

14 | Government Climate plan lacks ambition and relies on failed market-based solutions

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There has been quite a bit of fanfare about the government's Climate Action Plan (CAP) with some environmental groups even welcoming it. Friends of the Earth called it the "biggest innovation in Irish climate policy in 20 years".¹ While it might contain a couple of good ideas, the CAP can be seen as a response to the growing pressure on the government from the movement on the streets and its concerns about losing votes to the Greens. It followed on from the Oireachtas Joint Committee on Climate Change Report which was hailed by many as a significant breakthrough in that it was seen to generate a consensus across the political spectrum that serious action was needed. It also contained a proposal for an enhanced carbon tax leading to the left and Sinn Féin not signing up to the Report.

CAP is a catalogue of past failures and a completely inadequate response to the Climate Emergency. Three main problems² with it are that:

- It lacks ambition;
- It lets big corporate players and big farmers off the hook;
- It does not challenge the profit-driven system which has created the climate crisis and relies, in the main, on the private sector, to deliver;
- It is not the state-lead Marshall Plan which many have been calling for to deal with climate change.³

1. It lacks ambition.

The 2018 IPCC Report,⁴ on keeping warming at less than 1.5 degrees Celsius, said that we needed "*deep emissions reductions in all sectors...and a significant upscaling of investments in those options*". It also said we need cuts, based on 2010 emissions, of 45% by 2030 and to be at net zero emissions by 2050.

The Report of the Oireachtas Joint Action Committee in March 2019 acknowledged this and said we needed cuts of between 5-10% per year. It also says that by 2030 Ireland's emissions should be at 33 MtCO₂eq (metric tons of carbon dioxide equivalent) rather than the 60 MtCO₂eq they are now. That's a fall of 45%. This is higher than the targets set in CAP (p.30) which sets a target of a 2% cut per year to 2030 with an overall target of between 43 and 46 MtCO₂eq by 2030, with a possible further reduction of 2.7 MtCO₂eq due to land use changes. At best, that brings us to 40.3 MtCO₂eq in 2030, a fall of 34%.

This leaves an awful lot of work to do after 2030. The targets for 2030 are very much framed in the context of the targets that have been set for us by the EU (30% for non-Emissions Trading Scheme (ETS) emissions which include transport, agriculture and buildings) and our obligations under the Paris Agreement which, with current global commitments, would lead to temperature rises of about 3°C by 2100.⁵

It's no wonder then that there have been calls to ramp up EU commitments with, for example, the left group in the European Parliament, GUE/NGL, calling for an immediate revision "of our 2030 targets to commit to a reduction target of at least 65%".⁶ Some climate scientists, such as Kevin Anderson, have argued that that richer economies, in recognising their greater historical responsibility for emissions, need cuts of the order of 12% per year to have a 50% chance of keeping rises below 2 degrees.⁷ A call for more ambition has also come from engineering professor Barry McMullin of DCU who claims that the current approach "falls short of the 1.5°C ambition". He argues that rich, industrialised states such as Ireland must "lead on climate ac-

tion and decarbonise significantly faster than the global average". This essentially implies that: "we must reach net-zero emissions *much sooner* than 2050".⁸

The lack of ambition in CAP is reflected in a number of areas:

a) Targets for retrofitting are considerably lower than those that have been promoted by the Sustainable Energy Authority of Ireland and other fairly conservative bodies such as the Irish Academy of Engineering (IAE), the Climate Change Advisory Committee and even the Oireachtas Committee itself. CAP seeks to raise the ambition of 'Project 2040' to retrofit 45,000 homes per year to 50,000 to help meet our 2030 emissions targets. Others, including the Oireachtas Committee, have said we need to be considering 75,000 a year while the IAE argued, in 2016, that we needed "a more aggressive programme of retrofitting "to do 100,000 per year with another 20,000 homes needing a deep retrofit. The estimate for the cost of this is about €14 billion to 2030.⁹

b) There is little or nothing in CAP about public transport investment. The targets highlighted on page 87 make no reference to increasing public transport use. There is no specific proposal for additional expenditure on public transport. The rail service is to be the subject of a, "strategic rail review paper". Instead of proposals to improve rural public transport, the plan's action is to, "produce a rural transport strategy" (p.94). There is no commitment to take on board the recommendations of the Citizens Assembly to prioritise spending on public transport. It is worth noting that the IAE said in 2016 that €9.25 billion was needed to be spent on public transport infrastructure to 2030 and that subsidies to transport companies should be increased. The main reason for this is that embedded in government thinking, and elaborated quite clearly in a recent review of subsidies for electric cars, is the idea that: "private car usage will remain the primary means of transportation" for most people.¹⁰ Is it not surprisingly then, that: "Irish cities have some of the highest private car usage for commuting journeys in the developed world. Public transport as a modal share [share of overall transport use] is also low." Thus there, "is a significant opportunity to

incentivise and support more sustainable transport options, particularly in urban areas. This has the added benefit of reducing congestion."¹¹

But that's not what the government wants to do. There is much in the document about increasing the number of electric vehicles by almost 1 million (including 840,000 private cars) by 2030 without any consideration of the environmental and social impacts of this in terms of the emissions for battery production; the mining of lithium and rare metals and the demand for electricity. Nor will it allow for the dematerialisation we need to cut consumption, which can only be accomplished by shifting away from private ownership of commodities like cars towards collective provision and sharing-based models. As Mike Davis has put it: "There is no planetary shortage of carrying capacity if we are willing to make democratic public space, rather than modular, private consumption, the engine of sustainable equality."¹² This individualised solution will not address other issues associated with car use such as congestion, the safety of cyclists and the deterioration in city life. Further, the targets proposed will never be met. We should not forget that the target for electric vehicles (EVs) have been a moveable feast. In 2008 it was 200,000 by 2020, then in 2014 it went down to 50,000 and in 2017 to 20,000 by 2020. In 2018 EVs were 1% of new car sales. Even the technological optimists in the IAE have doubts. In 2016 they said:

"Coming from such a low base and despite the existence of a grant scheme, the Academy expects that the total number of [Battery Electric Vehicles] BEVs in Ireland is unlikely to reach 5,000 by 2020... It is very difficult to forecast the uptake of BEVs in Ireland over the period to 2030. Overall, the Academy does not envisage a large penetration of BEVs in Ireland before 2030 and assumed that BEV's would constitute just 10% of the private car fleet by 2030. The associated cost to the State of relief on vehicle registration tax and reduced revenue from annual motor tax and excise duties would be up to €3 billion between now and 2030."¹³

A recent government review¹⁴ of subsidies for EVs confirms this showing:

- Ireland has some of the most generous supports in the world for EVs;
- If the current supports continue every 100,000 new EVs will cost the Exchequer between €1.14 billion and €1.36 billion; and
- If the Climate Plan targets are reached, tax revenues could be reduced by €1.5 billion, reaching €500 million in annual losses by 2030.

It states that: “When compared to the cost of reducing emissions through other mechanisms, the cost to the Exchequer of the current range of EV supports appears quite high.” The benefits are also regressive in nature, in that they tend to benefit the wealthier in society. The review cites research from elsewhere that: “high income buyers capture a disproportionately large share of EV incentives”.

All of this raises significant questions about social equity and a policy that promotes individual car use at the expense of public transport.

2. It blames the wrong people

As well as a serious lack of ambition in relation to transport and retro-fitting there is a complete failure to take on corporate and agricultural interests.

The following table (below) is constructed from data in the Climate Action Plan (CAP) which illustrates emissions trends and targets:

The figures clearly show a failure to decouple growth and emissions. The dates in the table reflect the impact of the 2008 crash and subsequent recession and show very clearly that: up to 2011 reductions in emissions were a result of the almost complete collapse of the economy. What is of note since 2011 is the extent to

which emission have taken off, particularly in the Enterprise and Agricultural sectors which between them account for almost half of our emissions, and that the only sector with sustained reductions is Buildings (Electricity had a small reduction of over 2%). According to the IAE in the 10 years to 2015, 300,000 homes were upgraded with shallow retrofits. But another 300,000 homes upgraded their insulation without any government support.¹⁵ It might just be the case that Josephine citizen is doing her part to get her emissions down, by retrofitting her home or changing her boiler, while the captains of industry and agriculture are sitting on their hands. Very modest targets have been set for Enterprise and Agriculture with no proposals to dramatically reduce activity in these sectors.

Enterprise

One thing is clear is that current approaches to dealing with the corporate sector have failed. No significant limits or targets are to be placed on the sector all with a view to maintaining: “the attractiveness of Ireland as a location for FDI” (p.5).

We learn that the 74 companies covered by the EU ETS¹⁶ scheme account for about 68% of enterprise emissions and that these emissions have grown by 41% since 2011 suggesting that this market-based method for reducing emissions has failed.¹⁷ Carbon credits are effectively a right to pollute. We also learn that 200 large enterprises together consume 20% of the entire energy demand (p.65) and that: by 2027 as much as a third of electricity could be used to power data centres. It is not surprising then that demand for electricity is forecast to increase by, “50% above existing capacity” (p.50), undermining

	Percentage of all Emissions 2017	Change in Emissions 2005-11 (%)	Change in Emissions 2011-17 (%)	Proposed Reduction in CAP 2017 to 2030 (%)
Agriculture	33.3	-9.5	+12.8	Circa 10%*
Transport	19.8	-14.6	+6.9	35%-40%
Electricity	19.3	-24	-2.6	60-65%
Enterprise (ETS)	13.4	-32.8 (+1.6)	+25.8 (+41%)	5%
Buildings	12.7	-10.3	-11.3	25-30%

*While a figure of 10% is provided, based on the actual number for emissions reduction provided in the report cuts range from 5% to 12.5%

any strategy for real energy conservation, which is hardly discussed at all in CAP.¹⁸

Without an ounce of irony, it is suggested: “a dramatic turnaround...is required” (p.61). It is suggested that reducing fossil fuel use in both cement production and the food industry could contribute significantly to reducing emissions (pp.62-3) yet the action that is proposed is: “Engage with the cement and food and drink industry sectors to identify measures to support the achievement of identified potential abatement in these sectors.” Indeed, all of the actions on page 69 are rather weak and involve no real compulsion or limits on enterprises. There is a belief running through the report, given its technological optimism and commitment to free enterprise, that perhaps there is not much enterprise can do: “The greatest savings from known technologies lie in Transport and Electricity, the lowest savings are from segments of the Enterprise sector. The aim is to pursue the pathway with the least burdens and the greatest opportunities” (p.6).

Thus, there is no proposal to ensure that the tax system is used to make big corporate polluters curb their emissions and pay their share.

Agriculture

There are no proposals to reduce agricultural activity with not one cow or sheep at risk as a result of this plan. Indeed, their numbers will grow as long as farmers find it profitable. This is shocking in the context of the recent EPA Report which states that agricultural emissions will grow by between 3% and 4% to 2030:

“Dairy cow numbers are projected to increase by 7% between 2018 and 2020 and 11% between 2020 and 2030. By 2030 it is estimated that dairy cow numbers will have increased to 1.63 million head compared with current levels of 1.38 millions head. There is projected to be a contraction (by 3.2%) in animal numbers in the less profitable ‘other cattle’ sector between 2020 and 2030.”¹⁹

It is quite clear that, although agriculture is responsible for over 30% of our emissions, nothing is to be done to interfere with the profits of large farmers. As recent posts from Seán McCabe from TASC (Think-tank for Action on Social Change) have shown, it is large farmers mainly who benefit from current EU and government policy. The top 10 beneficiaries of the Common Agricul-

tural Policy in Ireland each earned over €200,000 from payments in 2017, with the largest recipient receiving a payment of €238,989, ten times the average farming income, raising significant questions as to who is to benefit from further expansion of the national herd.²⁰

But what is clear is that: expansion of the national herd (and a failure to plant more forests) has undermined any carbon efficiencies gained in the sector since 2000 (p.103) and that nothing is to be done to impede the further profitability of large farms. As CAP says:

“Specific challenges for Ireland include our position as a key supplier for dairy and beef internationally, but in particular Europe. However, despite our carbon efficiency in this area, *these are products with a high carbon footprint*. The Irish dairy sector was artificially constrained by milk quotas up to 2016 but has subsequently grown due to it being **the most profitable agricultural activity in Ireland**, and one where we have a real competitive advantage.” (p.96 emphasis added).

Because of the failure to commit to any reduction of the national herd, emissions are not projected to fall by much to 2030. Perhaps it is not surprising then, also, that there is no discussion of diet or dietary change.

So, no real action is to be taken to tackle the big polluters. The rest of us are to be subjected to a ‘Carbon Tax’ which is a central plank of this whole document:

“We are committed to implement a carbon tax rate of at least €80 per tonne by 2030, accompanied by a trajectory of increases over successive annual Budgets. Decisions to be taken in a budgetary context on the future evolution of our carbon tax *will underpin many of the actions in this Plan*. This commitment will send a strong signal to householders and firms of the need to invest in low-carbon alternatives, *where possible*.” (p.40 emphasis added).

It approvingly quotes ESRI research²¹ on a proposed carbon tax but fails to say that the ESRI found that a carbon tax will harm low income households disproportionately; that affluent households have higher emissions and that without improving access to lower-carbon alternatives, such as public transport, the effects could remain limited. It is suggested by the government that revenues from the tax are to be recycled to reverse its regressive effects, but no indication is given about how and to whom. CAP gives no indication of how this potential for increas-

ing inequality is to be addressed other than a vague commitment to examine impacts on lower income families (p.40). Further, if the purpose of the tax is to encourage the use of lower-carbon alternatives, it is not at all clear, for example, how retrofits are to be financed. Action 48 in the CAP (p.79) recommends:

“Develop a plan to establish a new delivery body to ensure the effectiveness and efficiency of the delivery system for retrofits, including examining how to deliver a major house retrofitting programme in the Midlands. We will also look at easy pay-back models, for example through your electricity bill.”

But of course, we are assured, in the best spirit of classical economics, the proper market signals through the pricing of carbon will send people off to retrofit their homes (p.77): increasing the price of using their current heating system will send them off to invest, with money they probably don't have, in systems with high start-up costs. We should not forget that despite recent declines in debt levels, compared to other EU countries, Irish households are still relatively highly indebted. The Republic now ranks fourth in terms of debt to disposable income.²²

The reality is not just that carbon taxes don't work but they target the wrong people letting big polluters off the hook.²³ Research shows that carbon taxes do little to stimulate investment in alternative sources of energy. Although there are very few empirical studies, a cross-comparison of European countries with different carbon tax levels, as well as difference in other policy instruments, showed that “In only one country (Finland) did the carbon taxes show up as having a significant effect, and even there it was small: about a *1% decline in emissions due to the taxes*. The fact is, energy consumption is what economists call ‘inelastic’, which means that it is hard for consumers to adjust their behaviour very much in response to a change in price”.²⁴

So clearly a different direction is required.

3. Business as usual: Capitalist Growth to Continue with Fossil Fuels

The main problem with the CAP is that it does not challenge the idea of continual capitalist growth. It assumes economic growth (or prosperity as it chooses to call it) can continue as before and that technology will do the necessary to abate the effect of that growth on our en-

vironment. This is in line with mainstream economic thinking promoted by the OECD, the World Bank and the UN.²⁵ In this context, fossil fuels will continue to play a role with the CAP proposing that: “we will keep the dates to phase out fossil fuels under ongoing review” (p.54). The CAP presumes fossil fuel carbon emissions will be abated by the use of Carbon Capture and Storage, the processes of capturing and storing the carbon dioxide given off in industry. While this is presented as crucial in reaching net zero emissions by 2050 it is hardly discussed at all in the report, but gets a recommendation to itself:

Action 33. Establishment of a Steering Group to examine and oversee the feasibility of the utilisation of CCS in Ireland, and report to the Standing Committee on Climate Action as appropriate

Most scenarios developed by the IPCC to get to net zero emissions by 2050 involve the use of CCS, but many climate scientists are seriously sceptical as the viability of power generation with CCS has never been proven to be “economically viable or scalable”.²⁶ More worryingly, if these technologies fail, they will lock us into a high temperature pathway.²⁷ Anderson and Peters point out that the allure of CCS it is due to the fact that it allows politicians to postpone the need for rapid emissions reductions.²⁸ The commitment to maintain 30% of power generation from gas will lock us into emissions into the future and is not compatible with 100% decarbonisation.²⁹

The problem we face with growth is well illustrated in the discussion on electricity. A significant target is set at 70% renewables by 2030, which would require a fall in emissions for power generation of between 60 and 65% based on 2017 figures. It is proposed to increase generation by onshore wind by 150%, along with a significant increase in offshore-wind power generation from almost nothing to 21% of generating capacity. Gas will make up for the 30% of non-renewables. But, as the report makes clear, despite efforts to decarbonise our electricity generation, emissions, “have stayed relatively static since (2011), as a result of rising demand for power outstripping our increased generation from renewable sources. Given our 40% target (to 2020) is based on a percentage of total energy demand, this rising demand makes meeting our 2020 target even more challenging and latest forecasts indicate we may miss

this target by 3 to 4 percentage points” (CAP p49). As already indicated demand will increase by 50% in the next decade. Thus “our ability to decarbonise our electricity system will be key to decouple economic growth from emissions growth” (CAP p50).

There are issues as to whether the level of renewables can be delivered by a reliance on the private sector given: a) the level of investment required, (based on IRENA costings,³⁰ would be at least €21 billion), b) falling levels of investment in renewables³¹ and c) possible opposition to widespread use of onshore wind. To address these issues a state-lead programme of investment is required.³² As the authors of a plan to provide all global energy from renewals put it: “Concerted social and political efforts beyond the traditional sorts of economic incentives” is necessary to realise a transition to renewables.³³ The kind of thing that is needed can be gleaned from a recent announcement that the ESB and Coillte are to develop a joint venture to invest €1 billion in wind-power to deliver 1,000 MW up to 2030. Bizarrely though they plan to build the farms, get them operating and sell them to the private sector.³⁴ Along with this we need a commitment to community ownership. While there is much reference to community involvement, participation and engagement in CAP, it eschews any reference to community ownership, a concept endorsed by the Oireachtas Committee. Nor is there a provision for a Just Transition fund which would facilitate the shift out of fossil fuels.

But attempts to raise the level of renewables (based as it is on the proportion of all electricity use) and meet the 70% target could potentially be undermined by increasing overall use through the government policy of attracting data centres to Ireland. A recent report from the IEA³⁵ makes for stark reading. It says the “future growth in electricity is wholly due to data centre demand and expansion by a very small number of large industrial customers”. The cost of providing for this amounts to €9 billion. Further, even if 30% of the electricity comes from highly efficient gas-fired stations, “data centre development is projected to add at least 1.5 MtCO₂ to Ireland’s carbon emissions by 2030”. That’s a 13% increase on current electricity related emissions.

Ireland is already the data centre capital of Europe, with nine of the top American ICT firms based here, including Apple, Amazon, Facebook and Google. Clearly,

government policy, especially our low, and sometimes non-existent, corporation tax rates, make Ireland an attractive location. But, as the IAE says: “Much less attention has been paid to the very considerable investment in generation and network assets required for such a large-scale development of data centres in Ireland. The issue of who will pay for this investment and how it will be funded urgently needs analysis and debate... The Government...(has) recognised this exposure but to date no measures have been put in place to ensure that these costs are fully borne by data centre developers.” Clearly nothing is to be done to stop Ireland being safe for multinational investors. No impediment is to be placed in their way, even if this means putting at risk the potential for a fully decarbonised electricity network. Yet again, rising demand, to facilitate capitalist profits and accumulation, will trump the need to protect the planet.

This raises the more general question of whether we can get to full decarbonisation given the assumptions about continual growth (prosperity!) embedded in the report. In general, there is no evidence that technological efficiencies can deliver the kind of decoupling we need to protect the environment. Historical evidence tells us that “technological innovation has never been used to stabilise the size of the economy; in fact, quite the opposite, namely the enhancement of industrial productivity, consumption and economic growth”.³⁶ Having said that, it may be theoretically possible to sustain growth through a fully decarbonised energy system. The problem we face is that we have a very short time in which to do this. There is considerable evidence³⁷ that continuing with current levels of growth will undermine efforts to decouple growth from emissions and avoid dangerous levels of warming.

A recent article³⁸ dealing with the issue of so-called green growth makes three key points:

There is no empirical evidence that absolute decoupling of carbon emissions from resource use can be achieved on a global with continued economic growth. 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 with continued economic growth.

While we need all of the technological innovations we can get, this will not be enough in and of itself.

In order for efficiency gains to be effective, we will need to scale down aggregate economic activity too and decouple prosperity from growth.

While the authors fail to identify the key mechanism driving growth as the thirst for capital accumulation and profit, and point to a number of proposals (such as green taxes) which I would find problematic, they do call for a shift in public investment and a shorter working week. A recent report argues for a working week of about 6 hours in OECD countries to achieve a target of less than 2°C of warming.³⁹

I have dealt with a number (not all, for example forestry; the global dimension; aviation) of issues here. The key point is that the government's Climate Action Plan cannot deliver and cannot be used to take the wind out of the sails of the rising movement for real action on climate change. There is too much at stake for us to be fobbed off by greenwashing on a large scale. While the movement can take the publication of this plan as a victory for the pressure it has put on the government, it is vital that this plan is not used to demobilise it. We need now to promote a set of demands around which wider layers of people can be mobilised. These demands must include:

- Banning exploration for, or further commissioning of, fossil fuel use;
- Free public transport with investment to significantly increase capacity;
- Priority for cycling and walking in our cities;
- A massive investment in retro-fitting, district heating and heat pumps;
- A ban on internal flights and fuel tax on aviation;
- A reduction in the national herd;
- A carbon levy on big polluters;
- Support for a major increase in forestry;
- State led investment in renewables with provision for community ownership of renewables and support for microgeneration;
- Establish a Just Transition Superfund to protect workers living standards, reduce the working week

and invest in socially useful carbon-free jobs and sustainable agriculture.

While a mass popular movement to stop climate chaos could be built on such a basis it is important too to call for system change. In a recent significant critique of the current approach to reducing emissions, Kevin Anderson has questioned the models (Integrated Assessments Models), on which the IPCC and others rely, to estimate required reductions in emissions. He argues they are based on “free market axioms”; rely heavily on rising carbon prices as a tool to change behaviour and envisage planetary scale negative emissions technologies. He says that: “ongoing failure to mitigate emissions has pushed the challenge from moderate change in the economic system *to a revolutionary overhaul of the system*” (emphasis added).⁴⁰ He has called for immediate degrowth strategies.⁴¹

The issue of climate change raises significant questions about the sustainability of an economic system premised on creating wealth for the few with no consideration of the impact of their accumulation strategies on the rest of us and the planet. While we can welcome campaigns for degrowth, we must be clear that the driver of the current system is the quest for profit and capital accumulation. Degrowth in the abstract has the potential to impoverish sections of the working class if not accompanied by extensive redistribution of resources and moving beyond the social and economic relations of capitalism. Degrowth can only take on genuine meaning as part of a critique of capital accumulation if it violates the basic motive force of capitalism as a system geared to the accumulation of capital without end.⁴² What this requires is a reorientation of economic activity to meeting human need, setting binding macro-level constraints through planning and not just relying on simple individual action or market mechanisms to reduce emissions.⁴³ Such an approach might set us on a course to a system that meets the needs of all humanity and the earth.

Endnotes

- 1 Kevin O'Sullivan (2019) "Friends of the Earth: Climate breakdown plan is 'biggest innovation' in 20 years" *Irish Times*, June 17, 2019.
- 2 Given the limitations of space I don't deal with all the issues here but rather want to draw out what the Plan tells us about the government's general approach to the climate emergency.
- 3 See for example L.L. Delina and M. Diesendorf (2013) "Is wartime mobilisation a suitable policy model for rapid national climate mitigation?" *Energy Policy*, 58: 371-380.
- 4 IPCC (2018) Global Warming of 1.5 Degrees; Summary for Policy Makers. IPCC, Switzerland. For an excellent summary see Carbon Brief (2018): 'In-depth Q&A: The IPCC's special report on climate change at 1.5°C'. At: <https://www.carbonbrief.org/in-depth-qa-ipcsc-special-report-on-climate-change-at-one-point-five-c>
- 5 IPCC (2018).
- 6 GUE/NGL (2019) A Climate Emergency Manifesto to Avert Climate Catastrophe: <https://www.guengl.eu/issues/publications/a-climate-emergency-manifesto-to-avert-climate-catastrophe/>
- 7 Jason Hickel and Giorgos Kallis (2019) "Is Green Growth Possible?" *New Political Economy*, DOI: 10.1080/13563467.2019.1598964
- 8 Barry Mc Mullin (2019): 'Troubling endorsement' of gas by climate council" *Green News*, 25 September 2019. <https://greennews.ie/troubling-endorsement-gas-ccac/>
- 9 Irish Academy of Engineering (2016) Ireland's 2030 Greenhouse Gas Emissions Target: An Assessment of Feasibility and Costs: <http://www.engineersjournal.ie/wp-content/uploads/2017/03/IAE-Report-Irelands-2030-Greenhouse-Gas-Emissions.pdf>
- 10 Laura Kevany (2019): Spending Review 2019: Incentives for Personal Electric Vehicle Purchase. Department of Public Expenditure and Reform: <https://assets.gov.ie/25107/eb5a541e3b614c94a3e47c8d068e72c9.pdf>
- 11 Laura Kevany (2019) p.41.
- 12 Mike Davis (2018) *Old Gods: New Enigmas*. Verso. p.218.
- 13 Irish Academy of Engineering (2016), emphasis added.
- 14 Laura Kevany (2019).
- 15 IAE (2016).
- 16 The EU has split emissions into two categories, the Emissions Trading System (ETS) and the non-ETS. Emissions from electricity generation and large industry are in the ETS. The ETS is a "cap and trade" system where an EU-wide cap is set for participating installations. Within that limit "allowances" for emissions are auctioned or allocated for free (outside the power-generation sector). Individual installations must report their CO₂eq. emissions each year and surrender sufficient allowances to cover their emissions. If their available allowances are exceeded, an installation must purchase allowances. On the other hand, if an installation has succeeded in reducing its emissions, it can sell any surplus allowances.
- 17 On an EU-wide basis, it has been found that: "Emissions falls are almost single-handedly a result of reduced generation from hard coal-power plants. Lignite power plant emissions remain stubbornly high, industrial emissions are almost unchanged since 2012, and aviation emissions continue to soar." <https://sandbag.org.uk/project/ets-emissions-2018/>
- 18 On this issue see Grubler, A., et al., (2018). "A low energy demand scenario for meeting the 1.5°C target and sustainable development goals without negative emissions technologies." *Nature Energy*, 3, 515-527.
- 19 EPA (2019): Ireland's Greenhouse Gas Emissions Projections 2018-2040. Dublin. June 2019.
- 20 Seán Mc Cabe (2019): "How can the agricultural sector engage a Just Transition?" Parts I and II <https://www.tasc.ie/blog/2019/06/11/how-can-the-agricultural-sector-engage-a-just-tran-1/>
- 21 M.A. Tovar Reaños and M. Lynch (2019) Carbon taxation in Ireland: Distributional effects of revenue recycling policies. Dublin ESRI. <https://www.esri.ie/publications/carbon-taxation-in-ireland-distributional-effects-of-revenue-recycling-policies>
- 22 Ciara O'Brien (2019) "Irish household debt falls but levels still high compared to EU neighbours", *Irish Times*, 7 February 2019. <https://www.irishtimes.com/business/economy/irish-household-debt-falls-but-levels-still-high-compared-to-eu-neighbours-1.3785558>
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- 24 Anthony Patt and Johan Lilliestam (2019): Carbon taxes aren't working any more. Only ramping up policies and infrastructure can accelerate the transition. Available at <https://energypost.eu>
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- 26 Kevin Anderson & Glen Peters (2016). "The trouble with negative emissions." *Science*, 354 (6309), 182-183. See also McMullin (2019); *Carbon Brief* (2018).
- 27 Hickel & Kallis (2019) pp 9-10 for citations.
- 28 Anderson & Peters (2016).
- 29 Oilchange International (2019) Burning the Gas "Bridge Fuel Myth" http://priceofoil.org/content/uploads/2019/05/gasBridgeMyth_web-FINAL.pdf. See also Mc Mullin (2019)
- 30 IRENA (2018), Renewable Power Generation Costs in 2017, International Renewable Energy Agency, Abu Dhabi.
- 31 A. Vaughan (2018) "IEA warns of 'worrying trend' as global investment in renewables falls", *Guardian*, 17 July

2018.

32 See Andreas Malm (2016). *Fossil Capital*. London and New York: Verso. Chapter 15 on this issue.

33 Andreas Malm (2016) p.382.

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