



Northern Ireland SMEs and the Net Zero target amidst the Covid-19 pandemic

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Northern Ireland SMEs and the Net Zero target amidst the Covid-19 pandemic

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EXECUTIVE SUMMARY

The climate emergency is leading many countries to commit to various targets for reducing their carbon footprint. In 2019, the UK Parliament passed a Net Zero emissions law to be attained by 2050.¹ To help achieve this target, Northern Ireland has been advised by the UK Committee on Climate Change to cut its Greenhouse Gas (GHG) emissions by at least 82 per cent by 2050.² The Department for the Economy has recently published a consultation paper on 31 March 2021 proposing an ambitious overall goal to achieve Net Zero carbon energy by 2050.³

This target, no doubt, requires considerable commitment from all actors in society. As the Northern Ireland economy is dominated by small and medium-sized enterprises⁴ (SMEs), they play a crucial role in the government's environmental plan. However, at the same time, this group of businesses have been severely affected by the Covid-19 pandemic and therefore their commitment and capacity towards promoting greater environmental protection might be delayed or suspended.

Ensuring the commitment of SMEs to meeting environmental targets means that it is important to understand their attitude, current practices, as well as the barriers to the planning and implementation of practices fostering environmental protection.

In this report, utilising the ERC Business Futures survey data, we present some insights on Northern Ireland SMEs and Net Zero target.

- First, the survey provides evidence of NI SMEs' positive attitude towards environmental protection. More than one third of NI SMEs reported that they always consider the environmental aspects in their business decision-making process, while more than 80 per cent confirmed that they at least consider it sometimes. More significantly, more than half of NI SMEs agreed that businesses should prioritise the environment above profitability and growth.
- Second, our data indicates a marked improvement in SMEs' management of environmental issues. Having an environmental management system (EMS) and

¹ "Net Zero" refers to achieving a balance between the amount of greenhouse gas emissions produced and the amount removed from the atmosphere. There are two different routes to achieving net zero, which work in tandem: reducing existing emissions and actively removing greenhouse gases ([Institute for Government: UK net zero target](#))

² [BBC: Climate change: NI 'should cut carbon emissions by 82% by 2050'](#)

³ [DfE: Consultation on policy options for the new Energy Strategy for Northern Ireland](#)

⁴ The UK definition of SME is generally a small or medium-sized enterprise, with fewer than 250 employees.

a senior manager responsible for environmental issues are reported by nearly half of NI SMEs. As demonstrated through the academic literature, these improvements not only strengthen SMEs' capacities but also reflect how serious SMEs are in their commitment to environmental protection as a strategic priority.

- Third, our data reveals that internal factors, such as reducing cost or improving the enterprise's reputation had stronger effects on SMEs' commitment to environmental protection than external factors, such as government support or regulations. However, in order to achieve the Net Zero target by 2050, we expect to see a greater influence of government support and regulations on SMEs' environmental activities in the future.
- Fourth, beyond the Covid-19 pandemic, SMEs have also faced several other challenges to their commitment towards environmental protection. Three obstacles that were reported by more than one third of NI SMEs are:
 - the cost of meeting regulations or standards;
 - the lack of information on low carbon technologies; and
 - the uncertain demand for low carbon products or services.

Any policy effort directed towards supporting SMEs in coping with these challenges might be of value.

- Finally, our empirical results show that most Net Zero practices have had a statistically significant influence on reducing SMEs' carbon emissions. In particular, two practices that seemed to be most effective are:
 - changing processes or transport/logistics and,
 - conducting training on environmental matters.

1. Introduction

In the foreword of a recent consultation paper from the Department for the Economy (NI), the Economy Minister stated: “We are living in a time like no other, where we are seeking to address climate change in parallel with our economic recovery following the coronavirus pandemic. Whilst there are undoubtedly challenges for us in these, they give us unique opportunities to shape a new future”.⁵ Her words strongly and clearly express the importance of environmental protection.

As the NI economy is dominated by small and medium-sized enterprises (SMEs)⁶, achieving the Net Zero target, no doubt, relies heavily on SMEs’ commitment to environmental protection. Therefore, it is necessary to understand NI SMEs’ engagement and strategic priorities with regards to environmental issues. It is even more important as the uncertain and challenging Covid-19 pandemic might delay or even suspend SMEs’ efforts towards environmental protection. In fact, a recent survey of UK firms from the Business Standards Institution (BSI) found that nearly 7 out of 10 business CEOs said their plans to achieve the carbon neutrality target have been pushed back by the pandemic, as other corporate priorities have taken centre stage. Furthermore, the BSI survey also showed that only one in five small enterprises have committed to a Net Zero target, in contrast to 50 per cent of their larger peers.⁷

In this report, we present insights into how SMEs responded to environmental issues over the Covid-19 pandemic year. Based on the ERC Business Futures survey that was carried out in Autumn 2020 on 178 NI SMEs, we report several findings. First, a positive attitude towards environmental protection is evident from our data, together with some marked improvements in SMEs’ approach to environmental management. Second, we find that internal factors, such as reducing cost or improving the enterprise’s image and reputation, seemed to play a more important role than external factors in inducing NI SMEs’ commitment to environmental protection. However, there are still some challenges that might prevent SMEs from maintaining their commitment in this aspect. Finally, our empirical results confirm that several Net Zero practices have had a significant effect on reducing SMEs’ carbon emissions.

⁵ [DfE: Consultation on policy options for the new Energy Strategy for Northern Ireland](#)

⁶ As indicated in DBEIS - Business Population Estimates 2019, 99.87 per cent of all firms in Northern Ireland employ fewer than 250 employees. Source: [National Statistics: Business population estimates 2019](#)

⁷ [Why small businesses need to think about climate change too](#)

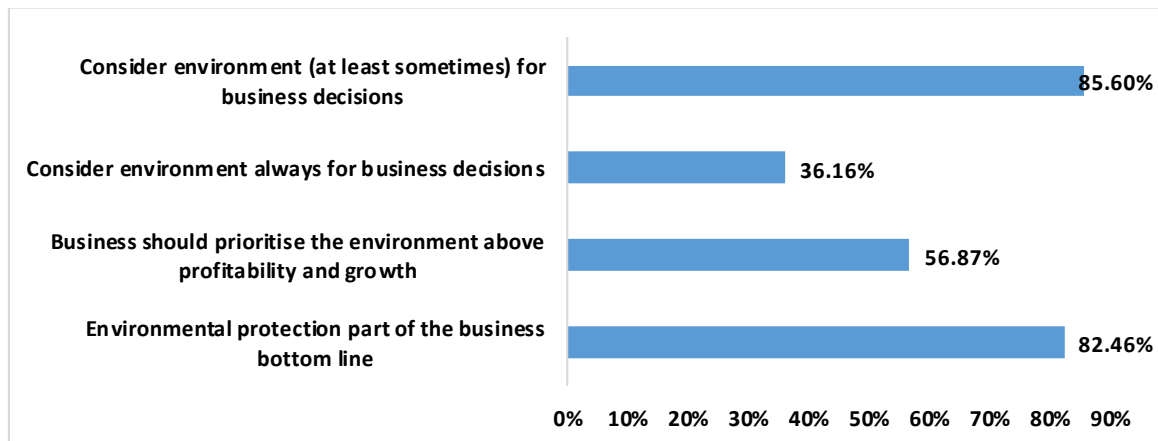
2. SMEs' attitudes towards environmental protection

As indicated in our earlier report⁸, even though SMEs are considered to be more severely affected by the Covid-19 pandemic than their larger peers, our data shows that NI SMEs maintain a positive attitude towards environmental protection. Here, we provide more evidence to support that claim.

First, it can be seen from Figure 1 below that high proportions of NI SMEs confirm the importance of environmental considerations in their decision-making process. In particular, more than one third of NI SMEs state that environmental issues are always considered in their business decisions (36.16 per cent). Moreover, with regards to whether firms worry about the impact of environmental plans on their profits and growth, our data suggests that more than half of NI SMEs agreed that businesses should prioritise environmental protection above profitability and growth (56.87 per cent).

Figure 1: NI SMEs' attitude toward environmental protection

Source: *ERC Business Futures Survey 2020*



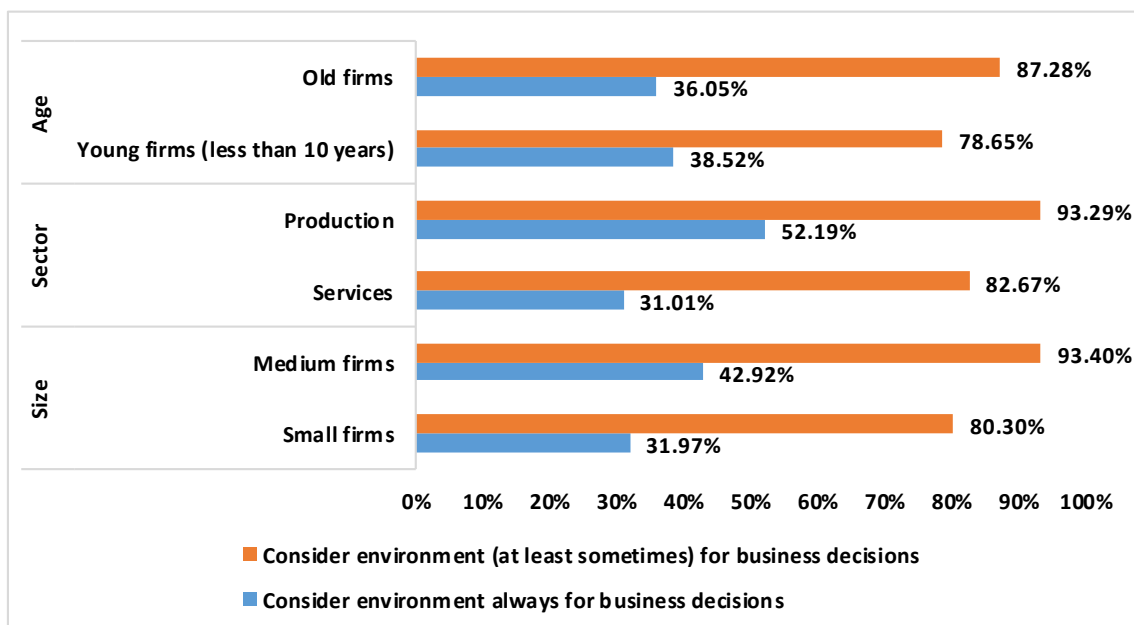
Disaggregating these findings further, we find that there is variation across firms. For instance, Figure 2 indicates that a higher proportion of medium-sized enterprises (50 to 250 employees) reported a positive attitude towards environmental issues than small enterprises (less than 50 employees). Further, SMEs in production sectors were more likely to consider environmental protection issues than firms in service sectors. The latter finding might be attributable to the fact that SMEs in production sectors often rely more heavily on input materials such as oil, gas, etc. in addition to supply chains and

⁸ [DfE - The impact of Covid-19 on Northern Ireland SMEs: Evidence and comparison with the rest of the UK](#)

associated logistics. As a result, this may mean that they are more conscious of the effect of business decisions on the environment, as well as the potential benefits from government policies to support the use of new and sustainable energy. This is in line with what Chris Martin, Danske Bank’s Head of Climate Risk and Strategy, said in a recent interview: “Developing a green and sustainable strategy that reduces environmental impact has direct implications for profits. For example, as fossil fuels are phased out and carbon taxes increase over time, business owners will need to think differently about how they power their offices, their factories and their manufacturing facilities”.⁹

In addition, Figure 3 shows that young enterprises (less than 10 years old) accounted for the highest proportion of SMEs who agreed that environmental considerations should be prioritized above profitability and growth. Even though it is quite reasonable to assume that most of these young enterprises might have already implemented the latest environmental-friendly technologies, we believe this attitude is still important for maintaining their commitment to environmental protection in the future.

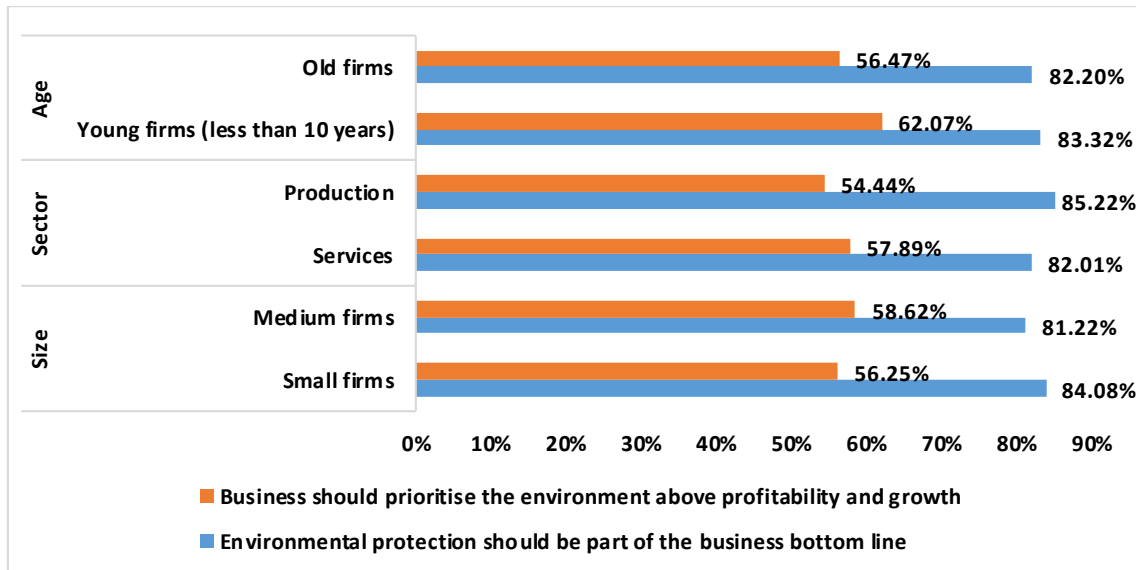
Figure 2: NI SMEs’ attitude toward environmental protection across firm characteristics
Source: ERC Business Futures Survey 2020



⁹ [Digital DNA: Small changes now on climate impact will have major benefits for NI businesses](#)

Figure 3: NI SMEs' attitude toward environmental protection across firm characteristics

Source: *ERC Business Futures Survey 2020*



3. SMEs' management of environmental issues

It is now well-established (Ozusaglam et al., 2018; Demirel and Kesidou, 2011, etc.)¹⁰, that adopting an environmental management systems (EMS) is important in supporting a firms' commitment to an environmental plan as it helps to enhance organisational capabilities in environmental protection. It provides "a formal system of articulating goals, making choices, gathering information, measuring progress, and improving performance" with respect to resource use, throughput and emissions (Florida and Davison, 2001: 64)¹¹. In addition, having a senior manager dedicated to considering environmental issues also reflects how serious SMEs are in committing to environmental protection as well as adding it into their values and priorities.

It can be seen from Figure 4 that nearly half of NI SMEs reported that they have implemented an EMS. This is a substantial proportion, taking into account that only 13 per cent of SMEs in the NetRegs SME Environmental Awareness survey in 2016 reported EMS implementation.¹² To break it down further, Figure 4 also shows that an EMS has been implemented more by medium- than small-sized enterprises (58.02 and 38.75 per cent, respectively), and more by SMEs in production than service sectors (54.51 and 43.43 per cent, respectively).

Besides, nearly half of NI SMEs have also confirmed that they have a senior manager dedicated to environmental issues, even though the differences seem to be more recognisable across firm characteristics. While nearly half of older SMEs (more than 10 years old) reported that they have a senior manager focused on environmental protection, the same was found in only a quarter of younger SMEs (less than 10 years old). Similarly, the proportion of medium-sized enterprises with a senior environmental manager was almost twice that of small-sized enterprises. Indeed, similar findings have been found elsewhere, with it being suggested that younger and smaller enterprises usually have a higher level of adaptive capacity in assimilating new ecological changes

¹⁰ Ozusaglam, S., Kesidou, E., and Wong, C.Y. (2018). Performance effects of complementarity between environmental management systems and environmental technologies. *International Journal of Production Economics* 197, 112-122.

Demirel, P. and Kesidou, E. (2011). Stimulating different types of eco-innovation in the UK: Government policies and firm motivations. *Ecological Economics*, 70(8), 1546-1557.

¹¹ Florida, R. and Davison, D. (2001). Gaining from green management: environmental management systems inside and outside the factory. *California management review*, 43(3), 64-84.

¹² [NetRegs Awareness Survey 2016: Final report](#)

and implementing environmental technologies and materials, therefore reducing their need for a senior manager dedicated directly to it (Fernandez et al., 2006).¹³

Figure 4: NI SMEs' management of environmental issues

Source: ERC Business Futures Survey 2020

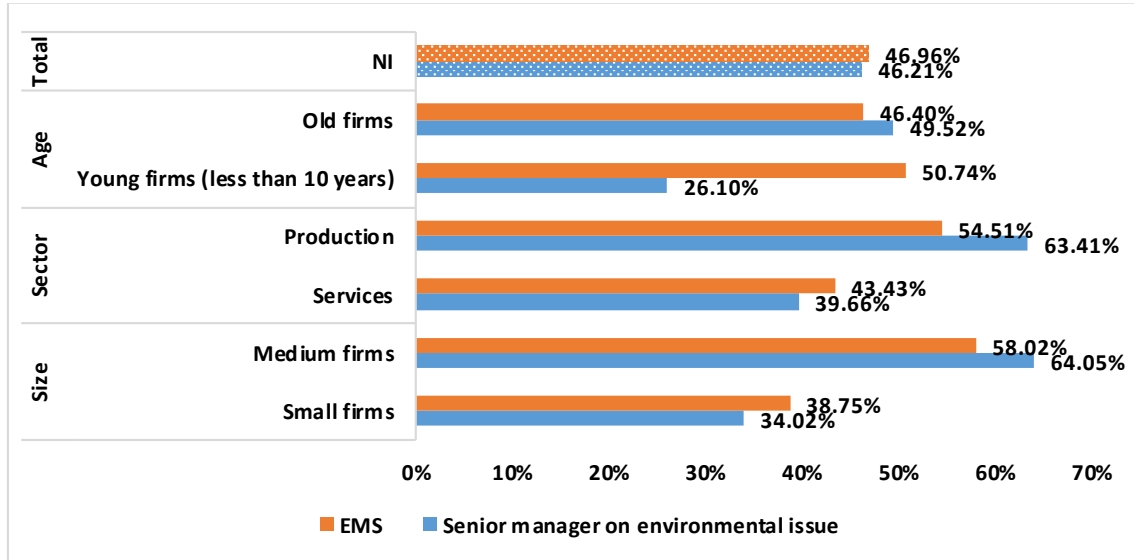


Figure 5: NI SMEs' adoption of EMS: In-house versus outside EMS

Source: ERC Business Futures Survey 2020

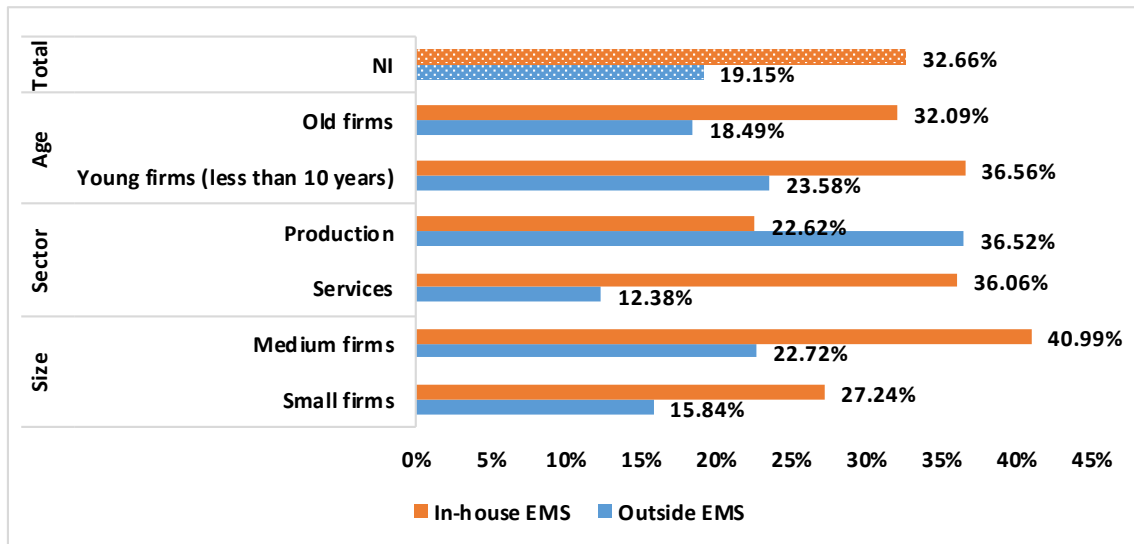


Figure 5 above also reveals that an in-house EMS seems to be preferred for NI SMEs in comparison with outside EMS (such as the ISO 14001 or the EMAS). The only case

¹³ Fernandez, E., Junquera, B. and Ordiz, M. (2006). Managers' Profile in Environmental Strategy: A Review of the Literature. Corporate Social Responsibility and Environmental Management, 13, 261-274.

where outside EMS is preferred to an in-house system is for SMEs in production sectors (36.52 and 22.62 per cent, respectively).

4. Determinants of SMEs Net Zero practices

Several factors have been discussed as drivers of firms' Net Zero practices. Externally, the stringency of environmental regulations as well as government support and encouragement play a key role, while internally, the possibility of increasing efficiency as well as improving corporate image and reputation are also reported to affect firm's commitment to environmental protection activities (Kesidou and Demirel, 2012)¹⁴.

Table 2 demonstrates how significant these determinants are for NI SMEs' environmental activities. Overall, internal factors appeared to be more important in driving SMEs' Net Zero practices in the previous 12 months. Specifically, 54 per cent of NI SMEs reported that reducing costs was a very important driver of their Net Zero practices, with 48 per cent regarding Net Zero practices as important for improving their image and reputation. The latter is in line with a finding from the NetRegs SME Environmental Awareness survey in 2016, where it was also found that the most common reason given for taking steps to improve environmental performance by SMEs was improving their business's reputation/green credentials (mentioned by 45 per cent).¹⁵

Our data highlights that only around a third of NI SMEs reported that either environmental regulations/taxes or government grants/subsidies were very important for the adoption of Net Zero practices. This, we believe, is reasonable and may reflect firms' priorities during the Covid-19 pandemic, when attention was directed towards government support and regulations associated with the pandemic and less attention on environmental policies and support. However, as the NI economy transitions from the pandemic towards a more sustainable future, we expect to see a stronger influence of government policies on SMEs' commitment towards the Net Zero target.

¹⁴ Kesidou, E. and Demirel, P. (2012). On the drivers of eco-innovations: Empirical evidence from the UK. *Research Policy*, 41(5), 862-870.

¹⁵ [NetRegs Awareness Survey 2016: Final report](#)

Table 1: Determinants of NI SMEs' Net Zero practices

Source: *ERC Business Futures Survey 2020*

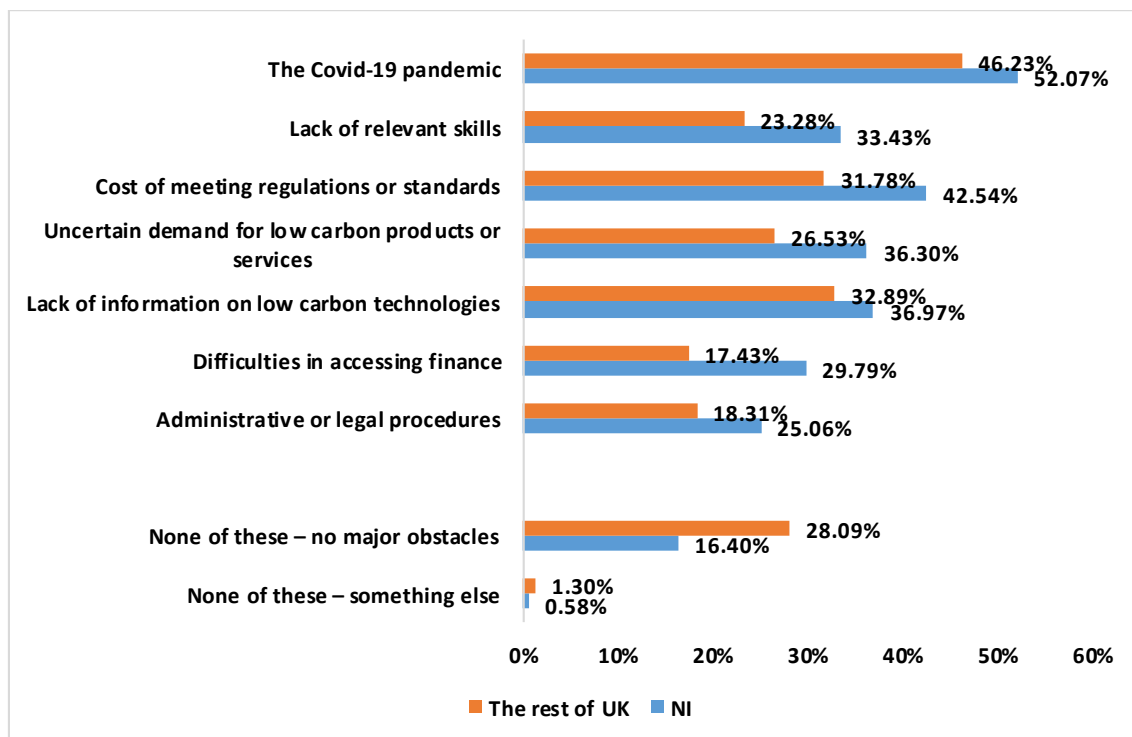
	Extremely/very important	Somewhat/moderately important	Not important at all
Reducing costs	54%	36%	8%
Improving your image and reputation	48%	39%	10%
Government grants or subsidies	34%	33%	27%
Environmental regulations or taxes	30%	46%	19%
Voluntary agreements within your sector or supply chain	23%	40%	28%
Availability of external funding from banks	22%	32%	38%
Customer Demand for low-carbon products or services	23%	40%	30%

5. Barriers to SMEs' environmental commitment

Figure 6 below indicates that several challenges and barriers might prevent SMEs from committing to the Net Zero target. As one might expect, the Covid-19 pandemic is a major obstacle reported by SMEs in both Northern Ireland and the rest of the UK (52.07 and 46.23 per cent, respectively). However, the pandemic is not the only challenge. Three other barriers were reported by more than one third of NI SMEs: the cost of meeting regulations or standards (42.54 per cent); the lack of information on low carbon technologies (36.97 per cent); and the uncertain demand for low carbon products or services (36.30 per cent). In addition, the lack of relevant skills and difficulties in accessing finance were also reported by almost one third of NI SMEs as obstacles for committing to their Net Zero practices, slightly higher than that for SMEs from the rest of the UK (only about 20 per cent).

Figure 6: Obstacles towards SMEs' environmental protection: NI compared to the rest of the UK

Source: ERC Business Futures Survey 2020



To disaggregate the data further, Figures 7, 8 and 9 below present more insight into how these different challenges have affected different types of NI SMEs.

With regards to firm size, medium-sized firms were more likely than small-sized firms to identify a lack of relevant skills and administrative or legal procedures as an obstacle to

pursuing environmental protection. In contrast, the cost of meeting regulations or standards seemed to be the most commonly cited barrier for small firms (less than 50 employees). Looking at this by sector, we find that SMEs in service sectors are more likely to cite a lack of relevant skills as well as the lack of information on low carbon technologies as barriers to their environmental activities than SMEs in production sectors. Whereas, somewhat reasonably, more SMEs in production sectors indicated that the uncertain demand for low carbon products or services was one of their main challenges (47.69 per cent, in comparison with only 32.79 per cent for SMEs in service sectors). Finally, with regards to firmage, young NI SMEs (less than 10 years old) tended to have fewer issues with a lack of relevant skills, a lack of information on low carbon technologies, or the cost of meeting regulations or standards than their older peers.

Figure 7: Obstacles towards NI SMEs' environmental protection: Small versus medium firms
Source: ERC Business Futures Survey 2020

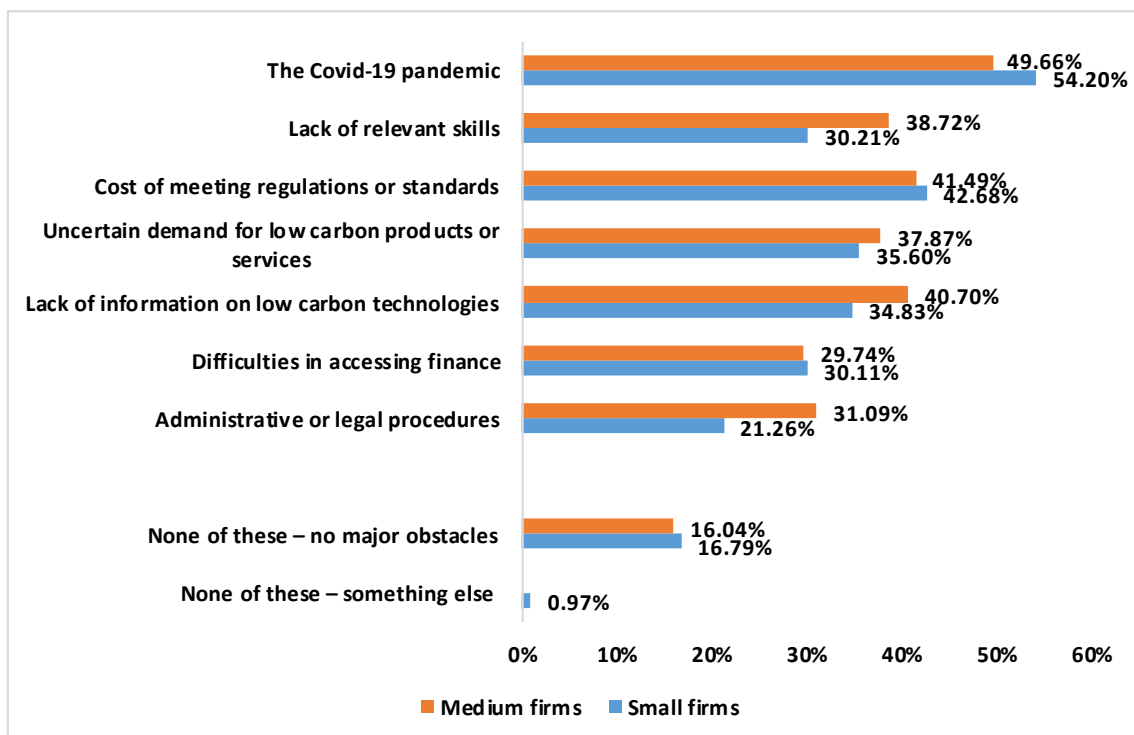


Figure 8: Obstacles towards NI SMEs' environmental protection: Production versus service sectors

Source: ERC Business Futures Survey 2020

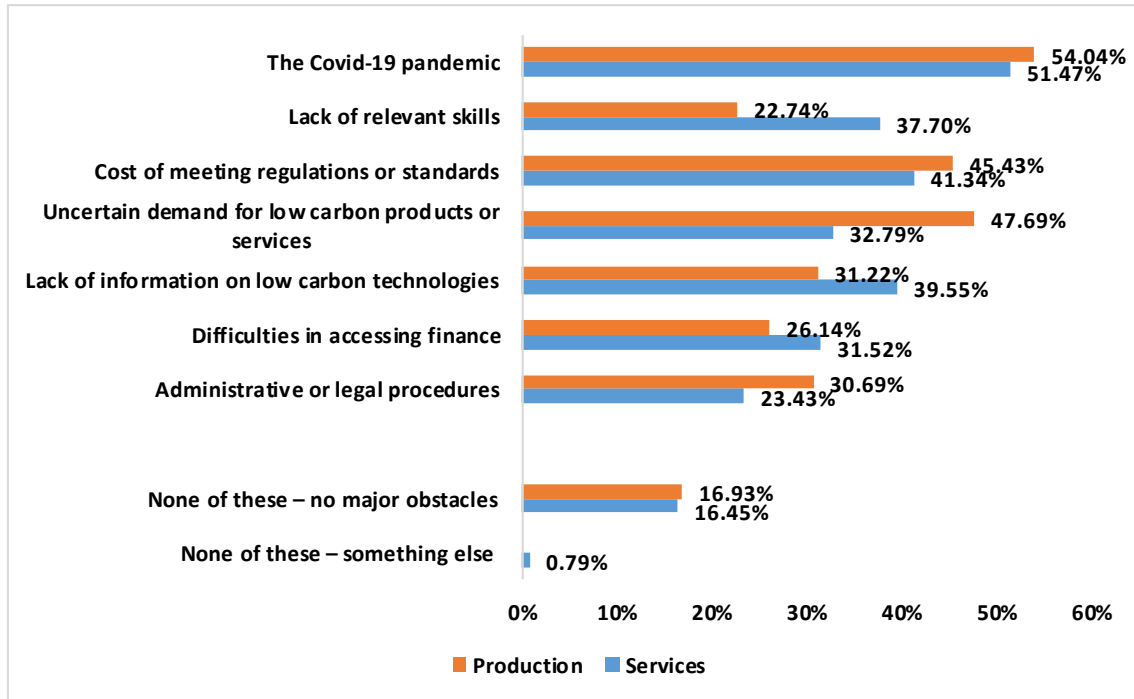
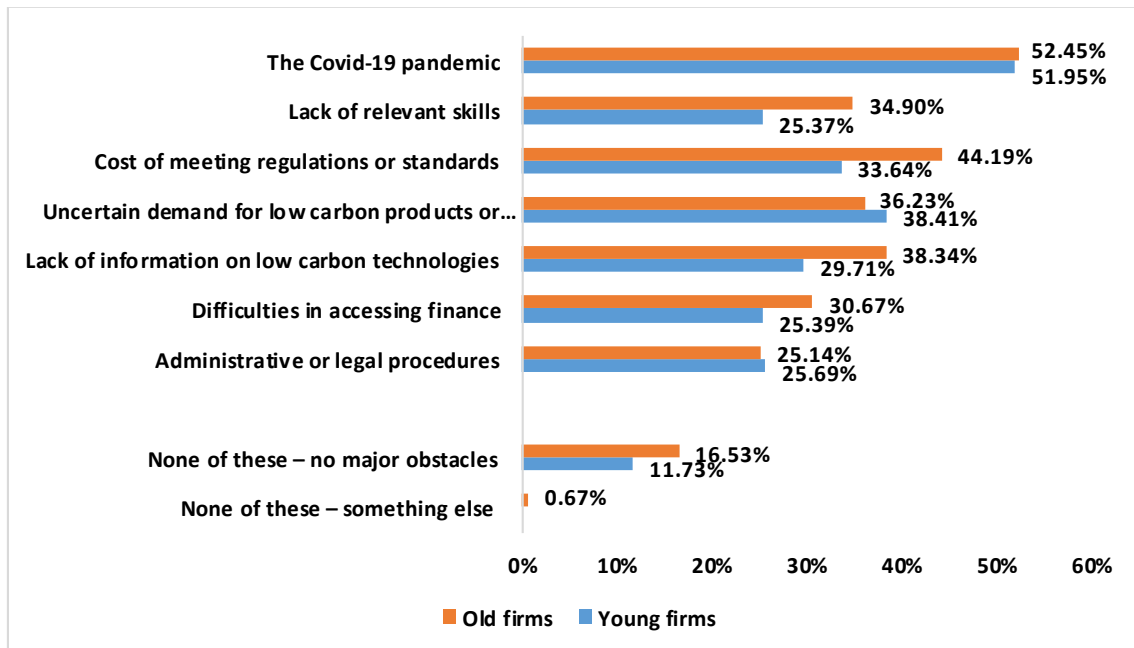


Figure 9: Obstacles towards NI SMEs' environmental protection: Young versus old firms

Source: ERC Business Futures Survey 2020



6. Effect of Net Zero practices on SMEs' carbon reduction: Further empirical results

Having examined the attitude of NI SMEs towards environmental protection issues, as well as the management systems currently in place and the drivers and obstacles towards environmental protection activities, here we take the analysis further in examining *the effect of different Net Zero practices on SMEs' environmental performance*.

Estimating the effect of Net Zero practices on SMEs' environmental performance is done by means of a *probit* regression on the model:

$$\text{Carbon_reduction}_i = \beta_j \text{practices}_{i,j} + \gamma_1 \text{size} + \gamma_2 \text{age} + u_i \quad (1)$$

Where:

Carbon_reduction_i: a binary variable that takes a value of 1 if a firm reported that it had reduced its carbon emissions over the previous 12 months, and 0 otherwise.

practices_{i,j}: a set of 7 binary variables indicating whether a firm had applied any of the 7 different Net Zero practices.

size: a binary variable that reflects whether a firm is small (less than 50 employees) or medium-sized (50 to 250 employees)

age: a binary variable that reflects whether a firm is less or more than 10 years old

The results of the regression model are presented in Table 2.

Table 2: The effect of different Net Zero practices on SMEs' carbon reduction (marginal effects reported)

Dependent variable (=1 if reduced carbon emissions)	
Undertaking environmental reports or audits	0.049 (0.082)
Changing processes or transport/logistics	0.270*** (0.045)
Investing in environmental R&D	0.197** (0.097)
Introducing air pollution monitoring and filtering	0.132 (0.094)
Conducting training on environmental matters	0.238*** (0.079)
Conducting market research related to low carbon products or services	-0.137 (0.119)
Introducing new low carbon products or services	0.172** (0.073)
Switching to more renewable energy	0.186*** (0.054)
<hr/>	
Firm size (= 1 if small firm)	0.018 (0.053)
Firm age (= 1 if less than 10 years old)	-0.022 (0.074)
Industry effects	Yes
Number of observations	175

Note: standard errors are in parentheses. ***, **, and * indicate the level of significance at 1%, 5%, and 10% respectively.

The econometric analysis suggests that most of the Net Zero practices have significantly positive effects on the probability of a firm reporting carbon reduction. These include: (i) changing processes or transport/logistics; (ii) investing in environmental R&D; (iii) conducting training on environmental matters; (iv) introducing new low carbon products or services; and (v) switching to more renewable energy. Surprisingly, different from conducting environmental R&D research, conducting market research related to low carbon products or services seems to have negative impact, even though it is statistically insignificant. It might be attributable to the fact that conducting market research about low carbon products or services might consume SMEs' limited resources without any real improvement on product or operational process, and from that even prevent SMEs from changing other practices. Therefore, partnership/collaboration might be a better option for SMEs in conducting this Net Zero practice, as well as any government support, as the practice itself might bring some opportunities for further improvement.

7. Conclusions

As indicated in our previous report for DfE and Invest NI¹⁶, despite all the challenges and uncertainty presented by the Covid-19 pandemic, the importance of environmental protection seems to be deep-rooted in SMEs' strategies and actions. In this report, we provide further evidence to support this claim. Utilising data from the ERC Business Futures survey, we report that more than one third of NI SMEs reported that they always consider environmental issues in their business decision-making process, while around 85 per cent confirmed that they at least consider it sometimes. More than half of NI SMEs from this survey agreed that businesses should prioritise the environment above profitability and growth.

Our data also reveals some marked improvement in SMEs' management of environmental issues. Both having an environmental management system (EMS) and having a senior manager responsible for environmental issues were reported by nearly half of NI SMEs. These improvements, we believe, not only strengthen SMEs' capacity but also reflect their commitment to environmental protection in the longer run.

With regards to the drivers of SMEs' environmental commitment, we find that factors internal to the firm, such as reducing cost or improving the enterprise's reputation had stronger effects on SMEs' environmental protection than external factors, such as government support or regulations. It might be that this is due to the business pressures associated with Covid-19, however, in order to achieve the Net Zero target by 2050, we expect to see a greater influence of government support and regulations on SMEs' environmental activities in the future.

Our data also reveals that beyond the Covid-19 pandemic, SMEs have also been faced with three major challenges to their commitment towards environmental protection: (i) the cost of meeting regulations and standards; (ii) the lack of information on low carbon technologies; and (iii) the uncertain demand for low carbon products or services. Hence, we suggest that future policy interventions to support SMEs' environmental commitment should be directed towards these challenges.

¹⁶ [DfE - The impact of Covid-19 on Northern Ireland SMEs: Evidence and comparison with the rest of the UK](#)

Finally, we find that two Net Zero practices with strongest effects on reducing SMEs' carbon emissions are (i) changing processes or transport/logistics and (ii) conducting training on environmental matters.

Limitations

While the report provides some insights into how Northern Ireland SMEs have responded to the urgent environmental protection – Net Zero target, two caveats should be noted. First, the nature of our cross-sectional survey data prevents us from conducting a causal analysis of the effect of the Net Zero practices on the actual level of SMEs' carbon emission reduction. However, as the NI economy seeks to move towards a more sustainable future, we believe more longitudinal data will be available in the future, which will enrich our knowledge about the strengths and weaknesses of the Net Zero practices on SMEs. Second, the small sample size of only 178 Northern Ireland SMEs must be acknowledged. Even though all observations are weighted, in order to provide representative results with some regional comparisons, any generalised conclusion should be carefully derived.

Appendix

The Enterprise Research Centre (ERC)'s Business Futures Survey was conducted during Autumn 2020, aiming to understand the experiences of SMEs over the previous 12 months, as well as the impact of the COVID-19 pandemic. The survey was undertaken by telephone using a CATI (Computer-Assisted Telephone Interviewing) system on 1,019 SMEs all over the UK. The Northern Ireland sample consists of 178 SMEs. The sample focused on enterprises employing between 7 and 249 employees.

In order to provide results representative of the UK population of SMEs and any following regional comparison, all observations were weighted.

The Northern Ireland sample contains data from 178 SMEs, in which 103 of them are small enterprises (less than 50 employees) - approximately 58 per cent of the sample. However, in contrast with the more or less balance in terms of firm size, most of NI SMEs participated in the survey are old enterprises (more than 10 years old) – 86 per cent of the sample, or enterprises from service sectors – 75 per cent of the sample.

Table A1 below provides summary statistics of our main variables.

Table A1: Summary statistics

Variables	The whole sample (1,019 obs)		Northern Ireland (178 obs)	
	Observations	Mean	Observations	Mean
Always considered the environmental implications when making business decision	1008	0.8318	175	0.8560
Sometimes considered the environmental implications when making business decision	1008	0.3924	175	0.3672
Agreed that businesses should spend more to reduce their impact on the environment	981	0.8369	174	0.8277
Agreed that businesses' environmental impact should be part of the bottom line	991	0.8360	176	0.8246
Agreed that businesses should prioritise protecting environment above profitability or growth	982	0.6142	171	0.5687
Implemented Environmental Management System (EMS)	958	0.4393	168	0.4696
Implemented in-house EMS	958	0.3431	168	0.3266
Implemented external EMS (e.g. ISO14001 or EMAS)	958	0.1403	168	0.1915
Having a member of the senior management team with designated responsibility for environmental issues	993	0.4111	175	0.4621
Net Zero practices				
Undertaken environmental reports or audits	736	0.3050	122	0.4221
Changed processes or transport/logistics to reduce carbon emissions	736	0.5373	122	0.4946
Invested in research and development related to the environment	736	0.2007	122	0.2320
Introduced air pollution monitoring and filtering	736	0.2693	122	0.3620
Conducted training on environmental matters	736	0.3646	122	0.4017
Conducted market research related to low carbon products or services	736	0.2205	122	0.2011
Introduced new low carbon products or services	736	0.3499	122	0.3324
Switched to more renewable energy	736	0.4145	122	0.4929

