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AN ASSESSMENT OF IRELAND'S FIRST DRAFT MITIGATION PLAN:

DOES IT LAY SOLID FOUNDATIONS FOR
LOW-CARBON DEVELOPMENT?

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Ireland's long-awaited draft strategy to reduce greenhouse gas emissions was launched on March 15 2017 by the state's first Minister for Climate Action, Denis Naughten T.D. The Minister acknowledges that climate change is "the global challenge of our generation". Over the coming decades economic and political power in international relations will shift to countries that possess know-how in renewable energy technologies, as coal continues its rapid decline and oil production plateaus, before eventually also waning. Ireland, with its lack of mineral but abundance of renewable resources, can emerge as a major beneficiary of these long-term meta-trends. As a wealthy country, Ireland must also show leadership in meeting its commitments under the Paris Agreement, and make a positive contribution to the global target of maintaining temperatures to below 2 degrees Celsius.

The yardstick against which this strategy should therefore be assessed is the extent to which it sets Ireland on a low-carbon development pathway commensurate with meeting its climate obligations; and the extent to which it positions the country to prosper in this new world order.

Background and context

This is Ireland's third attempt to put forward a cogent vision for decarbonisation. Previous climate strategy documents, published in 2000 and 2007, were ambitious and forward looking, but implementation was patchy. It has been almost five years since the previous strategy elapsed, leaving a sense that climate has not been at the top of successive Governments' agendas.

A key challenge over this period has been ensuring coordination across several Government departments. Furthermore, many climate policies are perceived to impact key stakeholders of these departments, whether that be commuters, farmers, the fossil fuel industry or the business community more broadly. Determining the (indicative) level of ambition within key sectors of the economy, and implementing policies corresponding to this level of ambition, has not proven possible.

A number of governance and administrative changes have occurred over the past couple of years with a view to addressing some of these challenges:

1. Under the Climate Law (2015) a new climate strategy (mitigation plan) to be brought forward by Government periodically (of which this is the first), and annual reviews of this strategy are required;
2. Furthermore, under the Law a Climate Change Advisory Council (CCAC) was established, with a view providing impartial advice to Government; and
3. Responsibility for climate change coordination and strategy formulation has been moved to the newly-created Dept. of Communications, Climate Action and Environment (DCCAE).

The roles and responsibilities under the old and new arrangements for climate policy are summarised in the table below. As can be seen, one outcome has been a concentration of responsibility for climate policy in one department (DCCAE).

This development, along with the establishment of a CCAC, has the potential to improve coordination across Government Departments, and to enhance climate policy implementation. The new draft mitigation plan, and the

Table 1. Roles and responsibilities for climate policy (mitigation)

	Responsible pre-2016	Responsible post-2016
Climate strategy formulation & monitoring	Dept. of Environment	DCCAE
Policy proposal and implementation in buildings/energy efficiency	Dept. of Communications, Energy and Natural Resources/ SEAI	DCCAE/SEAI
Policy proposals and implementation in power generation	Dept. of Communications, Energy and Natural Resources/ SEAI	DCCAE/SEAI
Policy proposals and implementation in transport	Dept. of Transport, Tourism and Sport	Dept. of Transport, Tourism and Sport
	Department of Finance	Department of Finance
Policy proposals and implementation in agriculture	Dept. of Agriculture, Food and the Marine	Dept. of Agriculture, Food and the Marine
Approval of measures requiring Government expenditure & monitoring of cost-effectiveness	Dept. of Public Expenditure and Reform	Dept. of Public Expenditure and Reform
		DCCAE
Advising Government on policy formulation, annual monitoring	Dept. of Environment	CCAC
	Environmental Protection Agency	Environmental Protection Agency

implementation phase which will follow, is a test of these new institutional and governance arrangements in practice. It remains to be seen how effectively these arrangements deliver.

The growing gap to target and the carbon budget

The strategy is uncompromising in setting out of the formidable challenges Ireland faces in meeting its climate/renewable targets for the 2020 and, even more so, its climate targets for 2030.

In a welcome development, these challenges are presented using a “carbon budget” framework. A carbon budget is the total amount a country can emit over a particular period (say, between 2013 and 2020). For example, Ireland’s EU targets mean that it can emit 338 million tonnes of carbon dioxide equivalents (Mt CO₂-eq) between 2013 and 2020 (not including emissions covered by the EU’s emissions trading scheme), and a further 456 Mt CO₂-eq between 2020 and 2030. According to the strategy, Ireland is likely to slightly breach its budget in 2020, but a far greater problem arises in the post-2020 period¹ (Table 2). This is largely because emissions from two of the largest sectors - agriculture and transport - are growing.

Table 2. Carbon budgets and renewable targets for 2020 and 2030

	Carbon budget	Projected Emissions	Gap
2012-2020	338	350	12 Mt CO ₂ -eq
2020-2030	383 ¹	456	73 Mt CO ₂ -eq

Source: DCCAE (2017)

There are two exacerbating factors that make Ireland’s challenge more daunting than the carbon budget in Table 2 suggests.

¹ Under negotiation

First, Ireland is legally bound to deliver 16% of energy from renewables by 2020. On business as usual, however, only 8% will be achieved, leaving a potentially significant gap to target² (and liability for fines, explored in previous [IIEA analysis](#)). Ireland is one of only four EU Member States not likely to meet its target, and the draft strategy provides a stark reminder of the necessity for further efforts, particularly in the renewable heat sector.

Second, in relation to the 2030 carbon budget, the strategy acknowledges: *“It is almost inevitable that this baseline carbon budget will be revised significantly upwards in the next iteration of EPA emissions projections”*.

That is to say, the economy is now recovering and emissions are likely to grow more rapidly than is reflected in current projections. This would mean that projected emissions between 2020 and 2030 could far exceed the current estimate of 456 Mt CO₂-eq.

The Government strategy does not, therefore, attempt to shy away from the challenges. In fact, it presents these challenges in a bleak light within a carbon budget framework.

However, to realistically frame the challenge it would be worthwhile for the final strategy to take cognisance of two additional factors. First, while there is a prominent focus on estimating the costs of various measures through the draft plan, no attempt is made to estimate the costs of not meeting targets (possible fines, purchase of carbon credits and other flexibilities etc.). Previous IIEA estimates suggested that the taxpayer could potentially be faced with considerable compliance costs by 2030 (Table 3) in the unlikely scenario that no new further measures were brought forward to reduce emissions.

Table 3. Possible compliance in no action scenario

		Low estimate (billion €)	High estimate (billion €)
2020	Renewables target	.16	.49
	Emissions target	.06	.12
2030	Purchase of flexibilities	.48	1.10
	Possible fines	2.20	4.40
Total		2.90	6.10

Source: IIEA (2016)

This consideration, which one would expect to be prominent in the deliberations of the Department of Public Expenditure and Reform, is absent from the draft plan.

Second, no attempt is made to assess the implications of the carbon budgeted for individual sectors (transport, agriculture etc.); nor in the sectoral chapters of the strategy is an attempt made to engage with the overall carbon budget; nor is an attempt made to assess the implications of proposed sectoral measures for the carbon budget. The sectoral contributions therefore take no cognisance of the carbon budget framing. If the strategy is to act as an effective guide for future policy development and formulation, sectoral contributions must be framed in terms of the contribution to the overall carbon budget.

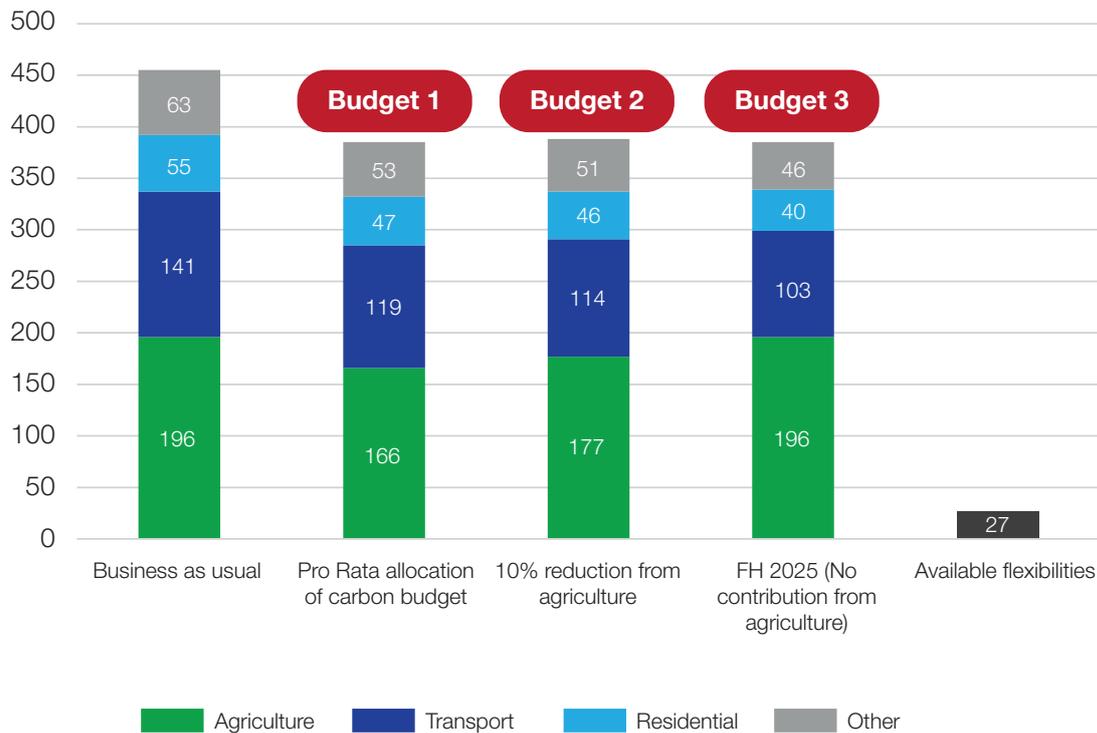
Three scenarios for meeting the carbon budget are provided in Fig. 1 for illustrative purposes, compared to business as usual. In the first, the budget is allocated pro rata across all sectors meaning they each contributes a 15% reduction on business as usual over the period; in the second, agriculture makes a 10% reduction and the remaining budget is allocated pro rata across the remaining sector, meaning they contribute more; in the final option, emissions from agriculture grow in line with Food Harvest 2025 and the remaining budget is

² It should be pointed out that several measures are currently immanent that should close this gap to target. Assumes business as usual, than no new policies will be introduced. The European Commission assumes that a variety of new measures will be brought forward and that Ireland's renewables will account for 15.5% of energy demand in 2020.

allocated pro rata across the other sectors³.

These provide useful (though speculative) future pathways which can be used to anchor the inter-sectoral debate in the reality of Ireland's commitments.

Fig 1. Carbon budget scenarios (Mt CO₂-eq, 2020-2030)



The final strategy could integrate consideration of potential costs of not meeting targets, and ensure that the sectoral chapters take greater cognisance of the newly-introduced carbon budget framework.

Cross-cutting measures

A promising aspect of the strategy is that it outlines a number of potentially important cross-cutting actions that are being considered, and sets timelines for their delivery. These include, *inter alia*, commitments to:

- Review “public expenditure appraisal and evaluation”, which is required to address the (very low) carbon price is used currently in Government cost-benefit analysis (CBA)
- Address the lack of “permanent technical and economic advisory infrastructure” to underpin policy formulation, which is a shortcoming clearly evident from the strategy itself;

³ It should be noted that numbers (in Business as usual, Fig. 1) do not reflect updated economic growth projections; and carbon budget allocations are indicative and based on ongoing negotiations at EU level.

- Review the use of carbon tax, with the potential for an increase in the carbon tax (currently €20 per tCO₂-eq for emissions not covered by the EU Emissions Trading Scheme);
- Address fossil fuel subsidies (though short on specifics, see power generation below);
- Ensure that climate concerns are integrated into spatial planning, which is a critical concern within the medium-term; and
- Climate proof capital expenditure programmes (see transport and buildings sectors below).

These are all welcome and critically important aspects of developing an effective climate strategy. It is useful that a timeline for delivery for each of these actions is included in the strategy, though it might improve accountability if a particular Department or agency was ascribed responsibility in each case.

One notable absence from the cross-cutting measures is considering the regional, social and distributional consequences of climate policy. Low-carbon development means that output and employment in energy efficient and renewable industries and services will grow, while energy- and resource-intensive sectors are likely to stagnate or contract. Furthermore, climate policy can be advanced in a way that is regional or socially progressive or regressive. Ensuring greater levels of understanding, acceptance and buy-in for low-carbon transition and low-carbon technologies is a key enabler of progress.

These social and societal aspects are perhaps equal in importance to economic and technical considerations, yet they are insufficiently addressed. For example, how might the declining importance of peat or beef farming in economically marginalised communities be addressed? These issues are considered more fully in the [Energy White Paper](#) of 2014, which recognises the central importance of ensuring that economically marginalised communities (particularly in rural Ireland) can benefit from low carbon development, by encouraging ownership of distributed renewable energy technologies. It is important to recognise that this is not only socially and economically desirable, but from a political-economy perspective, it is an effective way to promote buy-in and societal support for low-carbon transition. It is good climate policy.

The strategy document would greatly benefit from a high-level acknowledgement of the potential impacts of low-carbon development on certain segments of society, and a commitment on behalf of Government to proactively managing these impacts and to smooth the transition for affected workers, enterprises and communities. A commitment that individual climate policies must be socially and rurally proofed would also be of benefit and could be recognised in the cross-cutting measures section.

On a related note, the absence of social criteria is notable in the metrics used to evaluate the policies and measures proposed (see below). The draft strategy considers only cost environmental effectiveness (emissions impact) and cost-effectiveness (emissions per unit of exchequer spend and per unit of benefit to society) metrics. IPCC propose using a wider set of metrics to evaluate policy implementation, most notable distributional equity and broader social impacts, and institutional, political, and administrative feasibility and flexibility (Somanathan et al., 2014).

There is a case for considering a broader set of criteria than those related to cost-effectiveness when evaluating proposed policies and measures.

Electricity generation

The first sectoral chapter concerns electricity generation. The deployment of wind power is recognised as the key driver of low-carbon development in the sector to date. There is an acknowledgment that low-carbon transition requires more renewables and interconnection to the EU grid, and less peat and coal, but little clarity is provided on how and when these objectives will be delivered.

In the case of renewables, there is an acknowledgment of the need to progress “*significantly beyond the 16% target for 2020, in order to avoid significant deviation from the necessary path to decarbonising by 2050*”, but there is little clarity on how this can be achieved. On the other hand, in the shorter term, a new renewable Electricity Support Scheme is anticipated in 2017. It is positive to see the intention to deliver commitments contained in the Energy White Paper (2014), as it is clear that the design of this incentive will be influenced by the objective of “*enhancing the role of communities*”. It is acknowledged, furthermore, that there is a need “*to ensure timely deployment by facilitating increased community acceptance*”.

Similarly, no timelines are given for phasing out of peat or coal. Contrast this to the clarity provided in the equivalent UK strategy. There is a forensic level of detail in the UK Department for Business, Energy and Industrial Strategy analysis of how the UK's energy system will look in 2035, which could act as a blueprint for Irish analysis of the same set of challenges. Notably, a commitment was given to phase out coal by 2030 (it will likely cease to be used as an input fuel considerably earlier).

It is also noteworthy that in the most recent [UK analysis](#) both solar PV and wind are now anticipated to be cheaper than gas by 2020⁴. As a result the latest UK plan envisages more renewables, batteries and interconnectors than expected. For example, the UK figures project 10GW (yes GW!) of small-scale subsidy-free solar by 2030. This is because the UK has invested in solar PV subsidies, which has led to the growth of an indigenous solar PV industry. By contrast, in Ireland the view to date has been that solar PV is a bad investment for the exchequer.

Furthermore, the important issues of energy storage, particularly battery storage, is not considered in the Irish plan. Costs of battery storage continue to fall at 20% per annum – [Aurora Energy Research](#) find that battery storage capacity could reach up to 8GW in the UK by 2030.

In summary, no additional clarity is provided around key issues by the Irish draft mitigation strategy. Important measures affecting interconnection, renewables, coal, peat and storage appear to have been long-fingered.

Greater clarity and direction is required, particularly in relation to phase out of coal and peat in electricity generation. A short-term approach which only considers costs per KWh may not deliver the long-term changes required, because seemingly promising technologies (e.g. large and small scale solar PV, battery storage) may appear untenable using this metric.

Built environment

In the built environment sector, there is a forthright acknowledgment that real progress on improving energy efficiency in homes has primarily come from lower cost, more “accessible” measures such as attic and cavity wall insulation. There is a positive and welcome statement of intent that:

...we are now moving into a new phase where we need to achieve larger amounts of more durable energy savings from

⁴ The UK has a carbon floor price of £18 per t/CO₂ in the power gen sector which makes low carbon sources more attractive.

larger scale projects, in particular deep renovation of buildings and more sustainable new build.

It is a furthermore positive to see that this commitment to back this intention with a budget allocation of €21 million for a deep renovation pilot programme “to test approaches to achieving deep retrofit in the residential sector”. However, a roadmap for renovating the majority of the residential building stock in the period to 2030 is required and a plan to roll out any pilot programme nationally. The importance of this policy opportunity within the context of 2030 targets cannot be overstated. It would be useful also to explicitly consider options for phasing out oil use in heating as part of the strategy.

It is also useful that the draft plan sets a baseline for exchequer contribution for promoting energy efficiency in “a business as usual scenario” (€330 million in the period 2017 to 2020). This level of capital spend is, however, clearly insufficient, and it should be considered a starting point in the debate. It is welcome that the mid-term review of the Capital Plan is cited in this respect, and there is seemingly an intention to use this review to make the case for further contributions beyond this baseline.

One promising new measure flagged in the is using a “cluster” approach to promote “Voluntary Housing Association upgrades”, but this requires greater elaboration. Overall, few new measures are introduced in the strategy. Measures “under consideration” in some cases have been flagged in previous policy documents over a number of years (e.g. minimal thermal standards in rental properties), and it will be the extent to which these commitments will be implemented in the near term that matters.

There is a recognition of the need to move to a new phase in terms of reducing emissions in the build environment sector, focused on deep renovations of buildings. However, a roadmap for what could be achieved in the sector is missing, along with the potential contribution of the sector to meeting Ireland's carbon budget.

Transport

The transport sector begins with a strong statement of the enormous challenge faced: mitigation costs are high and a strong projected growth in emissions is anticipated. Nevertheless, it acknowledges that the transport sector will be required to make a contribution.

Of all of the sectors, this is perhaps the most encouraging sectoral chapter in the report. A number of intentions are flagged which could have profound impacts if delivered. For example, the Department of Transport cites its intention to “make the case for public transport investment to be both increased and accelerated” within the context of the Capital review. This is absolutely vital considering the current plan envisaged that the lion's share of investment would go to roads, which is incompatible with decarbonisation.

There is an acknowledgement that several important measures could be reviewed or expanded, for example the Bike to Work Scheme and the motor tax and VRT system. A taskforce for electric vehicles has been established, which will hopefully lead to strong proposals and recommendations to support the switch to low-emissions vehicles in the period to 2030.

One particularly interesting new measure is cited. This is a comprehensive national parking review which could see a gradual reduction of parking spaces “by a small percentage every year in urban centres” making more “space available to pedestrians, cyclists, and public transport”. This is the kind of long-term, far-reaching and joined-up policy initiative that, if progressed, would have multiple benefits, particularly if the space freed up is used to build infrastructure for cyclists, pedestrians and public transport. This could markedly increase quality of life, reduce congestion, and make for more

vibrant and liveable cities, while reducing noise pollution, air pollution and CO₂ emissions.

There are strong statements of intent and innovative new thinking in this section of the draft plan. The challenge is to flesh out some of the new proposals, and ultimately to ensure that they are implemented.

Agriculture

The agriculture section (Ireland's largest sector from an emissions perspective) of the draft plan begins by drawing a red line around emissions from the sector. It states that by 2020 they are likely to "flat-line at best".

If we assume this logic holds true in the period to 2030 as envisaged under Food Harvest 2025 (Fig.1), agriculture would take up approximately 196 Mt CO₂-eq or over 51% of Ireland's total estimate carbon budget for the period. In 2030, agriculture would account for over 60% of non-ETS emissions (approximately 33.5 Mt CO₂-eq) assuming the carbon budget was met.

This would, needless to say, leave almost no room to manoeuvre for other sectors (Fig.1). For example, the transport sector would have to deliver a 40% reduction in its total carbon budget compared to BAU.

The strategy states that "one-off technological fixes" are not available in the sector, and that Ireland's emissions on a per unit output basis are relatively efficient by comparison with the EU. It identifies a number of measures that have previously been introduced to increase profitability and efficiency on farms. However, no new measures are identified with the exception of switching to urea fertilisers.

The focus on technical fixes assumes that the current structure of the agriculture sector is unchangeable. Needless to say, emissions are dependent on the types of farming activities engaged in. On a per-hectare basis, Irish emissions are very high. This is primarily because of the dominance of suckler beef systems, which, according to the FAO, are the most emissions-intensive way to produce protein bar none. Successive Teagasc Farm Surveys illustrate that these systems do not provide a sustainable income to farm families; in fact, two thirds of beef farmers lose money without taking account of the subsidy provided by Common Agricultural Policy's Single Farm Payment.

It is clear that the types of farming activities are largely dependent on policy and incentive structures. The current structure of Irish agriculture reflects the introduction of milk quotas in 1984. These milk quotas, which have now been removed, led to the massive expansion of suckler beef farming. In a post-milk-quota and carbon-constrained era, these systems are neither economically optimal nor environmentally sustainable.

Options for switching from suckler beef systems which are economically and environmentally optimal should therefore be considered. These include switching land to forestry, energy crops, solar, wind farms and other distributed renewables, and perhaps a beef herd that is more integrated into the dairy sector. So-doing would have a double benefit of reducing emissions from beef while potentially sequestering emissions (forestry) or contributing renewable energy (distributed renewables).

There is some awareness of the potential of switching evident in the draft plan. One of the questions asks respondents to consider: "How can we encourage land owners to convert agricultural land to forest use?" The potential carbon budget contribution from switching from beef production, however, is unknown, and requires consideration in land use modelling and policy analysis.

The structure of Irish agriculture, an historical anomaly arising from the introduction of milk quotas, must be considered within the context of the end of milk quotas and the carbon budget constraint.

Greater efforts are required to understand the potential impact of different levels of switching from suckler beef enterprises into more economically optimal and environmentally sustainable activities, within the context of considering agriculture's contribution to the overall carbon budget.

Conclusion

A carbon budget framework is introduced for the first time in this draft plan, although there is a requirement for individual sectors to take greater cognisance of this budget constraint in the final plan. The need for societal acceptance and buy-in for low-carbon development is recognised, but a greater percolation of this insight across the strategy is necessary.

Within individual sectoral contributions, there are some positive signs of new thinking, particularly in transport. There is, however, a much work to be done in energy sectors to plan for decarbonisation, and little additional clarity is provided in the most important areas (peat, coal, renewables, battery and storage technologies). Finally, the agriculture sector's position on its carbon budget contributions puts pressure on other sectors to deliver what appear to be unrealistic targets.

The backdrop for this analysis is a fast-growing economy. In recessionary times, a commonly articulated rationale for inaction was lack of resources to invest in new technologies and practices. In the preceding Celtic tiger era, the narrative was that the economy was growing too fast for targets to be met. Whether growing too rapidly or too slowly, there will always be a readily available reason for inaction. Perhaps it is now time for a more proactive approach, which seeks to translate Ireland's lofty objectives of climate leadership into low-carbon development on the ground. This would position Ireland to thrive in a carbon-constrained world.

Any views expressed in this policy brief are those of the author alone.



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