues in an interconnected way can we achieve change.

The Covid-19 pandemic erupted while this edition of our journal was in development. The major upheaval it has caused has cast the inequalities that are embedded in our societies’ functioning in a stark light. Reflecting on *Laudato Si’* during this time of uncertainty can help to illuminate a path to protect our common home with the type of communal action that, until now, has seemed impossible. “The present crisis is an opportunity to start anew, and to make sure that the world that arises after this crisis has passed is sustainable and just.”<sup>2</sup>

The essay “Everything is Interconnected”: *Laudato Si’, an Ethical Framework to Guide Environmental Policy?*, by Gerard Whelan SJ, introduces us to the teachings of a leading climate economist, Ottmar Edenhofer - specifically his policies on carbon pricing. Whelan approaches the topic from a pragmatic perspective encouraging those working within the Catholic Social Teaching tradition to engage more readily with the discipline of economics to facilitate the development of integral ecology policy proposals. For policies to be truly effective they need to not only garner public support but also achieve the goal of lowering emissions; “What is needed is a politics which is far-sighted and capable of a

new, integral and interdisciplinary approach to handling the different aspects of the crisis” (LS’ §109). Whelan shows us how the social implication of policies cannot be disconnected from their perceived effectiveness, and explores the tensions of the ethics and the practicalities of implementing effective climate policies. What is ethical is not always the most palatable to implement, resulting in developing policies that will be acceptable rather than fair. Utopia literally means “no place,” and in Whelan’s conception, utopian thinking has no place in responsible policy formation in this “second-best world.”

This same quandary is articulated from a different direction in Orla Kelleher’s essay, “A Reflection on the Experience of Climate Justice in Ireland” depicting Ireland’s journey in developing its Climate Laws and Just Transition policies in the context of international law. Kelleher tracks the lack of ambition in climate action by the Government which has resulted in Taoiseach Leo Varadkar admitting in 2018 that we would not meet our 2020 target for emissions reductions.<sup>3</sup> While this failure will cost millions of Euro in fines to the EU it also brings into sharp relief Ireland’s shirking of responsibilities towards the most vulnerable people, both at home and globally. Pope Francis recognised that climate change does not impact people equally but that “its worst impact will probably be felt by developing countries over the coming decades..... Our lack of response to these tragedies involving our brothers and sisters points to the loss of that same sense of responsibilities for our fellow men and women.” Kelleher argues that strong climate laws will be a vital component of Ireland’s climate justice movement, echoing Pope Francis’ teachings that “the establishment of a legal framework which can set clear boundaries and ensure the protection of ecosystems has become indispensable.”

This lack of ambition by the Irish Government to generate and implement effective climate legislation is compounded by the active subsidisation of the natural gas

<sup>3</sup>. Juno McEnroe, *Ireland will miss EU emission targets for 2020, admits Taoiseach* (Irish Examiner, Nov 21, 2018) <https://www.irishexaminer.com/breakingnews/ireland/ireland-will-miss-eu-emission-targets-for-2020-admits-taoiseach-886731.html>

<sup>2</sup> <https://laudatosiweek.org/coronavirus/> (accessed on 20/05/2020)



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industry in Ireland as Clodagh Daly's essay, "Meet the New Boss; Same as the Old Boss – The Subsidisation of Natural Gas as a Decarbonisation Pathway in Ireland", highlights. Daly's meticulous study of the different ways in which the Irish Government is diverting public money into the private gas industry articulates how "economic interests easily end up trumping the common good" (LS' § 135). She illustrates the results of the lobbying power of the fossil fuel industry by reflecting, not only on direct producer subsidies, but also the lax environmental regulations and the favourable research opportunities. The risks posed by facilitating the expansion of the fossil fuel industry in Ireland, are borne not only by the Irish taxpayer but by the vulnerable in society who will suffer the most by the effects of climate change. Redistributing the vast quantities of money currently propping up the fossil fuel industry into public infrastructure for the 'common good,' will facilitate Ireland's transition into a decarbonised society.

While progression of certain areas of environmental and climate policy by the Irish Government has been recalcitrant, there are certain areas in which innovative solutions

are being trialed and rolled out. Dr Caroline Sullivan, a leading researcher in farmland biodiversity policy, discusses results-based agri-schemes in her essay "High Nature Value (HNV) Farmland: Getting Results from Farming for Biodiversity." Loss of biodiversity and deterioration of environmental quality is an increasing problem in Ireland, with holistic agricultural policies needed to stem this deterioration. "Caring for ecosystems demands far-sightedness, since no one looking for a quick and easy profit is truly interested in their preservation" (LS' § 36). Operating in some of the most beautiful places in Ireland, these types of schemes have the potential to transform agriculture in Ireland to protect both farmers and biodiversity as well as to reduce emissions. These results-based schemes are carefully designed and highly flexible, incorporating the principles of integral ecology. Careful dialogue with and incorporation of farmers in designing and implementing these programmes has resulted in more active participation than traditional agri-schemes. This follows Pope Francis' caution that "attempts to resolve all problems through uniform regulations or technical interventions can lead to overlooking the



complexities of local problems which demand the active participation of all members of the community. New processes taking shape cannot always fit into frameworks imported from outside; they need to be based in the local culture itself” (LS’ § 144).

For climate and ecosystem-friendly policies to be successfully implemented, we need a collective ecological conversion. In his essay “Designing Within a Culture of Sustainability,” Michael Haslam illustrates, through Fritjof Capra’s philosophies, the role design and architecture can play, not only in designing low-energy buildings, but also in re-establishing our connection with nature. Pope Francis recognises the “interrelationships between living space and human behaviour”, and notes that “those who design buildings, neighbourhoods, public spaces and cities, ought to draw on various disciplines” in the service of “people’s quality of life, their adaption to the environment, encounter and mutual assistance” (LS’ § 150). Capra, whose thinking on systems is so fertile for designers, recognises an ally in the writings of Pope Francis.<sup>4</sup> Designing with an eye on the larger interconnected system is an applied expression of what the Pope terms “integral ecology” (LS’ §10-16). As we see the increasing consequences of climate and biodiversity breakdown, there is an opportunity for designers and artists of all kinds to join in the challenge of designing a culture of sustainability, recognising how our independence is dependent on our place within a grand system of infinite complexity and diversity. Rarely have practical and philosophical questions intersected so explicitly.

Pope Francis notes that “integral ecology includes taking time to recover a serene harmony with creation” (LS’ § 225), warning that “if we approach nature and the environment without this openness to awe and wonder, if we no longer speak the language of fraternity and beauty in our relationship with the world, our attitude will be that of masters, consumers” (LS’ § 11). During this

global health crisis we have experienced a much slower pace of life. The restrictions of movement we have placed on ourselves to slow the spread of Covid-19 could perhaps be a catalyst in our “ecological conversion” (LS’ § 216-227). In the words of the Irish writer, Michael Harding:

“Sometimes the virus feels like a darkness. And grief seeps up out of the ground. But yet the garden where I pass the time in the hills above Lough Allen was never as beautiful, or never as peaceful as it appears this spring time. ... I’m astonished by small things; the budding trees, the goofy gait of a pheasant, or two crows on an oak branch, wobbling in the wind as they sing their lamentations in the evening; like cowed monks, or like old bewildered men.”<sup>5</sup>

<sup>4</sup> Fritjof Capra, *The Ecological Ethics and Systemic Thought of Pope Francis*, (2015) <https://www.fritjofcapra.net/laudato-si-the-ecological-ethics-and-systemic-thought-of-pope-francis/>

<sup>5</sup> Michael Harding, *The world was never this quiet in my entire life*, (Irish Times, 2020) [https://www.irishtimes.com/life-and-style/michael-harding-the-world-was-never-this-quiet-in-my-entire-life-1.4222149?fbclid=IwAR1ksWrd7pEOxxhs4WsZmRhO4NAXwJ\\_qs0ti6ByyEvFpcgZDYmJE5l6aXS0](https://www.irishtimes.com/life-and-style/michael-harding-the-world-was-never-this-quiet-in-my-entire-life-1.4222149?fbclid=IwAR1ksWrd7pEOxxhs4WsZmRhO4NAXwJ_qs0ti6ByyEvFpcgZDYmJE5l6aXS0)



## **TAPESTRY OF LIGHT**

**Silver netting of the dawn,  
Embroidered through the silent night,  
Woven into dewy webs,  
Suspended tapestry of light.**

**Cobwebs greet the morning air,  
Strings of priceless jewels glistening,  
Veiling gateway, bush and tree,  
Lending wonder to our waking.**

**Nature's gift holds me enthralled,  
Treasure of the dawning day,  
Till the fairy breezes call,  
Stealing all my dreams away**

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# “Everything is Interconnected”: *Laudato Si’*, an Ethical Framework to Guide Environmental Policy?

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Gerard Whelan SJ

Fr. Gerard Whelan SJ is a Professor of Fundamental Theology at the Pontifical Gregorian University in Rome. He holds a degree in economics from Trinity College, Dublin, and lived in Zambia and Kenya for fourteen years. He is author of *A Discerning Church: Pope Francis, Lonergan, and a Theological Method for the Future* (NJ: Paulist Press, 2018.)

## INTRODUCTION

In May 2015 Pope Francis published *Laudato Si'*, *Encyclical Letter on Care for Our Common Home*.<sup>1</sup> This work of two-hundred pages addresses many aspects of the complex challenge presented by the ecological crisis. Francis proposes that we adopt a personal and cultural attitude of “integral ecology” recognizing that “everything is interconnected.”<sup>2</sup> The issues whose connection need to be recognized include education, culture, spirituality, and religion. However, they also include natural science, social science, policy-making, and bridge between these and ethics. Given the target audience of *Working Notes*, I focus on this latter set of questions. In doing this, I avert to reflection being conducted in Germany by academics linked to “think tank” research institutes, and place these in dialogue with *Laudato Si'*. I do this hoping to be of service to those who reflect about environmental policy in Ireland.

Pope Francis produced *Laudato Si'* six months before the international gathering of government leaders, “COP 21,” to be held in Paris in December 2015. He did this in the explicit hope of helping a positive outcome emerge from that meeting. Some commentators suggest that the encyclical was at least partially successful in achieving this goal.<sup>3</sup> Five years later, the letter continues to be taken seriously. At an academic level, many agree with Francis that, in the face of the ecological challenge, “the fragmentation of knowledge and the isolation of bits of information can actually become a form of ignorance, unless they are integrated into a broader vision of reality.”<sup>4</sup> It would seem that the following sentiments of Pope Francis remain at least as relevant five years after *Laudato Si'* as when they were published:

“Ecology studies the relationship between living organisms and the environment in which they develop. This necessarily entails reflection and debate about the conditions required for the life and survival of society, and the honesty needed to question certain models of development, production and consumption. It cannot be emphasized enough how everything is interconnected.”<sup>5</sup>

Those interested in employing the encyclical as a point of reference will notice one striking fact: the Pope makes few concrete proposals. Rather, he stresses the importance of improved processes of dialogue that he hopes will produce proposals, actions, and results. These processes include, “dialogue on the environment in the international community,” “dialogue for new national and local policies,” dialogue and transparency in decision-making,” “politics and economy in dialogue for human fulfilment,” and “religions in dialogue with science.”<sup>6</sup> My focus is primarily on the areas, “dialogue for new national and local policies,” and “politics and economy in dialogue for human fulfilment.”

## EDENHOFER'S POLICY CONTRIBUTION

In 1992, the Potsdam Institute for Climate Impact Research (PIK) was founded in a town near Berlin. It is a think-tank dedicated to the scientific study of questions related to globalization, climate impact, and sustainable development.<sup>7</sup> It is funded by the German government, employs about 400 people, and enjoys a high international reputation. In 2018 two joint directors were appointed. One of these is Ottmar Edenhofer, who had previously been Deputy Director.<sup>8</sup>

Edenhofer is an economist with a high international profile.<sup>9</sup> He was the main author of the Fourth Assessment Report on Climate Change published by the Intergovernmental Panel on Climate Change (IPCC) in 2007,

<sup>1</sup> Pope Francis, *Laudato Si': Encyclical Letter on Care for Our Common Home*, (May 2015) [http://www.vatican.va/content/francesco/en/encyclicals/documents/papa-francesco\\_20150524\\_enciclica-laudato-si.html](http://www.vatican.va/content/francesco/en/encyclicals/documents/papa-francesco_20150524_enciclica-laudato-si.html)[http://www.vatican.va/content/francesco/en/encyclicals/documents/papa-francesco\\_20150524\\_enciclica-laudato-si.html](http://www.vatican.va/content/francesco/en/encyclicals/documents/papa-francesco_20150524_enciclica-laudato-si.html) (accessed May 2020)

<sup>2</sup> The following reflections are influenced by, *Everything is Interconnected: Towards a Globalization with a Human Face and an Integral Ecology*, eds. Joseph Ogbonnaya and Lucas Briola (WN: Marquette University Press, 2019.)

<sup>3</sup> A representative of the Holy See to COP 21 expresses his opinion that *Laudato Si'* contributed positively to the success of COP 21, see Paolo Conversi, “COP 21 e *Laudato Si'*” in *Laudato Si'*, il testo ci interroga, chiave di lettura, testimonianze, e prospettive (Roma: G&B Press, 2014.) See also, Joe Ware, “COP21: *Laudato Si'* a major talking point at climate change talks in Paris,” *The Tablet*, 6 December 2015.

<sup>4</sup> Pope Francis, *Laudato Si'*, paragraph 138 (subsequent citations are from the numbered paragraphs of the encyclical, not from page numbers.)

<sup>5</sup> Pope Francis, *Laudato Si'*, 138 (emphasis added.)

<sup>6</sup> These are the sub-headings of Chapter 5, “Lines of approach and Action,” *Laudato Si'*, 163–201.

<sup>7</sup> <https://www.pik-potsdam.de/pik-frontpage> (accessed, May 2020.)

<sup>8</sup> The other Co-Director of the PIK is Johan Rockström, from Sweden.

<sup>9</sup> Ottmar Edenhofer is Director and Chief Economist of the Potsdam Institute for Climate Impact Research as well as Director of the Mercator Research Institute on Global Commons and Climate Change and Professor of the Economics of Climate Change at the Technische Universität Berlin.

the year when the IPCC was awarded the Nobel Peace Prize. Much of his work is at a technical level, studying questions on the boundary between natural science and economics. However, his interests expand beyond economics. One example is that he is the author of a book whose German title translates as *Climate Politics, Goals, Conflicts, Solutions*.<sup>10</sup>

Placing the thought of Edenhofer in dialogue with *Laudato Si'* is illuminating. He agrees with *Laudato Si'* that the ecological crisis has many dimensions, including climate change, the reduction of biodiversity, and the reduction of access for humans to clean water. He suggests that the problem of climate change is the most urgent of the ecological issues and acknowledges that this needs to be addressed by a variety of means. However, he brings to the centre of attention the question of “carbon pricing,” an issue that is not treated in *Laudato Si'*. He expresses a confidence in the ability of governments to intervene in the market mechanisms of modern economies in such a way as to reduce carbon emissions and mitigate climate change. He claims that if carbon prices are set high enough, they can go a long way to achieving these goals<sup>11</sup>

While he acknowledges that debates about the causes of climate change can be complex, he insists that, at their heart, there is a simple insight: once emitted, carbon remains in the atmosphere for a long time. He traces how emissions of greenhouse gases by industrialized economies are the principle means by which humanity is feeding carbon into the atmosphere. He then speaks of the existence of a “carbon budget.” He explains that when carbon in the atmosphere reaches a certain level its budget will have been exhausted. At this point, a saturation will occur which will cause accelerated climate change with

catastrophic consequences for human society. He explains that humanity has already gone a long way toward consuming its budget.<sup>12</sup>

However, it is not too late for humanity to radically reduce its carbon emissions and thus mitigate the worst effects of climate change. He warns that, given how much of our carbon budget we have already consumed, world economies will need to reduce carbon emissions to zero by the year 2050, to allow for an increase of world temperature of between 1.5 and 2.0 degrees centigrade. Such climate change will still have major negative consequences, but he describes how world economies may be able to adapt to such changes. Consequently, the terms “mitigation” and “adaptation” become important parts of his vocabulary.<sup>13</sup>

Regarding mitigation, Edenhofer focuses on issues of carbon pricing while also touching on its effective implementation within wider climate policy frameworks.<sup>14</sup> It involves both carbon taxes and mechanisms for carbon trading. He argues that government intervention in market mechanisms in modern economies can be effective. He attributes the damage that has been done to the environment thus far in terms of “externalities.”

This begins with the principle that states that producers of goods and services should pay for the real costs of the factors of production that they employ. Here he describes a commonly accepted principle: that costs of production should include rents paid on the ownership of natural resources. This rent should normally be paid in the form of a tax to the government that represents the interests of the entire population of a country in which the natural resource is found. Next, he points out that it is often the case that there are factors of production for which producers do not pay.

<sup>10</sup> Ottmar Edenhofer and Michael Jakob, *Klimapolitik: Ziele, Konflikte, Lösungen* (Munich: C.H. Beck, 2017). See also a YouTube lecture in English by Edenhofer: <https://www.youtube.com/watch?v=XrQHkyqDWxw&t=1432s> (accessed May 2020).

<sup>11</sup> Edenhofer acknowledges that, the success of carbon pricing regime will depend on other necessary factors. One of these will be the availability of supplies of alternative energy at attractive prices so that consumers can switch from fossil-fuel sources. On this issue, he invokes the principle of economic theory that measures the “elasticity,” or speed of response, of both producers and consumers to the market signal of price change. See, (see, “A meta-analysis on the price elasticity of energy demand,” Xavier Labandeira, José M. Labeaga, and Xiral López-Otero, *Energy Policy*, Volume 102, March 2017, 549-568.)

<sup>12</sup> For further analysis of the carbon budget, see the web-page of the Mercator Research Institute, of which Edenhofer is director: <https://www.mcc-berlin.net/en/research/co2-budget.html> (accessed May 2020).

<sup>13</sup> The argument for carbon pricing is found in IPCC, “First Assessment Report,” <https://www.ipcc.ch/report/ar1/wg3/> (accessed May 2020), and all subsequent Assessment Reports.

<sup>14</sup> Ottmar Edenhofer, Christian Flachsland, Matthias Kalkuhl, Brigitte Knopf and Michael Pahle, Options for a Carbon Pricing Reform (gGmbH, 2019) [https://www.mcc-berlin.net/fileadmin/data/B2.3\\_Publications/Working%20Paper/2019\\_MCC\\_Options\\_for\\_a\\_Carbon\\_Pricing\\_Reform\\_ExecSum\\_final.pdf](https://www.mcc-berlin.net/fileadmin/data/B2.3_Publications/Working%20Paper/2019_MCC_Options_for_a_Carbon_Pricing_Reform_ExecSum_final.pdf)



These are “externalities” which never arrive on the balance sheets of the producer. He notes that economists have long argued that externalities should be “internalised,” especially through taxation. If not, market imperfections exist that give the lie to those who defend the capitalist system as based on a free market system.

Edenhofer next points out that externalities that have been particularly neglected are those that appertain to the “global commons” that is the Earth’s atmosphere. He acknowledges that this is an externality that is trans-national and so particularly difficult to claim rent upon. However, he argues that, given the reality of the carbon budget to which scientists are calling our attention today, the need to internalise these externalities has become urgent. He suggests that, ultimately, this theoretical discussion culminates in a principle that appeals to common sense: “the polluter pays.”<sup>15</sup>

Edenhofer next explains how a notion of carbon pricing involves both mechanisms of taxation and “carbon trading.” This latter principle represents a transitory step in a process toward a global economic system with zero net carbon emissions. It involves distributing rights to pollute the atmosphere among different countries and permitting richer, more industrialised, countries, pay for the right to pollute that is owned by poorer countries. He insists that there is empirical evidence that policies of carbon pricing can be effective. He outlines what is called a “Pigou effect” whereby policies of government-caused price increases shift practices of both production and consumption within economies. As a secondary issue, he speaks of how the revenues from carbon taxes will remain at high levels for several years until they eventually disappear. He studies how such tax revenues can be “recycled” to compensate both producers and consumers who are most negatively affected by the transition to a zero-carbon-emissions economy.<sup>16</sup>

Finally, Edenhofer’s technical reflections on carbon pricing extend to a study of efforts to reach intergovernmental agreements on carbon emissions, negotiations in which he has been personally involved. Here again he employs principles from welfare economics which study how self-interest can operate in negotiation processes. Problems to be addressed here include that of the temptation of “freeloading,” where one country seeks to let other countries make the painful decisions about carbon emission reduction, hoping to reap the common climatic gains in the longer run. Another involves questions of justice—which policies of carbon trading seek to address—where poor countries with little history of emissions are asked to make the same sacrifices as those that consumed most of the carbon budget of the world.

However, even when Edenhofer makes efforts to respect the realities of the political process, he still finds himself disappointed. For example, in October 2019, he addressed a committee of the German government, the “Climate Cabinet,” at which the German Chancellor, Angela Merkel, was present.<sup>17</sup> He noted that Germany was not living up to the promises it had made in the annual intergovernmental, “Conference of Parties” (COP), meetings, associated with the IPCC targets on carbon emissions. He suggested that a reason for this was that the government had set the price of carbon too low. He proposed that carbon price be set at €50 per tonne of carbon emitted—a price that would guide subsequent taxation levels. The Climate Cabinet thanked him for his contribution and subsequently decided to set the price of carbon at €10.

Such an experience was not new to Edenhofer. He had long been aware that challenges exist in winning political acceptance for policies that he considers to be scientifically rational. He was also aware that academic reflection was needed about how proponents of environment policy should engage with the imperfect reality of politics.

<sup>15</sup> Edenhofer, “Governing the Commons,” 44–46.

<sup>16</sup> Edenhofer, “Governing the Commons,” 46–50.

<sup>17</sup> See, <https://www.mcc-berlin.net/en/news/information/information-detail/article/mcc-and-pik-deliver-detailed-assessment-of-german-climate-package.html> (accessed May 2020).

## POLICY MAKING IN “A SECOND BEST WORLD”

In *Laudato Si'*, Pope Francis touches upon the question of how to engage with the imperfect world of politics. He expresses admiration for the IPCC and the annual meetings of COP, but states, “it is remarkable how weak international political responses have been,” adding that this has amounted to a “failure of global summits on the environment.”<sup>18</sup> He avoids laying exclusive blame on politicians who fail to think of the long term interests of their peoples, and recognizes that also to blame is the “powerful opposition” of economic interests as well as a “more general lack of interest” in the voting population.<sup>19</sup> He states, “political realism may call for transitional measures.”<sup>20</sup>

Edenhofer seeks to explore what such political realism might involve. He was instrumental in setting up a think-tank in 2012 that would complement the work of the PIK: The Mercator Research Institute on Global Commons and Climate Change (MCC)<sup>21</sup> The aim of this institute, based in Berlin, is to provide concrete “scientific assessments” of the carbon emissions of institutions and to offer proposals for how they might mitigate these. Another aim is to study issues on the interface between science, policy making, and ethics.<sup>22</sup> Edenhofer also produces publications on similar lines to this working group. In collaboration with other experts he has published in areas that continue to employ welfare economics but extend this to the realms of behavioural economics and political science.<sup>23</sup>

An application of welfare economics employed by Edenhofer in such studies is that which studies the dynamics of economies that exist

in a “second best world” characterized by market imperfections. Here, for example, Edenhofer recognizes that the effect of recycling income from carbon taxes may be affected by the fact that the tax system in some countries are already unbalanced. Reflections of this kind tend to lead to conclusions proposing “lump sum transfers” of funds to targeted audiences rather than across-the-board tax reductions. An example of this is how the French government, under President Macron, transferred considerable funds in the form of wage subsidies to those living on the minimum wage, thus quieting the “Gilet Jaunes” protests of 2018-2019, which were provoked by a petrol tax. By leaving the petrol tax in place, President Macron hoped to exercise a Pigou effect of reducing petrol consumption. In the end, he was obliged to transfer more funds to the poorer sectors of society than would ever be collected by this tax. However, from the point of view of welfare economics, this outcome can nevertheless be considered positive.<sup>24</sup>

Another aspect of welfare economics has already been referred to. It involves looking at carbon taxes as rent collection on property rights awarded to economic producers and consumers for use of the global commons of the Earth’s atmosphere.<sup>25</sup> This notion of taxing rent for access (or ownership) of natural resources has raised anew the concept of applying such taxes to other externalised “commons.” Here arguments are recalled that were first proposed by a conservative economist in the nineteenth century, Henry George.<sup>26</sup> This New Yorker reflecting on taxation patterns in his own city, noted that taxing land, could provide necessary income for governments while causing a minimum of distortion to the operating of free markets. Ecological economists revisit this argument noting that land taxes could also have positive effects on carbon emissions. This is because they can help reduce urban sprawl. They acknowledge that this would require a reduction in rates of home ownership and a

<sup>18</sup> *Laudato Si'*, 54.

<sup>19</sup> *Laudato Si'*, 14.

<sup>20</sup> *Laudato Si'*, 180.

<sup>21</sup> The Mercator Institute on Global Commons and Climate Change, <https://www.mcc-berlin.net/en.html>

<sup>22</sup> See Working Groups of the MCC, including “Scientific Assessments, Ethics, and Public Policy”: <https://www.mcc-berlin.net/en/research/working-groups/scientific-assessments-ethics-and-public-policy.html>. See also working groups on “Economic Growth and Human Development,” and “Sustainable Resource Management and Global Change,” and “Governance.”

<sup>23</sup> David Klenert, Ottmar Edenhofer et al. “Making Carbon Pricing Work for Citizens,” in *Nature Climate Change* Vol. 8, August 2018, 669-677. See also, Michael Jakop, Ottmar Edenhofer et al “Governing the Commons to Promote Global Justice: Climate Change Mitigation and Rent Taxation,” in *Climate Justice: Integrating Economics and Philosophy*, Ravi Kanvur and Henry Shue (eds.) (Oxford Scholarship Online, 2018), ISBN-13: 9780198813248, 43-62.

<sup>24</sup> See, “Macron Buys Off His Critics: A Chastened President Offers Concessions Worth Euro 10 billion,” *The Economist*, 11<sup>th</sup> December 2018

<sup>25</sup> Edenhofer, “Governing the Commons,” 44-46.

<sup>26</sup> Henry George, *Progress and Poverty* (NY: Robert Schalkenbach Foundation, 1879); see also Mattias Kalkuhl and Ottmar Edenhofer, “Ramsey Meets Thünen: The Impact of Land Taxes on Economic Development and Land Conversation,” *International Tax and Public Finance*, 24(2): 350-80.

cultural readiness to live in apartment buildings (something acceptable in countries such as Austria, Germany, and Denmark, but less so elsewhere.)<sup>27</sup>

Next, the publications of which Edenhofer is part employ the insights of political science and behavioural economics. A first insight is an obvious one. The level of acceptance of innovative proposals on environmental policy will be a product of general levels of education about the ecological problem. A second one is that acceptance of ecological policies will have a lot to do with how much citizens trust politicians in general. They explain: “public distrust of politicians and perceived corruption have been robustly associated with weaker climate policies”<sup>28</sup> and note that evidence points to a significant drop in political trust in many countries in recent years. Causes of this seem to include the perceived mishandling of the financial crisis of 2008, as well as perceived inequitable taxation systems and unequal distribution of wealth. Edenhofer et al, focus on questions of “distributional fairness,” and “revenue salience” and add: “We argue that traditional economic lessons on efficiency and equity are subsidiary to the primary challenge of garnering greater political acceptability.”<sup>29</sup> Consequently, those who seek to promote responsible ecological policies propose that governments should also seek to address those issues that sow the seeds of such generalized distrust.

Another insight deriving from political-scientific surveys is that voter attitudes to the ecological policies tends to be closely related to partisan political opinion. Here, a distinction is drawn between those who hold political philosophies that are broadly “egalitarian-communitarian,” and those that are “hierarchical-individualistic.” Evidence suggests that the former set of views result in a greater tolerance for ecological policies than the latter. Policy proposals based on these insights include presenting ecological policies in a vocabulary that attracts those of a hierarchical-individualistic orientation.

Those who seek to promote responsible ecological policies propose that governments should also seek to address those issues that sow the seeds of such generalized distrust.

This can include measures as simple as calling taxes “fees.”<sup>30</sup>

At this stage, some proposals seem to take on a Machiavellian air, even if articulated in the neutral-sounding terminology of employing “instruments that target behavioural biases.”<sup>31</sup> Studies in behavioural economics demonstrate that voters demonstrate an “ignorance of the Pigouvian effect”<sup>32</sup> and so have little interest in how carbon taxes will redirect economic production and consumption. By contrast, it seems that such voters can be highly interested in how the recycled tax income from carbon taxes is spent. Some proposals involve accommodating this unbalanced perception by making highly-publicised gestures of lump sum financial transfers to politically influential minorities. Such minorities might include those who hold hierarchical-individualist political opinions - e.g. soya bean farmers in the American Mid-West - and would otherwise tend to oppose ecological policies. Those who propose such policies acknowledge that money spent in this way would be directed away from recipients recommended by classical economists, including producers most hard-hit by carbon taxes. They argue that these hard-hit groups are likely to oppose carbon taxes anyway, and so the pragmatic option is to cultivate a political constituency that will counteract the pressure they can bring to bear.<sup>33</sup>

A related point is that redistributing carbon tax money only to the poor is unlikely to build a voting majority in favour of maintaining a policy in the long-term. Here proposals are made that initiatives should be undertaken that favour both the poor and sections of the

<sup>27</sup> Edenhofer, “Governing the Commons,” 50-55. See also, “Land Tax, Why Henry George Had a Point,” *The Economist*, 2 April 2015.

<sup>28</sup> Edenhofer, “Making Carbon Pricing Work for Citizens,” 672.

<sup>29</sup> Edenhofer, “Making Carbon Prices Work for Citizens,” 669.

<sup>30</sup> Edenhofer, “Making Carbon Pricing Work for Citizens,” 671.

<sup>31</sup> Edenhofer, “Making Carbon Pricing Work for Citizens,” 670.

<sup>32</sup> Edenhofer, “Making Carbon Pricing Work for Citizens,” 670.

<sup>33</sup> Edenhofer, “Making Carbon Pricing Work for Citizens,” 671.



middle class.<sup>34</sup> Advice is offered about how to avoid policy reversals when governments change. On this issue, proposals are made to channel funds to influential minorities from different political philosophies.<sup>35</sup>

Finally, these studies acknowledge that implementing effective carbon prices in ‘A Second Best World’ is not just about getting the price and redistribution correct but requires proper alignment of the entire climate policy framework towards the main goal of reducing emissions. Carbon pricing is a key component of this framework but requires supplementation by complementary climate policy instruments and measures including building renovations and updated transport and pollution policies.<sup>36</sup> Recognition that our dependence on fossil fuel cannot be reduced by a substantial amount unless there are viable alternatives makes complementary climate policies vital.

## ETHICS AND SUSTAINABLE DEVELOPMENT

If comments in the previous section may seem to imply a readiness to propose policies that manipulate ignorant voters, much of the work of Edenhofer, the PIK, and the MCC is idealistic in tone. They express hope in the gradual emergence of a voting population who are educated in ecological awareness and they recognize the importance of schooling of the young in these matters (the PIK runs a Summer School for students.<sup>37</sup>) They also pursue an academic dimension of such an approach.

Before describing how Edenhofer and others pursue this issue, one notes that *Laudato Si'* has much to say on this matter, as it is related to the principle that “everything is interconnected.” To begin with, Pope Francis criticises how powerful economic interests gain control of political decision-making in a way that does not serve the common good. He insists, “politics must not be subject to the economy.”<sup>38</sup> He

adds that opposition to the co-opting of politics by sectional economic interests must first be mobilized at the level of culture. Here, he raises the question of what kind of paradigm influences a culture. He laments that in fact, “humanity has taken up technology and its development according to an undifferentiated and one-dimensional paradigm.”<sup>39</sup> He describes this as “technocratic paradigm” which produces a “distorted anthropocentrism”<sup>40</sup> which “tends to dominate economic and political life.”<sup>41</sup> He states that such a paradigm does not emerge by accident, but rather is promoted by influential and self-interested forces, for whom, “power is never considered in terms of the responsibility of choice which is inherent in freedom,” but rather, “only norms are taken from alleged necessity, from either utility or security.”<sup>42</sup> By contrast, he proposes a culture that would accept principles of integral ecology and comments on intellectual principles that such a culture would need to uphold:

“These problems cannot be dealt with from a single perspective or from a single set of interests. A science which would offer solutions to the great issues would necessarily have to take into account the data generated by other fields of knowledge, including philosophy and social ethics; but this is a difficult habit to acquire today.”<sup>43</sup>

Edenhofer demonstrates an openness to such other fields of knowledge by contributing to books with titles such as *Climate Justice: Integrating Economics and Philosophy*.<sup>44</sup> Similarly, The Mercator Institute (MCC), engages with questions at the interface of policy-making and philosophy in a yet more systematic way. In September 2019 the MCC organized a three day conference, “Divergent Values in Sustainability Assessments, Love Them Leave Them or Change Them?”<sup>45</sup> One of the speakers, Dr. Mark Saner from the University of Ottawa, delivered a talk entitled “Science-Policy Interfaces and

<sup>34</sup> “The universality of Social Security and Medicare in the United States, for example, has largely safeguarded these programmes from multiple rollback attempts” (Edenhofer, “Making Carbon Pricing Work for Citizens,” 673.

<sup>35</sup> Edenhofer, “Making Carbon Pricing Work for Citizens,” 671.

<sup>36</sup> Edenhofer et al. “Options for a Carbon Pricing Reform” 7, 8

<sup>37</sup> <https://potsdam-summer-school.org/> (accessed, May 2020.)

<sup>38</sup> *Laudato Si'*, 189.

<sup>39</sup> *Laudato Si'*, 106.

<sup>40</sup> *Laudato Si'*, 69.

<sup>41</sup> *Laudato Si'*, 109.

<sup>42</sup> *Laudato Si'*, 105. Here Pope Francis is quoting the philosopher Romano Guardini.

<sup>43</sup> *Laudato Si'*, 110.

<sup>44</sup> Ravi Kanbur, Henry Shue (eds.) *Climate Justice: Integrating Economics and Philosophy* (Oxford: Oxford University Press, 2018.)

<sup>45</sup> <https://www.mcc-berlin.net/news/events/zuruecklegend/ethics-and-assessments-conference/conference-details.html> (consulted May 2020.)



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Divergent Values.”<sup>46</sup> This talk noted that a certain number of ethical terms have widespread acceptance in international political debates. These include “legitimacy” and “good governance.” He then explains that it can be more difficult to find agreed-upon ethical terminology on environmental issues. He suggests that a partial explanation for this is that novel technologies emerge regularly introducing a “constellation” of economic possibilities with consequences for the environment that are sometimes unclear. He explains that, in terms of ethical debate, it can be difficult “to successfully navigate the risks and opportunities provided by this constellation.”<sup>47</sup>

Dr. Henry Shue, of Merton College, Oxford University, delivered a talk, “All Things Considered: Towards Policy-Oriented Climate Ethics.” He notes how difficult it is to find individuals who are trained in one or other profession to consider ethical principles that are not directly relevant to that profession:

“Specialists tend to stew in their own obsessions. Many ethicists cannot imagine our not wanting to be ideally just. Many economists cannot imagine our not wanting the lowest cost pathway. Lawyers want us to

avoid all moral hazards; and so on. But good policy-makers seem to need somehow to grant all the considerations worthy of attention their respective appropriate weights and make an all-things-considered judgement. What could this mean? How could a specialist in ethics who lacks all-encompassing wisdom embracing all disciplines nevertheless provide guidance that is less parochial, less utopian, less monolithic, more concrete, and more relevant, but still communicates the moral seriousness of what is at stake?”<sup>48</sup>

Edenhofer also publishes reflections on such issues, and echoes the concern expressed above about the difficulty of finding consensus on ethical presuppositions in policy debates on the environment. He notes that one system of ethical discourse can be relatively acceptable in intergovernmental debates about environment policy: the philosophy of distributive justice expressed by the liberal philosopher from the USA, John Rawls in *A Theory of Justice*.<sup>49</sup> In this, Rawls describes a hypothetical scenario where a group of people would have to agree on what would be the ideal economic and political arrangement in a new society that was about to be constructed. A key condition of this reflection is that there exists “a veil of ignorance” so that no one can

<sup>46</sup> I draw on a list of abstracts of talks delivered at the conference provided privately by the organizer, Dr. Martin Korarsch. Dr. Korarsch encourages enquires into the work of the MCC, [kowarsch@mcc-berlin.net](mailto:kowarsch@mcc-berlin.net).

<sup>47</sup> MCC conference abstracts

<sup>48</sup> Quotation taken from MCC conference abstracts. See also, Henry Shue, *Climate Justice: Vulnerability and Protection* (Oxford: Oxford University Press, 2014.)

<sup>49</sup> John Rawls, *A Theory of Justice* (Cambridge, MA: Harvard University Press, 1971.)

know in advance what level of the society being designed he or she will be born into—rich or poor.

However, Edenhofer identifies how sharp divisions quickly emerge in the manner in which representatives of negotiating governments are prepared to employ Rawls. He identifies two camps. In the first, “cosmopolitans argue that robust principles of distributive justice ought to apply globally”; in the second, “minimalists argue that stronger principles apply within states.”<sup>50</sup> And so the dilemma remains.

## A ROLE FOR RELIGION?

Might religion offer help to resolve the difficulty that nations find in arriving at consensus on ethical principles that underlie environmental policy? Here Edenhofer and the think tanks with which he is associated remain silent. However, Pope Francis has a good deal to say.

In a chapter entitled, “The Gospel of Creation”<sup>51</sup> Pope Francis recalls that a large majority of the inhabitants of the Earth considers itself to be religious. He then suggests that religion can be an important source of cultural resistance to the technocratic paradigm and to the consequent distorted anthropocentrism that is so pervasive in culture today. He points out that most of those involved in the ecology movement acknowledge that “respect must also be shown for the various cultural riches of different peoples, their art and poetry, their interior life and spirituality.”<sup>52</sup> He adds, “no branch of the sciences and no form of wisdom can be left out, and that includes religion and the language particular to it.”<sup>53</sup> He points to the widespread acceptability of Saint Francis of Assisi who, “shows us just how inseparable the bond is between concern for nature, justice for the poor, commitment to society, and interior peace.”<sup>54</sup>

Pope Francis next explores themes of which Francis of Assisi is a model. He recalls that the title of his encyclical comes from a hymn of St. Francis that begins with the phrase, “praised be you O Lord” (“*Laudato Si’, mi Signore.*”) He recalls that for many people a respect for nature is related to a sense of the sacredness of nature. He also notes that many people associate key moments in their spiritual lives with the places where they underwent such an experience, encouraging in them a desire to return to such places of epiphany. He points out that, for many, “rather than a problem to be solved, the world is a joyful mystery to be contemplated with gladness and praise.”<sup>55</sup> Turning to explicitly Christian themes, he stresses that a belief in God made human has implications for a religious appreciation of nature.<sup>56</sup> He adds that the symbol of the God-man crucified by sinful humanity offers a perspective on the destructive behaviour committed by human beings today both against the poor and the natural environment. He suggests that a sense of compassion prompted by contemplation of Christ on the Cross can prompt the insight: “A sense of deep communion with the rest of nature cannot be real if our hearts lack tenderness, compassion and concern for our fellow human beings.”<sup>57</sup> He adds that a belief in the Second Coming of Christ can prompt a sense of responsibility for the care of our common home because “creation is projected towards divinization, towards the holy wedding feast, towards unification with the Creator himself.”<sup>58</sup>

Pope Francis confines such reflection primarily to one explicitly theological chapter in his book. Otherwise, he acknowledges that “in the areas of politics and philosophy there are those who firmly reject the idea of a Creator” or, at least, those who “view religions simply as a subculture to be tolerated.”<sup>59</sup> He points out that the major part of his encyclical employs the neutral language of ethics and values with which he hopes that even those who hold such opinions about religion can agree. He stresses that his intention in *Laudato Si’* is to promote coalitions between people who can support integral ecology from a variety of starting points.

<sup>50</sup> Edenhofer, “Governing the Commons,” 48.

<sup>51</sup> *Laudato Si’*, 62-100.

<sup>52</sup> *Laudato Si’*, 63.

<sup>53</sup> *Laudato Si’*, 63.

<sup>54</sup> *Laudato Si’*, 10.

<sup>55</sup> *Laudato Si’*, 13.

<sup>56</sup> *Laudato Si’*, 96-100.

<sup>57</sup> *Laudato Si’*, 91.

<sup>58</sup> *Laudato Si’*, 236 (quoting Pope Benedict XVI.).

<sup>59</sup> *Laudato Si’*, 62.

## CONCLUSION: EVERYTHING IS INTERCONNECTED

This paper seeks to acknowledge the five-year anniversary of the publication of *Laudato Si'* by reflecting on policy proposals by Edenhofer alongside its teachings. It explores how the issues raised in ecology are deeply interdisciplinary, requiring a method of proceeding that recognizes that “everything is interconnected.” I conclude with comments of two kinds: how the thought of Edenhofer and *Laudato Si'* serve as a corrective to each other; and how these two sources might be relevant to policy making in Ireland.

A first point is that I find the argument of Edenhofer in favour of carbon pricing to be persuasive. At the very least, it suggests that those who find the argument of *Laudato Si'* persuasive should consider that energetically supporting the notion of an appropriate carbon price is an important way of implementing the general principles stated in the encyclical. In fact, one can ask questions of why *Laudato Si'* did not commit itself to such proposals. The Noble Peace Prize winner for climate economics, William D. Nordhaus criticises *Laudato Si'* for avoiding this. In an article entitled “The Pope and the Market,” he suggests that the failure of the encyclical to do this implies that Pope Francis has not freed himself from the tendency of those practicing Catholic social teaching, to fail to understand how markets function. Many have defended *Laudato Si'* against this accusation, and I believe that Nordhaus is mistaken to interpret Pope Francis as opposed to carbon pricing. However, I also believe that *Laudato Si'* could have been strengthened with some more specific reference to the technical matters that are treated by Edenhofer. One can note that Edenhofer, without referring specifically to *Laudato Si'* also speaks often of the problem of those who express an ethical concern about the ecological crisis but fail to think-through the issue enough and commit themselves to the crucial issue of carbon pricing.<sup>60</sup>

A second point concerns the ethical deliberations of both Edenhofer and the MCC. These seem to draw exclusively on thinkers who stand, broadly, within a liberal tradition of ethical reflection.<sup>61</sup> It should be noted that some ecological ethicists consider the liberal rationalism of Enlightenment thought to have contributed to the kind of culture that has contributed to our ecological crisis. By contrast, such thinkers propose communitarian arguments that include an appeal to some version of natural law and an ethic of place.<sup>62</sup> It would seem reasonable to explore such ethical arguments as these are likely to appeal to voters who have “populist” tendencies and tend to oppose environmental policies. It should also be noted that *Laudato Si'* lends itself at least as much as communitarian ethics as to ethical reasoning that stands within the liberal tradition.<sup>63</sup>

A third point addresses the relevance of the above reflections to policy-making in Ireland. Here one point is clear. The Irish performance regarding carbon pricing has, so far, been inadequate, even if, as a matter of interest, it has been better than that of Germany. The carbon price currently set by the Irish government is €26, with plans to raise this price to €80 by 2030<sup>64</sup>, the price proposed by “The Climate Change Advisory Council,”<sup>65</sup> which, as it happens, is advised by Edenhofer. In developing and implementing tax-based climate policies, consideration must also be given to the possible appropriateness of a land value tax for Ireland. The analysis of Edenhofer on this issue suggests that it warrants further exploration—even though adopting it would require major changes in Irish cultural attitudes to house ownership.<sup>66</sup> It is interesting

60. “In reading the encyclical, one senses the struggle of an ancient institution, immersed in its doctrine and history, slowly and incompletely adapting to modern science. Most commentaries have focused on the pope’s endorsement of climate science, but my focus here is primarily on the social sciences, particularly economics” William D. Nordhaus, “The Pope and Markets,” *New York Review of Books*, October 8 2015.

61. The theory of distributive justice of John Rawls stands within the liberal philosophical tradition. Similarly, Henry Shue is a “rights based thinker.” See his seminal work, *Basic Rights: Subsistence, Affluence, and US Foreign Policy* (NJ: Princeton University Press, 1980.)

62. See, Michael S. Northcott, *The Environment and Christian Ethics* (Cambridge: Cambridge University Press, 1996); Place, *Ecology and the Sacred: The Moral Geography of Sustainable Communities* (London, Bloomsbury Publishing, 2015, Kindle Edition).

63. See, Gerard Whelan SJ, “Communitarian Solutions to the Ecological Crisis: Michael Northcott, Bernard Lonergan, and Robert Doran in Dialogue” in Ogonnaya and Briola, *Everything is Interconnected*, 97-116.

64. Government of Ireland, Climate Action Plan, 42(2019) <https://www.dcae.gov.ie/documents/Climate%20Action%20Plan%202019.pdf>

65. The Irish Climate Change Advisory Council: <http://www.climatecouncil.ie/media/Climate%20Change%20Advisory%20Council%20Annual%20Review%202019.pdf>

66. An argument for introducing a land value tax in Ireland is made by Dr. Frank Crowley, Cork University Business School, in “How a land value tax could solve many economic headaches”: <https://www.rte.ie/brainstorm/2017/1017/912913-how-a-land-value-tax-could-solve-many-economic-headaches/>

to note that news reports about negotiations on forming a coalition government suggest that the Green Party is arguing in favour of an increase of carbon taxes. Also notable are reports that other parties are offering the a counter-argument that in the time of economic recovery from the effects of the Coronavirus, it will be difficult to accept the economic sacrifices involved from such tax increases. Perhaps here one recalls the statement of Pope Francis, “political realism may call for transitional measures.”<sup>67</sup>

A fourth point regards the question of the ethical orientation of Irish culture, especially on issues of ethics and economics. Reflection on such issues is not lacking among Irish academics and in the media. Also, and for example, the McGill Summer School is an impressive example of a policy-focused exercise in cultural reflection.<sup>68</sup> On the other hand, some indications are less positive. Here I recall that Ireland is a small open economy that is highly dependent on the globalised economic system. Does this make it difficult for Irish culture to resist a related, cultural, influence of the “technocratic paradigm”? Other members of the European Union criticise Irish policies on corporate taxation as an example of an unethical alliance with big business. This criticism might be articulated as placing Ireland within what Edenhofer describes as a minimalist approach to the theory of distributive justice. Will its European partners regard Ireland as better behaved on questions of environment policy? However, one can recall that the temptation for small open economies to “freeload” on its larger neighbours is strong. Might the temptation to freeloading in terms of carbon emissions increase as Ireland plans to return to economic growth after the crisis of the Coronavirus?

Finally, I raise the question of the possible contribution that religion can make to the promoting of a culture of integral ecology in Ireland. Like most Western societies, there is a decline in the influence of religion on both sides of the border. What is more, in the Republic, the influence of the Catholic church has declined in recent years with a rapidity not seen elsewhere. This raises questions of the possible remaining influence of the Catholic church on Irish culture. Such issues were addressed by the Taoiseach, Mr. Leo Varadkar, during a speech of welcome to Pope Francis during his visit to Ireland in 2018. Mr. Varadkar was generous in acknowledging past contributions of the Catholic church to Ireland, as well as mentioning current contributions in the care of the homeless. He then quoted an Irish bishop who acknowledged that the current decline of influence of the Catholic church is due, in part, to its own “dark history...a history of sorrow and shame.” Clearly, this dark history has reduced the credibility of the Catholic church, in the eyes of many in Ireland, to comment on any ethical issues. However, the Taoiseach next asserted:

“The time has now come for us to build a new relationship between church and state in Ireland - a new covenant for the 21st Century ... Building on our intertwined history, and learning from our shared mistakes, it can be one in which religion is no longer at the centre of our society, but in which it still has an important place.”<sup>69</sup>

This leads me to my final reflection. To invoke the phrase of Mr. Varadkar, might reference to the ideas and values expressed in *Laudato Si'* form part of the “important place” that the Catholic church can still play in Irish culture?

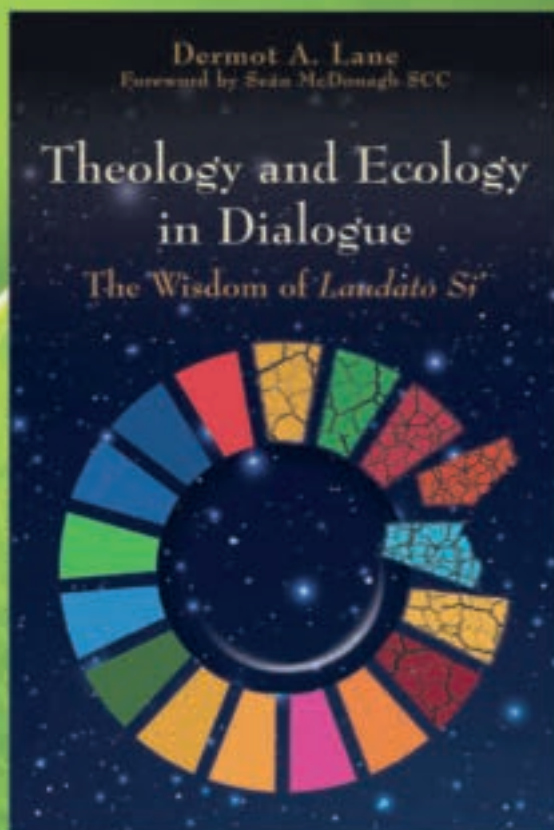
<sup>67</sup> *Laudato Si'*, 180.

<sup>68</sup> In 2019, the conference was held “Forty years of McGill and the next forty years: How to face the challenges ahead?” <http://www.mcgillsummerschool.com/>

<sup>69</sup> “Welcome Speech of An Taoiseach, Leo Varadkar, on the occasion of the Visit of Pope Francis.” Published: 25 August 2018: <https://www.gov.ie/en/news/d9f784-speech-of-an-taoiseach-leo-varadkar-on-the-occasion-of-the-visit-of-/>



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# A Reflection on the Experience of Climate Justice in Ireland

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<sup>1</sup> The author would particularly like to thank Bernard Daly for his input and guidance on this essay.



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## INTRODUCTION

Over the past decade, climate breakdown has come to be recognised as the greatest threat to human rights.<sup>2</sup> Climate change threatens the right to life, health, food, water, property, education, work, culture, adequate standard of living, means of subsistence, adequate/secure housing, self-determination and a healthy environment.<sup>3</sup> The UN Special Rapporteur on Human Rights and Extreme Poverty, Philip Alston, recently highlighted that climate breakdown also poses a growing threat to democracy and the rule of law because of the risk that States will respond to the worsening climate crisis by augmenting executive powers and restricting fundamental rights.<sup>4</sup> The impact of climate breakdown and the threat it poses to fundamental rights are not evenly dispersed across or even within countries.

As Alston further noted, “climate change is, among other things, an unconscionable assault on the poor”<sup>5</sup> because “the poorest, who have contributed the least to emissions and have the least capacity to react, will be the most harmed.”<sup>6</sup> He concluded with a warning that “climate change threatens to undo the last fifty years of progress in development, global health, and poverty reduction.”<sup>7</sup> Tackling climate breakdown therefore raises serious ethical issues relating to fairness, distributive justice and responsibility.

Climate change is understood not just as a scientific, technological or economic problem but also as an ethical issue. Climate justice can be broadly understood as a concept that “approaches climate change from the perspective of justice, human rights and the responsibility for climate change.”<sup>8</sup> According to Mary Robinson and Tara Shine:

“Climate justice links human rights and development to achieve a human-centred approach, safeguarding the rights of the most vulnerable people and sharing the burdens

<sup>2</sup> See generally: Annalisa Savaresi and Juan Auz, ‘Climate Change Litigation and Human Rights: Pushing the Boundaries’ (2019) 9(3) Climate Law 244 which examines the evolution of and growing traction for a rights-based approach to climate breakdown over the past decade; see also: Michelle Bachelet, ‘Global update at the 42nd session of the Human Rights Council: Opening statement by UN High Commissioner for Human Rights Michelle Bachelet’ (Geneva, 9 September 2019) <<https://www.ohchr.org/EN/NewsEvents/Pages/DisplayNews.aspx?NewsID=24956&LangID=E>> accessed: 16 September 2019.

<sup>3</sup> Andrea Schapper, “Climate justice and human rights” (2018) 32(2) International Relations 275, 279.

<sup>4</sup> Philip Alston, *Report of the Special Rapporteur on extreme poverty and human rights: Climate change and poverty* <https://www.ohchr.org/EN/NewsEvents/Pages/DisplayNews.aspx?NewsID=24735&LangID=E> [65] accessed: 10 September 2019. Fundamental rights here can be understood to include constitutionally protected rights as well as human rights protected under regional human rights treaties such as the European Convention on Human Rights.

<sup>5</sup> Human Rights Council, *Report of the UN Special Rapporteur on Human Rights and Extreme Poverty on Climate Change and Poverty* at 21 21 [https://www.ohchr.org/Documents/Issues/Poverty/A\\_HRC\\_41\\_39.pdf](https://www.ohchr.org/Documents/Issues/Poverty/A_HRC_41_39.pdf) accessed 5 July 2019.

<sup>6</sup> *Ibid* at 6.

<sup>7</sup> *Ibid* at 5.

<sup>8</sup> European Economic and Social Committee, 2017. *Climate Justice* (NAT/712-EESC, 2017) <https://www.eesc.europa.eu/en/our-work/opinions-information-reports/opinions/climate-justice>



and benefits of climate change and its impacts equitably and fairly. It is informed by science and responds to science. As a result, climate justice strives to achieve the 1.5°C temperature goal and avoid dangerous climate change... [it] is underpinned by a desire to respect and protect the human rights of all people, particularly those living in vulnerable situations in the face of climate impacts and through climate actions.”<sup>9</sup>

To reflect on the Irish experience of climate justice, this essay will firstly elaborate on the broader concept of climate justice in theory and under international climate law. The proceeding section will then examine the specific experience of climate justice in Ireland through domestic legislation and just transition programmes.

## THE CONCEPT OF CLIMATE JUSTICE

Climate justice connects a fair and equitable allocation of responsibility for climate change with a rights-based approach to tackling climate change. In terms of responsibility, philosopher Henry Shue observes that in most cases the three main principles for allocating responsibility - the polluter-pays principle; the ability-to-pay principle; and the beneficiary pays principle - all converge upon the same countries, namely, wealthy developed countries bearing the lion’s share of responsibility for tackling climate breakdown.<sup>10</sup> With respect to the human rights dimension, climate justice seeks to safeguard the rights of *all* people, but particularly those most vulnerable to climate impacts and climate action.<sup>11</sup> The United Nations Human Rights Council has identified women, children, indigenous communities, older adults and persons with disabilities in developing countries as particularly vulnerable to the adverse impacts of climate change.<sup>12</sup> Similar trends

can also be seen in more developed countries in the Global North where those already disadvantaged in terms of their socioeconomic status or their age<sup>13</sup> are disproportionately impacted by climate change. Those most vulnerable to climate action itself are often workers from the fossil fuel industry and their communities.<sup>14</sup> It follows that climate justice is particularly concerned with safeguarding the rights of social groups already in vulnerable positions as a result of gender, age, minority status, disability, poverty or work status in the fossil fuel industry.<sup>15</sup> It is worth briefly noting that other variations on the concept of climate justice do exist,<sup>16</sup> but for the purposes of this essay the focus will be on this dominant conception of climate justice outlined above.

Although the Paris Agreement enshrined the ambitious temperature goal of keeping “global temperature rise this century well below 2.0°C above pre-industrial levels and [pursuing] efforts to limit the temperature increase to 1.5°C,”<sup>17</sup> it was not a triumph for rights-based approaches to climate breakdown or a fair allocation of responsibility. The Paris Agreement was the first international climate treaty to make explicit reference to the concept of climate justice, but did so in soft language in the non-binding preambular text.<sup>18</sup> It acknowledged that “developed country Parties should continue taking the lead by undertaking economy-wide absolute emission reduction targets.”<sup>19</sup> It also recognised

<sup>9</sup> Robinson, M and Shine, T. 2018. ‘Achieving a climate justice pathway to 1.5°C’. *Nature*. <https://www.nature.com/articles/s41558-018-0189-7>

<sup>10</sup> Henry Shue, 2015. ‘Historical Responsibility, Harm Prohibition, and Preservation Requirement: Core Practical Convergence on Climate Change’ 2(1) *Moral Philosophy and Politics* 7, 24.

<sup>11</sup> European Economic and Social Committee, 2917. *Climate Justice* (NAT/712-EESC, 2017) <https://www.eesc.europa.eu/en/our-work/opinions-information-reports/opinions/climate-justice> ; See also: Robinson, M. and Shine, T. 2018. ‘Achieving a climate justice pathway to 1.5°C’. *Nature*.

<sup>12</sup> Office of the High Commissioner for Human Rights, *Report of the Office of the United Nations High Commissioner for Human Rights on the Relationship between Climate Change and Human Rights* (2009) 15-18 See also: Andrea Schapper, ‘Climate Justice and Human Rights’ (2018) 32(2) *International Relations* 275, 280-281.

<sup>13</sup> Office of the High Commissioner for Human Rights, *Report of the Office of the United Nations High Commissioner for Human Rights on the Relationship between Climate Change and Human Rights* (2009) 15-18 See also: Andrea Schapper, ‘Climate Justice and Human Rights’ (2018) 32(2) *International Relations* 275, 280-281; Also see: European Environmental Agency. *Unequal exposure and unequal impacts: social vulnerability to air pollution, noise and extreme temperatures in Europe* (2018) 6-7. <https://www.eea.europa.eu/publications/unequal-exposure-and-unequal-impacts>

<sup>14</sup> Robinson, M. and Shine, T. 2018. ‘Achieving a climate justice pathway to 1.5°C’. *Nature*. <https://www.nature.com/articles/s41558-018-0189-7>

<sup>15</sup> Office of the High Commissioner for Human Rights, *Report of the Office of the United Nations High Commissioner for Human Rights on the Relationship between Climate Change and Human Rights* (2009) 15.

<sup>16</sup> See for example: Lukas Meyer and Pranay Sanklecha, ‘Individual Expectations and Climate Justice’ (2011) 2 *Analyse & Kritik*, 449 where the authors argue that those living in highly industrialised countries and elsewhere have a legitimate and permissible expectation (subject to certain conditions) to be able to continue emit at an above just per capita level. They assert that such an expectation is morally permissible in circumstances where there is no moral alternative to above per capita emissions or else the alternative is extremely expensive such that we cannot demand people in highly industrialised countries to choose it. However, they heavily qualify this conclusion by emphasising that this permissibility is still limited to necessary emissions.

<sup>17</sup> Article 2(1)(a) of the Paris Agreement, 2015 <https://unfccc.int/resource/docs/2015/cop21/eng/10a01.pdf>

<sup>18</sup> Ibid, Recital 13 of the Preamble.

<sup>19</sup> Ibid, Article 4(4).

that Parties “should, when taking action to address climate change respect, promote and consider their respective obligations on human rights”<sup>20</sup> and affirmed the “imperatives of a Just Transition of the workforce.”<sup>21</sup> However, the Paris Agreement has not been successful in curbing global greenhouse gas (GHG) emissions or putting countries on a pathway to rapid GHG emission reductions. Global GHG emissions for 2019 were 4% higher than those in 2015, when the Paris Agreement was signed.<sup>22</sup> References to climate justice, a fair allocation of responsibility, human rights and the Just Transition have not spurred on fair and ambitious climate action and seem, for the time being, to be just of symbolic value. Unfortunately, this experience is also being mirrored at the national level in Ireland: national emissions are predicted to remain above 1990 levels until approximately 2035, even with additional measures.<sup>23</sup> The responsibility dimension of climate breakdown and the human rights implications for already vulnerable groups of our unambitious approach to climate action has failed to gain much traction in legal and policy circles.

The reason climate laws have been difficult to implement, to use the words of philosopher Dale Jamieson, is that tackling the problem raises “fundamental questions of morality” about “how we ought to live, [and] what kinds of societies we want.”<sup>24</sup> The Intergovernmental Panel on Climate Change has warned that achieving the ambitious 1.5°C temperature goal of the Paris Agreement “would require rapid, far-reaching and unprecedented

changes in all aspects of society.”<sup>25</sup> The weak enforcement mechanisms under the Paris Agreement<sup>26</sup> means support for ambitious climate action at the domestic level is key. Political support has not been forthcoming. The reason for a lack of political backing to date is that climate change poses an existential threat to States and institutions committed to capitalist economic systems.

Hickel and Kallis, analysing the viability of the concept of *green growth*, argue that there is “no empirical evidence that absolute decoupling from resource use can be achieved on a global scale against a background of continued economic growth, and absolute decoupling from carbon emissions is highly unlikely to be achieved at a rate rapid enough to prevent global warming over 1.5°C or 2°C, even under optimistic policy conditions.”<sup>27</sup> Political actors in capitalist economic systems do not have the tools to leverage meaningful change: business-as-usual, “green-growth” style solutions are proving incapable of tackling the climate crisis. Climate action in many capitalist economies has to date involved deeply unpopular sacrifices for ordinary people, which has made climate policies politically toxic. Yet, levels of concern about climate change are now at an all-time high amongst the public<sup>28</sup> making transformative policies necessitated by the ambitious 1.5°C temperature goal - particularly policies that improve peoples’ quality of life - more acceptable. Achieving the 1.5°C temperature goal requires radical climate policies underpinned by strong laws that are effectively implemented and broadly supported by the public: the absence of any of these elements, as we will shall see, undermines meaningful climate action.

<sup>20</sup> Ibid, Recital 11 of the Preamble.

<sup>21</sup> Ibid, Recital 10 of the Preamble.

<sup>22</sup> Fiona Harvey and Jennifer Rankin, 2019. ‘Paris climate deal: world not on track to meet goal amid continuous emissions’. *The Guardian*. <https://www.theguardian.com/environment/2019/dec/04/paris-climate-deal-world-not-on-track-to-meet-goal-amid-continuous-emissions>.

<sup>23</sup> EPA, 2018. *Ireland’s Provisional Greenhouse Gas Emissions 1990-2018* [https://www.epa.ie/pubs/reports/air/airemissions/ghgprovements2018/Report\\_GHG%201990-2018%20Provisional%20Inventory%20October%202019.pdf](https://www.epa.ie/pubs/reports/air/airemissions/ghgprovements2018/Report_GHG%201990-2018%20Provisional%20Inventory%20October%202019.pdf), 10; also see: EPA, 2019. *Ireland’s Greenhouse Gas Emissions Projections 2018-2040* [https://www.epa.ie/pubs/reports/air/airemissions/ghgprojections2018-2040/Greenhouse\\_Gas\\_Projections.pdf](https://www.epa.ie/pubs/reports/air/airemissions/ghgprojections2018-2040/Greenhouse_Gas_Projections.pdf), 18.

<sup>24</sup> Dale Jamieson, ‘Ethics, Public Policy and Global Warming’ in Stephen Gardiner, Simon Caney, Dale Jamieson and Henry Shue (eds) *Climate Ethics: Essential Readings* (Oxford University Press 2010) 82.

<sup>25</sup> Intergovernmental Panel on Climate Change, ‘Summary for Policymakers of IPCC Special Report on Global Warming of 1.5°C approved by governments’ (*Intergovernmental Panel on Climate Change*, 8 October 2018) <https://www.ipcc.ch/2018/10/08/summary-for-policymakers-of-ipcc-special-report-on-global-warming-of-1-5c-approved-by-governments/> accessed: 10 September 2019; see also: Intergovernmental Panel on Climate Change, *Special Report on Global Warming of 1.5°C: Summary for Policymakers* (2018) 15.

<sup>26</sup> Article 15 of the Paris Agreement.

<sup>27</sup> Jason Hickel & Giorgos Kallis, “Is Green Growth Possible?” (2018) *New Political Economy*.

<sup>28</sup> Adam Corner, “Public opinion on climate change is up but let’s not forget lessons from the past” (*Climate Change News*, 4 March 2020) <https://www.climatechangenews.com/2020/03/04/public-opinion-climate-change-lets-not-forget-lessons-past/>; see also: European Commission, “Citizen support for climate action” [https://ec.europa.eu/clima/citizens/support\\_en](https://ec.europa.eu/clima/citizens/support_en)

## THE IRISH EXPERIENCE OF CLIMATE JUSTICE

### *Climate justice before the Irish courts and in domestic legislation*

Under Irish climate law and policy, the concept of climate justice has not fared well. The centrepiece of Irish climate law is the Climate Action and Low Carbon Development Act 2015, which was enacted by the Fine Gael/Labour government. The 2015 Act sets Ireland a “national transition objective” of transitioning to an undefined “low carbon, climate resilient, and environmentally sustainable economy” by 2050.<sup>29</sup> With a view to achieving this national transition objection, the 2015 Act requires the government to approve a National Mitigation Plan (NMP) every 5 years<sup>30</sup> which must “have regard to” a range of criteria including the concept of climate justice.<sup>31</sup> In 2017, the Fine Gael/Independent minority government approved an NMP, for the period 2017 to 2022, which paid no heed and made no reference to the concept of climate justice. The Plan itself has come in for criticism by the Climate Change Advisory Council, an independent statutory body,<sup>32</sup> who have described Ireland’s current and projected emissions to 2035 as “disturbing”<sup>33</sup> and have repeatedly warned that: “[Ireland] is not on a pathway towards a low-carbon transition. The 2017 National Mitigation Plan contained insufficient measures to put Ireland on this pathway.”<sup>34</sup>

Friends of the Irish Environment, an environmental non-governmental organisation, challenged the Irish government’s approval of this Plan on fundamental rights and administrative law grounds. The judicial review

challenge, which has been dubbed “Climate Case Ireland,” was dismissed by the Irish High Court in September 2019.<sup>35</sup> The judgment was a disappointment for climate activists and human rights scholars alike. While the Court did make some significant findings in relation to standing (the entitlement to bring a case) and justiciability (the competence of the court to hear the case given its potential political ramifications), it stopped short of finding that approving a Plan, which does little or nothing to reduce emissions, was unlawful or in breach of fundamental rights.<sup>36</sup>

The judgment was particularly disappointing insofar as it completely glossed over the climate justice point. Friends of the Irish Environment had argued that the Irish government did not have adequate regard to the concept of climate justice in approving the Plan. As previously stated, there is not one reference to the concept of climate justice in the Plan, nor does the Plan’s ambition (or lack thereof) reflect anything of the concept of climate justice.

Wealthy countries like Ireland have disproportionately contributed to the problem of climate change but also have the capacity to tackle the problem. A climate just approach would require Ireland not only to comply with its existing climate obligations but to take a lead on decarbonisation, while respecting and protecting fundamental rights of those subject to its jurisdiction. If other countries were to follow Ireland’s climate policies as they stand, the world would be on track for a cataclysmic 4°C of warming compared with pre-industrial levels by 2100.<sup>37</sup> It is therefore difficult to see how the Irish government had any regard whatsoever to the concept of climate justice in approving the Plan. The Irish High Court missed an important opportunity to censure the government for its flagrant disregard for the concept of climate justice here. Given that Ireland’s equitable share of the remaining global CO<sub>2</sub> budget is projected to be exhausted

<sup>29</sup> Section 3(1) of the Climate Action and Low Carbon Development Act 2015. <http://www.irishstatutebook.ie/eli/2015/act/46/enacted/en/pdf> The National Policy position on Climate Change, which envisaged “an aggregate reduction in carbon dioxide emissions of at least 80% (compared to 1990 levels) by 2050 across the electricity generation, built environment and transport sectors; and in parallel, an approach to carbon neutrality in the agriculture and land-use sector, including forestry, which does not compromise capacity for sustainable food production,” provides an indication of what the government understood this “low carbon, climate resilient and environmentally sustainable economy” would entail. See: <https://www.dcae.gov.ie/en-ie/climate-action/publications/Pages/National-Policy-Position.aspx>

<sup>30</sup> Section 3(1)(a) and section 4(1)(b) of the Climate Action and Low Carbon Development Act 2015.

<sup>31</sup> For the full list of criteria see section 3(2) and section 4(7) of the Climate Action and Low Carbon Development Act 2015.

<sup>32</sup> Section 8 of the Climate Action and Low Carbon Development Act 2015.

<sup>33</sup> Climate Change Advisory Council, *Annual Review 2018*, iii. [http://www.climatecouncil.ie/media/CCAC\\_AnnualReview2018.pdf](http://www.climatecouncil.ie/media/CCAC_AnnualReview2018.pdf)

<sup>34</sup> Ibid, 40.

<sup>35</sup> *Friends of the Irish Environment v Government of Ireland* [2019] IEHC 727.

<sup>36</sup> Ibid.

<sup>37</sup> James Glynn, 2018 “The other budget: why it’s time for an annual carbon budget”. *RTE Brainstorm*. <https://www.rte.ie/brainstorm/2018/10/01/999173-the-other-budget-why-its-time-for-an-annual-carbon-budget/>

If other countries were to follow Ireland's climate policies as they stand, the world would be on track for a cataclysmic 4°C of warming compared with pre-industrial levels by 2100.

by about 2024,<sup>38</sup> the High Court could, at the very least, have given an indication as to how this Plan accords with the fair allocation of responsibility dimension of climate justice. The judgment is currently under appeal to the Supreme Court and is due to be heard on 22-23 June, 2020.<sup>39</sup> It is hoped that the Supreme Court will seize that opportunity to elaborate on implications of the concept of climate justice for Irish climate law and policy.

There have been a number of legislative developments occurring alongside this judicial review. In April 2018, the Citizens Assembly report 'How the State Can Make Ireland A Leader in Tackling Climate Change' was published.<sup>40</sup> This report contained 13 recommendations on how Ireland should move forward with more ambitious climate actions. In March 2019, the Joint Oireachtas Committee on Climate Action, which was established to consider these recommendations, published its cross-party consensus report which recommended, among other things, overhauling the 2015 Climate Act.<sup>41</sup> In June 2019, the Government published a Climate Action Plan, a comprehensive climate policy statement containing 183 concrete actions

and their emissions reduction potential.<sup>42</sup> This was followed, in December 2019, with the Draft General Scheme of the Climate Action (Amendment) Bill 2019, which contains the proposed amendments to the 2015 Act and is designed to put the Climate Action Plan into law. This Bill would, by law, commit Ireland to net-zero emissions by 2050, it also gives legally binding five-year carbon budgets on greenhouse gas emissions.

While these legislative developments represent progression in Ireland on climate action, the Climate Action Plan has been criticised by Stop Climate Chaos (SCC), a coalition of civil society organisations<sup>43</sup>, on its lack of ambition in terms of emissions reductions (2% per annum from 2021 to 2030). SCC argues that a much steeper decline of 7% per annum is required to achieve a minimum 80% emissions reduction by 2050, relative to 1990 levels.<sup>44</sup> While 2% reduction annually is enough to meet Ireland's emission reduction targets under European Union law,<sup>45</sup> it will fail to meet the reductions required to comply with the Paris Agreement.<sup>46</sup> According to Carbon Brief, limiting warming to below 1.5°C starting in 2019, without (as of yet under-developed) carbon capture technology, would require a 15% reduction each year through to 2040.<sup>47</sup> To stay within its equitable share of the carbon budget, Ireland would need to decarbonise well before 2050, which is simply not compatible with the Government's proposed 2% reduction.<sup>48</sup> This criticism of the Climate Action Plan is made stronger when considering the Amendment Bill (2019) because, if enacted, it could lock Ireland into underperforming rather than maximising the level of ambition.

<sup>38</sup> Barry McMullin, Pail Price, Michael B Jones, Alwynne H McGeever, 2019. Assessing negative carbon dioxide emissions from the perspective of a national "fair share" of the remaining global carbon budget. *Mitigation and Adaptation Strategies for Global Change* <https://tinyurl.com/y6tkw383>

<sup>39</sup> *Friends of the Irish Environment v Government of Ireland and the Attorney General* [2020] IESCDET 13. <https://www.friendsoftheirishenvironment.org/fie-work/17776-fie-challenge-to-national-development-plan-opens-in-the-high-court> This is now due to proceed by remote hearing subject to further instructions by the Chief State Solicitors Office, see: Mary Carolan, "Supreme Court judges concerned about physical sittings due to Covid-19 risk" (*Irish Times*, 20 April 2020) <https://www.irishtimes.com/news/crime-and-law/courts/supreme-court/supreme-court-judges-concerned-about-physical-sittings-due-to-covid-19-risk-1.4233213>

<sup>40</sup> Report of the Citizens' Assembly, *How the State can make Ireland a leader in tackling climate change*. 2018 [https://www.citizensassembly.ie/en/how-the-state-can-make-ireland-a-leader-in-tackling-climate-change/final-report-on-how-the-state-can-make-ireland-a-leader-in-tackling-climate-change.html](https://www.citizensassembly.ie/en/how-the-state-can-make-ireland-a-leader-in-tackling-climate-change/final-report-on-how-the-state-can-make-ireland-a-leader-in-tackling-climate-change/final-report-on-how-the-state-can-make-ireland-a-leader-in-tackling-climate-change.html)

<sup>41</sup> Report of the Joint Committee on Climate Action Climate Change, *A Cross-Party Consensus for Action*. 2019 7- 14. [https://data.oireachtas.ie/ie/oireachtas/committee/dail/32/joint\\_committee\\_on\\_climate\\_action/reports/2019/2019-03-28-report-climate-change-a-cross-party-consensus-for-action\\_en.pdf](https://data.oireachtas.ie/ie/oireachtas/committee/dail/32/joint_committee_on_climate_action/reports/2019/2019-03-28-report-climate-change-a-cross-party-consensus-for-action_en.pdf)

<sup>42</sup> Government of Ireland, 2019. *Climate Action Plan*. <https://www.dcae.gov.ie/documents/Climate%20Action%20Plan%202019.pdf>

<sup>43</sup> <https://www.stopclimatechaos.ie/>

<sup>44</sup> Stop Climate Chaos, 2019. *The new Climate Action Plan: Will it lead to a revolution in how we live? Report from the Stop Climate Chaos Coalition and the Environmental Pillar on their analysis of the Climate Action Plan*, 8. [https://www.stopclimatechaos.ie/assets/files/pdf/will\\_the\\_new\\_climate\\_action\\_plan\\_deliver\\_the\\_revolution\\_the\\_minister\\_promised\\_report\\_july\\_2019.pdf](https://www.stopclimatechaos.ie/assets/files/pdf/will_the_new_climate_action_plan_deliver_the_revolution_the_minister_promised_report_july_2019.pdf)

<sup>45</sup> These targets are set out in the 2030 Climate and Energy Framework and comprise at least 40% cuts in greenhouse gas emissions (from 1990 levels); at least 32% share for renewable energy; at least 32.5% improvement in energy efficiency.

<sup>46</sup> Stop Climate Chaos, 2019. *The new Climate Action Plan: Will it lead to a revolution in how we live? 9*.

<sup>47</sup> Zeke Hausfather, 2019. "UNEP: 1.5C climate target 'slipping out of reach'" *Carbon Brief*. <https://www.carbonbrief.org/unep-1-5c-climate-target-slipping-out-of-reach>

<sup>48</sup> Stop Climate Chaos, 2019. *The new Climate Action Plan: Will it lead to a revolution in how we live? 9*

The Amendment Bill also fails to strengthen Ireland's position on climate justice. It retains the requirement of the Climate Action and Low Carbon Development Act 2015 to "have regard to" criteria such as climate justice in considering whether to approve carbon budgets or climate action plans. However, if there is any lesson to be learned from Climate Case Ireland, it is that statutory language like "have regard to" is too weak to force the government to act in accordance with the fair allocation of responsibility dimension of climate justice. If the responsibility dimension of climate justice is to be taken seriously, this language will need to be strengthened before the Bill passes into law.

Climate Case Ireland and the legislative developments that have followed reveal Ireland's lack of commitment to the responsibility dimension of climate justice and to engaging with the human rights dimension of climate impacts. But how has the State responded to the rights implications of climate action itself?

## TIMELINE OF RECENT CLIMATE LAW

Significant dates and events in Irish and international climate law from 2015 to the present day.

**2015**

**Paris Agreement** (international)

**Climate Action and Low Carbon Development Act** (Ireland)

**2016**

**Irish General Election**

- notable for the lack of urgency given to climate issues

**2017**

Approval of the **National Mitigation Plan**

FIE launch legal challenge against Irish Government ('**Climate Case Ireland**')

**2018**

Publication of Citizens Assembly report '**How the State can make Ireland a Leader in Tackling Climate Change**'

**2019**

**JOCCA Report** published  
**Climate Action Plan** published  
Draft **General Scheme Action (Amendment) Bill 2019**  
'**Climate Case Ireland**' ruling

**2020**

**Irish General Election**



## Climate justice and Just Transition policy in the Midlands

With respect to a Just Transition, the 'litmus test' for Ireland's commitment to respecting and protecting the rights of those most vulnerable to climate action will be the treatment of workers and communities in the Midlands affected by the wind-down of peat extraction activities by *Bord na Móna*.<sup>49</sup> According to the European Trade Union Confederation, a Just Transition comprises five key elements:

1. Social Dialogue encompassing all actors, including worker representatives, involved in industry changes.
2. A guarantee of good green jobs.
3. Access to retraining and education for all workers.
4. Respect for democratic rights to trade union and community representation.
5. A social safety net to support affected workers.<sup>50</sup>

The exigences of transitioning to a zero carbon society have accelerated *Bord na Mona*'s shift away from peat production and has brought to the fore the need for "urgent, concerted and coherent" action to protect workers and communities with ties to the peat industry for generations.<sup>51</sup> In 2018, *Bord na Móna* employed approximately 2,000 people directly and another 2,000 indirectly,<sup>52</sup> but the wind-down of semi state company's peat extraction activities has already seen hundreds of workers in the Midlands lose their jobs.<sup>53</sup>

The approach, until now, to the transition reveals a "glaring absence" of any coherent Just Transition framework or national strategy to ensure workers and communities are not left behind.<sup>54</sup> To date, the measures have

included a Just Transition fund of €6 million<sup>55</sup> for the Midlands to support retraining workers and to assist local communities to adjust to the transition. Kieran Mulvey has also been appointed as the Just Transition Commissioner on a non-statutory basis to engage with relevant stakeholders, track developments and make recommendations to Government.<sup>56</sup> While on the face of it, these measures look good, the Just Transition fund pales in comparison to the 2018 Just Transition deal reached between the Spanish government, unions and employers that will see an orderly wind-down of the coal industry in Northern Spain and €250 million invested in affected communities over the coming years.<sup>57</sup> The Just Transition deal in Northern Spain has been hailed by the European Trade Union Confederation as a model of Just Transition.<sup>58</sup> There are similarities between the Spanish coal industry and *Bord na Móna* in terms of the age profile and size of the workforces,<sup>59</sup> Patricia King, the general secretary of the Irish Congress of Trade Unions (ICTU), has argued that it could provide a "useful template" for the Just Transition in the Midlands.<sup>60</sup>

As for the Just Transition Commissioner, it is a two-year part-time role and the Commissioner has not yet been given a physical office with support staff.<sup>61</sup> What is more, the terms of reference for the Just Transition Commissioner specify that he should have no role in industrial relations matters in *Bord na Móna*, who will continue to work with the Joint Industrial Relations Council.<sup>62</sup> Appearing before the Oireachtas Committee on Climate Action,

<sup>49</sup> Irish Congress of Trade Unions, 2019. *Building a Just Transition: The Case of Bord na Mona*. 2. [https://www.ictu.ie/download/pdf/building\\_a\\_just\\_transition\\_report\\_feb\\_2019.pdf](https://www.ictu.ie/download/pdf/building_a_just_transition_report_feb_2019.pdf)

<sup>50</sup> Paul Goldrick-Kelly, 2019. 'Moving towards a Just Transition'. *Nevin Economic Research Institute*. <https://www.nerinstitute.net/blog/moving-towards-just-transition>.

<sup>51</sup> Irish Congress of Trade Unions, 2019. *Building a Just Transition: The Case of Bord na Mona*. 5.

<sup>52</sup> Kevin O'Sullivan, 2019. 'ICTU criticises BNM for failing to help staff following peat job losses' *The Irish Times*

<sup>53</sup> Cormac FitzGerald, 2019 'Bord na Móna announces plan to redeploy 200 workers' *The Journal*.

<sup>54</sup> Irish Congress of Trade Unions, 2019. *Building a Just Transition: The Case of Bord na Mona*. 5.

<sup>55</sup> The ESB has pledged an additional €5 million and a further €5 million has been pledged by the government for bog restoration and rehabilitation of non-Bord na Mona bogs.

<sup>56</sup> Department of Communication, Climate Action and the Environment, 'Accelerated Exit from Peat will be accompanied by Just Transition for Workers and the Midlands – Minister Bruton' (8 November 2019). <https://www.dcae.gov.ie/en-ie/news-and-media/press-releases/Pages/Accelerated-Exit-from-Peat-will-be-accompanied-by-Just-Transition-for-Workers-and-the-Midlands-%E2%80%93-Minister-Bruton-Accelerat.aspx>

<sup>57</sup> Arthur Nelsen, 2018 'Spain to close most coalmines in €250m transition deal'. *The Guardian*. <https://www.theguardian.com/environment/2018/oct/26/spain-to-close-most-coal-mines-after-striking-250m-deal>

<sup>58</sup> European Trade Union Confederation, 2019. 'Spain guarantees a Just Transition for miners' <https://www.etuc.org/en/spain-guarantees-just-transition-miners?>

<sup>59</sup> Joint Committee on Climate Action Deb 20 November 2019. [https://data.oireachtas.ie/ie/oireachtas/debateRecord/joint\\_committee\\_on\\_climate\\_action/2019-11-20/debate/mul@/main.pdf](https://data.oireachtas.ie/ie/oireachtas/debateRecord/joint_committee_on_climate_action/2019-11-20/debate/mul@/main.pdf)

<sup>60</sup> Ibid.

<sup>61</sup> Joint Committee on Climate Action Deb 18 December 2019. [https://data.oireachtas.ie/ie/oireachtas/debateRecord/joint\\_committee\\_on\\_climate\\_action/2019-12-18/debate/mul@/main.pdf](https://data.oireachtas.ie/ie/oireachtas/debateRecord/joint_committee_on_climate_action/2019-12-18/debate/mul@/main.pdf)

<sup>62</sup> Department of Communication, Climate Action and the Environment, 'Accelerated Exit from Peat will be accompanied by Just Transition for Workers and the Midlands – Minister Bruton' (8 November 2019).



Patricia King emphasised that the Joint Industrial Relations Council is designed to solve day-to-day issues and would have neither “the wherewithal [nor] capacity” to deal with the issues relating to transition.<sup>63</sup> The ICTU have instead called for a Just Transition Forum to be chaired by the Workplace Relations Commission bringing together key stakeholders to reach an agreement on issues currently affecting Bord na Móna workers as well as future employment opportunities.<sup>64</sup> Bord na Móna has not to date agreed to take part in such a forum.<sup>65</sup> While the exit from peat production has accelerated, successive governments and Bord na Móna have known for a long time this was coming. The paltry Just Transition fund, the under-resourcing and limited terms of reference of the Just Transition Commissioner and the absence of a stakeholder-backed forum are evidence that successive governments have not been preparing or taking the Just Transition and the rights of communities affected by climate action seriously.

As Paul Goldrick-Kelly of the Nevin Economic Research Institute highlighted “properly harnessed, this transition could do more than simply limit damage – it could develop regions and increase living standards.”<sup>66</sup> The ICTU has recommended that Bord na Móna increase its involvement in renewable energy generation which could create some 4,400 jobs in wind energy and 11,000 jobs in solar energy nationally. It also recommended that Bord na Móna could take a lead in a deep retrofit programme across the Midlands which could create some 18,750 jobs nationally. Many of these jobs could be located in the Midlands and taken up by existing Bord na Móna staff, following the provision of retraining.<sup>67</sup>

International experiences documented by Australia’s Construction, Forestry, Maritime, Mining and Energy Union (CFMMEU)<sup>68</sup> illustrates that the outcome of any transition

is not a forgone conclusion.<sup>69</sup> For example in the case of the coal mining Ruhr Region in Germany, advanced planning, consistent engagement, and dialogue between government, unions and employers over many years saw the region successfully manage the transition to a low carbon economy with decent work for the affected communities.<sup>70</sup> By contrast, the reactive *ad hoc* policy response to mine closures in Appalachia in the USA, the lack of federal government engagement, and the weakness or absence of unions has exacerbated socioeconomic devastation in the region.<sup>71</sup> These examples show that successful, properly-managed transitions involve effective government engagement, advanced planning and consultation with workers, union involvement and the provision of decent, secure, unionised jobs for the affected workforce. As the ICTU have put it: “Appalachia’s communities were left to the whims of the market and the outcome is proof that the ‘market’ is entirely incapable of delivering anything other than an Unjust Transition.”<sup>72</sup>

Unfortunately, Bord na Móna’s transition away from peat extraction, to date, seems to be following the footsteps of America, rather than those of Germany or Spain. As Bernard Daly, Regional Officer in Unite the Union put it “the outgoing Government [has] maintained a hands-off approach to the growing crisis in Bord na Móna.”<sup>73</sup> This approach risks leaving behind a community who are already being asked to shoulder a disproportionate burden, sacrificing their livelihoods to ensure Ireland does its part to stave off dangerous climate breakdown. Such an approach is fundamentally at odds with the concept of climate justice.

As a semi-state company with a skilled and unionised workforce, the Bord na Móna transition already has many of the key ingredients for a Just Transition. Yet to date, the move away from peat extraction in the Midlands has not gotten any of the five key

<sup>63</sup> Joint Committee on Climate Action Deb 20 November 2019.

<sup>64</sup> Ibid. See also: Irish Congress of Trade Unions, 2019. *Building a Just Transition: The Case of Bord na Mona*. 3.

<sup>65</sup> Joint Committee on Climate Action Deb 20 November 2019.

<sup>66</sup> Paul Goldrick-Kelly, 2019. ‘Moving towards a Just Transition’ Nevin Economic Research Institute, <https://www.nerstitute.net/blog/moving-towards-just-transition>.

<sup>67</sup> Irish Congress of Trade Unions, 2019. *Building a Just Transition: The Case of Bord na Mona*. 3.

<sup>68</sup> Peter Sheldon, Raja Junankar, Anthony De Rosa Pontello, 2018. *The Ruhr or Appalachia? Deciding the future of Australia’s coal power workers and communities IRRR Report for CFMMEU Mining and Energy* [https://www.ictuc-csi.org/IMG/pdf/ruhrorappalachia\\_report\\_final.pdf](https://www.ictuc-csi.org/IMG/pdf/ruhrorappalachia_report_final.pdf)

<sup>69</sup> Irish Congress of Trade Unions, 2019 *Building a Just Transition: The Case of Bord na Mona*. 7.

<sup>70</sup> Peter Sheldon, Raja Junankar, Anthony De Rosa Pontello, 2018. 28-34.

<sup>71</sup> Ibid at 44-46.

<sup>72</sup> Irish Congress of Trade Unions, 2019. *Building a Just Transition: The Case of Bord na Mona*. 7.

<sup>73</sup> Unite the Union, Ireland Region, 2020 ‘Bord na Móna: Dáil hopefuls to attend Shannonbridge rally on Saturday’. <https://unitetheunionireland.org/2020/01/30/bord-na-mona-dail-hopefuls-to-attend-shannonbridge-rally-on-saturday/>

elements of a Just Transition correct. At a minimum the next government should adequately resource the Just Transition Commissioner, urgently raise the Just Transition fund, and provide a multi-stakeholder mediation service to discuss issues currently affecting Bord na Móna workers and future employment opportunities. This could be done by passing into law the Green Party's Just Transition (Workers and Community Environmental Rights) Bill 2018 which is supported by the ICTU and would establish such a stakeholder forum similar to that proposed by the ICTU itself.<sup>74</sup> While Bord na Móna workers and their communities may be some of the first to suffer, they will not be the last group of workers whose livelihoods will be lost to the transition to a zero-carbon society. If the next government and Bord na Móna fail to deliver a Just Transition in the Midlands and abandon these communities, this will inevitably breed valid opposition to vital climate action in other sectors.<sup>75</sup> The sea-change in Irish politics brought about by the results of the recent General Elections and the coronavirus pandemic offers an opportunity for political leadership to help the Midlands flourish as it transitions away from peat.

## CONCLUSION

Framing climate breakdown as a justice issue is vitally important to ensuring that responsibility for it is fairly allocated and those most vulnerable to climate impacts and climate action are not disproportionately affected. Climate justice language has been gradually making its way into international climate treaties and Irish legislation, but the concept is not yet informing international or national climate action. The Irish experience of climate justice is borne out by weak reference to the concept in the Climate Action and Low Carbon Development Act 2015, the glossing over of climate justice issues in Climate Case Ireland, and the unambitious reform proposals.

This demonstrates a lack of political will to commit to a rights-based/fair allocation of responsibility to climate change in favour of maintaining our current capitalist economic system. The reactive and *ad hoc* policy response to Bord na Móna's wind-down of peat extraction and limited engagement with stakeholders reveals the dearth of advanced planning to ensure that these communities, disproportionately impacted by climate action, are not left behind. The Climate Case Ireland appeal to the Supreme Court will give the judiciary an important opportunity to clarify, amongst other things, whether a Plan designed in advance to achieve sub-standard reductions in GHG emission meets the statutory obligation to have regard to climate justice. The political changes afoot could pave the way for more ambitious climate legislation that mandates respect for the concept of climate justice. These political changes could also correct the course of the transition away from peat in the Midlands to ensure those communities do not suffer undue hardship as a result of the State's need to decarbonise. It is imperative that these opportunities are not missed.

<sup>74</sup> See: Just Transition (Worker and Community Environmental Rights) Bill 2018; see also: Irish Congress of Trade Unions, 2019. Building a Just Transition: The Case of Bord na Móna. 3.

<sup>75</sup> Irish Congress of Trade Unions, 2019. Building a Just Transition: The Case of Bord na Móna. 2.



# Meet the New Boss; Same as the Old Boss – The Subsidisation of Natural Gas as a Decarbonisation Pathway in Ireland<sup>1</sup>

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Clodagh Daly

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<sup>1</sup> This essay is based on a report produced by the author for Friends of the Earth Ireland in 2019.

## INTRODUCTION

When the Covid-19 pandemic caused oil stocks to plummet, the US President was accused of facilitating “corporate socialism” by proposing to bailout the fossil fuel industry at a cost of \$20 billion.<sup>2</sup> However, this was not an isolated incident, brought about in exceptional times. The ailing fossil fuel industry has long relied on public finances to ensure its profitability. “Money is the oxygen on which the fire of global warming burns,”<sup>3</sup> and nation states are using scarce public resources to fan the flames. In 2019, the International Monetary Fund (IMF) — not a noted environmental organisation — estimated that fossil fuels were subsidised to the value of \$5.2 trillion. That’s an increase of half a trillion dollars since the Paris Agreement was signed, which, incidentally, requires participatory states to make financial flows “consistent with a pathway towards low greenhouse gas emissions.”<sup>4</sup> Instead, fossil fuels continue to account for a staggering 85% of *total global subsidies*.<sup>5</sup> However, the pandemic has exposed the underlying weaknesses of the fossil fuel industry. We now have an unparalleled opportunity to retire fossil fuel production subsidies and invest in a clean, efficient energy system instead.

Although natural gas has not made as many headlines as oil recently, it is currently the second most subsidised fuel after coal.<sup>6</sup> When burned, it emits roughly half the carbon dioxide emissions of a coal plant. The fossil fuel industry routinely manipulates this comparison to portray gas as a low-carbon ‘bridge’ fuel to a zero-emissions society. However, emissions created at the point of combustion do not represent the *lifecycle* emissions of natural gas. Methane is the primary component of natural gas - a highly potent greenhouse gas,

“Instead, fossil fuels continue to account for a staggering 85% of *total global subsidies*.”

almost 90 times more efficient at trapping heat than carbon dioxide in a 20-year period.<sup>7</sup> There is no pathway to remaining within 1.5°C — the politically agreed ‘safe’<sup>8</sup> level of global warming in accordance with the Paris Agreement — that is compatible with natural gas expansion.<sup>9</sup> The concept of requiring a ‘bridge fuel’ also obscures the fact that we are already capable of running our grid on renewable energy<sup>10</sup> and instead prolongs our dependence on fossil fuels. Gas terminals and pipelines once built are designed to last decades, and money invested in bringing new reserves into operation could make it legally, politically, and economically very difficult to keep that carbon in the ground. Once investments are made, producers are likely to continue production until they have recovered their costs, even if the market price is *lower* than the long-term costs of production. Avoiding public investments in the first place is therefore fundamental to preventing carbon lock-in.

Earth has already warmed by approximately 1.1°C since the Industrial Revolution, and the impacts have been devastating, particularly in the Global South.<sup>11</sup> With less than 0.4°C additional warming to go before the 1.5°C ceiling is surpassed, the amount of carbon we can afford to pour into the atmosphere before we reach 1.5°C — our remaining ‘carbon budget’ — is rapidly diminishing (some estimate that it has already been

<sup>2</sup> Higgins, E. 2020. ‘Corporate Socialists Denounced as Trump Considers Fracking Industry Bailout Amid Corona Virus Break Out.’ Common Dreams, <https://www.commondreams.org/news/2020/03/10/corporate-socialists-denounced-trump-considers-fracking-industry-bailout-amid>

<sup>3</sup> McKibben, B. 2019. ‘Money is the Oxygen on Which the Fire of Global Warming Burns.’ *The New Yorker*. <https://www.newyorker.com/news/daily-comment/money-is-the-oxygen-on-which-the-fire-of-global-warming-burns>

<sup>4</sup> United Nations Framework Convention for Climate Change. 2015. Paris Agreement, 3. [http://unfccc.int/files/essential\\_background/convention/application/pdf/english\\_pari\\_agreement.pdf](http://unfccc.int/files/essential_background/convention/application/pdf/english_pari_agreement.pdf)

<sup>5</sup> Coady, D., Parry, I., Nghia-Piotr, L., Baoping, S. 2019. ‘Global Fossil Fuel Subsidies Remain Large: An Update Based on Country-Level Estimates.’ *International Monetary Fund*. <https://www.imf.org/en/Publications/WPI/Issues/2019/05/02/Global-Fossil-Fuel-Subsidies-Remain-Large-An-Update-Based-on-Country-Level-Estimates-46509>

<sup>6</sup> Ibid, 5

<sup>7</sup> Cowern, N., Russel Jones, R. 2016. ‘Global Warming Impact of a Switch from Coal to Gas-Fired Electricity Generation in the UK. UK Climate Change Committee. <https://www.theccc.org.uk/wp-content/uploads/2016/07/Onshore-petroleum-evidence-submitted-by-Cowern-and-Russell-Jones.pdf>

<sup>8</sup> What constitutes an ‘acceptable’ degree of warming for politicians is not at all acceptable to frontline communities battling the climate crisis – this essay simply refers to 1.5°C as the bare minimum nation states have agreed to work towards.

<sup>9</sup> United Nations Intergovernmental Panel for Climate Change. 2018. Special Report on the Impacts of 1.5°C warming. Chapter 2. [https://www.ipcc.ch/site/assets/uploads/sites/2/2019/02/SR15\\_Chapter2\\_Low\\_Res.pdf](https://www.ipcc.ch/site/assets/uploads/sites/2/2019/02/SR15_Chapter2_Low_Res.pdf)

<sup>10</sup> Connolly, D. 2014. ‘A technical and economic analysis of one potential pathway to a 100% renewable energy system.’ *Journal of Sustainable Energy Planning and Management*, 1. <https://doi.org/10.5278/ijsepm.2014.1.2>

<sup>11</sup> Mann, M. 2018. ‘People are already dying by the thousands because we ignored earlier climate change warnings.’ *Huffington Post*. [https://www.huffpost.com/entry/opinion-climate-change-deaths\\_n\\_5c101e14e4b0ac5371799b1c](https://www.huffpost.com/entry/opinion-climate-change-deaths_n_5c101e14e4b0ac5371799b1c)



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exceeded).<sup>12</sup> According to the United Nations Intergovernmental Panel on Climate Change, to have a mere 50% chance of remaining within a 1.5°C threshold, only a further 480 gigatonnes of carbon dioxide (Gt CO<sub>2</sub>) can be emitted.<sup>13</sup> In Ireland, based on our historical contribution to the climate crisis, we have until just 2024 of our current level of emissions before our minimally equitable share of the 1.5°C global carbon budget is entirely exhausted.<sup>14</sup> To rely on natural gas as a bridge fuel and to invest public money in new carbon intensive infrastructure now, is to knowingly torch the planet.

What we have is a system that favours the development of carbon intensive infrastructure. What we lack is political will and investment flowing in the right direction. What we need is a leap in terms of policy and investment favouring renewables – not a ‘bridge’ fossil fuel.

## FOCUSING OUR ENERGIES - HOW IRELAND FUELS THE GAS INDUSTRY

Although natural gas subsidies can be directed towards both producers and consumers, producer subsidies work to cut the costs and risks associated with bringing new natural gas reserves into production. Producer subsidies therefore have a *far* more direct and tangible impact on our capacity to effectively decarbonise than consumer subsidies do. In the Irish context, producer subsidies provide us with a useful barometer to assess the government’s commitment to climate action, arguably more so than the raft of plans and stated emissions reduction targets, which to date have failed to be accompanied by actionable pathways.

Subsidising the production of fossil fuels essentially means that the investment risks associated with bringing new fossil fuel reserves into production are socialised, whilst profits are privatised. The financial risks shouldered by the public are considerable. 2,860 gigatonnes of carbon dioxide (GtCO<sub>2</sub>) is contained in the *known* fossil fuel reserves owned by companies and states – enough carbon to burn through our remaining carbon budget of 480 GtCO<sub>2</sub> almost six times over. If we are to maintain a global temperature

<sup>12</sup> Carbon Brief: UNEP 1.5°C climate target ‘slipping out of reach’ <https://twitter.com/CarbonBrief/status/1211631520760221696>

<sup>13</sup> Rogelj, J., Forster, P., Kriegler, E., Smith, C., Séférian, R. 2019. ‘Estimating and tracking the remaining carbon budget for stringent climate targets.’ *Nature* 571, 335 – 342. <https://doi.org/10.1038/s41586-019-1368-z>

<sup>14</sup> McMullin, B., Price, P., Jones, M., McGeever, A. 2019. ‘Assessing Negative Carbon Dioxide Emissions from the Perspective of a National ‘Fair Share’ of the Remaining Global Carbon Budget.’ *Mitigation and Adaptation Strategies for Global Change*. <https://doi.org/10.1007/s11027-019-09881-6>

increase below 1.5°C, fossil fuel reserves and assets could become stranded (i.e. lose value prematurely). The value of stranded assets was recently described by the Financial Times as ‘breath-taking’ with estimates ranging between \$900 billion<sup>15</sup> and \$27 trillion.<sup>16</sup> The value of natural gas reserves and assets may be written down far sooner than proponents of the ‘bridge’ fuel expected. Before the Covid-19 pandemic, and the subsequent collapse in demand for fossil fuels, there was a pre-existing glut of global natural gas supply. A particularly mild European winter in 2019, combined with the US fracking boom, flooded global energy markets with surplus gas. At the beginning of March 2020, natural gas storage facilities in Europe were 60% full, and are projected to reach capacity by July of this year. Even when lockdown restrictions are lifted, the massive quantities already held in storage are likely to keep demand for new production low. The pandemic has simply accelerated an already ongoing decline.<sup>17</sup>

Ireland utilises a wide range of subsidisation mechanisms to fuel the natural gas industry in Ireland, all of which undermine our capacity to transition into a decarbonised society, as well as funnelling public funding away from social services into the hands of private fossil fuel companies.

### Public Finance

In 2019, the European Investment Bank — the biggest public bank in the world, funded directly by EU taxpayers — adopted a new energy lending policy that will come into effect by the end of 2021.<sup>18</sup> Until then, however, the bank can freely approve public financing for some 55 natural gas infrastructure projects included under the EU’s 4th list of ‘Projects

of Common Interest,’ (PCI list).<sup>19</sup> Included on the 2019 PCI list is the proposed Shannon LNG terminal, which would facilitate the importation of liquefied natural gas (LNG), most likely extracted through fracking<sup>20</sup> from the US into Ireland.

Aside from adding 10 billion cubic meters of natural gas to Ireland’s energy mix, twice Ireland’s annual total gas consumption (5.14 billion cubic meters),<sup>21</sup> the inclusion of the proposed plant on the PCI list makes very little sense. Ireland banned fracking in 2017 on health and environmental grounds. As grassroots groups have pointed out for years,<sup>22</sup> importing fracked gas from elsewhere renders our domestic ban worthless. The legitimacy of the planning permission for the project is also being questioned; a case was brought against the developers by Friends of the Irish Environment after a number of environmental concerns were overlooked at the initial approval level. The case has been referred to the European Court of Justice and in the meantime, developers have been ordered to halt development plans.<sup>23</sup>

Ireland already has a very poor track record of acquiring significant public financing from the EIB for natural gas infrastructure. Last year, Gas Networks Ireland (GNI) received a €100 million EIB loan (the equivalent of the entire EU-wide budget for renewable energy) to upgrade and expand Ireland’s gas network. No independent assessment of demand for natural gas in Ireland was carried out prior to the EIB

<sup>15</sup> Livsey, A. 2020. ‘Lex in Depth: the \$900 bn cost of ‘stranded energy assets.’ The Financial Times. Available at: <https://www.ft.com/content/95efca74-4299-11ea-a43a-c4b328d9061c>

<sup>16</sup> McKibben, B. 2012. ‘Global Warnings Terrifying New Math.’ Rolling Stones. Available at : <https://www.rollingstone.com/politics/politics-news/global-warnings-terrifying-new-math-188550>

<sup>17</sup> Feit, S., Muffett, C. 2020. ‘Pandemic Crisis, Systemic Decline: Why Exploiting the COVID19 Crisis Will Not Save the Oil, Gas and Plastic Industries.’ Centre for International Environmental Law. Available at : <https://www.ciel.org/wp-content/uploads/2020/04/Pandemic-Crisis-Systemic-Decline-April-2020.pdf>

<sup>18</sup> European Investment Bank. 2019. ‘EIB Energy lending policy: supporting the energy transformation.’ [https://www.eib.org/attachments/strategies/eib\\_energy\\_lending\\_policy\\_en.pdf](https://www.eib.org/attachments/strategies/eib_energy_lending_policy_en.pdf)

<sup>19</sup> The PCI list contains key EU infrastructure projects that are eligible for funding from the EIB, supposedly designed to allow the EU to meet its climate objectives, including ‘affordable, secure and sustainable energy for all citizens, and the long-term decarbonisation of the economy in accordance with the Paris Agreement.’ For a project to meet the PCI criteria, it must be beneficial for at least two European countries, improve the EU’s energy security and increase competition on the energy markets <https://ec.europa.eu/energy/en/topics/infrastructure/projects-common-interest>

<sup>20</sup> Fracking is a technique in which high-pressure water, sand and chemicals are pumped into shale rock to help extract natural gas. The fracking of a single well can require up to 23 million liters of water and the process contaminates fresh water supplies. Fracking has been responsible for a ‘millennia’s worth of earthquakes,’ in Oklahoma, and leaks from fracked wells in the US have been responsible for the recent surge in global methane emissions.

<sup>21</sup> Food and Water Europe. ‘Ireland Factsheet.’ Available at: [https://www.foodandwatereurope.org/wp-content/uploads/2019/09/Ireland\\_FactSheet-final.pdf](https://www.foodandwatereurope.org/wp-content/uploads/2019/09/Ireland_FactSheet-final.pdf)

<sup>22</sup> See Not Here Not Anywhere (<https://noherenotanywhere.com/>), Futureproof Clare (<https://twitter.com/futureproofc?lang=en>) and Safety Before Shannon LNG (<http://www.safetybeforelmg.ie/>)

<sup>23</sup> O’Sullivan, K. 2019. ‘Developers of Shannon LNG Processing Terminal Ordered Not to Begin Construction.’ The Irish Times. <https://www.irishtimes.com/news/environment/developers-of-shannon-gasprocessing-terminal-ordered-not-to-begin-construction-1.3795310>

granting the loan.<sup>24</sup> GNI stated that they were not concerned about Ireland's gas network becoming stranded, given its potential for low-carbon alternatives, including Renewable Gas, Compressed Natural Gas, Carbon Capture and Storage and Hydrogen.<sup>25</sup> However, there are some concerns regarding these claims. Briefly:

- Renewable gas in this context refers to biomethane, which contains over 90% methane. The risk of leakage in the production and transportation of biomethane would require "extremely robust and potentially costly independent regulation and monitoring of production sites."<sup>26</sup>
- Compressed Natural Gas (CNG) refers to GNI's intentions to expand use of natural gas beyond energy and heat into transport. GNI plans to construct 70 CNG stations across Ireland, including one already opened in Topaz Dublin Port. However, CNG vehicles have similar carbon emissions performance to other fossil-fueled vehicles. When methane leakage is accounted for, CNG offers no climate benefits compared to petroleum-based fossil-fuels.<sup>27</sup>
- Carbon capture and storage is a risky and expensive technology, presently non-viable at scale and does not forestall the need to rapidly reduce reliance on fossil fuels, including natural gas.
- Hydrogen can be produced in two ways. If it is produced through a chemical conversion process, whereby natural gas is split into hydrogen and carbon dioxide, and the carbon is (in theory) stored, this is not a zero-carbon gas. If it is produced through the conversion of renewable electricity, this would result in a zero-carbon gas, but the likelihood that renewable hydrogen will ever be produced in the same volume as natural

gas currently occupies on our grid remains low, and its deployment may take decades, as GNI reported themselves.<sup>28</sup> Furthermore, both production systems would require a complete overhaul of GNI's entire system of pipelines, storage and appliances, as hydrogen is a smaller molecule than methane.<sup>29</sup>

Instead of directing limited public finances toward a much-needed Just Transition in Ireland, the EIB loan to GNI simply downplays the scale of transformation required from the energy sector in rapidly transitioning to a zero-emissions economy. This is not prudent fiscal policy. It is reckless. Subsidising the upgrade of gas infrastructure in Ireland should not be based on the unproven assumption that the network will distribute renewable energy or decarbonised gas at some undefined point in the future. EIB lending support for natural gas infrastructure in Ireland is not financing the transition — it is financing the entrenchment of resource extraction policies responsible for the climate crisis.

### Tax Exemptions

As the production of natural gas is extremely capital intensive, subsidies that can reduce the upfront costs associated with its production are highly attractive to investors. Subsidies that pose the greatest threat to remaining within 1.5°C are therefore those that assume the liability of investment risks associated with gas extraction, as they incentivize investment into natural gas extraction on a long-term basis, creating risk of lock-in.<sup>30</sup> Ireland's licensing regime for natural gas exploration and extraction is among the most liberal in the world.

Companies that receive licenses to drill for oil and gas in Ireland are required to pay 25% corporate tax on profits. Most countries tax

<sup>24</sup> Email correspondence with Gas Networks Ireland.

<sup>25</sup> Email correspondence with Gas Networks Ireland.

<sup>26</sup> Mullin, B., Price, P., Carton, J., Anderson, K. 2018. 'Is Natural Gas Essential For Ireland's Future Energy Security?' *Stop Climate Chaos* [https://www.stopclimatechaos.ie/assets/files/pdf/is\\_natural\\_gas\\_essential\\_for\\_irelands\\_future\\_energy\\_security\\_scc\\_study\\_november\\_2018.pdf](https://www.stopclimatechaos.ie/assets/files/pdf/is_natural_gas_essential_for_irelands_future_energy_security_scc_study_november_2018.pdf)

<sup>27</sup> Transport & Environment. 2018. 'CNG and LNG for Vehicles and Ships - the Facts.' Available at : [https://www.transportenvironment.org/sites/te/files/publications/2018\\_10\\_TE\\_CNG\\_and\\_LNG\\_for\\_vehicles\\_and\\_ships\\_the\\_facts\\_EN.pdf](https://www.transportenvironment.org/sites/te/files/publications/2018_10_TE_CNG_and_LNG_for_vehicles_and_ships_the_facts_EN.pdf)

<sup>28</sup> Houses of the Oireachtas. Joint Committee on Communications, Climate Action and Environment debate - Tuesday, 15 Oct 2019. 'Gas Networks Ireland's Vision 2050: Discussion.' Retrieved from: [https://www.oireachtas.ie/en/debates/debate/joint\\_committee\\_on\\_communications\\_climate\\_action\\_and\\_environment/2019-10-15/3/](https://www.oireachtas.ie/en/debates/debate/joint_committee_on_communications_climate_action_and_environment/2019-10-15/3/)

<sup>29</sup> Fischer, L. 2018. 'Renewable and Decarbonised Gas Options for a Zero Emissions Society.' E3G. [https://www.e3g.org/docs/E3G\\_Renewable\\_and\\_decarbonised\\_gas\\_Options\\_for\\_a\\_zero-emissions\\_society.pdf](https://www.e3g.org/docs/E3G_Renewable_and_decarbonised_gas_Options_for_a_zero-emissions_society.pdf); also see: Stockman, L. 2019. 'Burning the Gas Bridge Fuel Myth: Why Natural Gas is not Clean, Cheap, or Necessary.' *Oil Change International*. [http://priceofoil.org/content/uploads/2019/05/gasBridgeMyth\\_web-FINAL.pdf](http://priceofoil.org/content/uploads/2019/05/gasBridgeMyth_web-FINAL.pdf)

<sup>30</sup> Koplow, D. 2018. 'Defining and Measuring Fossil Fuel Subsidies.' Cambridge University Press.

profits on oil and gas extraction somewhere between 40 – 85%.<sup>31</sup> As the entire operating costs of the business can be offset against the 25% tax rate, the Irish government can never receive even 25% of private profits earned from drilling for natural gas. Companies are required to pay 5% tax on profits from when production commences, however this can be written off against the 25% tax paid on overall profits. Furthermore, unused tax allowances on unsuccessful oil and gas exploration expenditure can be carried forward for up to 25 years. Although royalties to host governments are typically a mandatory compensation for the extraction of resources on State-owned land or waters, royalties on the profits of oil and gas extraction have been banned since 1987 in Ireland. Natural gas companies own 100% of the oil and gas found under Irish waters and are not required to sell any reserves found back to the State. Granting licenses for oil and gas exploration are therefore of no benefit to Ireland's energy security. If reserves are sold back to the State, it is at full market value.<sup>32</sup> Finally, the revenue foregone from failing to appropriately tax fossil fuel extraction means that higher taxes on other economic activity is necessary to plug the budgetary gap.

The Petroleum Affairs Division of the Department of Communication, Climate Action and the Environment (DCCAE) has never required an Environmental Impact Assessment to be carried out for the exploration of oil and gas in Irish waters.<sup>33</sup> The location of drilling for oil and gas is effectively led by industry, as the DCCAE prioritises “determining where they can obtain the best level of interest.”<sup>34</sup> In May 2019, ExxonMobil received a license to drill in Ireland's environmentally-sensitive Porcupine Basin — a critical ecosystem for whales and dolphins. Unsurprisingly, this venture was

unsuccessful,<sup>35</sup> but the environmental impacts of exploration alone are enormous. The impacts of seismic testing on marine wildlife in Ireland has been well documented by Irish researchers,<sup>36</sup> and in 2019, new research found that seismic testing has significantly reduced sightings of cetaceans.<sup>37</sup> Despite this, Ireland issued 15 new exploration licenses from 2018 through to June 2019.<sup>38</sup>

### *Investments by State-Owned Enterprises*

Investments in natural gas infrastructure by State-owned enterprises create risk of carbon lock-in as well as stranded assets and gives investors the impression of policy certainty around the future of gas. The Electricity Supply Board (ESB), a 95% State-owned company, announced plans in 2019 to build four new gas plants in North Dublin, at the anticipated cost of €700 million.<sup>39</sup> The company aims to feed the gas into the grid by 2023 and has so far applied for planning permission to begin the construction of a Flexible Generation Thermal Station (Flexgen) for the generation of electricity in Poolbeg.<sup>40</sup> When asked what the new gas plant was required for, the ESB simply responded that “all of the power will be fed into the electrical grid.”

However, this does not explain why a semi-State company is investing in new natural gas infrastructure when we know we need to rapidly decarbonise. Incidentally, Eirgrid

<sup>31</sup> Kavanagh, A.S., Nykänen, M., Hunt, W., Richardson, N., Jessopp, M.J. 2019. 'Seismic surveys reduce cetacean sightings across a large marine ecosystem.' *Nature*. <https://www.nature.com/articles/s41598-019-55500-4.pdf>

<sup>32</sup> Slevin, A. 2016. 'Gas, Oil and the Irish State: Understanding the Dynamics and Conflicts of Hydrocarbon Management.' Manchester University Press.

<sup>33</sup> Seismic Surveys: Written Answers. 2018. Kildare Street. Retrieved from: <https://www.kildarestreet.com/wrans/?id=2018-06-12a.2809>

<sup>34</sup> Joint Committee on Communications, Natural Resources and Agriculture. 2012. Report: Offshore Oil and Gas Exploration. Available at: <http://www.andrewdoyle.ie/wp-content/uploads/2012/05/OffshoreOilandGasExplorationReport-OLreachtasCommittee-AndrewDoyleTD-May2012.pdf>

<sup>35</sup> Murray, D. 2019. 'Fresh blow to exploration industry as drilling off Kerry coast draws a blank.' *The Sunday Business Post*. <https://www.businesspost.ie/news-focus/fresh-blow-to-exploration-industry-as-drilling-off-kerry-coast-draws-a-blank-923819a6>

<sup>36</sup> Mercier, S. 2018. 'Do we want our beaches strewn with stranded dolphins?' *The Journal*. <https://www.thejournal.ie/readme/do-we-want-our-beaches-strewn-with-stranded-dolphins-4107401-Jul2018/>

<sup>37</sup> Kavanagh, A.S., Nykänen, M., Hunt, W., Richardson, N., Jessopp, M.J. 2019. 'Seismic surveys reduce cetacean sightings across a large marine ecosystem.' *Nature*. <https://www.nature.com/articles/s41598-019-55500-4.pdf>

<sup>38</sup> Department of Communications, Climate Action and the Environment. 2019. Petroleum Exploration & Development Offshore Ireland. <https://www.dccae.gov.ie/documents/Acreage%20Report%20at%2030%20September%202019.pdf>

<sup>39</sup> O'Halloran, B. 2019. 'ESB could spend €700m on plan to meet surging electricity demand.' *The Irish Times*. Available at: <https://www.irishtimes.com/business/energy-and-resources/esh-could-spend-700m-on-plan-to-meet-surging-electricity-demand-1.3849983>

<sup>40</sup> Dublin City Council. 2019. *Planning Application Details*. Dublinicity. ie. (Reference number 3714/19). <http://www.dublinicity.ie/swift/g/apas/run/WPHAPDETAIL.DisplayUrl?theApId=3714/19&back-URL=%3Ca%20href=wphappcriteria.display%paSearch-Key=4563759%3ESearch%20Criteria%3C/a%3E%20%3E%20%3Ca%20href=%27wphappsearchres.displayResultsURL?Result-D=5313580%26StartIndex=1%26SortOrder=APNID:DESC%26Dis-ResultsAs=WPHAPPESEARCHRES%26BackURL=%3Ca%20href=wphappcriteria.display%paSearchKey=4563759%3ESearch%20Criteria%3C/a%3E%27%3ESearch%20Results%3C/a%3E>



projects that by 2027, 31% of electricity demand will come from data centres and that by 2030, data centres will account for 75% of new electricity demand growth in Ireland.<sup>41</sup> Data centres are large buildings used to centralise, store, and disseminate digital data collected largely by tech giants and their subsidiaries, such as Microsoft, Apple, Amazon, Alphabet Inc. (Google's parent company) and Facebook. Dublin has already become Europe's "largest data hosting cluster," and in May 2019, there were 53 data centres active in Ireland, with a further 29 under development.<sup>42</sup> Investment in data centres in Ireland is predicted to reach €10 billion by 2022.<sup>43</sup> A single data centre demands the same energy as "a large town," in Ireland and if run on combined gas-fired units, data centres will add 1.5 million tonnes to Ireland's carbon emissions by 2030 — a 13% increase in electricity sector emissions.<sup>44</sup>

Companies that own and seek to develop data centres have offices located in Ireland to expressly avoid paying tax and are listed among the most profitable enterprises in the world, outpacing even carbon majors ExxonMobil and Shell in terms of their market share.<sup>45</sup>

In fact, the distinction between the fossil fuel industry and big tech is itself becoming increasingly blurred. Google, Amazon, and Microsoft have quietly become "the new innovative arm of the fossil fuel industry," investing heavily in researching and developing artificial intelligence to enhance the efficiency of oil and gas extraction.<sup>46</sup> Amazon recently threatened to fire its employees for speaking out against the company's contracts with the fossil fuel industry and for donating to

climate-denying politicians.<sup>47</sup> Shannon LNG developers plan to build data centres to "manufacture," their own demand for natural gas in Ireland.<sup>48</sup>

New natural gas infrastructure is being subsidised by the ESB to support the energy demands of an extremely lucrative industry that will contribute very little to the Irish economy in terms of tax take or secure employment, but will instead increase Ireland's energy costs and emissions.<sup>49</sup>

### *Fiscal Support for Industry Research*

Fiscal support of industry-led research effectively doubles subsidies to the natural gas industry. Firstly, the research is partially State-funded and is directed towards the interests of the natural gas industry. Secondly, academic partnerships offer an objective position from which industry can influence policy. The public relations value of partnering with research institutions cannot be overstated. It is considerably more valuable than advertising alone, which is recognised as self-interested; independent research instead is marked by its disinterestedness.

One of the leading research objectives of the Irish Centre for Research in Applied Geosciences (iCrag) is "to significantly de-risk Ireland's offshore and onshore hydrocarbon (i.e. oil and gas) and mineral resource exploration, thereby increasing exploration activities."<sup>50</sup> The Centre receives funding from semi-state and public bodies including Science Foundation Ireland, Ireland's European Structural and Investment Funds Programme, and the European Regional Development Fund. Among iCrag's 60 industry partners are fossil fuel giants Shell, ExxonMobil, BP, and Chevron, as well as local actors such as

<sup>41</sup> EirGrid. 2018. 'All-Island Generation Capacity Statement 2018-2027.' [http://www.eirgridgroup.com/site-files/library/EirGrid/Generation\\_Capacity\\_Statement\\_2018.pdf](http://www.eirgridgroup.com/site-files/library/EirGrid/Generation_Capacity_Statement_2018.pdf)

<sup>42</sup> RTE. 'Data centre investment to top €10 billion by 2022.' [Rte.ie https://www.rte.ie/news/business/2019/0514/1049443-data-centres-report/](https://www.rte.ie/news/business/2019/0514/1049443-data-centres-report/)

<sup>43</sup> Host in Ireland & Bitpower. 2019. 'Ireland's Data Hosting Industry: 2018 Q2 Update.' [http://www.bitpower.ie/images/RDDSTUDY/Bitpower\\_2018\\_Q2\\_Update\\_V4.pdf](http://www.bitpower.ie/images/RDDSTUDY/Bitpower_2018_Q2_Update_V4.pdf)

<sup>44</sup> Irish Academy of Engineering. 2019. 'Electricity Sector Investment for Data Centres in Ireland.' <http://iae.ie/wp-content/uploads/2019/08/Data-Centres-July-2019.pdf>

<sup>45</sup> Paul, M. 2018. 'Ireland is the World's Biggest Corporate Tax Haven Say Academics.' *The Irish Times*. <https://www.irishtimes.com/business/economy/ireland-is-the-world-s-biggest-corporate-tax-haven-say-academics-1.3528401>

<sup>46</sup> Merchant, B. 2019. 'How Google, Microsoft and Big Tech are Automating the Climate Crisis.' *Gizmodo*. <https://gizmodo.com/how-google-microsoft-and-big-tech-are-automating-the-1832790799>

<sup>47</sup> Milman, O. 2020. 'Amazon threatened to fire employees for speaking out on climate, workers say.' *The Guardian*. <https://www.theguardian.com/technology/2020/jan/02/amazon-threatened-fire-employees-speaking-out-climate-change-workers-say>

<sup>48</sup> Murray, D. 2019. 'Fracked Gas Exporter Will Create Own Demand by Developing Power Hungry Data Centres.' *The Sunday Business Post*. <https://www.businesspost.ie/more-business/fracked-gas-exporter-will-create-own-demand-by-developing-power-hungry-data-centres-06fc909c>

<sup>49</sup> Taylor, C. 2018. 'Data centre demand to lead to higher energy prices.' *The Irish Times*. <https://www.irishtimes.com/business/energy-and-resources/data-centre-demand-to-lead-to-higher-energy-prices-1.3581998>

<sup>50</sup> Irish Centre for Research in Applied Geosciences. 2019. Retrieved from: <https://www.ucd.ie/earthsciences/research/iCrag/>

Providence Resources,<sup>51</sup> companies which have been instrumental in establishing the discourse of natural gas as a “transition fuel.”<sup>52</sup>

The natural gas industry is fully embedded in the governance of the research centre. Representatives from Shell and Woodlands occupy positions on iCrag’s Industry Advisory Committee which “advises iCrag on the prevailing industry trends and needs, and influences research agenda accordingly.” Aside from setting the research agenda, a seat on iCrag’s Industry Advisory Committee affords Shell and Woodlands direct access to policymakers from the Department of Communications, Climate Action and the Environment, who also occupy positions on the Committee.<sup>53</sup> Tullow Oil and ENI (an Italian oil and gas company) occupy positions on iCrag’s Governance Committee, the group responsible for providing “advice and guidance on the strategic development of the Centre.”<sup>54</sup> Finally, in a particularly striking conflict of interest, the Chair of the Irish Offshore Operators Association (IOOA) sits on the Executive Management Committee of iCrag. The IOOA is the private representative and lobbying organisation for all oil and gas companies in Ireland. In 2019, the IOOA lobbied heavily against the Climate Emergency Measures (CEM) Bill (proposed legislation to ban the issuance of new exploration licences for oil and gas in Ireland).<sup>55</sup>

Public funding directed to iCrag is not even counted as a subsidy. The Central Statistics Office analyzes subsidies directed towards fossil fuels in Ireland, including data on research and development directed to the ‘promotion of fossil fuels.’ The CSO found that research and development of fossil fuels had not received any public financing since 2015. However, a report in the Sunday Business post found that the Science Foundation Ireland granted €14.5 million in public funds to iCrag’s research since 2015. €4.7 million of this was directly channelled to ‘commercially focused oil and gas exploration.’<sup>56</sup>

As Franta and Supran note, when involving the fossil fuel industry in academic research “neither the public nor the future is well served.”<sup>57</sup> The subsidisation of public research carried out in partnership with the gas industry may be compromising not only research integrity, but our response to the climate crisis. Companies can shape independent and publicly funded research to promote the use of natural gas as a part of Ireland’s transition to a low-carbon economy and society, as has demonstrably been the case in this instance.<sup>58</sup>

51. Irish Center for Research in Applied Geosciences. 2019. ‘Current Industry Partners.’ Retrieved from: <https://www.iCrag-centre.org/industry/current-iCrag-partners/>

52. See, eg: <https://www.shell.com/energy-and-innovation/natural-gas/providing-more-and-cleaner-energy.html>  
<https://corporate.exxonmobil.com/Energy-and-environment/Energy-resources/Natural-gas>  
<https://www.bp.com/en/global/corporate/sustainability/climate-change/natural-gas.html>

53. Irish Center for Research in Applied Geosciences. 2019. Industry Advisory Committee Members. Retrieved from: <https://www.iCrag-centre.org/people/advisory-committees/industryadvisorycommittee/>

54. Irish Center for Research in Applied Geosciences. 2019. Governance Advisory Committee Members. Retrieved from: <https://www.iCrag-centre.org/people/advisory-committees/governancecommittee/>

55. Murray, D. 2019. ‘Sevenfold Increase in lobbying by oil and gas firms last year.’ *The Sunday Business Post*. <https://www.businesspost.ie/news/sevenfold-increase-lobbying-oil-gas-firms-last-year-441547?auth=login>

56. Murray, D. 2019. ‘State pumps €4.7m into studies for oil, gas sectors.’ *The Sunday Business Post*. <https://www.businesspost.ie/business/state-pumps-e4-7m-studies-oil-gas-sectors-448238?auth=login>

57. Franta, B. and Supran, G. 2017. ‘The fossil fuel industry’s invisible colonization of academia.’ *The Guardian*. <https://www.theguardian.com/environment/climate-consensus-97-per-cent/2017/mar/13/the-fossil-fuel-industries-invisible-colonization-of-academia>

58. See, for instance: Commercialization of Natural Gas Hydrates: <https://www.icrag-centre.org/research/projectlist/commercializationofnatural-gashydratesgeologicalattributesenvironmental.html>  
Natural Gas Will Underpin Ireland’s Electricity Generation to 2030 and Beyond: <https://www.icrag-centre.org/t4media/Natural%20gas%20underpinning%20electricity%20generation.pdf>  
Unconventional Hydrocarbons: <https://www.icrag-centre.org/research/research-challenges/energy-security/unconventionalhydrocarbons/>



## SUBSIDISED BY

Public Finance

Tax Exemptions

Fiscal Support for  
Industry Research

Investments Supported  
by State-Owned  
Enterprises



## RISKS/COSTS

Stranded Assets

Carbon Lock-in

Lack of Money for Other  
Public Investments

Climate Breakdown

### TRANSITIONING TOWARD A TRULY ZERO-CARBON ECONOMY AND SOCIETY

The recent oil price shock, precipitated by Covid-19, should serve as a lesson to the Irish Government, which is continuing to invest in natural gas infrastructure. This is what an unmanaged decline of the fossil fuel industry looks like. We can avoid future chaos for gas-dependent employees in Ireland if action is taken to redirect public investment right now. There are other very good reasons to retire public investment from natural gas infrastructure. The current unpredictability about when, and to what extent, energy demand might resume is likely to deter ongoing natural gas production. However, as Oil Price International notes, without targeted policies aimed at developing a clean and efficient energy system as we emerge from the current crisis, fossil fuel companies may profit from an increase in price when demand eventually does resume. We need to institute safeguards against this, by redirecting public investment toward supporting clean and efficient energy systems.<sup>59</sup> If there's one lesson that has already been brought into sharp relief by the Covid-19 pandemic, it is the need to respond to crises in a timely manner.

Subsidising the production of fossil fuels will only delay the inevitable transition to a zero-emissions economy and society – it cannot reverse it. However, if we are to emphatically not return to ‘business as usual’, our climate and fiscal policies must not only be scientifically sound, but also socially equitable. For example, many of the Carbon Majors are strong advocates of the need for a carbon tax, but their silence on the need to remove subsidies is telling. Fossil fuel producer subsidies act as a negative tax on carbon whose benefits are enjoyed by a minority whilst the costs are borne across society. Furthermore, research has demonstrated that if people perceive that the costs of a climate policy will be borne by polluting industries, they are far more likely to support it.<sup>60</sup> Campaigns to keep fossil fuels in the ground have “yielded significant mobilization,”<sup>61</sup> and perhaps more strikingly, the most conservative players in our global economy – including the IMF, the OECD and the Irish Central Bank – have long warned governments that fossil fuel subsidies are inefficient, socially inequitable, fiscally draining, offer no benefit to the taxpayer, and block the much-needed rapid transition to clean and efficient energy systems.

<sup>60</sup> Erickson, P., Lazarus, M., Piggot, G. 2018. ‘Limiting fossil fuel production as the next big step in climate policy.’ *Nature Climate Change* 8, 1037–1043. [https://www.nature.com/articles/s41558-018-0337-0?WT.feed\\_name=subjects\\_climate-change](https://www.nature.com/articles/s41558-018-0337-0?WT.feed_name=subjects_climate-change)

<sup>61</sup> Erickson, P., Lazarus, M., Piggot, G. 2018. ‘Limiting fossil fuel production as the next big step in climate policy.’ *Nature Climate Change* 8, 1037–1043.

<sup>59</sup> Ibid

Despite claims of natural gas serving as a 'bridge' or 'transition fuel,' there are no plans to phase out natural gas, even in the medium to long-term. The Irish Government is instead bankrolling its expansion throughout the production chain. By placing the interests of the natural gas industry at the heart of Ireland's transition, the Irish Government is effectively guaranteeing a more disruptive and burdensome transition to a low-carbon future. If the ultimate goal is to align energy policy with climate science (in other words, reality), and therefore create an energy system supported solely by renewables, why waste public capital on a temporary 'bridge' fuel now? In a carbon and budget-constrained world, the Irish Government must instead adopt an unburnable carbon approach to Ireland's fiscal and energy policies. This means an end to subsidies for natural gas production.

More importantly, the time for action is now. It is not every day, or even every election cycle, that politicians have an opportunity to reset the economy. Our recovery from the Covid-19 recession should not prop up the ailing system responsible for our ecological crisis. We can, instead, seek to transform it. We need to learn from mistakes made in the aftermath of the 2008 financial crisis, which saw public lending overwhelmingly favour polluting industries, leading to soaring emissions. Furthermore, we must do more than simply reallocate public resources from natural gas to renewables. Massive public investment is needed to decarbonise our entire economy and society, but we must ensure that those resources are directed toward supporting energy as a public good, rather than a privatised commodity. If we are to realistically address the climate and biodiversity crises, Ireland's fiscal policies and institutions must work to support a genuine zero-carbon transition, ecological boundaries, and human rights.

# High Nature Value Farmland: Getting Results from Farming for Biodiversity

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## INTRODUCTION

If asked to name the most scenic places in Ireland, where would you mention? Connemara, the Burren, the Wicklow Mountains, the Leitrim Hills, the Shannon Callows, or somewhere else along the west coast? The list is endless. While visually stunning to locals and tourists alike, these areas bear another similarity as they are dominated by High Nature Value (HNV) farmland.

The term HNV farmland came into common usage in the late 1980s and early 1990s to refer to areas of Europe dominated by semi-natural habitats<sup>1</sup> and maintained by low-intensity farming (i.e. low or no fertiliser input and low stock numbers). On average, farms in Ireland have around 15% semi-natural habitat which typically consists of hedgerows, patches of woodland, scrub, or a pond or marshy area that is not used for grazing or saving fodder.<sup>2</sup> Many farms dramatically exceed this 15% average and these are HNV farms. On these farms, semi-natural habitats are essential parts of the grazing and hay or silage systems and make up a significant portion of the farmed land. These HNV farmland habitats, which are not only used for the production of food but are also important in terms of supporting

biodiversity, usually fall into two discrete categories; peatland or semi-natural grassland habitats.<sup>3</sup> These fields are essential resources of wildflowers which feed pollinators and other invertebrates such as butterflies, which then, in turn, feed our birdlife. These habitats support high plant and animal (butterflies, bees, mice, shrews, birds) biodiversity throughout the Irish countryside, existing within landscapes as a mosaic of hedgerows, drainage ditches, treelines, stone walls, small patches of woodland and scrub and larger areas of peatlands (heaths and bogs).

When areas of high-nature value farmland are well-managed, they deliver much more than farmland biodiversity; they also deliver important ecosystem services such as clean water, good quality soils, flood and fire resilience, and contribute to vibrant rural communities.<sup>4</sup> Intact peatlands that occur in upland areas are particularly important both in terms of flood protection for downstream areas and carbon storage;<sup>5</sup> a high-water table is a major characteristic of these habitats and they ensure a low risk of fire, providing

<sup>1</sup> Semi-natural habitats have never been reseeded or chemically fertilised but they are grazed or cut on a regular basis.

<sup>2</sup> Sheridan, H., McMahon, B.J., Carnus, T., Finn, J.A., Anderson, A., Helden, A.J., Kinsella, A., Purvis, G., 2011. Pastoral farmland habitat diversity in south-east Ireland. *Agriculture, Ecosystems & Environment* 144, 130-135.

<sup>3</sup> Sullivan, C.A., Bourke, D., Skeffington, M.S., Finn, J.A., Green, S., Kelly, S., Gormally, M.J., 2011. Modelling semi-natural habitat area on lowland farms in western Ireland. *Biological Conservation* 144, 1089-1099.

<sup>4</sup> Moran, J. and Sullivan, C. 2017. Co-benefits for Water and Biodiversity from the Sustainable Management of High Nature Value Farmland. [https://www.epa.ie/pubs/reports/research/biodiversity/EPA%20RR%20209\\_webEssentra.pdf](https://www.epa.ie/pubs/reports/research/biodiversity/EPA%20RR%20209_webEssentra.pdf)

<sup>5</sup> Irish Peatlands Conservation Council, Blanket Bogs factsheet. <http://www.ipcc.ie/a-to-z-peatlands/blanket-bogs/>

additional protection for this stored carbon.<sup>6</sup> HNV farmland has the potential to provide important ecosystem services but, without specific policies to protect them, they are under risk of being lost through intensification, conversion to forestry, and abandonment.<sup>7</sup>

## EU POLICIES TO PROTECT HNV FARMLAND

The benefits provided by HNV farmland have been recognised at a state-level since the early 2000s. Member states of the European Union agreed, in 2003, to identify HNV farmland areas and support their economic and ecological viability.<sup>8</sup> This was followed by the Member States Rural Development Plans for 2007-2013 mentioning the protection of HNV farmland as a strategic guideline.<sup>9</sup> Stronger support was promised with the inclusion of HNV in the 2013-2020 Common Agricultural Policy (CAP) – the European Union’s agricultural subsidy system to ensure food security – and in the European Union’s Rural Development Policy post-2013, where one of the three primary objectives was the sustainable management of natural resources and climate action. Achieving this objective was to be pursued through six broader European Union priorities, including “restoring, preserving and enhancing ecosystems related to agriculture,” focusing on biodiversity (including Natura 2000<sup>10</sup> and HNV farming) and the state of European landscapes.<sup>11</sup> In reality, despite this public recognition of HNV farmland within strategic frameworks, little meaningful action was taken to prioritise their preservation.<sup>12</sup>

HNV farmland has the potential to provide important ecosystem services but, without specific policies to protect them, they are under risk of being lost.

Unfortunately, implementation of Common Agricultural Policy by member states can result in perverse outcomes for marginal farmland. This is seen in Ireland every year when large swathes of upland areas are illegally burnt<sup>13</sup>, often in an effort to keep land ‘eligible’ for Pillar 1 payments<sup>14</sup>. Additionally, the Common Agricultural Policy rewards farmers primarily for the delivery of food through the Single Farm Payment in Pillar 1. Since HNV farmlands are low-intensity farms, this puts them at a significant financial disadvantage, encouraging intensification (reclamation of land through drainage or ploughing and reseeded) or abandonment.<sup>15</sup>

With Pillar 1 payment focused solely on food delivery, other payments are delivered through Pillar 2 of the Common Agricultural Policy which aims to support environment deliverables. Through the creation of Areas of Natural Constraint (ANC) and agri-environment scheme payments, HNV farmland support has been incorporated into broader policy goals. In Ireland, at present, environment deliverables are primarily delivered through the Green Low-Carbon Agri-Environment Scheme (GLAS),<sup>16</sup> which has evolved over the years from the Rural Environment Protection Scheme (REPS) and the Agri-Environment Options Scheme (AEOS).<sup>17</sup> These schemes are known as action-based schemes; a farmer selects a number of actions from a menu and receives payment once these actions are complete. While, in theory, this sounds beneficial for the environment, a number of design issues

<sup>6</sup> Page, S. and Baird, A., 2016. Peatlands and Global Change: Response and Resilience. *Annual Review of Environment and Resources*. 41:35-57 <https://www.annualreviews.org/doi/full/10.1146/annurev-environ-110615-085520>

<sup>7</sup> Non-Technical Summary County Leitrim, Shannon Callows, Ireland and Navarra, Spain, 2018. [https://rbapseu.files.wordpress.com/2019/01/rbaps\\_es01\\_non\\_technical\\_summary.pdf](https://rbapseu.files.wordpress.com/2019/01/rbaps_es01_non_technical_summary.pdf)

<sup>8</sup> Temate, 2008. Kyiv Resolution on Biodiversity. <http://biodiversite.wallonie.be/servlet/Repository/?IDR=6024>

<sup>9</sup> CEC, 2006. COUNCIL DECISION of 20 February 2006 on Community strategic guidelines for rural development (programming period 2007 to 2013). Official Journal of the European Union, Brussels <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32006D0144&from=EN>

<sup>10</sup> Natura 2000 is a network of core breeding and resting sites for rare and threatened species, and some rare natural habitat types which are protected in their own right. [https://ec.europa.eu/environment/nature/natura2000/index\\_en.htm](https://ec.europa.eu/environment/nature/natura2000/index_en.htm)

<sup>11</sup> Publications Office of European Union, 2018. Farming for Natura 2000 <https://ec.europa.eu/environment/nature/natura2000/management/docs/FARMING%20FOR%20NATURA%202000-final%20guidance.pdf>

<sup>12</sup> Navarro, A., and López-Bao, J.V. 2019. EU agricultural policy still not green. *Nature Sustainability* 2, 990. <https://www.nature.com/articles/s41893-019-0424-x>

<sup>13</sup> <https://www.rte.ie/news/leinster/2020/04/17/1132014-gorse-fires-wicklow/>

<sup>14</sup> Pillar 1 payments are direct, income support, payments to farmers <https://www.europarl.europa.eu/factsheets/en/sheet/109/first-pillar-of-the-common-agricultural-policy-cap-ii-direct-payments-to-farmers>

<sup>15</sup> O'Rourke, E., Kramm, N., 2012. High nature value (HNV) farming and the management of upland diversity. A review. *European Countryside* 4, 116-133.

<sup>16</sup> Department of Agriculture, Food and the Marine. Green, Low-Carbon, Agri-Environment Scheme - GLAS <https://www.agriculture.gov.ie/farmerschemespayments/glas/>

<sup>17</sup> Teagasc. Biodiversity and Countryside Schemes. <https://www.teagasc.ie/environment/biodiversity--countryside/schemes/>

arose. Firstly, these actions are not targeted to the places that would most benefit from such actions (though GLAS did have some targeted elements). Secondly, and most concerning, there is no monitoring carried out to verify that there is a positive environmental benefit.<sup>18</sup> These schemes receive huge amounts of funding every year (€1.08bn, excl training payments, over its lifetime<sup>19</sup>) but evidence of effectiveness is scant.<sup>20</sup> This payment structure highlights the food production focus of CAP, where environmental protection goals are often mooted with every new round, but up to 2020 at least, ultimately massively diluted<sup>21</sup>.

## SHIFTING THE FOCUS TO RESULTS

Recently, another type of agri-environment initiative, known as a results-based programme, has been developed, principally but not exclusively, for supporting HNV farmland. Simply put, they are results-based programmes which pay a farmer based on the delivery of an agreed outcome. It doesn't follow rigid rules; the higher the ecological quality of the result produced, the higher the financial reward for the farmer.<sup>22</sup> The desired result is clearly explained, and the farmer can decide the management required to achieve it, in consultation with trained advisors and programme staff. These programmes centre on the farmer, granting them autonomy and increasing their personal investment. They are also locally-adapted, meaning the programme is designed around the farms that would deliver most for the target. The importance of this planned approach cannot be overstated.

The Burren Programme, based in Co. Clare, is the longest running results-based agri-

environment programme.<sup>23</sup> Developed in conjunction with a small number of farmers in the early 2000s through initial EU LIFE funding, the programme was rolled-out as a mainstream agri-environment scheme in 2010 within the Rural Development Programme. Attracting almost 400 participants, the Burren Programme is an excellent example of farmers producing, and being rewarded for, high quality ecosystem services, specifically species-rich grassland. Following the successful rollout, a number of pilots have progressed the concept of results-based agri-environment programmes beyond the Burren.

The Results-based Agri-environmental Payment Scheme (RBAPS) Project is one such progression, running from 2015-2018 across three regions and two countries.<sup>24</sup> The team working on this project developed scorecards for assessing habitat quality and also incorporated species-specific requirements, where necessary. For example, they developed a wet grasslands scorecard with the Marsh Fritillary, a rare butterfly, in mind. Fields were scored using questions on the scorecards and received a score between 10 and 0. A higher score ensures a higher payment will be paid, while a low score e.g. 0-3, will usually result in no payment.<sup>25</sup> Even though the RBAPS Project was carried out on a small number of farms in Co. Leitrim and Co. Offaly (and Navarra in Spain), it successfully showed that the results-based approach would work for other habitats, and indeed species, outside of this unique area in Co. Clare where it was initially developed.<sup>26</sup>

Monitoring the success of initial pilots supporting high nature value farmland, the Department of Agriculture, Food and the Marine (DAFM) incorporated principles of results-based programmes into their European Innovation Partnerships (EIPs)<sup>27</sup> designed to address priorities of the 2014-2020 Rural

<sup>18</sup> ADAS (2018) Baseline Analysis of Actions Under GLAS: Full Report, Department of Agriculture, Food and the Marine.

<sup>19</sup> GLAS is one of the Department of Agriculture, Food and the Marine's (DAFM) largest programmes of voted expenditure with spending of €232 million in 2018, comprising around 15% of the DAFM's total gross voted expenditure for 2018. see Cathal McDermott, *Spending Review 2019 The Green, Low-carbon Agri-environment Scheme* (Department Of Public Expenditure And Reform Igges Unit, 2019) <https://assets.gov.ie/25646/197ea0c01c5840a0b2255bd8d446cea8.pdf>

<sup>20</sup> CEC, 2006. COUNCIL DECISION of 20 February 2006 on Community strategic guidelines for rural development (programming period 2007 to 2013). Official Journal of the European Union, Brussels

<sup>21</sup> <https://greennews.ie/cap-reform-scientists-call/>

<sup>22</sup> Summary: What are results-based payments for biodiversity and when and where should they be used? 2018. [https://rbapseu.files.wordpress.com/2019/01/rbaps\\_es02\\_what-are-results-payments.pdf](https://rbapseu.files.wordpress.com/2019/01/rbaps_es02_what-are-results-payments.pdf)

<sup>23</sup> <http://burrenprogramme.com/>

<sup>24</sup> <https://rbaps.eu/>

<sup>25</sup> A score between zero to three would result from no positive action towards protection of the natural environment in recent times, with the payable score of four relatively simple to achieve. There is support available for farmers to change practices to achieve higher scores. The scorecard provides a clear indication of where the problem is (e.g. field got -30 due to burning). There is also a fund called the 'supporting actions fund' that farmers can draw on. Actions are 25-100% funded depending on how beneficial they are for biodiversity.

<sup>26</sup> <https://rbaps.eu/>

<sup>27</sup> <https://ec.europa.eu/eip/agriculture/en/about>



Development Programme, including the restoration, preservation and enhancement of ecosystems. Launched in 2012, EIPs are partnerships which aim to better co-ordinate different levels of existing financial instruments and initiatives to address specific challenges and focus on societal benefits in a number of key areas including Agriculture Sustainability and Productivity (EIP-AGRI).<sup>28</sup> While most other EU member states focused this mechanism on productivity and small-scale projects, DAFM were unusual in utilising EIPs for ecosystem scale projects. In Ireland, a budget of €59 million was set aside for 23 EIP projects which are developed by Operational Groups which bring together farmers, researchers, advisors, and agri-business to identify innovative solutions to particular challenges facing the agri-food sector and rural economy.<sup>29</sup> Several of these projects aim to improve ecosystems in different regions with location specific approaches and targets. The EIPs have been running since 2017 with some only receiving funding in 2019.

## OPPORTUNITIES OF RESULTS-BASED AGRI-ENVIRONMENT PAYMENT SCHEMES

With funding of €25 million, the Hen Harrier Project is the largest of these EIP programmes. The Project follows the RBAPS model and aims to deliver high quality farmland habitats required by the Hen Harrier, a bird of prey, in an effort to stem its continuing decline. The Hen Harrier Project runs the Hen Harrier Programme targeting farmers with land in six Special Protection Areas (SPAs) for breeding Hen Harrier across nine counties from Co. Monaghan to Co. Cork.<sup>30</sup> It uses scorecards to assess peatland and semi-natural grassland habitats on HNV farms in the designated areas. Over 1500 farmers are in the programme in Ireland today and Hen Harrier numbers are being monitored along with farmland habitat quality.

While initial results are promising<sup>31</sup>, these programmes need to be running for a number of years before trends can be accurately quantified. The Pearl Mussel Project<sup>32</sup> is another EIP with a similar approach (scorecards assessing dominant habitats) but with a different conservation target; the Freshwater Pearl Mussel. The programme covers eight river catchments, across five counties from Co. Donegal to Co. Cork, aiming to restore rivers to good quality which would allow them to support the Freshwater Pearl Mussel.

Because there are different targets, there are different incentives within the programme (local-adaptations) such as a Hen Harrier Payment in the Hen Harrier Programme and a whole farm bonus payment in the Pearl Mussel Project. These are designed to financially reward those who deliver the most. Between these two EIPs, the Burren Programme, and a number of smaller EIPs with a results-based focus (e.g. Caomhnú Arann and Inishowen EIP<sup>33</sup>), there are now approximately 2500 primarily HNV farmers in results-based agri-environment programmes in Ireland. This represents significant growth since 2015, when 160 farmers were involved in the Burren.<sup>34</sup>

While the concept of results-based agri-environment payment schemes have existed since the early 2000s, widespread adoption did not immediately follow. Barriers exist to the wider roll-out of a results-based agri-environment programme. Firstly, the Burren's unique nature meant there were questions over whether a similar type of programme could work elsewhere. Inevitably, concerns surfaced about how costly such programmes can be in operation. While the Burren is indeed unique, the framework, detailed by the RBAPS Project, that undergirds the Burren project is very adaptable, not just within Ireland but within Europe. Paying for the delivery of a result is clearly a concept that can be applied not just to farmland biodiversity but many other farmland ecosystem services

<sup>28</sup> <https://ec.europa.eu/eip/agriculture/en/eip-agri-concept>

<sup>29</sup> <https://www.agriculture.gov.ie/media/migration/farmingschemesandpayments/europeaninnovationpartnership/EIP-AGRI%20Operational%20Group%20Booklet%202019%20proof%202.pdf>

<sup>30</sup> <http://www.henharrierproject.ie/>

<sup>31</sup> Seán Mac an tSigh, *Hen Harrier breeding soars with help of farmers* (RTE, 2020) <https://www.rte.ie/news/ireland/2020/0521/1139806-hen-harrier/>

<sup>32</sup> <https://www.pearlmusselproject.ie/freshwater-pearl-mussel.html>

<sup>33</sup> <https://www.inishoweneip.com/>

<sup>34</sup> <http://burrenprogramme.com/the-programme/>

and other farmland systems. Indeed, the Pearl Mussel and Hen Harrier Projects deliver on water quality, flood resilience, carbon storage, and more.<sup>35</sup> The Hen Harrier Project in particular has been instrumental in showing that a results-based approach can be scaled up effectively. The scale of the Hen Harrier Programme has allowed significant upskilling for agricultural advisors and investment in technological solutions to facilitate high participant numbers. With more participants and a bigger budget, the administration costs could fall to the equivalent to the action-based only programme approaches but with a key distinction that ecological systems are being preserved and enhanced.

## LOOKING FORWARD

The next iteration of the European Union's Common Agricultural Policy aims to be more ambitious on environmental and climate actions with mandatory requirements on preserving carbon-rich soils with specific mention of peatlands.<sup>36</sup> Current plans reveal increased flexibility and simplicity with less emphasis on rules and more emphasis on results. The success of these results-based projects highlights a timely opportunity for the next Common Agricultural Policy if it is to fulfil its ambitions on biodiversity. It's an opportune time to make results-based agri-environment programmes, with HNV farmland as an ideal target for this type of approach, more widely available in Ireland and indeed throughout Europe. Targets can also be adapted for other areas outside of HNV farmland areas<sup>37</sup> or non-farmed areas.

It is hoped that DAFM will take the positive results from their EIP investment and expand the results-based agri-environment programmes in the next CAP round, 2021-2028. These programmes would provide support to some of the most economically challenged parts of the country ensuring a vibrant rural community is retained. Communities and their local environment are both enhanced when farmers are supported to manage agricultural land, in particular HNV farmland, in a way that is harmonious with our ecosystems. Biodiversity is to be valued, not only for what services it provides us but for its own sake. To turn this possibility into reality we need strong policies that support action for biodiversity and the environment.

<sup>35</sup>. <https://www.pearlmusselproject.ie/farm-programme/results-based-approach.html>; also see <http://www.henharrierproject.ie/farming.html>

<sup>36</sup>. [https://ec.europa.eu/info/food-farming-fisheries/key-policies/common-agricultural-policy/future-cap\\_en](https://ec.europa.eu/info/food-farming-fisheries/key-policies/common-agricultural-policy/future-cap_en)

<sup>37</sup>. The BRIDE Project is one such example. It aims to design and implement a results-based project to enhance habitats and biodiversity in lowland intensive farmland. This project has a landscape scale approach to environmental management that is also community based.. For more see: <https://www.thebrideproject.ie/>.

# Designing Within a Culture of Sustainability

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## INTRODUCTION

Climate change and biodiversity loss are crises that not only put ecosystems, but also human societies at risk. Our present mainstream sustainability thinking discusses the compromises between the three pillars of social justice, ecological integrity and economic well-being and puts its hopes in environmental salvation through green technological innovations. We need, however, a more paradigmatic shift in world views if ecology and human society are to survive and flourish. The design of our built environment has a critical role to play in making a positive contribution to our environment and in this essay it is argued that the foundations of this shift towards a culture of sustainability should be based in systems thinking<sup>1</sup> and complexity theory.

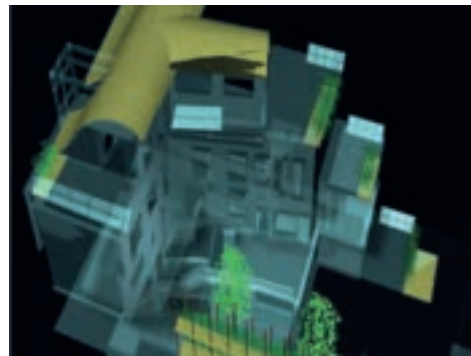
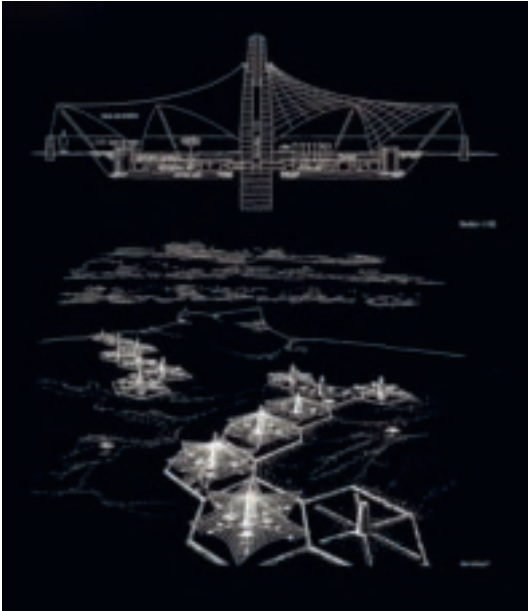
Fritjof Capra's development of a systems view of life uses the concept of networks as its cornerstone. A network is a pattern common to all life, from the metabolic networks inside cells to the food webs in human societies;

“...sustainability is not an individual property but a property of an entire web of relationships: it involves a whole community”

Fritjof Capra<sup>2</sup>

the components of a living system are interlinked in a network fashion.<sup>3</sup> These networks are both dynamic in response to change and organisationally stable. Another way of looking at this is to say that networks are organisationally closed but materially and energetically open, matter flows through it but the system maintains a stable form.

An important point about systems thinking is that it is contextual; systems thinking means that we develop understanding of something by putting it into the context of a larger whole. Philosopher and sociologist, Edgar Morin, makes the point that the “alpha idea” of all ecological thought is that the independence of a living being necessitates its dependence within its environment. What can be termed our state of interdependence.<sup>4</sup>



©HCoA/Solearth, left: Sahel Eco-Catalyst drawing (see <http://www.solearth.com/projects/view/sahel-eco-catalyst> for more detail; top-right: exterior view of Airfield cafe, Dublin (see <http://www.solearth.com/projects/view/airfield> for more details); bottom-right: Building plan of the Daintree Building (see <http://www.solearth.com/process/article/the-daintree-building> for more details)

<sup>1</sup> Leyla Acaroglu, *Tools for Systems Thinkers: The 6 Fundamental Concepts of Systems Thinking* (2017) <https://medium.com/disruptive-design/tools-for-systems-thinkers-the-6-fundamental-concepts-of-systems-thinking-379cdac3dc6a>

<sup>2</sup> Fritjof Capra. *Community is the way to sustain life*. (Ecologist, 2018) <https://theecologist.org/2018/apr/30/way-sustain-life-build-and-nurture-community>.

<sup>3</sup> Fritjof Capra, *The Web of Life: A New Scientific Understanding of Living Systems* (London, Random House, 1996) 33 - 35

<sup>4</sup> Edgar Morin, *Method: Towards a Study of Humankind The Nature of Nature* (New York, NY: Peter Lang, 1992), 202.

From a systems point of view, the understanding of life begins with the understanding of patterns, for example the pattern of organisation, a configuration of relationships characteristic of a particular system. Networks are the patterns of life. They are non-linear, going in all directions, and may include feedback loops; importantly these feedback loops permit the possibility of self-regulation within a living system, achieving an equilibrium in which the factors of the system are balanced.<sup>5</sup>

Capra helps us define the key criteria of a living system: firstly, the *pattern of organisation*: the configuration of relationships that determines the system's essential characteristics. Secondly, the *structure*: the physical embodiment of the systems pattern of organisation. Thirdly, the *life process*: the activity involved in the continual embodiment of the system's pattern of organisation.<sup>6</sup> Capra argues that the key to a comprehensive theory of living systems lies in the synthesis of two different approaches: the study of substance or structure (something measured and weighed in quantities) and the study of form or pattern (something mapped which involves qualities).

## THE ENVIRONMENT AS A SYSTEM

Ecology is the study of the relationships that interlink all members of Planet Earth. Ecologists picture ecosystems in terms of flow diagrams, mapping out the pathways of energy and matter in food webs and it is this thinking that established recycling as a key principle of ecology. The environment's organisational complexity allows the transformation of the living beings' destructive and wasteful productions into food for other living beings. This happens at all levels across the ecosystem, from the top predators to the smallest microbe and fungi.

The environment is in itself a system, an eco-organisation, self-regulating with multiple feedback loops. It's an integration of the physical environment and all living organisms into the cyclical order of what could be termed

the solar poly machine (climates, seasons, diurnal rhythms)<sup>7</sup>. It can also be considered an open system from an energetic perspective; the environment needs permanent input of solar energy to counteract the thermodynamic process of entropy. Eco-organisation constitutes not just one but several great cycles including the hydrologic cycle, the carbon cycle and the food cycle (energy and nutrients).<sup>8</sup>

In eco organisations, diversity and complexity are complementary: eco systems reach points of optimum diversity with a dominating feedback loop involving only a few species, surrounded by a great variety of other species contributing to maintain the dynamic balance. Diversity matters in these systems; genetic diversity, for example, increases a species's resilience to disease. Complexity preserves diversity as complex life forms have evolved to interrelate with simpler life forms, creating dependence on the functioning of each other.



©HCoA/Solearth,  
Stream ecosystem cycles

<sup>5</sup> Ecological Feedback Loops. Available at: <https://systemsinnovation.io/ecological-feedback-loops/>

<sup>6</sup> Capra, 157 - 176

<sup>7</sup> Sacha Kagan, *Art and Sustainability: Connecting Patterns for a Culture of Complexity* (Bielefeld. Transcript Verlag, 2011) 175

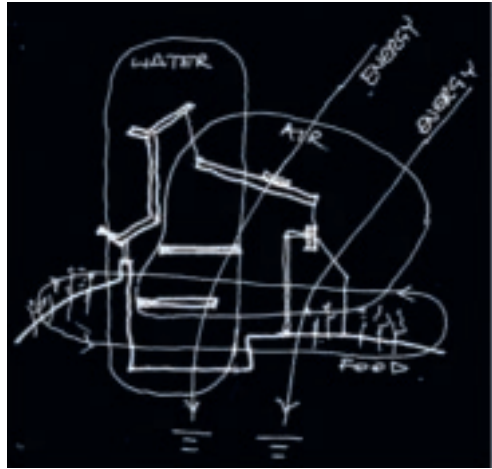
<sup>8</sup> The Gaia theory of earth environmental system also notes the self regulation of the planet through feedback loops, and interestingly links both living with non living elements e.g with rocks and water into this self-regulating process.

Cultures of sustainability should keep this in mind – in architecture, though, this should not be about forced complexity or contrivance, but about recognising and working within the inherent complexity of our environment.

## HUMANITY AND ECOLOGY

Human society has developed transformational capabilities in its relationship to the world ecosystem and with this comes responsibilities. This includes how we choose to build and to live. Kagan argues for a symbiotic co-development between man and nature as co-pilots.<sup>9</sup> We need to apply our ecological knowledge to the fundamental redesign of our technologies and social institutions, so as to bridge the current gap between human design and the ecologically sustainable systems of nature. McDonough and Braungart noted in their ‘cradle to cradle’ methodology that the first principle of eco-design is that waste equals food.<sup>10</sup> This closed loop thinking begins to inform all our spatial design strategies so that they are fundamentally concerned with ecological networks of energy and material flows.

Fostering ecological literacy in human societies is one of the key stepping-stones towards a culture of sustainability. Capra explores some basic principles of eco-literacy: interdependence, recycling, partnership, flexibility, diversity, resilience, and as a consequence of all these, sustainability.<sup>11</sup> Interdependence means understanding relationships, our network pattern. Recycling is the understanding that waste for one is food for another. Partnership is the tendency to associate, to establish links and cooperate, while flexibility is a consequence of multiple feedback loops. Diversity brings resilience because it contains overlapping ecological functions, other links can be formed or utilised. Resilience is the capacity to adapt to change from the outside; there must be a certain openness within an organisation, which is a basic property of life because survival depends on a constant flow of incoming resources.



©HCoA/Solearth, *Ecosystem cycling within a house context*

David Orr, the environmentalist and educator, has written at length on the necessity for ecological literacy in society and he has noted that good design needs to respond positively to its ecological, social and cultural context.<sup>12</sup> Eco literacy is a detailed understanding of nature as a complex interacting creative process in which humanity participates. Eco literacy results in an increased awareness of the basic dependence of all biological and ecological systems (architecture and its occupancy being but one facet of this) on their underlying physical and material systems.

How can we contribute creatively towards a better understanding of the complexity of the global crisis, towards strategies of resilience and sustainability?<sup>13</sup> This is a question that anthropologist and cyberneticist Gregory Bateson has sought to answer with the development of a sensibility to the *pattern which connects*.<sup>14</sup> Art and architecture have the potential to create experience, make relationships of an expanded experience of reality which is critical to understanding our interconnectivity – the integration of subject and object. The environment is not only a setting but also contextualises experience. Understanding reality implies that form can be thought of no longer as an idea of an essence but rather an idea of existence and organisation just as matter is an organising system of elements and processes.

<sup>9</sup> Kagan, 193

<sup>10</sup> William McDonough and Michael Braungart, *Cradle to Cradle: Remaking the Way We Make Things*. (New York, USA: Macmillan, 2002) 92 - 117.

<sup>11</sup> Capra, 297 - 304

<sup>12</sup> David W. Orr *Earth in Mind: On Education, Environment, and the Human Prospect*. (Washington DC USA: Island Press, 2004) 117 - 121

<sup>13</sup> Kagan S. (2011) *Art and Sustainability: Connecting Patterns for a Culture of Complexity* Bielefeld. Transcript Verlag

<sup>14</sup> Bateson G., (1972). *Steps to an Ecology of Mind*. Chicago, USA: University of Chicago Press



## ECOLOGICAL AESTHETIC AND TANGIBILITY

Defining an ecological aesthetic from the point of view of systems and complexity theory leads one to look at the connections between nature and culture, what could be called an aesthetic of integration.<sup>15</sup> Philosopher and cultural ecologist David Abram sees the purpose of aesthetics as to assist in restoring our closeness to the rest of nature, “the touchstone for an experiential world now inundated with electronically generated vistas and engineered pleasures”<sup>16</sup> would be the reconnection to a direct sensuous reality. New forms are needed to emphasise our essential connectedness rather than our separateness, forms that evoke the feeling of belonging to a larger whole, to an ecosystem<sup>17</sup>. Defining the difference in the perception of human-designed artifices against evolved forms of nature can help design these new forms. The former are based mostly in linear, functional logic. They cannot repair themselves and do not evolve; plus there is also a predictability of artificial artefacts which means these objects, after we have mastered them, can teach our senses nothing new and so we must continually acquire new built objects in order to stimulate ourselves, arguably fostering a consumerist, throw-away society. The latter, which include patterns on a stream, starling murmuration, and the seasonal cycles of trees are all composed of repetitive figures but never exactly repeat themselves, are in constant metamorphosis, and hold our attention again and again.

The *pattern which connects* is as clear in the cycles of oxygen and carbon dioxide within our breathing as much as it is in the hydrological cycle, energy flows and material cycles of our built environment. Our awareness of the air forces us to recognise, ever more vividly our interdependence with the countless organisms that surround us.

“The air is the soul of the visible landscape flowing in and out of the earthly living beings, constantly bathed in it.”<sup>18</sup> “for it is only at the scale of our direct sensory interactions with the land around us that we appropriately notice and respond to the immediate needs of our living world.”<sup>19</sup>

The recognition of this pattern in architecture and art would utilise environmental function to assist in the generation of environmental form. It moreover needs to engage not only with further complexities within the networks of our environment but also needs to engage with the occupant and wider public at a cultural level in order to foster ecological literacy

## CONCLUSION

A science of systems and complexity forms the basis for cultures of sustainability. Green aesthetics grow from the knowledge of complexity within ecology, generating an architectural aesthetic that engages with interactions and relationships, not with objects alone. It is this potential for spatial inventiveness, derived from a systems thinking approach, which comes to inform our architectural response to climate change. Working with this approach gives a basis for designing structures that are ecologically sustainable and directs our understanding of design elements such as daylight, natural ventilation strategies, water and wastewater systems or the incorporation of biodiversity.<sup>20</sup> These are all elements which demand to be viewed as part of a larger interconnected system where form follows environmental function.

<sup>15</sup> Wahl, D. C., (2006). *Eco-literacy, ethics, and aesthetics in natural design: The artificial as an expression of appropriate participation in natural process*. Dundee, UK: Centre for the Study of Natural Design, University of Dundee.

<sup>16</sup> David Abram, *Spell of the Sensuous* (New York, NY: Random House, 1996), 9.

<sup>17</sup> See for example: Suzi Gablik, *The Reenchantment of Art* (Thames and Hudson, 1991) and Morin (1992)

<sup>18</sup> David Abram, *Spell of the Sensuous* (New York, NY: Random House, 1995), 226.

<sup>19</sup> Abram, 268.

<sup>20</sup> See for example, Michael Pawlyn, *Biomimicry in Architecture* (London: RIBA publishing, 2011)

## Are you worried about what the post-Covid-19 future looks like?

*'Policies After a Pandemic'* [Issue 87 of **Working Notes**] will explore what the effects of this global crisis will be and how our governments can and should respond to the challenges and opportunities it will bring.

The spread of the virus and the measures taken to mitigate it will have far-reaching implications for the environment, the housing and homelessness crisis and prisons.

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