

# Recovering from COVID-19 through a Green Lens

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Dr. Jessica Doyle, Senior Parliamentary Researcher (Social Science)  
Kate Walsh, Senior Parliamentary Researcher (Environmental Science)  
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## Abstract

Calls for a green recovery in light of the COVID-19 pandemic have been voiced globally. This *Spotlight* presents analysis examining sustainable recovery measures across six key focus areas of relevance to Ireland which are (1) sustainable industry, (2) job creation and a greener workforce, (3) green research and development (R&D), (4) sustainable food systems, (5) sustainable energy and (6) sustainable mobility (transport). A number of broad policy recommendations from international organisations are presented.



## Contents

Key messages .....	2
Calls for a green recovery .....	2
The context for green recovery measures .....	4
Aspects of a green recovery from COVID-19 .....	6
Sustainable industry .....	6
Job creation and opportunities for a greener workforce .....	7
Green research and development (R&D) .....	9
Sustainable food systems .....	10
Sustainable energy .....	11
Sustainable mobility (transport) .....	13
Conclusion and summary of leading policy recommendations .....	14

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## Key messages

- Economic recovery through a green lens, or a green recovery, can be defined by its potential to create opportunities for income, jobs and growth, and at the same time accelerate action on medium and long-term environmental goals, both national and global.<sup>1</sup>
- Experts mostly agree that the disruptive force of the COVID-19 pandemic opens a narrow policy window to steer economic development towards a more sustainable path. In particular, they argue that there is an opportunity to deploy economic stimulus packages towards climate neutral goals.
- The European Green Deal (EGD) and UN Sustainable Development Goals (UN SDGs) can help guide green and sustainable recovery measures from COVID-19.
- This *L&RS Spotlight* focuses on six areas for green recovery measures which are (1) sustainable industry, (2) job creation and a greener workforce, (3) green research and development (R&D), (4) sustainable food systems, (5) sustainable energy and (6) sustainable mobility (transport).
- A summary of policy recommendations made by leading International Organisations (IOs) is provided. These recommendations include: supporting green activities and industries while ensuring a 'just transition' for those working in brown activities/industries; investing in job creation and training and re-skilling in green sectors; increased support for green research and development (R&D); support sustainable food production practices and initiatives to drive down environmental impacts of the agricultural sector; low-carbon energy investments; and investment in sustainable mobility options to support economic activity.

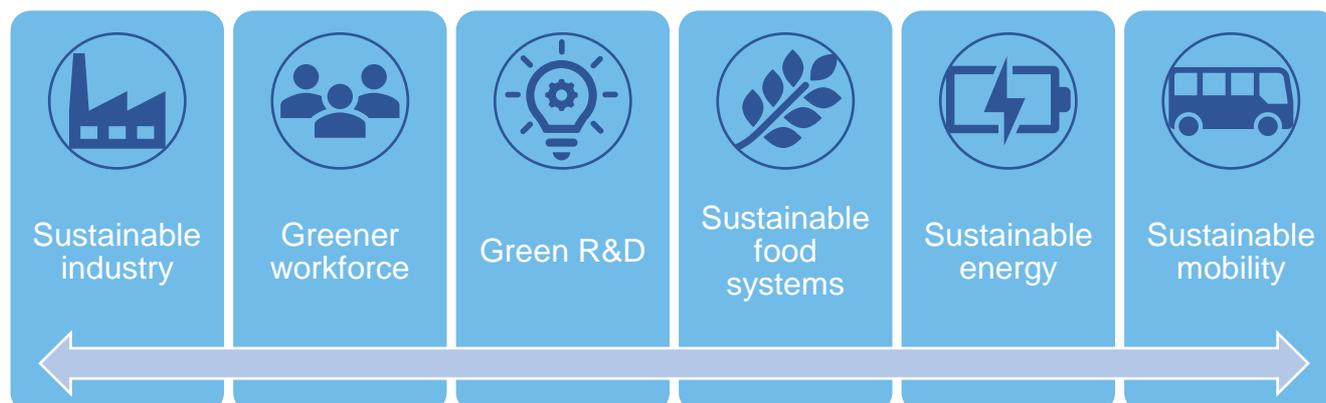
## Calls for a green recovery

Intergovernmental organisations (IOs) and experts on climate change mostly agree that the disruptive force of the COVID-19 pandemic opens a space for reflection on how we face environmental challenges and a narrow policy window to steer economic development towards climate neutral goals.<sup>2</sup> While acknowledging the immense human suffering caused by the COVID-19 pandemic, they highlight the global reduction in CO<sub>2</sub> emissions as a result of COVID-19 shutdowns and the opportunity for environmental sea change presented by COVID-19 economic recovery packages.

Findings from opinion polls indicate a strong public desire to build on the environmental benefits seen during COVID-19 lockdowns as the economy resumes and for governments to prioritise climate change in COVID-19 recovery packages.<sup>3</sup> Interestingly, there are clear indicators of political support for such an agenda at both an Irish and a European Union (EU) level. In April 2020 the Irish government signalled a commitment to place the European Green Deal (EGD) at the centre of its economic response to COVID-19<sup>4</sup> and this commitment is further reinforced in the 2020 Programme for Government document (see Text Box 2).<sup>5</sup> A similar commitment has been echoed by many other EU countries,<sup>6</sup> and in May 2020 EU officials stated that 25% of the proposed €750 billion EU coronavirus recovery fund would be reserved for climate-friendly actions.<sup>7</sup>

Overall, it would seem the impetus for a 'green' recovery from COVID-19 - one that accelerates progress towards decoupling economic development from natural resource use and towards broader sustainability goals - is high. Within this context, this *L&RS Spotlight* considers some potential aspects of a green recovery from COVID-19 according to the available scientific literature. It does so with a focus on six key issues which are set out in Figure 1 below and discussed in turn in the sections that follow. Prior to discussing these issues, the context for green recovery measures is briefly set out below. It should be noted at the outset that perspectives on a green response to COVID-19 are varied, contested and rapidly evolving and this *Spotlight* is intended only to provide a snapshot of some key issues and literature rather than a complete guide to all debates. To this end, the literature base is predominately peer-reviewed academic literature and policy literature from leading IOs, with the views of interest and lobby groups mostly excluded. This is done to maintain impartiality in the analysis. Further, while a range of measures for a green recovery are presented here, the timing of implementation of these measures is not determined; it is possible that some industries will need to be supported in the immediate term with green measures introduced over the medium term.

Figure 1. Areas of focus for a green recovery from COVID-19 discussed in this L&RS Spotlight



## The context for green recovery measures

### Text Box 1

*“The EGD must become the cornerstone of Europe’s pandemic recovery...we must focus on spending stimulus money wisely and on preparing Europe for a competitive and inclusive 21st century, climate-neutral future.”*

- Frans Timmermans, Executive Vice-President for the EGD, European Commission

The European Green Deal (EGD)<sup>8</sup> has been repeatedly referenced as a possible framework for a green recovery from COVID-19, at both an EU level and in the 2020 Programme for Government (see Text Boxes 1<sup>9</sup> and 2<sup>10</sup>). Its timing is coincidental and provides an opportunity for steering economic growth in directions consistent with climate action policy. In essence, the EGD is a new growth strategy for the EU which aims to transform the EU from a high to a low carbon economy where economic growth is decoupled from natural resource use. It provides a range of actions to achieve this aim, with the central goal being for the EU to become the first net climate neutral bloc in the world by 2050. This is in line with the Paris Agreement objective to keep the global temperature increase to well below 2°C and maps onto several of the United Nations Sustainable Development Goals (UN SDGs).<sup>11</sup> Central to this goal of a climate neutral EU by 2050 is the European ‘Climate Law’ which will legally enshrine the 2050 climate neutrality objective. To achieve this objective, the EGD introduces actions across almost all sectors of the EU economy, including:

- Investing in environmentally-friendly technologies
- Supporting industry to innovate
- Rolling out cleaner, cheaper and healthier forms of private and public transport
- Decarbonising the energy sector
- Ensuring buildings are more energy efficient
- Working with international partners to improve global environmental standards.

The main policy focus areas of the EGD are summarised in Figure 2 below. The EGD and Ireland’s commitments under it are the subject of a recent [L&RS Note](#).<sup>12</sup>

### Text Box 2

*We will support the EGD...[and] direct any relevant funding under the EGD towards decarbonising projects...clean research and development spending, and reskilling needs to address unemployment from COVID-19 and structural shifts from decarbonisation.*

- Programme for Government, Our Shared Future

Figure 2. Key policy areas of the European Green Deal



Source: Oireachtas Library and Research Service, *L&RS Note: The European Green Deal and its implications for Ireland*, 2020.

In addition to the EGD, the UN SDGs provide a global blueprint for a sustainable future, comprising 17 interrelated goals which scope the major challenges of contemporary society, including climate change and environmental degradation. Ireland has committed to advancing progress across each of these 17 goals by 2030. The SDGs are unique in that they provide a platform for considering public policy within the context of multiple pillars—the environment, economy, and society—together, underpinned by a partnership approach to policy implementation. Mirroring the policy areas of the EGD, the UN Environment Programme<sup>13</sup> suggests that green recovery measures from COVID-19 simultaneously address the SDG challenges<sup>14</sup>, most notably in sustaining a healthy environment and climate action (Goal 13), halting harm to ecosystems (Goals 14 and 15), adopting cleaner and greener approaches to energy, resources, industry and communities (Goals 7, 9, 11 and 12), and eliminating inequalities (Goal 10).

In June 2019, Ireland's Climate Action Plan was published and many of the 183 specified actions<sup>15</sup> will likely fall to the current Government to fully implement.<sup>16</sup> Of importance is that the Action Plan (like the UN SDGs) sets out the need to progress climate actions as critical—alongside and not secondary to economic and social policy objectives (see Text Box 3).<sup>17</sup>

**Text Box 3**

*In line with the UN Sustainable Development Goals, climate action must be seen as complementary to other important policy objectives, such as promoting sustainable economic development pathways, improving energy security, and addressing air pollution impacts on human health.*

- Climate Action Plan, 2019

In the 2020 Programme for Government, the Government has committed to an average of 7% per annum reductions in CO<sub>2</sub> equivalent of greenhouse gases (GHG).<sup>18</sup> The July Jobs stimulus package<sup>19</sup> is the first wave of the Irish government's fiscal responses to aid the economic recovery from COVID-19 and environmental aspects of this are discussed where relevant in the sections below. Together these provide frameworks for emergent green actions, progress towards which experts argue can be either accelerated or decelerated by policy responses to COVID-19.

## Aspects of a green recovery from COVID-19

### Sustainable industry

Government support for industry has been a core area of focus among IOs and experts concerned with a green recovery from COVID-19. Recommendations here have mainly focused on two key issues: (1) that carbon-intensive, "brown" industries do not receive unconditional financial support from governments and (2) that sustainable "green" industries/activities are supported instead (see Text Box 4). For instance, an International Monetary Fund (IMF) Note<sup>20</sup> urged policymakers to "choose to support green, rather than brown, activities [and to] make support for brown activities conditional on making progress on climate change". Similarly, a policy paper<sup>21</sup> published by Oxford University recommended that "incentivising key energy-intensive industrial sectors to reduce net carbon emissions" and "making bailouts for struggling firms conditional on improvements against climate-positive criteria" should be considered in a United Kingdom (UK) sustainable recovery package for COVID-19. One argument made by the authors of this study is that financing fossil-fuel dependent industries through economic stimulus packages risks locking the economy more tightly to fossil fuel dependency. Large-scale investments in fossil fuels today makes a move towards greener industry/activities appear increasingly costly and unappealing and the private sector is unlikely to invest heavily enough in green activities in a depressed economy.

**Text Box 4**

Policy areas of focus for big industry:

- (1) Chose to support green, rather than brown, activities
- (2) Make support to brown activities conditional on making progress on climate

The authors of the Oxford University study also point with particular concern to an emerging trajectory of governments giving large unconditional bailouts to airlines; one database shows that as of 27 August 2020, European nations had bailed out airlines to the sum of over €33 billion<sup>22</sup> mostly with limited or no climate conditions attached. This is despite unconditional airline bailouts being ranked as a poor performing economic policy by leading economic experts<sup>23</sup> and publicly unpopular, as well as damaging to the environment.<sup>24</sup> It is noteworthy that this assessment relates

to the *unconditional* nature of bailouts; the argument is not that airlines should not receive financial assistance, but rather that assistance should be given alongside commitments to make progress towards climate action conditions. This point is significant in the Irish context as Ireland's island nation status necessitates air travel more than others, and economically its strategic hub for international connectivity and freight is significant.

The question of how to ensure a transition from green to brown industry does not cause negative outcomes for those reliant on these industries has been an important one. For Ireland, the extractive industry and state enterprises in forestry and peat harvesting are large employment sectors, particularly in rural areas. They are also key focus areas from a climate perspective. For example, commitments have already been made to end peat harvesting by the end of 2020.<sup>25</sup> Initiatives aligned with a 'just transition' to adapt and modify the workforce to greener measures, such as rehabilitating peat bogs rather than harvesting them, are key climate actions that can combine a green future with sustained employment for rural communities.<sup>26</sup> Without strong policies to ensure a just transition and protect livelihoods, those employed in high-polluting industries will suffer job losses and falling incomes. Here, the Just Transition fund established<sup>27</sup> for the midlands region of Ireland may serve as a model nationally.

#### Text Box 5

The question of how to ensure a transition from brown to green industry does not cause negative outcomes for those reliant on these industries is an important one.

## Job creation and opportunities for a greener workforce

Since the outbreak of COVID-19 in Ireland unemployment has risen massively with a peak of 598,000 pandemic unemployment payment (PUP) claimants in May 2020.<sup>28</sup> Studies show<sup>29,30</sup> that young people, women and lower paid workers have been particularly hard hit by job losses, mainly

#### Text Box 6

Policy areas of focus for job creation:

- (1) Invest in job creation in green sectors and activities
- (2) Introduce comprehensive measures for vocational training and re-skilling
- (3) Ensure a just transition for those in fossil-fuel industries

due to their over-representation in labour-intensive sectors and the sectors specially shut down to slow the spread of COVID-19 (e.g. entertainment, hospitality and retail). Studies also indicate that COVID-19 is likely to deepen existing economic inequalities.<sup>31</sup> Primarily this is because labour-intensive, lower paid sectors are more likely to be curtailed by enduring social distancing requirements than desk-based, higher paid sectors which are well-suited to remote working.<sup>32</sup> It is therefore essential that any COVID-19 recovery package not only creates new jobs for those most affected by layoffs, but also

allows for innovation and provides new opportunities for training and reskilling<sup>33</sup> (see also Text Box 6).<sup>34</sup> Here, experts and IOs point towards the co-benefits of investing in job creation and reskilling in areas which support a move towards climate commitments under the EGD, UN SDGs and Paris Agreement,<sup>35</sup> and in particular the benefits of investing in green building and renovation projects. It is worth noting at the outset that researchers and leading environmental non-governmental organisations (NGOs) have emphasised that any post-COVID-19 job planning and creation should

be an inclusive process which engages with labour unions and other worker and citizen representatives.<sup>36</sup>

The European Commission COVID-19 Recovery Plan states that investment “should help the EGD become a job-creating engine” and ties job creation to building and renovation commitments under the EGD (see Text Box 7).<sup>37</sup> An Oxford University-led study<sup>38</sup> makes a similar observation and further contends that investment in job creation through green building and renovation projects also makes the most sense from an economic perspective; the authors point to one model which suggests that spending on sustainable energy infrastructure generates almost three times as many jobs as spending in fossil fuels,<sup>39</sup> although others have pointed out that some population groups (ethnic minorities and women) do not benefit from job creation in this sector to the same extent as others.<sup>40</sup> However, while spending on sustainable energy infrastructure may have a positive impact on job creation overall, the reality remains that thousands working in fossil-fuels will have to find alternative employment. Here, the OECD emphasise the importance of policies for a just transition in retraining fossil-fuel workers at risk.<sup>41</sup>

At a more general level, research suggests that energy efficiency retrofits can help reduce fuel poverty<sup>42</sup> and economic inequalities in society (where support for energy efficiency retrofits are directed towards lower-income households to decrease their electricity costs); an observation also made in the European Commission recovery plan.<sup>43</sup> As part of the July Jobs stimulus package the Irish government has committed to the establishment of a Retrofit Skills Training Initiative and a €100 million investment to support the expansion of the Energy Efficiency National Retrofit programme.<sup>44</sup>

The COVID-19 pandemic has accelerated and normalised remote working for many and the expectation is that this can and should continue to be a feature of the economy going forward (see Text Box 8).<sup>45</sup> However, research indicates that remote working as a green solution is not as simple as it perhaps sounds and requires the simultaneous introduction of policies and funding which support workers and offset potentially detrimental environmental outcomes.<sup>46</sup> For instance, while research suggests that cutting work commutes will likely reduce transport sector GHG emissions,<sup>47</sup> this must be offset against electrifying and heating/cooling many individual residential workspaces rather than fewer office and coworking spaces.<sup>48</sup> Here, experts have pointed to the importance of support for energy efficiency home renovations and *high-quality* retrofits when it comes to remote working, both to offset the aforementioned environmental impacts of heating individual homes and also to ensure that

#### Text Box 7

*[European Commission] investment should help the EGD become a job-creating engine...The upcoming Renovation Wave will focus on creating jobs in construction, renovation and other labour-intensive industries...This will help save money on energy bills, provide healthier living conditions and reduce energy poverty.*

- European Commission COVID-19 Recovery Plan

#### Text Box 8

*The move to remote working, online trading, and digital services, have accelerated during the pandemic. This will be a permanent feature of the economy which we must prepare for now.*

- July Jobs Stimulus, July 2020

workers are not negatively impacted by high heating costs incurred by remote working policies.<sup>49</sup> Improvements in infrastructure and internet access utilities<sup>50</sup> are also necessary, particularly in rural communities, to effectively support remote working.

## Green research and development (R&D)

A European Commission policy brief highlights the value of research and innovation in dealing with both the immediate and long-term fallout from the COVID-19 crisis.<sup>51</sup> In 2015, the Irish government introduced a target to invest 2% of GDP in R&D by 2020.<sup>52</sup> This has not yet been achieved, with R&D investment hovering closer to 1% in Ireland, well below the EU27 average.<sup>53</sup> However, the 2020 Programme for Government signals an intention to introduce a “transformational programme of research and development, to ensure that Ireland is at the cutting edge of scientific and technological innovation in meeting our climate change targets”.<sup>54</sup> It further highlights six target areas for clean R&D (see Text Box 10).

### Text Box 10

Programme for government target areas of clean R&D

- Bioeconomy
- Marine sequestration
- Green hydrogen
- Wave technology
- Developing floating offshore wind turbines
- Agriculture

The European Commission COVID-19 recovery plan also has a strong focus on clean R&D and commits to investment in clean technologies and value chains, mainly through the new Strategic Investment Facility and additional funding for Horizon Europe.<sup>55</sup> Research shows that clean R&D can drive down the cost and therefore increase the accessibility of green technology (such as solar panels<sup>56</sup>) and that government support for R&D is crucial in protecting the early lifecycle development of new technologies. Investment in general R&D can be linked to economic growth (although not always<sup>57</sup>) and studies show that public investment in clean R&D results in a particularly high level of knowledge spill over, meaning that knowledge from one innovation can lead to additional innovations.<sup>58</sup> On this basis, Hepburn et al. (2020) have argued that including public investment in clean R&D as part of the COVID-19 recovery plans can help government’s meet R&D investment targets, build a more productive and resilient economy and support

climate neutral goals such as a transition to green energy.<sup>59</sup> However, it is worth noting that this study also found that leading economic experts considered public investment in green R&D to be slow at yielding economic benefits for society. A September 2020 OECD policy brief highlighted opportunities for green innovations, which include, among others, technologies for renewable energy, energy storage, heating and cooling in buildings, electric, hybrid and fuel-efficient vehicles, and carbon capture, storage and use technologies.<sup>60</sup> This policy brief argued that COVID-19 stimulus measures represent an important opportunity to bolster funding for innovation.<sup>61</sup> For Ireland, as part of the July Jobs Stimulus the government has committed €10 million to support

### Text Box 9

Policy areas of focus for R&D

- (1) Increase public R&D budgets as response to crisis
- (2) Remove barriers to R&D
- (3) Safeguarding knowledge-intensive companies

businesses engaging in green research, development and innovation, capital investment, and capacity building, through the first phase of a new Green Enterprise Fund.<sup>62</sup>

## Sustainable food systems

Terrestrial and marine food production in Ireland is associated with adverse impacts on the environment, yet it is our most important indigenous industry, valued at 7.9% of modified gross national income (January 2018).<sup>63</sup> There are many environmental challenges within this sector including nitrogen pollutants, poor water quality, biodiversity loss, greenhouse gas (GHG) emissions, waste, and packaging. Ireland's agri-food sector has faced challenges in the COVID-19 crisis around changes in the demand profile at different times, workforce availability and logistics concerning just-in-time production, and recovery for the sector will have to carefully navigate the balance between climate action obligations and opportunities for savings, adaptation and growth. The agricultural sector and food production together underpin most rural jobs including seasonal workers.<sup>64</sup> Calls for sustainable food production practices to be prioritised in the green recovery have been made (for example see Text Box 11).<sup>65</sup> In a Royal Irish Academy blog post, Professor Tom Arnold, Chair of the 2030 Agri-Food

Strategy, stated that "the Irish agri-food sector will have a critical role in our economic recovery, as it did in the wake of the 2008 financial crash".<sup>66</sup> Recommendations from a collective of UN organisations suggest "four broad shifts in the food system":<sup>67</sup>

1. Resilient food supply chains. Food produced locally can be distributed more efficiently, lowering risks of food insecurity, [...] hikes in food prices, while creating local jobs. This calls for a rural transformation to empower small producers and retailers and mainstream them in the food systems economy.
2. Healthy diets. Curbing the overconsumption of animal and highly-processed food, [...] and improving access to good nutrition [...] can improve well-being and land use efficiency [...] and [can] slash carbon emissions.
3. Regenerative farming. A shift toward sustainable and regenerative land and ocean farming connected to strong local and regional food systems can heal our soils, air and water, boosting economic resilience and local jobs.
4. Conservation. [...] A shift toward more plant-based diets [...] is key to saving pristine ecosystems. Conservation efforts [...] are central to restoring biodiversity, boost carbon sequestration and lower the risk of future pandemics.

### Text Box 11

*"The Green economic recovery we envisage would see greater diversification and getting back to a more locally-based model of agriculture and fishing. It would involve reform of the current economic model to make it one that serves the people rather than the reverse.*

*It would see a sustainable, resilient job-rich economy, with just transition plans supporting workers as they move from unsustainable practices that are environmentally damaging."*

- Grace O'Sullivan MEP, Green Party, Ireland South

Food security is not problematic for Ireland<sup>68</sup> (although it is a net importer), however a recovery from COVID-19 could see export markets adjust their own security of supply and affect the demand of produce. Consumers and food producers are increasingly aware of and driven by sustainability and choices around environmental impacts of food production.<sup>69</sup> Ireland is well positioned to serve consumers for whom quality and provenance, and sound environmental practice, are of increasing importance.<sup>70</sup> According to a sector survey report<sup>71</sup> the COVID-19 lockdown brought about “increased consumer spending on food retail [and] may have a long-term impact on consumer buying habits and create increased demand for certain products and services.”

The 2019 Climate Action Plan envisages 16.5 Mt CO<sub>2</sub> equivalent savings from agriculture over the period 2021–2030.<sup>72</sup> Achieving this target requires ‘smart agriculture’ initiatives such as protected urea fertilisers, improved animal health and breeding, and low emission slurry spreading. In some cases, R&D is key to realising the potential benefits of advanced agronomy, and the 2020 Programme for Government commits to “ensur[ing] that Ireland is at the cutting edge of scientific and technological innovation in meeting our climate change targets”.<sup>73</sup>

Energy consumption in the sector is also a major challenge. Ambitions to improve energy efficiency and incentives for micro-renewable energy generation on farms, and to establish an ‘Energy Efficient Farming’ scheme for energy-efficient technology for farm use, are stated in the 2020 Programme for Government.<sup>74</sup> The next iteration of Common Agricultural Policy (CAP) reform in 2021/22 will propose that 40% of the CAP budget will be spent on climate actions.<sup>75</sup>

Ireland can effectively earn credits or allowances (known as flexibilities) for removing or absorbing atmospheric CO<sub>2</sub> (as measured against the EU targets), by means of its land use and management.<sup>76</sup> The Climate Action Plan 2019 measures for GHG reduction include improved land use management, productivity and preservation of carbon sinks in soils, forestry and bogs. A green recovery for land use management could entail preservation and rehabilitation of the most at-risk landscapes, such as forested and excavated peatlands, and bog rewetting and forestry/farming on bog landscapes (paludiculture).

Food waste and excessive packaging (especially of single-use plastics) are very visible and action is required to reduce these environmentally harmful issues. Food waste is a problem both in commercial and residential settings, globally about a third of produce is wasted and this amounts to estimates of one million tonnes per annum in Ireland (the majority of which is avoidable or potentially so).<sup>77</sup> Measures to curb this include use of technology for improved time and supply management such as smart bar codes.<sup>78</sup> More generally, waste management challenges have increased as a result of the COVID-19 pandemic as governments deal with major increases in medical waste (due mostly to disposable personal protective equipment), increased demand for single-use plastics (for groceries, food delivery, health care and e-commerce packaging), and reduced recycling capacity and a collapse of the market price for recycled plastics.<sup>79</sup>

## Sustainable energy

Heat and electricity generation is the largest contributor to non-industrial emissions of GHG. For years, Ireland has been dependent on non-renewable fossil fuel—mainly natural gas (which

accounted for 54% of energy inputs to electricity generation in 2018<sup>80</sup>), peat (for its three peat-based electricity generation plants), and imported coal for its only coal burning plant. Ireland is seeing growth in electricity demand,<sup>81</sup> and electrification and decarbonisation of the energy sector is a major climate action focus for Ireland.<sup>82</sup> The Climate Action Plan (2019) had already set in motion major transformations in Ireland's approach to electricity generation, targeting 70% renewables by 2030.<sup>83</sup> For instance, the cessation of peat harvesting and combustion is a primary climate action goal, earmarked to save over 3000 tonnes of CO<sub>2</sub> equivalent annually.<sup>84</sup>

#### Text Box 12

*"A well-designed stimulus package could offer economic benefits and facilitate a turnover of energy capital which have huge benefits for the clean energy transition."*

- Fatih Birol, executive director, International Energy Agency

The 2020 Programme for Government has made prominent commitments to several measures in change towards a more sustainable energy sector. First, it deals with the potential problem of becoming stranded with infrastructure based on fossil fuels by a commitment to stalling and moving away from projects tied to non-renewable hydrocarbons such as a liquified natural gas (LNG) terminal for gas imports and interconnectivity to Europe. Second, it identifies new opportunities in offshore wind generation as a major engineering challenge with the potential to meet and exceed the gap left by transitioning

away from natural gas and peat/coal generated electricity. The mix of state, semi-state and private stakeholders, very high investment costs up-front, the dependence on national and connectivity infrastructure and transmission systems upgrades, mean that public investment are key to achieve this. Energy infrastructure decisions taken now will be locked in for decades to come, thus the opportunity for low(er)-carbon energy investments as part of the post COVID-19 recovery phase is timely (see Text Box 12).<sup>85</sup>

Beyond renewable electricity generation, thermal initiatives worth mentioning here are energy-saving initiatives such as retrofitting and insulation (mentioned above), and other renewable heat generation such as geothermal and district heating schemes<sup>86</sup> (reducing the need for heat generated, and hence energy consumption, by power plants) which Ireland has geological potential for<sup>87,88</sup> and is not susceptible to energy security challenges.

## Sustainable mobility (transport)

Transport is the largest CO<sub>2</sub> contributing sector in Ireland, and it is closely linked to economic indicators,<sup>89</sup> with around half of journeys undertaken for work, education and shopping.<sup>90</sup> Public transport plays a major role in alleviating traffic congestion and air pollution and is one of the key elements in making our cities and towns both environmentally sustainable and economically competitive.<sup>91</sup> Research shows that in urban areas of Ireland public transport is already beyond capacity on many routes and COVID-19 public health measures such as 2m physical distancing on transport result in extremely restricted capacity reduction.<sup>92</sup> More broadly, the recovery is an opportunity for investments that meet sustainable transport needs in ways that better serve climate actions (see also Text Box 13).<sup>93</sup>

### Text Box 13

*"The crisis has also demonstrated the crucial role that transport plays, ... To help create more jobs, there will also be a focus on accelerating the production and deployment of sustainable vehicles and vessels as well as alternative fuels."*

- European Commission  
COVID-19 Recovery Plan

The 2020 Programme for Government pledges<sup>94</sup> transport policies to increase investment in carbon neutral alternatives, primarily cycling and walking, and to accelerate electrification of the transport system, including electric bikes, electric vehicles, and electric public transport, alongside a ban on new registrations of petrol and diesel cars from 2030. Cycling and walking are the greenest modes and investment is likely to be welcome, although obvious drawbacks are that this approach serves those mainly living and working proximally. Over 60% of commuting journeys were by car in 2016,<sup>95</sup> and car use for commuting is proportionally greater amongst those who reside in commuter belt regions who cannot avail of public transport, for example because of unsuitable scheduling, or is inconvenient for a point to point journey from rural to urban localities. Public transport in towns and cities is often beyond capacity and demand for new routes and infrastructure are not likely to disappear. Using public transport presents a unique challenge in relation to living alongside COVID-19 where social distancing measures remain in place, so enhanced capacity from pre-COVID levels is likely unattainable in the current climate. Investment in public or privately-run transport services, other than bus routes, require long lead in times and high upfront investment. The step-back from commuting due to COVID-19 provides a chance to reflect on opportunities that might have not been viable, such as use of river and canal ways for waterbus services, or regeneration of old railways for cycle routes or light rail, or multi-modal park and ride schemes that keep vehicles out of most congested areas. Incentive schemes for electric bikes and/or scooters (plus associated regulation) might fill the gap in the commuter's transport mix.

Alongside this are opportunities for a transition towards decarbonising the transport sector, which in Ireland used 3.9 % of renewable energy (principally biofuels) in 2018, or 7.2% when weightings for biofuels and renewable electricity are applied in accordance with the EU Renewable Energy Directive (2009/28/EC).<sup>96</sup> This is short of the Directive target of 10% for 2020.<sup>97</sup> As well as a recovery strategy that looks at capacity and routes, there is an opportunity to explore new technologies in transport. Biofuels are already in all combustion engine vehicles, and there are

plans to double the ethanol mix from 5% currently to 10% by 2030.<sup>98</sup> Electric vehicles (EVs) and plug in hybrid vehicles (PHEVs) are gaining popularity and a broader product selection and charging point availability combine to make this more attractive.<sup>99</sup> However, the levels of (PH)EVs uptake required are very high, and production rates are unlikely to match a rapid increase in demand.<sup>100</sup> Rolling out EVs in captive fleets for business could be further incentivised (beyond current zero-rate benefit in kind tax for business users of electric cars). Investments in roads and their configuration might be revisited, for example education on more efficient driving, making use of carsharing/carpooling schemes<sup>101</sup> and bus lanes for high occupancy vehicles.<sup>102</sup> However, there are counterarguments that such measures can result in reduced capacity for public transport.

As mentioned previously, Ireland's island nation status necessitates air travel more than others, and economically its strategic hub for international connectivity and freight is significant. However, at the same time, aviation is very impactful on atmospheric GHG and is levied. CO<sub>2</sub> emissions from aviation have been included in the EU emissions trading system (EU ETS) since 2012.<sup>103</sup> An early indicator of the impact of the lockdown was that in Ireland, deliveries of jet kerosene were 84% lower in April 2020 compared to April 2019.<sup>104</sup> It is evident both during and following the COVID-19 crisis, that a reduction in domestic and international travel would have environmental benefits (albeit they cannot be 'reckoned' in the climate action targets at national level: international aviation does not form part of Ireland's total reported emissions, so we will not see a significant emissions reduction from aviation in the national greenhouse gas inventory).<sup>105</sup>

## Conclusion and summary of leading policy recommendations

This *L&RS Spotlight* seeks to highlight some potential areas of focus for a green recovery from COVID-19 according to the available policy and academic literature. Experts from leading international organisations such as the EU, IMF, OECD, UN and World Bank have made a strong case urging governments to incorporate green measures in their policy and economic responses to COVID-19. Within this context, Table 1 (below) summarises the main policy recommendations on how to support a green recovery from COVID-19 according to some of these experts. It is worth noting that the policy measures set out in Table 1 are not aligned with any specific policy tabled in Ireland, but rather provides an overview of the types of measures being discussed. In addition to these measures, the World Bank has published a "Proposed Sustainability Checklist for Assessing Economic Recovery Interventions" and the previously cited Oxford University working paper sets out key elements of a UK sustainable recovery package which may be of interest.<sup>106</sup> Finally, the OECD have developed a list of environmental indicators to monitor the environmental success of COVID-19 recovery packages over time.<sup>107</sup>

Overall, economic stimulus packages will have lasting effects on the economic system and potentially the environment. Even if investments have the same benefits over the short term, some options will do better at promoting long-term sustainable growth and poverty reduction. A recent article in *Nature Climate Change* concluded that with an economic recovery tilted towards green stimulus and reductions in fossil fuel investments, it is possible to avoid future warming of 0.3 °C by 2050.<sup>108</sup> This would set the world on track for keeping the long-term temperature goal of the Paris Agreement within sight.

Table 1. Policy recommendations for a green recovery from COVID-19.

Policy recommendation	Source
Recovery Fund to promote resilience- and sustainability-oriented reforms as conditions for economic support	Economic and Societal Impact of Research and Innovation (ESIR) European Commission Expert Group <sup>109</sup>
Environmental and social conditions to lay framework for fiscal stimulus, economic recovery and Research and Investment (R&I)	ESIR
Increase public R&I investments within the EU and Member States' budgets as response to crisis	ESIR
Direct public and private resources to finance systems innovation through commitment between EU's funding instruments and the private investment community	ESIR
Pursue reforms to safeguard knowledge-intensive companies	ESIR
Assess the climate impact (positive and negative) of support (stimulus) measures	IMF Fiscal Affairs <sup>110</sup>
Choose to support green, rather than brown, activities	IMF Fiscal Affairs
Make support to brown activities conditional on making progress on climate	IMF Fiscal Affairs
Price carbon right (e.g. raise carbon taxes, eliminate fossil fuel subsidies)	IMF Fiscal Affairs
Develop a new, ambitious, medium-term climate plan	IMF Fiscal Affairs
Coordinate and support others (e.g. financial support to low-income countries, countries agree carbon-price floor)	IMF Fiscal Affairs
Make the financing green (e.g. using green bonds, private finance for green investment)	IMF Fiscal Affairs
Ensure that emergency response measures do not relax environmental standards and regulation, and ultimately exacerbate existing environmental challenges. This requires a whole of government approach to assessing the impact of recovery and stimulus measures	OECD <sup>111</sup>
Supporting sector restructuring towards fairer, greener economies	OECD
Use COVID-19 recovery measures to accelerate actions that were already envisaged under existing environmental plans and proposals	OECD

Policy recommendation	Source
Implementing fossil-fuel subsidy reform and carbon pricing, with due consideration of distributional impacts	OECD
Avoiding locking-in unsustainable infrastructure and resource extraction	OECD
Achieving more sustainable and resilient agriculture	OECD
Unleashing innovation (bolster support for green R&D)	OECD
Deliver new jobs and businesses through a clean, green transition	UN Secretary General António Guterres <sup>112</sup>
Taxpayers' money used to rescue businesses tied to achieving green jobs and sustainable growth	UN Secretary General António Guterres
Fiscal firepower must drive a shift from the grey to green economy, and make societies and people more resilient	UN Secretary General António Guterres
Public funds use to invest in the future and flow to sustainable sectors and projects that help the environment and the climate	UN Secretary General António Guterres
Climate risks and opportunities incorporated into the financial system as well as all aspects of public policy making and infrastructure	UN Secretary General António Guterres
Work together as an international community	UN Secretary General António Guterres

<sup>1</sup> OECD. "Making the Green Recovery Work for Jobs, Income and Growth." Accessed September 24, 2020. <https://www.oecd.org/coronavirus/policy-responses/making-the-green-recovery-work-for-jobs-income-and-growth-a505f3e7/>.

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<sup>5</sup> Government of Ireland. "Programme for Government - Our Shared Future," June 2020. <https://static.rasset.ie/documents/news/2020/06/programmeforgovernment-june2020-final.pdf>.

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## Contact:

Houses of the Oireachtas  
Leinster House  
Kildare Street  
Dublin 2  
D02 XR20

[www.oireachtas.ie](http://www.oireachtas.ie)

Tel: +353 (0)1 6183000 or 076 1001700

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