



Observatory



DEMAND AND SUPPLY OF GREEN FINANCE IN THE MIDLANDS ENGINE

MARCH 2022

Executive Summary

This report is based on the following research:

- Analysis of circa 30 reports exploring supply and demand of green finance in the UK
- Interviews with key role holders, including:
 - o project leads at relevant innovation support programmes available to businesses within the Midlands Engine
 - o officers with a responsibility for access to finance and low carbon based at Growth Hubs and LEPs in the Midlands Engine
 - o Business relationship managers at banks, fund managers, lenders and financial intermediaries operating across the Midlands Engine

The research was carried out during November and December 2021.

Key Findings:

1. Several national surveys points to a picture of high and increasing awareness and desire amongst businesses to reduce their carbon footprint, but which is not translating into investment due to a number of reasons such as complexity of options, confusion, appetite for debt, and competing priorities. These national trends are verified in the research undertaken for this report, but suggests that demand in the Midlands Engine is lower than the national trend.
2. This is important because regions that have weaker economies, including the East Midlands, have higher per capita carbon emissions - more needs to be done to incentivize businesses in the Midlands to reduce their emissions.
3. Businesses in the Midlands Engine consider longer-term financial solutions and tax incentives to be the most appropriate way of incentivizing investment.
4. Barriers to investment could be overcome through collaboration between carbon footprint calculators, energy providers and finance providers to overcome a reluctance to take on (additional) debt.
5. It is difficult to gauge the regional supply of green finance due to the complexity of categorisation. Nevertheless, the supply of green finance for early-stage innovation in green technology is very limited in the Midlands Engine.
6. Understanding of green finance is limited; increasing regulatory requirements around reporting are slowly raising awareness. This adds to the difficulties in identifying and measuring supply.
7. The insistence on “novel technologies” from innovation funding agencies is creating blockages to the potential demand. Many solutions are proven technologies, so are not eligible for support.
8. Data for infrastructure finance are based on extrapolating regional requirements from national or global studies. Most studies point to a huge gap between the necessary investment in the Midlands to reach Net Zero targets now and in the next five years.
9. Local resources to support green infrastructure projects are currently impinged due to Covid and longer-term structural issues. Mapping and developing further the pipeline of local projects will help attract investment. This could be augmented further through the development of a regional green or social investment agency with funds to co-invest.
10. Inward investment (both foreign and domestic) has been traditionally driven by job creation. As a result, organisational structures and resources treat development opportunities for employment separately from energy, transport and natural capital projects. Due to the rapid growth in green and sustainability impact finance, there should be improved coordination of green project development, including education and awareness raising about the requirements of green finance.

Recommendations for further research

1. Research into the further requirements of clients of regional innovation-support projects, incubators and accelerators would be useful in order to establish the carbon-saving potential of the technologies in development, and then match this against the requirements of fund managers.
2. Map appetite to raise green bonds (for example via interest in the Natural Environment Investment Readiness Fund by local authorities and combined authorities in the Midlands Engine) to ascertain interest in a regional green investment fund or bank.
3. Examine the findings of sustainability audits in the Midlands undertaken by banks and other providers to assess project type, location, sector, carbon saving potential and the total cost of implementation.
4. Analysis of carbon footprint calculators such as those used by NatWest's Carbon Tracker, the Carbon Trust, Climate Partner, Zellar and Flutter to establish regional variations in demand for green projects, as well as their potential to reduce carbon emissions.
5. Analysis of searches on online business finance finders, such as Finpoint at Swoop, as well as brokers and intermediaries, to establish regional variations in demand for green projects.
6. Prepare an assessment of the tenure of commercial and industrial premises in the Midlands Engine and their energy performance certificates. Interviews with representatives of commercial landlords and agents to understand how best to incentivize both owner and tenant with net zero adaptations.
7. Support efforts to create a visible pipeline of credible Smart Local Energy Systems, nature-based and other net zero infrastructure projects in the Midlands, and develop

innovative private finance mechanisms for them.

8. An appraisal of options available to unleash latent demand for investment in net zero by Midlands businesses through (among others) tax incentives, business rates relief, changes to legislation surrounding capital requirements or how lenders could be supported to provide longer-term finance.

A note on the data

There is very little data available at regional level which is explicitly about the supply of and demand for green finance. Fund managers interviewed very rarely either had or were able to share quantitative data available about fund availability and/or levels of enquiries/customer demand about green finance. Fund managers at organisations who had no supply of green finance, or no regulatory requirements around reporting, often had limited understanding of what green finance is. Their responses are mainly based on individual assessments based on experience rather than any analysis of MI data etc.

The national surveys used for this report tended to use around 1000 responses. At around 11% of the national economy, drawing conclusions from 110 responses, even if they were available, would not be able to produce robust interpretations.

Studies estimating required infrastructure costs at a global or national level required to prevent (or remove) carbon entering the atmosphere are themselves subject to heavy caveats. Extrapolating further to reach regional figures are subject to even greater margins of error and should only be taken as rules of thumb.

The current debate within the European Union as to whether electricity generated from gas-powered turbines can be considered "green" or not¹ is a topical example of the difficulties in considering the environmental credentials of technology or finance. This report does not attempt to explore a funder's categorisation, or whether technologies are green or not.

¹ Financial Times (2022) Brussels faces threat of legal challenge over sustainable finance rules 23rd January 2022 <https://www.ft.com/content/48d44c9a-298e-4203-a160-772a032d1c36>



Supply

Q1: What types of green finance are available in the UK, and to what extent is this choice replicated in the Midlands?

There is a mixed picture regarding green finance in the Midlands. Talking to major banks, finance for green projects is available in the UK and across the Midlands through their emerging green finance products.

Talking to smaller banks, support providers and intermediaries however, there are many complaints about lack of supply in “genuinely” green finance. This distinction is important: the lack of a consistent understanding of green finance amongst stakeholders generates distortions when discussing supply and demand. There were several mentions of “greenwashing”, and yet also a lack of awareness about measures in place to tackle the problem.

Whilst there are generalist funders available for bringing green technologies to market and generalist funds which could be suitable for financing investment in energy efficiency measures etc, most were unaware of whether assets under management were subject to green lending requirements. Some smaller lenders are preparing for the extension of carbon reporting requirements, and so are aware of what distinguishes green finance, social impact finance and others.

In summary, green finance is a very new phenomenon and it is unsurprising that awareness is not universal. The words green and finance are easily understood, and so the compound “green finance” also seems easy to understand. Caution needs to be taken that green finance should ideally refer to funds raised under the Green Bond Principles (GBP):

Green Bonds are any type of bond instrument where the proceeds or an equivalent amount will be exclusively applied to finance or re-finance, in part or in full, new and/or existing eligible Green Projects and which are aligned with the four core components of the GBP.

In this report, reference is made to “generic finance” that can be used to finance projects with an aim to reduce carbon emissions, improve energy efficiency, bring a relevant product or service to market, or build relevant infrastructure. In the GBP, “Green Projects” have a specific definition; that definition is not used in this report.

a) What finance options are available for innovative businesses in the UK/Midlands that aim to bring green technologies to market, along all the stages of this process?

A range of mainstream finance is available for post-revenue green technologies in development. For example, Mercia, Midven and Foresight provide equity funding specifically for the Midlands through Midlands Engine Investment Fund (MEIF), in addition to funders such as Maven Capital Partners, DSW, Business Growth Fund and others. The West Midlands team that took part in the Massachusetts Institute of Technology REAP programme part-funded by the Department of Business, Energy and Industrial Strategy (BEIS) over 2019-2020, identified at least 42 funders active in the region.

The majority of funds are not explicitly focused on green technologies. None of the fund managers interviewed say they would not consider green technologies. Some are focused on software or tech generally, which include green applications. All commented that their customers are increasingly shifting towards green as a result of regulation, customer demand or companies’ own strategy.

Fund managers are actively prospecting for investable propositions, increasingly driven by their own ESG commitments, and through evolution of the market as more companies/innovators seek to exploit commercial opportunities and customer demand by developing green projects.

These more generalist funds tend to focus on post-revenue propositions. Given that the journey

to Net Zero is one of rapid transition away from incumbent carbon-intensive technology, many solutions remain too risky and long-term for lower-cost finance. Many green technologies will be competing against cheaper, more convenient existing technologies that are facilitated by nationwide infrastructure such as gas-powered central heating or the entire industry to service combustion engine cars. This problem is too great to expect relatively small funds to resolve, which will only be exacerbated in regions outside of London and the South East such as the Midlands.

Many funders interviewed are making firmer commitments to the Environmental, Social and Governance (ESG) agenda². Some are actively considering signing the UN Principles for Responsible Investment. Some smaller banks are preparing for the reporting requirements in the Task Force on Climate-Related Disclosures to cover their activities in the near future. All moves are reflective of the rapid growth of ESG investment funds, up almost 400% since 2016³. A study by accounting firm BDO found that 57% of UK private equity firms have made investment strategies more ESG-focused since 2020, and 55% adhere to the UN Principles, up from 49%⁴. These commitments drive change both in the internal activities of funders and their suppliers, as well as the destination of their investments – including energy use and generation, waste, water and other factors. There are many drivers of this change, including mitigation against expected future regulatory changes, responses to customer demand and shareholder activism. All of the funders interviewed are keen to reduce carbon emissions and environmental sustainability of their own organisations as well as via their investments.

The Clean Growth Fund is a specialist provider of green finance that is based in London but operates across the UK and aims to have £100m under management by 2022. Its own data shows that around 10% of its funding pipeline is based in the Midlands, commensurate with the size of the regional economy. The Green Angel Syndicate operates across the UK and claims to be the UK’s only dedicated angel syndicate for green technologies. It is also based in London, with 28 investments across the country. Whilst the majority of these have been in the South East, the distribution is again broadly in line with the relative sizes of regional economies. Both are open to deals from any location in the UK, and both mentioned the importance of accelerator and incubator programmes with a focus on green technologies as sources of investment propositions. There are other specialist funders, including Carbon Accelerator⁵, that weren’t interviewed for this report.

Research indicates that at pre-revenue stage there are gaps in the supply of finance in the Midlands. Finpoint⁶, an aggregator of finance options for businesses, reports there are no options for those seeking funding under £250,000. Minerva Business Angels Network based at Warwick Science Park has around 100 active angels with approximately £2-3m available to invest each year, including to pre-revenue businesses, but their experience is that opportunities are slowing as other funders are increasingly open to smaller or earlier deals.

²O “Environmental, Social, and Corporate Governance (ESG) is an evaluation of a firm’s collective conscientiousness for social and environmental factors.” https://en.wikipedia.org/wiki/Environmental_social_and_corporate_governance

³New Financial (2021) p.3

⁴<https://www.icaew.com/insights/viewpoints-on-the-news/2021/nov-2021/bdo-private-equity-firms-prioritise-esg-despite-covid-threat>

⁵<https://www.carbon-accelerator.com/>

⁶<https://finpoint.co.uk/about-finpoint/>

This is echoed by officers at Growth Hubs interviewed across the Midlands Engine who are receiving an increasing number of requests for funding for green innovations. These requests are often for grant funding, because the enquirer cannot identify suitable external finance – usually because they are still at pre-revenue stage, and/or because the amount of funding required is below the minimum ticket size of funders.

UK Research and Innovation (UKRI), a non-departmental public body sponsored by the Department for Business, Energy and Industrial Strategy (BEIS), brings together the seven

disciplinary research councils, Research England (responsible for supporting English research and knowledge exchange at higher education institutions), and the UK’s innovation agency, Innovate UK, is an important player in this earlier stage market. Analysis of Innovate UK funded projects since 2004 is complicated by the collaborative nature of projects, which means many see the funding split between partners in different regions. Selecting projects identified by region generates different results than selecting projects identified by Local Enterprise Partnership (LEP) area and excluding withdrawn projects:

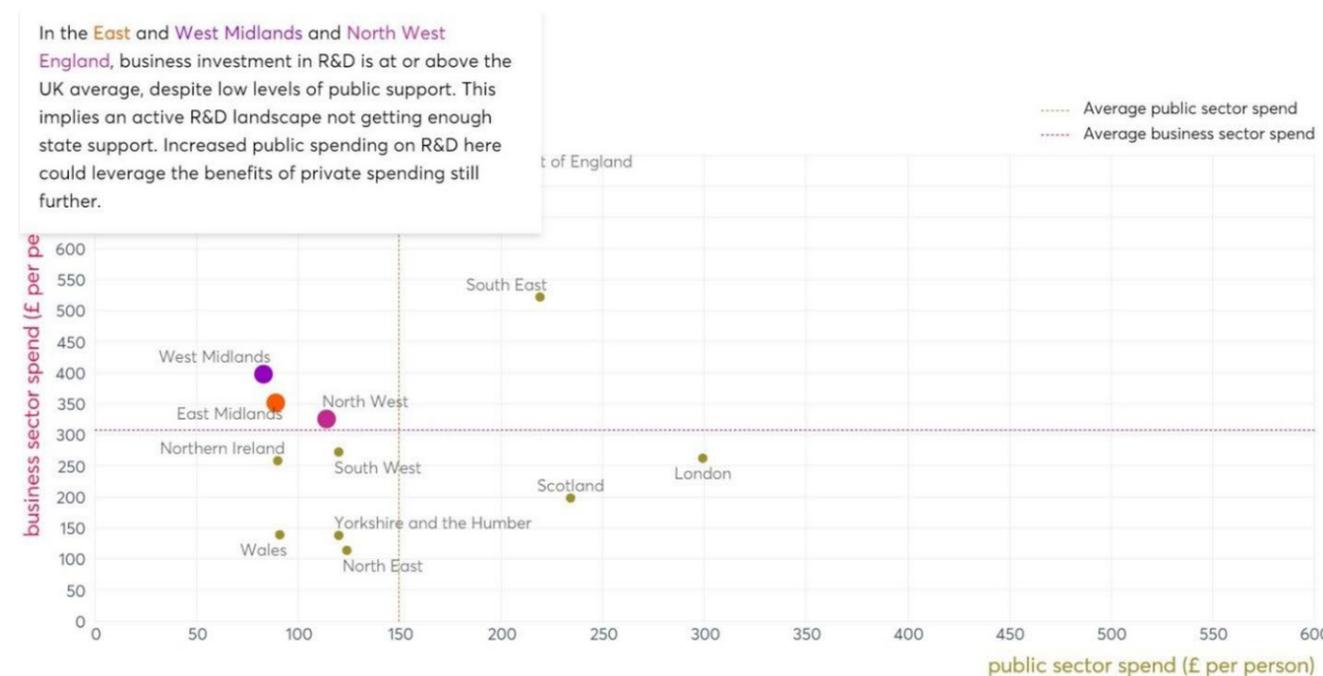
Table 1: Innovate UK funding allocated since 2014⁷

Midlands Engine	Total Project value (£)	Total award offered (£)	Number of projects	Average grant (£)
By region	3,017,704,785	2,076,358,168	6995	296,832
By LEP	3,621,421,490	2,530,931,625	7879	321,266
UK	18,206,836,902	11,976,302,002	46,913	255,293

Either way, the Midlands attracts a higher-than-expected share of Innovate UK funding, with the average grant award well above the UK average and received one sixth of the total available for an area with around 12% of the business population. One would hope and assume that this would translate into an equivalent share of finance seeking to develop these projects further towards commercialisation – but as discussed above and below, some evidence suggests this is not happening.

Research undertaken by Nesta on research and development funding shows lower levels of public funding in the East and West Midlands compared with other parts of the country. This is despite higher-than-average business investment in research and development (R&D) in the region⁸.

Figure 1: Regional public and business investment in R&D per person; Nesta



Conversely, an unpublished report from HMRC into innovation tax reliefs⁹ shows the Midlands receives less than the national average in tax reliefs such as R&D tax relief and the Seed Enterprise Investment Scheme (SEIS). This could be because businesses are not taking full advantage of tax relief available to them in either the volume of applications or the amount requested per application. It could also mean the R&D in the Midlands is typically at later Technology Readiness Levels (TRL) and within established businesses, rather than lower TRLs within start-up companies seeking seed investment.

There is a handful of small grant funds still available in the Midlands Engine through the European Regional Development Fund (ERDF) innovation support projects which can contribute towards small capital and revenue costs, both specifically for low carbon or green projects, and more general innovation (such as iNet at Loughborough, or Innovation Networks at Coventry University). However, they are rapidly being exhausted and until further news of the UK Shared Prosperity Fund expected in the Levelling Up White Paper, cannot be counted as a stable source of supply.

It is the earlier-stage projects with the potential to reduce carbon at a significant scale (and therefore a greater requirement for funding) that will drive impact. It is also difficult to gauge regional supply of finance for these kinds of projects. Many sources of funding are associated with Innovate UK and the Grand Challenges that were in the 2017 Industrial Strategy. For example, much of the Aerospace Technology Institute’s strategy is part of the Net Zero challenge, such as their Fly Zero programme. Based in Cranfield, it is a national programme. The majority of Fly Zero’s recipients are large companies based across the country, some (such as Rolls Royce) with a strong presence in the Midlands Engine area. At this volume and intensity, the supply of finance for green projects is difficult to disaggregate to a regional level, especially due to the collaborative nature of R&D projects involving multiple suppliers across multiple locations.

⁷ <https://www.ukri.org/publications/innovate-uk-funded-projects-since-2004/>

⁸ <https://www.nesta.org.uk/data-visualisation-and-interactive/design-future/>

⁹ Available upon request

Recommendation One:

Further research should be undertaken into the requirements of clients of regional innovation-support projects, incubators and accelerators to establish the carbon-saving potential of the technologies in development, to be matched against the requirements of fund managers. This would establish whether supply of finance is the problem, or if it is demand-side issues such as appetite to sell equity, ambition, quality of presentational material and other pre-investment readiness.

b) What finance options are available to help businesses adopt green technologies, processes and practices that could reduce their carbon footprint?

The following is not an exhaustive list of all green finance products available at major UK banks, but an illustration of the breadth of products available, based on information available online and in discussion with regional representatives:

HSBC	Lloyds	Barclays
Green SME Fund	Clean Growth Finance Initiative	Green Loans
Green Term Loans	Commercial Real Estate Green Lending Initiative	Green mortgages
Sustainability Linked Loans	Sustainability Linked Loans	Green Selective Receivable Finance
Green Revolving Credit Facilities		Green Asset Finance
Green Asset Finance	Renewable Energy Financing	Green Deposits
Green Deposits		Green Trade Loans
Green and Sustainable Trade Finance		Green Bonds, Guarantees and Indemnities
Green and Sustainability Linked Bonds	Green Bond facilitation	Green Bill of Exchange and Promissory Note Discounting

In November 2021, HSBC launched a £500m Green SME fund in the UK. It is aimed at “businesses with a turnover of less than £25m and will offer 1% cashback on loans, starting from £1,000 to help SMEs invest in green activities”¹⁰.

In 2020 Lloyds “provided over £2.3 billion of green finance in Commercial Banking through [the] Clean Growth Finance Initiative, Commercial Real Estate Green Lending Initiative, Renewable Energy Financing and Green Bond facilitation. This increased ... total green finance to over £7.3 billion since 2016. In addition, [Lloyds has] supported clients with over £1.8 billion of Sustainability Linked Loans since 2017”¹¹.

Barclays makes Green Loans available for SMEs for “green energy and sustainable projects”¹² alongside green asset finance, green mortgages and others.

Santander’s UK Climate Strategy includes an aspiration to create green products and services for customers, and an aspiration to “raise or facilitate the mobilization of over €120bn of green finance since 2019” by the latter half of this decade¹³. Similarly, NatWest is “committing £100bn of climate and sustainable funding by 2025 to support the investment the UK needs”¹⁴ through its mainstream business lending. Its range of green finance products is currently in development and is expected to launch in 2022; there are some products currently available such as green mortgages and asset finance through its Lombard partner.

Access to these products is via a sustainability audit, which covers a range of questions about energy use, water use, staff travel and waste etc. Evidence is required after completion of

any investment, such as an improved Energy Performance Certificate for a building. NatWest will pilot a carbon tracker tool in January 2022 which links to business account transaction data, which will remove the risk of subjectivity creeping into answers to any audits using a simple conversation with a client¹⁵.

Even so, a British Business Bank survey suggests 60% of business finance intermediaries felt that the current funding ecosystem does not assist SMEs in identifying and understanding net zero projects, while 39% of intermediaries believed that there is an inadequate supply of finance dedicated to net zero in their region or nation¹⁶. Finpoint states that there are no options for green finance available on their finance finder platform, which claims to be the UK’s largest panel with around 140 business lenders. One interviewee cites Triodos Bank, which will “only lend to organisations that have a positive impact on people and planet”¹⁷ as a rare example of what it considers a green finance provider.

In interviews, there was a degree of scepticism from banks and intermediaries about how “green” the green financial products really are. Some felt that competitors’ green products were simply generic products re-badged as green, and with no additional benefits to borrowers, or with benefits cross-subsidised by other revenue that is available to all banks. Despite market standards for green loans and sustainably linked loans being published by recognised industry associations in 2018 and 2019 (and updated in 2021)¹⁸, this scepticism illustrates the complexity around green finance, and its novelty. Scepticism within

intermediaries and support providers could arise from unawareness of the Green Bond Principles and how green bonds and loans operate, or a judgement on their voluntary nature and the broad definition of how a “green” status is derived.

Lloyds mentioned a salary-sacrifice scheme for leasing electric vehicles, which has considerable tax incentives, especially for higher-tax payers. This was proving popular with employers who are keen to support the willingness of their employees to “do their bit” as well as offering an additional incentive for staff recruitment and retention.

Secondary finance providers interviewed are all willing to consider requests for finance for adopting green technology or projects to reduce carbon footprint, but had no green finance products available which offered discounts on the pricing (though one had plans to introduce them). Each had sectors or activities for which they could not lend such as property development, retail or gambling. None mentioned alternatives such as two-way pricing mechanisms, making repayments into a second account which could be used to improve the borrower’s environmental performance even further, or novel reporting metrics such as the proportion of EVs in a company’s fleet¹⁹.

Whilst intermediaries may feel that there is an inadequate supply of general finance dedicated to net zero, mainstream finance providers are comfortable with the current supply of green finance based on demand for investment in green projects in the Midlands Engine.

¹⁰ <https://www.about.hsbc.co.uk/news-and-media/hsbc-uk-launches-500m-green-sme-fund>

¹¹ <https://www.lloydsbankinggroup.com/who-we-are/responsible-business/financing-a-green-future.html>

¹² <https://www.barclays.co.uk/business-banking/borrow/green-loan/>

¹³ <https://www.santandersustainability.co.uk/tackling-climate-change>

¹⁴ <https://www.natwest.com/business/green-banking.html>

¹⁵ NatWest (2021) p.34

¹⁶ British Business Bank (2021) p.9

¹⁷ <https://www.triodos.co.uk/business>

¹⁸ Linklaters (2019) p.5; see also International Capital Markets Association (2021)

¹⁹ Ibid, pp.15 to 17

c) What finance options are available for large scale green infrastructure projects?

None of the fund managers spoken to for this report are directly involved in financing large-scale green infrastructure projects, and almost all of the support providers are aimed at SME projects. Research is limited to a handful of top-level reports looking at supply and demand nationally. The recent Midlands Engine Hydrogen Technologies Strategy explores the potential of hydrogen in the region, but is too early to make an assessment of funding requirements or the availability of supply to meet those demands. Further research is required – especially considering that infrastructure has the most potential to reduce (and capture) carbon emissions in line with the Net Zero targets.

The UN Environment Programme estimates that investments in nature-based solutions around the world need to triple by 2030 and to increase four-fold by 2050, coming largely from a significant increase in private sector investment. According to the Energy Systems Catapult, “the opportunity for local energy resources to capture full energy system value and wider societal benefits at scale” are key to increasing that private sector investment.

US\$20.8bn of green bonds were issued in H1 of 2021 in the UK, according to the Climate Bonds Interactive Data Platform. The total amount of green bonds issued globally in H1 2021 was almost as much as the entire amount issued in 2020, which itself was a record year. In other words, the amount of green bonds issued globally

is increasing exponentially. There are place-specific projects emerging which aim to tap into this finance. Revere (Rethinking the Financial Value of Nature) is an initiative which aims to raise private capital to fund nature restoration in National Parks in the UK (a small part of the Midlands Engine is covered by the Peak District National Park).

However, in the words of Energy Systems Catapult:

“there is a current lack of standardisation or consistency across local authorities for how they define Net Zero strategies, prioritise and facilitate energy-related projects, and utilise private and public finance. This means opportunities are often viewed as bespoke, one-off projects. A consistent, common approach [is] needed to improve investment conditions for local energy. This would enable investors to visualise a clear national scale pipeline of similar opportunities, making it easier to raise the needed volume of finance at a low cost of capital”.

This is echoed by the Green Finance Institute, which states that there are few nature-based projects that could generate sufficient revenues to repay funders, and they remain too small (although the pipeline is growing). The Natural Environment Investment Readiness Fund is open for applications until February 2022 from the Department for Fisheries, Environment and Agriculture (DEFRA). At least two local authorities in the Midlands Engine are considering applications, to use the support to explore options including the issuing of green bonds with which to finance natural capital projects.

Recommendation Two:

Map of appetite to issue green bonds (for example via interest in the Natural Environment Investment Readiness Fund by local authorities and combined authorities in the Midlands Engine) to ascertain interest in a regional green investment fund or bank.

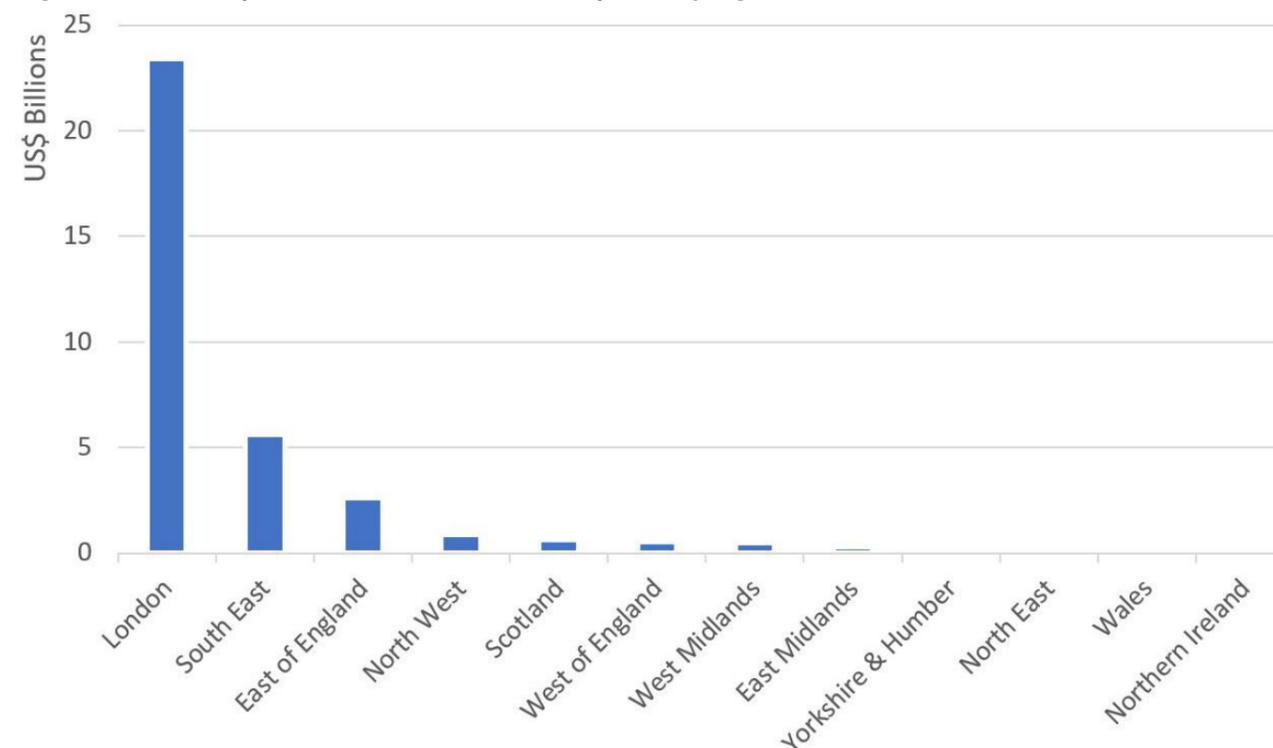
In partnership with the Green Finance Institute, Abundance launched the Local Climate Bond campaign in July 2021 to raise awareness and support UK councils in issuing Community Municipal Investments (CMI) to drive their sustainability aspirations. Abundance has calculated that these bonds could raise as much as £3 billion if issued by the 343 local authorities in England. None of the local authorities in the Midlands are involved in any live or forthcoming bond raises, but several LEPs spoken to mentioned an active interest.

It is likely that there is green finance available for green infrastructure projects in the Midlands. Organisations which facilitate carbon offsets such as ClimatePartner claim that supply of credits globally is increasing rapidly. However, without a firm pipeline of bankable projects that have quantified costs and outputs, it is difficult to understand gaps between supply and demand.

Q2: How is the supply of green finance distributed throughout the UK and are there any regional inequalities that impact the Midlands? Do any inequalities exist within the Midlands?

Analysis of data available through the Tech Nation Data Commons, shows that in 2021 (up to 8th December 2021), there had been US\$35.1bn invested by 1293 VC investors in the UK into tech ventures. Arranging the total investments as a vertical line chart in descending order demonstrates the disparities between London and the rest of the country:

Figure 2: Venture capital investment in UK tech companies by region in 2021; source Tech Nation Data Commons



²⁰ Midlands Engine (December 2021)

²¹ United Nations Environment Programme (2021)

²² <https://www.climatebonds.net/market/data/>

²³ <https://revere.eco/>

²⁴ Energy Systems Catapult (June 2021) p.4

²⁵ <https://www.greenfinanceinstitute.co.uk/gfihive/about-us/>

²⁵ <https://www.gov.uk/government/publications/apply-for-a-grant-from-the-natural-environment-investment-readiness-fund>

²⁷ UK Financing a Just Transition Alliance (2021) p.35

²⁸ <https://datacommons.technation.io/>

\$473m (1.35%) was invested into the West Midlands, and \$303m (0.9%) was invested into the East Midlands, a total of \$776m (2.85%).

The \$35.1bn total includes \$1.5bn invested into the energy tech sector. The sector comprises clean energy, energy efficiency and energy storage but also oil & gas. Assuming the same proportion was invested in the energy tech sectors in the Midlands as the national total (4.3%) means \$33.16m was invested into energy projects in the West and East Midlands in 2021.

This chimes with the majority of funders who consider there to be more than adequate supply of finance. Only the Clean Growth Fund and Green Angels Syndicate say that demand far outstrips supply, which is also understandable given the former has £100m under management against a total invested of \$1.5bn in 2021 alone.

No funder reported regional differences in supply, and the experience of each of the Growth Hubs/LEPs spoken to as well as support providers was the same: clients who are seeking funding all complain of a lack of options. They are overwhelmingly seeking small amounts of grant funding to incrementally develop innovations or to make investments in energy efficiency or renewables.

Q3: What determines the supply of green finance in the UK/ Midlands (if different)?

a) Vision/Strategy

The appetite for supplying green projects is driven by a number of factors. Many interviewees mentioned a funder's vision and strategy either specifically regarding net zero or more generally regarding ESG. These are often cemented in formal commitments such as signature of the Paris Agreement or other charters. Sometimes this impetus is a reaction against shareholder activism or consumer demand.

b) Reporting requirements

Supply is also driven by anticipation of increasingly demanding reporting requirements²⁹, principally those recommended by the Financial Stability Board's Task Force on Climate-related Financial Disclosures (TCFD)³⁰ which require companies

above a certain size to report the carbon emissions associated with their capital allocation. Being required to report on carbon emissions in turn requires organisations to measure those emissions both directly and indirectly (Scope 2 and 3 emissions). Major UK banks are subject to these reporting requirements; smaller banks on the whole are not - this explains the absence of green finance products from smaller lenders, although those spoken to are anticipating the extension of reporting requirements, and so are exploring plans to introduce products.

c) Demand

Many lenders interviewed are confident that the market will respond with greater supply when demand for business investment in energy efficiency and renewable energy begins to significantly increase. As the business case for energy efficiency continues to become increasingly viable and green technology increasingly widespread (along with the infrastructure it may require), green projects will become mainstream, which will be suitable for green finance (and hopefully benefit from lower interest rates and arrangement fees). Despite the prevalence of deals by specialist funders (Clean Growth Fund, Green Angels Syndicate) in London and the South East, the distribution of scale-up green companies is evenly distributed across the UK, with the West Midlands in the top three UK regions by turnover³¹. Minerva Business Angels Network, based in the Midlands, has the second-highest number of investments in green scale-ups by UK funders³². This could suggest that encouraging specialist lenders to establish offices in regional hotspots of green scale ups such as the North West and the West Midlands, or encouraging generalist funders to focus on the green scale ups/innovation through marketing and engagement of specialist advisors (see d and e below), may unearth greater regional demand.

d) Availability of public funding

The Nesta research makes the case that business investment in (general) R&D has picked up the gap in public spending. The report suggests that "increased public spending on R&D in the [East and West Midlands] could leverage the benefits of private spending still further"³³. Seen in conjunction with levels of take up of innovation tax reliefs in the Midlands³⁴, this stacks up further: use

of R&D tax credits and other relevant reliefs such as SEIS/EIS are lower compared to other regions.

e) Sectoral knowledge and experience

In the case of the Clean Growth Fund and the Green Angels Syndicate, supply seems to influence demand. All of the angels investing through the Green Angels Syndicate are personally committed to tackling climate change, and have experience of investing in green technology. Both the syndicate and Clean Growth Fund say they have no problem sourcing innovative companies across the UK, and both are actively seeking to expand supply to meet demand. Both cite the networks and expertise of the fund managers and the angels, and their appetite (and capacity) to explore proposals as reasons for this high demand. One intermediary commented that this process of "separating the wheat from the chaff" could be aided through tech to help match the limited supply with the volumes of demand and speed up the process. The same intermediary commented that whilst the larger funders do good work, many are too slow and take too long to make investment decisions after an initial enquiry, especially problematic given the rapidly evolving and global nature of green tech.

Conversely, some fund managers disagreed that being a general funder meant their networks, expertise and appetite to invest in green was uncovering less demand. They suggested that good fund managers have access to wide networks of suitable expertise that could be called on as and when required.

f) Marketing

The way in which funds are marketed, and how intermediaries/brokers can link clients to the most appropriate sources, via key words such as "green", is significant. The experience of the recently launched D2N2 Low Carbon Fund³⁵ is instructive. The project manager says it has experienced "unbelievable" levels of interest which could indicate huge local demand for investment in energy efficiency and renewable energy. In reality, the applicants spoken to by the project team are mainly motivated by the availability of grants, and there will be little appetite for financing the balance from external finance. The low carbon element seems of little consequence regarding the demand.

Q4: By how much is supply expected to increase over the short/medium term (over next 5 years)?

Most funders are of the view that supply will expand to accommodate increased demand. All expect demand for green funding to increase, through a combination of interests and pressures from increasing awareness of the ESG agenda, plus the direction of the market as it responds to price pressures regarding energy and supply chains. The amounts of finance committed from the major banks for green projects listed above cover the period over the next five years and are expected to be sufficient to meet current and expected demand. There is no evidence to suggest that supply won't be sufficient for the Midlands.

This picture of mixed growth is backed up by research from the thinktank New Financial. It finds that whilst ESG investment funds are growing around the world, particularly in Europe, the number remains small (13% in 2020). The volume of funds however has increased rapidly - the value of assets in sustainable investment funds in 2021 was almost four times that in 2016. One problem continues to be the lack of a clear definition of ESG, and of actually determining whether investments "count" or not, and the availability of data³⁶; however, the direction of travel of green finance available is upwards.

No fund managers had data to be able quantify an expected increase in the supply of green funds. The Clean Growth Fund expects to increase to £100m under management in 2022. The Green Angel Syndicate expects to grow its network of angels. It is also considering developing funds under management to cater for the increasing demand from entrepreneurs in early-stage green technologies, but will be relatively modest.

The BDO study shows private equity firms nationally are steadily ramping up commitments to the ESG agenda, including reporting on impacts, and resource to manage them. The proportion of private equity firms with a dedicated individual or team responsible for embedding ESG into the investment process has increased from 25% in 2020 to 29% in 2021, and almost half now report in detail on the ESG impact of their investments. This movement is expected to increase to meet customer demand as well as regulatory requirements.

²⁹ Linklaters (2018)

³⁰ Task Force on Climate-Related Disclosures (2021)

³¹ Scale Up Institute (2021) p.2

³² Ibid. p.1

³³ <https://www.nesta.org.uk/data-visualisation-and-interactive/design-future/>

³⁴ Unpublished report from HMRC

³⁵ <https://d2n2lep.org/low-carbon-growth-fund/>

³⁶ New Financial (2021) p.3

The supply of green finance for green projects (energy and transport infrastructure, natural capital etc) is set to continue to grow rapidly. Growth trajectories suggest exponential growth from the US\$290bn of green bonds issued in 2020 .

The supply of public funding for supporting very early-stage innovation in SMEs and start-ups, or for energy efficiency adaptations etc is largely dependent on funds made available through UKRI and whatever shape the proposed Shared Prosperity Fund will take, as well as the outcomes of the Levelling Up White Paper.

UKRI continues to receive funding directly from HM Treasury, and Net Zero remains a key priority. This will presumably continue as part of the government's commitment to spending 2.4%

of GDP on R&D by 2027 in the UK Innovation Strategy, unless there is a heavy shift towards tax incentives rather than grants (and some loans/ equity).

There remains a large degree of nervousness among support providers that are currently funded through European Regional Development Fund about the Shared Prosperity Fund and if it will be able to cover similar early-stage activity in both breadth and volume. Other funds supported under the broad Levelling Up agenda (e.g. Towns Fund and Community Renewal Fund) have not been explicitly focused on innovation or Net Zero and it is hoped by many of the providers that these don't give a hint of the flavour of Shared Prosperity Fund.

Demand

Q5: What is the current level of demand for different types (a, b, c) of green finance from UK and Midlands businesses?

Most fund managers interviewed did not have access to data showing whether a prospect is green or not. The major banks all referred to sustainability audits carried out by client

relationship managers, particularly to establish whether a client is eligible for the various green funds being introduced (part of the Green Loans Principles). Therefore, data are likely to exist, but were not available via the representatives interviewed for this research. Otherwise, there is only limited data to establish regional demand for green finance, mainly from specialist lenders or based on assumptions in survey data about investment intentions.

Recommendation Three:

Examine the findings of sustainability audits in the Midlands by banks and other funders to assess project type, location, sector, carbon saving potential and the total cost of implementation.

Finance to help businesses adopt green technologies, processes and practices and reduce their carbon footprint

There is considerable awareness of climate change as a risk and a recognition of the need to change current practices: 56% of respondents to an FSB survey agree that "our planet is facing a climate crisis"³⁸. The ERC Business Futures Survey points to 52% of respondents who report that 'reducing environmental impact' is their business priority³⁹. 89% of UK SMEs responding to a Lloyds survey say sustainability is important to their business, 74% are aware of the government's Net Zero target and 50% have committed to reaching Net Zero or have already done so⁴⁰. Awareness is probably far higher - 98% of responders to a Make UK survey were aware of the Net Zero target⁴¹.

The picture becomes increasingly complex as businesses struggle to translate awareness into meaningful action that aligns with their needs.

A survey in November 2021 by the British Chambers of Commerce found that nine out of 10 firms in the UK have not done any assessment on a series of key strategies for managing a sustainable transition to net zero⁴². Conversely, the FSB found a similar figure (9%) who had measured the carbon footprint of their business - and 69% said they did not know how to do so⁴³.

The proportion of firms who said they wanted to do more to achieve net zero was lowest in the East Midlands (24%), and third lowest in the West Midlands (36%), out of eight regions⁴⁴. This is important regionally because there is a link between per capita carbon emissions and economic performance. Citing BEIS statistics, the ERC State of Small Business Britain 2021 Report states that "reflecting their industrial mix, Wales, Northern Ireland, Yorkshire & Humber, and the East Midlands top the regional emissions league table"; consequently there is a "much greater level of adaptation that is needed in less prosperous areas of the UK"⁴⁵.

³⁸ Federation of Small Businesses (November 2021)

³⁹ Enterprise Research Centre (2020) p.25

⁴⁰ Lloyds Banking Group (2021)

⁴¹ Make UK (July 2021) p.2

⁴² British Chambers of Commerce (November 2021)

⁴³ Federation of Small Businesses (November 2021) p.14

⁴⁴ Federation of Small Businesses (November 2021) p.11

⁴⁵ Enterprise Research Centre (2022) p.35



There are varying attitudes to how much of a priority achieving net zero is, especially compared to more immediate needs such as supply of goods or labour. Data from the [GROWTHmapper](#) diagnostic tool used by Oxford Innovation show that “environmental” projects are the least common type across all LEPs where the Manufacturing Growth Programme operates (including all LEPs in the Midlands Engine). Out of approximately 650 projects with SMEs in England undertaken through the Manufacturing Growth Programme, only 96 (15%) were related to “environmental” (including carbon footprint management, environmental strategy and waste management). Where grants are available which can be used for a wide range of activity, such as the Manufacturing Growth Programme, most manufacturing business prefer to invest in strategy, productivity or marketing strategies.

This is echoed in survey data in Q1 2021 where 34% of respondents in the East and West Midlands specified that they need government support to help them achieve net zero. Almost 1 in 2 businesses in the East Midlands say support for net Zero would be the most beneficial intervention to help them address current challenges. This drops to 1 in 4 in the West Midlands⁴⁶.

In the FSB survey referred to earlier, 28% of UK small businesses said it will be extremely difficult to transition to a net zero economy. Of those that have not yet taken steps to address their energy usage, 29% of small businesses say energy is not a significant cost, 24% say that the return on investment takes too long or is too uncertain, and 22% highlight the lack of capital (savings) as a reason why they are unable to invest⁴⁷. The top 10 barriers to net zero actions listed in the British Business Bank report include the upfront capital cost (21%), unavailability of required technology (18%) and lack of available cash or finance (11%)⁴⁸. In the Lloyds survey, the proportion citing finance as the principal barrier to investment is as high as 39%⁴⁹.

All the fund managers, support providers and Growth Hubs/LEPs interviewed as part of this research spoke of very limited demand in the Midlands for finance for green projects.

The experience of ATETA at the University of Birmingham is instructive – they believe that none of the businesses who approach them to reduce their costs through energy efficiency are prepared to seek external finance for any capital costs, citing competing requirements with higher priorities such as wage pressures or shipping container costs. This is echoed from the other energy efficiency support programmes, through the fact that businesses are usually only exploring grant options, and the projects they are undertaking are capped by the amount of grant funding available, rather than any other business case. Some Growth Hubs go as far as to say they had never received any enquiries explicitly about support for green projects; instead, the initial requests are for grant funding, some of which may be available for green projects simply due to objectives in the ERDF programme. The “green” is coincidental.

Other indicators give a similar picture: the Bank of England’s quarterly agents’ summary for Q3 2021 makes no reference of energy efficiency or other green factors driving business investment intentions (despite levels growing overall). Instead, businesses are choosing to invest in automation, upgrade machinery, expand facilities, research and development, address skills and labour shortages, refurbish office, make acquisitions, and upgrade digital systems to improve the efficiency of customer service, or to enhance marketing and business management systems⁵⁰.

Nevertheless, there have been a number of capital projects with SMEs in the Midlands supported by grants (this may not be an exhaustive list):

Table 2: Energy efficiency business support programmes in the Midlands; data sourced from project managers

Project	LEP coverage	Projects	Average	Total
Low Carbon SMEs, Aston University	BC, GBS	42	£16,986	£730,398
Green Business Programme, Coventry City Council	C&W	99	£40,926	£4,051,636
Low Carbon Workspaces, ngage	SEM	39	£11,941	£465,709
Low Carbon Opportunities	Worcestershire, The Marches			
Business Energy Efficiency Programme	Worcestershire, The Marches			
Marches Renewable Energy	The Marches			
AGRI	The Marches			
SHIRE Environment Grant, Leicestershire County Council	LL			
Energy for Business	D2N2, LL			
DE-Carbonise	D2N2			
Total		180	£29,154	£5,247,743

Whilst the number of businesses supported is trivial compared to the total number of SMEs in the Midlands, the numbers perhaps point to the relevance of public support to unlocking the desire to improve energy efficiency and reduce carbon emissions suggested in the survey data above. Feedback from the providers of these support programmes supports the assumptions around low awareness and uncertainty over the suitability of technology holding back demand. LED lighting remains a very popular request, presumably because it is now mainstream technology with very short payback periods. This picture of modest project sizes is in line with findings by Make UK, which advocates for “a streamlined national funding system, accessible to all companies of all sizes and from any region, covering smaller ‘close to commercialisation’ projects (in the order of the £10,000s)⁵¹”.

Salix Finance Ltd is a non-departmental public body funded by the Department for Business,

Energy and Industrial Strategy, the Department for Education, the Welsh Government and the Scottish Government. It provides funding to the public sector to improve energy efficiency. The average total project cost it funds is £54,416⁵² – also “in the order of the £10,000s”.

According to the OECD, “evidence shows that SMEs are increasingly rising up to the challenge to reduce their environmental footprint, and that cost reduction is the primary driver for this⁵³. Recent work by the British Business Bank has divided businesses into four “personas” to characterise their awareness of and exposure to climate change and their responses. This includes differences by sector, which is one factor that will create regional differences in the UK due to the distribution of sectors. For example, only 34% of manufacturing businesses have taken at least one capability-building action (towards net-zero), compared to 57% in accommodation and food service businesses⁵⁴.

⁴⁶ Economic Growth Solutions (2021)

⁴⁷ FSB (2021)

⁴⁸ British Business Bank (2021) p.51

⁴⁹ Lloyds Banking Group (2021)

⁵⁰ <https://www.bankofengland.co.uk/agents-summary/2021/2021-q4>

⁵¹ Make UK (July 2021) p.10

⁵² <https://www.salixfinance.co.uk/>: £1,1072,000,000/19,700 = £54,416 as of March 2021.

⁵³ OECD (2021) p.6

⁵⁴ British Business Bank (2021) p.32

These sectoral variations appear to be driven by the relevance of actions in terms of energy-savings, cost, suitability etc to each business. In turn, this will drive demand for external finance. Where cost of finance is lower, green finance products will be suitable if available. Switching to a green or renewable energy provider, purchasing lower carbon goods or services, and purchasing more energy-efficient office/IT equipment are all in the top five actions considered or planned

by businesses in the British Business Bank survey⁵⁵. These are likely to be less relevant for manufacturing firms and will skew demand in the Midlands. Similarly, manufacturing businesses will be more likely to implement process improvements such as automation or digitisation, which may reduce energy costs but may not be considered “green projects”.

Recommendation Four:

Analysis of carbon calculators such as NatWest’s Carbon Tracker pilot, Climate Partner, Zellar and Flutter to establish regional variations in demand for green projects, as well as their potential to reduce carbon emissions. GBS LEP is currently sponsoring 100 free licences for businesses in the West Midlands, which will provide a useful initial sample.

Recommendation Five:

Analysis of results of searches on online business finance finders such as Finpoint and Swoop as well as brokers and intermediaries to establish regional variations in demand for green projects.

Support providers and Growth Hubs in the Midlands interviewed all reported that businesses asking about energy efficiency or support on the path to net zero expect grants to be available. They also revealed that enquiring businesses cite other competing priorities as the reason they won’t invest in green projects, such as workforce issues, supply chain delays and difficulties and a drop in revenues. The British Business Bank report shows resource-intensive actions are the least likely to be considered⁵⁶. This is echoed in the quarterly regional business confidence monitors published by ICAEW for Q4 2021, where challenges connected to net zero aren’t mentioned in the lists of challenges reported by businesses in either the East or West Midlands⁵⁷. Grant funding is the most popular source of potential funding for SMEs according to the British Business Bank survey, at 58%; only 20% of respondents would consider bank lending⁵⁸.

Neatly summing up this story, the Low Carbon Growth Fund from D2N2 LEP has experienced

“unbelievable” interest since opening on 1st December 2021, but the quality of many of the applications (by late December) has been short of what was expected. Many businesses are applying for mainstream technology, where the case for public intervention is weak – precisely because there is private finance freely available, and business cases are strong. It seems plausible to suggest that **strong business cases for investment built around savings on increasing energy prices are not enough to incentivize many small business owners**, and other priorities remain more important.

Finance for innovation in green technology

There is more evidence available to paint the picture of demand for finance to develop new green products, processes or services.

Funders report very limited demand for finance of innovation in green technology. Minerva

Business Angels Network reports demand for green technology but a cultural challenge across the Midlands of poor individual engagement to angel invest high grow companies (despite Minerva making eight investments into green scale ups). Other funders such as Mercia, DSW, RCL Partners, BCRS, FSE Group, UKSE and Accelerated Ventures report very few investments directly in green technology (some are indirect such as the purchase of machinery to manufacture components for electric vehicles). More positively, three Midven deals via the MEIF have been in green tech, and Business Growth Fund reports just shy of £200m invested in 23 portfolio companies in the green sector across the UK. It is assumed that none of the source of this funding is specifically via green finance.

This outcome is not through a lack of trying – all funders say they are open to green technology and would like to see more. All reflect the picture presented by the Tech Nation data above which points to an estimated \$33m invested in green technology in the Midlands in 2021.

Conversely, the Clean Growth Fund and Green Angels Syndicate report that demand vastly outstrips supply. So much so that both are expanding rapidly with more funds under management, or with plans to create funds under management to provide a source of follow-on funding.

The University of Birmingham’s ATETA programme sees three to four new-to-firm R&D projects each quarter. These are usually identified via the Climate Innovation Platform at Tyseley Energy Park in collaboration with HSBC and Energy Systems Catapult, and are all based in the West Midlands. The Green Business Programme has supported 23 businesses in Coventry and Warwickshire since 2019, and includes a small grant to cover third party costs. The iNet programme at Loughborough University which supports businesses in Leicester and Leicestershire across a wide range of thematic areas reports “not many” projects under the Low Carbon theme, and those have been focussed on reducing plastic in both packaging and product. The more specialist Built Environment and Climate Change Innovation (BECCI) programme at the University of Wolverhampton has delivered 40 new-to-firm local carbon innovations since 2016.

The Smart Energy Network Demonstrator (SEND) project at Keele University is a demonstrator project supporting businesses with research projects across the country. Feedback was that engagement with regional businesses in Smart Energy was lower than the level of interest from firms in the South East and North West.

Table 3: Low carbon innovation programmes in the Midlands; data sourced from project managers

Project Name	Provider	LEP Coverage	Average number of new to firm low carbon innovations supported each year
BECCI	University of Wolverhampton	Black Country, The Marches	8
iNET	Loughborough University	LL	2
Green Business Programme	Coventry University	C&W	8
ATETA	University of Birmingham	Black Country, GBS, C&W, Worcestershire	13
Low Carbon & Circular Economy Grants	GBS LEP	GBS, BC, C&W	15
Energy for Business	University of Nottingham	D2N2, LL	
De-Carbonise	University of Derby	D2N2	
	Cranfield University	SEM	
Low Carbon Opportunities	Worcestershire County Council	Worcestershire, The Marches	

⁵⁵ British Business Bank (2021) p.42

⁵⁶ British Business Bank (2021) p.43

⁵⁷ <https://www.icaew.com/technical/economy/economic-insight/business-confidence-monitor-regional>

⁵⁸ British Business Bank (2021) p.62

Taking an average of 7.2 per project where the participant numbers are known, there could be around 65 projects each year in total across these nine schemes.

These schemes do not frequently translate projects into investable propositions. According to one provider, none of the business they have supported are interested in external finance to fund the required investment identified. The picture from other providers, and from Growth Hubs, is similar: there are many businesses they support who are “stuck in a loop” chasing grant funding rather than looking at ambitious growth financed through debt or equity. Of those that are, none are looking for amounts greater than £250,000. Assuming a modest 10% of those currently developing innovations go on to seek external finance would equal a maximum demand of £1.625m for pre-revenue seed funding in green technology in the Midlands. This perhaps has potential to rise four-fold to circa £6.5m over the next five years with suitable pre-investment and accelerator support to boost the quantity, pace and scale (dependant on government support such as Catapults, Growth Hubs and Shared Prosperity Fund).

A logical next step following these early interventions in technology readiness levels is Innovate UK funding. Funds are highly competitive, as they seek to fund the best in innovation across the country. A success rate of 20% was, before Covid, the usual figure cited but due to the collapse in revenue streams for many businesses during Covid lockdowns, the volume of applications increased significantly and this figure will likely have declined further. Feedback from a variety of sources agrees that the step between early-stage support and the quality required and expected by VC funds is too great.

For example, GBS LEP ran two rounds of grants to support innovation in the low carbon and circular economy, with projects spending an average total of £25,477. With grant schemes, the amount of grant available and the intervention rate dictate the total project size but this perhaps gives an indication of the very modest levels of funding required to progress innovation projects that SMEs typically have in development – and how far they are from being viable for external funders.

Faced with such a chasm between funders’ requirements and the ambitions and expectations of entrepreneurs/businesses in the Midlands, the role of regional incubators and accelerators, such as the Climate Innovation Platform, is crucial. 31% of the SMEs in the UK supported by the Energy Launchpad reported they had raised investment through angels, crowdfunding or grant funding of at least £2.6m⁵⁹. At an average of approximately £290,000, this is slightly higher than the £250,000 reported ceiling from the ERDF innovation support providers and Growth Hubs, but still below the minimum ticket size of many of the regional equity investors in the Midlands.

Data from NatWest’s Entrepreneurs Accelerator⁶⁰ programme, which offers coaching, events, peers support and co-working space, is a useful feeder for more advanced incubator programmes. There is now a Climate Accelerator specialism within the programme. Nevertheless, the average annualised turnover of beneficiaries is circa £250,000, and over the entire programme, around 500 businesses have raised £8m in investment. This gives a clear picture of how even in a relatively ambitious cohort, receiving support at a considerable cost to the provider, demand is related to degrees of scale, appetite and confidence rather than absolute numbers of interested companies.

Q6: What are the determinants of demand for green finance from UK and Midlands-based businesses. Do these differ?

Differences in attitudes to net zero and environmental challenges across sectors will play a large role in regional differences in demand, due to the distribution of sectors across the country. Barclays reports a spread of responses to the question “environmental sustainability is extremely important to my organisation” ranging from 40% agreement from business services to 74% in charities and third sector organisations⁶¹. British Business Bank shows a similarly diverse picture, with almost 40% of transportation and storage businesses being open to bank lending to finance planned net zero actions but only 14% of construction firms⁶².

The distribution of businesses by size and sector will be relevant to regional demand for green finance. 49% of small businesses say environmental sustainability is important, compared to 70% of larger businesses⁶³. The Midlands accounts for 15% of the total SME population but makes up 22% of carbon correcting and 16% of carbon exposed companies⁶⁴. It is in precisely these more complex scenarios where awareness and desire may be high due to higher costs, but barriers are also high.

Some banks reported that a factor which would affect demand is the level of personal interest, awareness and motivation of individual client managers and their willingness to carry out sustainability audits with clients. Such an audit could precipitate action, even if it is low-cost, “low hanging fruit” that does not require external finance – but it might set in motion a strategy that requires more substantial investment later on. An audit itself is reliant on data, which in turn is reliant on measurement. Make UK points out that “once waste (heat, water and air) is detected, plant managers will be compelled to make corrections to their processes and programming, change behaviours, repair leaks, and replace old less energy efficient equipment”. It also suggests that the introduction of half-hourly submetering could be a simple and effective way of instigating action among manufacturing businesses⁶⁵.

One funder joked that some businesses enquire about mezzanine finance to fund new mezzanine floors in their premises. In a similar way, marketing funds as “green” no doubt attracts interest that might otherwise have remained dormant. The support providers all spoke of enquirers who had little idea of available options, and who initially approached them asking for support with LED lighting or solar PV panels, as they were the most easily understood solutions. There is clearly a link between information, awareness and demand, and therefore a role for energy providers to collaborate with funders and installers to directly approach commercial customers with appropriate solutions.

Regarding demand for finance to develop green technology, funders and support providers both mentioned the importance of specialist incubator and accelerator programmes aimed at low carbon businesses, such as NatWest’s Climate Accelerator. Funders all spoke of the important role that incubator and accelerator programmes play in identifying investable companies generally. Given the very low demand reported by support providers, their customers will require far more intensive support in order to develop their propositions – exactly the kind of support available at accelerators. Regional disparities in demand for green finance will be exacerbated by the distribution of incubators and accelerators focussing on green tech.

Q7: By how much is demand for green finance expected to increase over the short/medium term (over the next 5 years)?

According to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC), achieving net-zero in the UK will involve investments in the UK approaching £6 trillion between 2021 and 2050⁶⁶. At 12% of the UK economy, a straight pro-rata figure would be £720bn required in the Midlands to achieve net zero. This will require an unprecedented reallocation of capital: in the UK, for example, annual net-zero investment needs to grow five-fold between 2020 and 2030⁶⁷.

Analysis of the CCC Sixth Carbon Budget, ONS, BEIS and other industry data sources suggests SMEs are responsible for between 30 and 35% of the UK’s total emissions⁶⁸. British Business Bank estimates the figure SMEs to be responsible for between 43% and 53% of the UK’s business greenhouse gas emissions (excluding those who operate from home)⁶⁹.

⁵⁹ Energy Systems Catapult (August 2021) p.37

⁶⁰ <https://www.natwest.com/business/business-services/entrepreneur-accelerator.html>

⁶¹ Barclays (2021) p.15

⁶² British Business Bank (2021) p.62

⁶³ Barclays (2021) p.8

⁶⁴ British Business Bank (2021) p.22

⁶⁵ Make UK (July 2021) p.7

⁶⁶ UK Financing a Just Transition Alliance (2021) p.13

⁶⁷ Ibid. p.13

⁶⁸ NatWest (2021) p.14

⁶⁹ British Business Bank (2021) p.7

Barclays “found that in the past four years, the amount of businesses [in the UK] that rate sustainability as a priority has increased from just 39% to 61%, and that [59%] expect their investment in environmental sustainability will increase over the next five years”⁷⁰. In 2017, only 40% expected their investment to increase over the next five years. Over a quarter of firms in the ERC State of Small Business 2020 report said that ‘reducing environmental impact’ had become a more important priority since the COVID-19 crisis – although the crisis had also impeded efforts⁷¹.

The picture regarding demand is complex, but the surveys reviewed for this report consistently draw the same conclusion. Awareness of the net zero challenge is high (and increasing) and desire to take action is high (and increasing), but from there this willingness quickly evaporates through a combination of confusion over technologies and lack of information; lack of skills; lack of trust in providers and the performance of solutions; uncertainty over the longevity of regulations; cost; competing priorities and importantly, a lack of appetite for additional debt, especially in the

context of the unprecedented effort to re-stimulate the economy following Covid lockdowns. Only 18% cited difficulty in accessing finance as a barrier to net zero in one survey, the least common in the list⁷².

This picture was reflected in the comments from the interviews. The BECCI programme cited its own research into the discrepancies between the advertised performance of energy efficiency products, and their actual energy savings in situ. Others mentioned the difficulties in preparing accurate carbon footprint benchmarks for manufacturing businesses due to the large variations in machinery, building premises, shift patterns and other factors. One significant factor not widely mentioned in surveys is the tenure of premises: many leaseholders approached by the Smarter Choices project⁷³ (run by a consortium including Oxford Innovation and funded by BEIS) did not have either scope or incentive to invest in improvements to the building fabric, which often included the largest potential carbon savings identified in completed energy audits.

Recommendation Six:

Prepare an assessment of the tenure of commercial and industrial premises in the Midlands Engine and their energy performance certificates. Undertake interviews with representatives of commercial landlords and agents to understand how best to incentivize both owner and tenant with net zero adaptations.

60% of respondents in the East Midlands and 46% in the West Midlands expect their investment in new machinery /premises to increase in the next six months (Q2, 2021). 10% in the East Midlands expect it to decrease, and 12% in the West Midlands.

British Business Bank estimates that over three in four businesses (76%) are yet to implement comprehensive decarbonisation strategies, but around half (53%) are not yet ready to prioritise decarbonisation⁷⁴. In the Midlands, this equates to 620,160 businesses yet to implement decarbonisation strategies, with 432,280 not

prioritising decarbonisation, leaving up to 187,880 who could be planning to implement projects.

For each of these 187,880 businesses to implement at least one capital decarbonisation project would cost £5.48bn, using the average project value established above.

Only 22% of UK small businesses say they are prepared to access external finance to support net zero actions in the next five years⁷⁵, and 38% say availability of finance from banks is not at all important to their net zero plans⁷⁶. The gap between those yet to implement comprehensive decarbonisation strategies, and those not yet

ready to prioritise decarbonisation is 23%, very close to the 22% prepared to access external finance.

NatWest research indicates that by the end of the decade 55-70% of business cases to reduce emissions will make financial sense for SMEs to deliver, as technologies become cheaper⁷⁷ and customer demand for green products continues. Even so, cheaper technology and increased customer demand might not be enough to encourage the business owners who say they want to implement net zero actions to invest, as cost increases from wages, raw materials, shipping costs and others continue are more immediate challenges.

Some indicators suggest that many businesses see the terms of finance offered to them as the barrier, that might be open to reconsideration under different conditions. This caution seems reasonable given the reported uncertainty in the difference between predicted and actual savings of many net zero actions. 70% of business in the East Midlands and 61% in the West Midlands think greater tax incentives will encourage capital investment. 57% in the East Midlands and 50% in the West Midlands think long-term financing will encourage greater investment in capital⁷⁸. 24% of UK small businesses which have not yet taken any action to address their energy use said that the length of the return on investment is a barrier to doing so⁷⁹. The proportion of those surveyed in the East and West Midlands who say a discount on their business rates would encourage them to be energy efficient is the same as the UK average of 30%⁸⁰.

Almost two thirds (61%) of respondents to the British Chambers of Commerce survey said either capital grants or tax allowances would do most to encourage them to reduce their carbon consumption in the long term⁸¹. Similarly, Barclays reports that 75% of UK businesses in 2021 say government incentives would enable them to increase their environmentally responsible programmes – up from 57% in 2017⁸².

Interest from businesses for advice and guidance around green investment ebbs and flows. For example, business support programmes report spikes in enquiries during the publication of the

UK government’s 10 Point Plan for Net Zero, and in the weeks leading up to and during COP26. Similarly, the announcement of government incentives has obvious impacts on demand – the recent announcement of £5000 grants towards heat pumps has seen a marked increase for advice according to regional support providers.

Business demand is affected by uncertainty regarding the policy environment relating to green technology, such as the availability and longevity of incentive schemes, the risk of government withdrawing regulatory drivers designed to stimulate adoption, and the long-term supply of alternative fuels such as hydrogen. Businesses demand solutions, and they also do not want to spend money they cannot afford on technology that doesn’t deliver savings. The result is inactivity combined with increasing frustration and sense of powerlessness.

On current levels of demand, whilst there are some signs of gradual increases, businesses will fall well short of their potential to capitalise on both opportunities from Net Zero, as well as to fulfil their role in reducing carbon emissions and meeting the UK’s Net Zero goals. Leaving businesses to make progress at current rates will not be sufficient, and there is a risk that continuing frustrations will turn good will into antagonism and resistance to increasing regulation.

Lloyds reports that demand for finance for leased greener vehicles through a salary sacrifice scheme is far higher than other green products. This echoes findings above where tax incentives are more popular than term loans and other debt tools, exacerbated by the uncertainty over where investment should be prioritised. Tax incentive schemes help SMEs by removing the need to research the most cost-effective solutions based on a variety of confusing options, all sitting within uncertain regulatory environments. In other words, a long-term investment on renewable energy made now may render itself ineligible for a future tariff scheme; or an investment in equipment powered by a more expensive renewable energy source may render itself unnecessary due to the decarbonisation of the existing fuel source. These decisions are too complex and too long-term for many small businesses.

⁷⁰ <https://www.barclayscorporate.com/insights/sustainability/connecting-you-to-a-sustainable-future/>

⁷¹ ERC (2021) pp.25 - 26

⁷² ERC (2021) p.28

⁷³ <https://smarter-choices.uk/about-us/>

⁷⁴ British Business Bank (2021) p.7

⁷⁵ British Business Bank (2021) p.9

⁷⁶ ERC (2021) p. 28

⁷⁷ NatWest (2021) p.15

⁷⁸ Economic Growth Solutions (2021)

⁷⁹ Federation of Small Businesses (2021) p.24

⁸⁰ Ibid. p.36

⁸¹ British Chambers of Commerce (2021)

⁸² Barclays (2021) p.6

Increasing demand and untapping potential requires route maps of the kind laid out by Lloyds Bank⁸³ and Make UK⁸⁴ that starts with benchmarking using energy usage and expenditure data from energy providers and banks and lays out a coherent strategy for individual businesses including quick wins, employee engagement/behavioural change

and more intensive capital investment where necessary. Most businesses will need to support analyse data to assess and design most effective measures to make up such a strategy.

Banks, funders and accountants are well-placed to provide much of this support, alongside trade bodies, energy and other utility providers.

Recommendation Seven:

Create a visible pipeline of credible Smart Local Energy Systems, nature-based and other net zero infrastructure projects as part of a Midlands Strategic Investment Portfolio, and develop innovative private finance mechanisms for them⁸⁵.

Recommendation Eight:

An appraisal of options available to unleash latent demand for investment in net zero by Midlands business through (among others) tax and business rates incentives, changes to legislation surrounding capital requirements or how lenders could be supported to provide longer-term finance.

⁸³ Lloyds Banking Group (2021) p.21

⁸⁴ Make UK (July 2021) p.6

⁸⁵ Energy Systems Catapult (June 2021) p.7



Market

Q8: Are there any gaps in the supply of green finance in the Midlands, according to analysis of current supply and demand? If so, how large are these gaps?

It is difficult to gauge how large the gap between demand and supply is both for the adoption of green technology as well as innovation. On the one hand Growth Hubs, intermediaries and specialist business support providers say there is an absence of supply. On the other hand, most fund managers report very limited demand.

With very early-stage projects that require a lot of development before they are suitable for external finance, gaps between supply and demand may be partly caused by the different definitions understood by each stakeholder. "Demand for finance" differs by amount, maturity, scale and ambition. Whilst there may be a lot of demand at the smaller, less developed end more likely to be seen by support providers, this doesn't appear to be translating into viable, investable propositions at the larger and more developed end seen by funders.

PwC's State of Climate Tech 2021 report paints a positive picture of steadily growing investment into steadily growing green technology firms, where most "regions have seen growth in investment over [2021], averaging 208% year-on-year", with Europe seeing \$US18.3bn, the second most significant region globally. Over 3000 green tech start-ups have received \$US222bn funding from around 6000 unique investors since 2013; London and Berlin are in the top five global hubs for these deals. Although London remains "the leading green finance centre currently"⁸⁶, PwC nevertheless concludes that increased funding is needed to meet demand, including patient capital from early-stage VC investors⁸⁷.

At around 16% of the EU economy in 2016⁸⁸, this equates to around \$US2.93bn for the UK, which should equate to \$US322m for the Midlands, at 11% of the UK economy. Tech Nation's figure for the UK (considered earlier) is almost 50% less, at \$US1.5bn - which also includes oil & gas. This suggests that the UK has fewer green tech start-ups, and fewer investors, than Europe. This report's estimate for the share of investment to the Midlands in 2021 from Tech Nation's figure is around \$US33.16m - around 10% of what a simple pro-rata calculation would suggest using the PwC total Europe figure. If the UK is under-represented, the Midlands is grossly under-represented in its share of green tech entrepreneurs and green-tech investors compared to Europe and the global economy.

The Clean Growth Fund is expected to reach £100m under management in 2022, across the UK. It is the only fund under management that is experiencing greater demand than supply. The Green Angels Syndicate plans to create a new fund under management in order to provide Series A funding. If collectively those funds are £150m, and 10% is invested in Midlands firms, £15m may be allocated regionally. It seems reasonable to suggest that other generalist investors, such as Minerva and those listed in the Scale Up Green Economy Index⁸⁹, made up the balance of the £30m or so invested in the Midlands.

Regarding infrastructure projects, the Green Finance Institute estimates the gap between demand for spending on nature and environmental projects, and the funding commitments, to be between £56bn in the UK up to 2032⁹⁰. Using a straight pro-rata figure for the Midlands (11%) gives a gap of £6.16bn.

Q9: Are any gaps forecast to appear or grow over the next 5 years, according to analysis of expected supply and demand?

The Green Finance Institute cites a 2017 report which concluded that the supply of green finance globally is "growing, but not fast enough"⁹¹. The evidence assessed for this report in January 2022 suggests that the same still applies in the Midlands, five years later: supply is growing, but not fast enough for the requirements in green infrastructure, potential green innovation, and potential green business investment over the next five years.

One risk is that regional supply continues to remain cautious due to limited regional demand, and that green innovation and investment in infrastructure elsewhere continues to absorb the growing national supply of green finance at a faster pace. SMMT sales figures released in January 2022 show sales of EVs to be far higher in London and the South East than the rest of the country - partly down to availability of charging infrastructure⁹². This is why regional support for innovation through incubators and accelerators in the Midlands is vital, alongside other demand stimulation measures such as carbon literacy training and sector-specific advice and guidance for energy-efficiency. Connected to the support of innovation, the experience of specialist green funders is that supply creates demand; additional funding or co-investment funding in the Midlands could stimulate latent demand regionally if delivered in collaboration with business support providers who could help innovators become investment-ready.

One fundamental issue that is relevant to demand and supply of finance for innovation, adoption and to a lesser degree infrastructure is the role of place. It is highly relevant due to the government's Levelling Up agenda, and one which potentially conflicts with other agendas such as the Innovation Strategy, increasing national productivity as well as Net Zero. It is easy to see why supporting and investing in "the best" would be an effective strategy at a nation scale. Due to long-term structural issues, that reflects investment and policy over a long period of time, "the best" in the UK is

often located in London, the South and Eastern England. Levelling up regional imbalances may require a different approach that recognises that locality and region matters, especially in risky and complex transactions such as raising external finance. Trust usually requires the development of relationships, and in finance is often brokered through trusted associates in networks.

This is backed up by British Business Bank research, which finds:

"In 82% of equity investment stakes, the investor has an office within two hours travel time of the company they are backing. In 61% of instances, the proximity is even closer and the two parties can travel between their premises in one hour or less. Increased remote working in 2020 does not appear to have affected these distance patterns in equity investment"⁹³.

The same principle no doubt applies in other circumstances requiring frequent in-depth discussions and establishing trust - such as research and development, and understanding the most effective way of improving energy efficiency in a business. Demand for green finance will continue to remain higher in London and the South East if fund managers continue to be concentrated there, despite the rapid increases in remote working, the convenience (or otherwise) of travel, and the ease of digital transactions.

For investment in green technology to reduce carbon footprint, there is survey evidence that suggests companies in the Midlands are even less inclined than the UK average to use external finance. Gaps are likely to extend further between investment and what is required to meet net zero targets over the next five years without additional incentives. Whilst small grant schemes using the forthcoming Shared Prosperity Fund will no doubt be popular, based on current experience they are unlikely to "shift the dial" to the degree required to meet regional and national goals, due to continued confusion, lack of awareness and hesitancy among businesses, coupled with continuing price pressures relating to recruitment and retention, supply chain and energy prices.

⁸⁶ Green Finance Institute (2021) p.25

⁸⁷ PwC (2021)

⁸⁸ <https://ec.europa.eu/eurostat/web/products-eurostat-news/-/DDN-20170410-1>

⁸⁹ Scale Up Institute (2021) p.1

⁹⁰ Green Finance Institute (2021) p.6

⁹¹ Green Finance Institute (2018) p.17

⁹² <https://www.smmt.co.uk/2022/01/covid-stalls-2021-uk-new-car-market-but-record-ev-sales-show-future-direction/>

⁹³ <https://www.british-business-bank.co.uk/research/regions-and-nations-tracker-2021/>

⁹⁴ Green Finance Institute (2018) p.45

This is not a new finding. This is from the Green Finance Institute's 2018 report:

As noted in the Government's Call for Evidence on Building a Market for Energy Efficiency "there is no single 'silver bullet' policy for improving energy efficiency." Providing easier access to finance is important, but - as the call for evidence acknowledged - will not in itself drive demand for insulation and more efficient heating systems⁹⁴.

Incentives must take into account low levels of awareness and the consequent confusion over different options for businesses on the journey to net zero. In more complex circumstances such as energy-intensive manufacturing, it may be better to consider understanding the complexity of net zero strategies as a skills issue which requires specific training to overcome. Government could support this training along the lines of the Help to Grow programme .

Providing information and simplifying processes will be essential, which suggests collaboration between energy companies, banks and other lenders could help provide solutions using meter and business account expenditure data, coupled with finance repaid through energy savings.

In a similar vein, using incentives in the Midlands may be necessary to unlock national or global finance for infrastructure projects to avoid it gravitating to more convenient targets elsewhere. According to the Green Finance Institute, "UK investors consistently cite a lack of UK-based green infrastructure investment opportunities as a major barrier to deploying more capital to these assets" . Removing as much hassle as possible for investors by canvassing local authorities to create a well-researched list of bankable green infrastructure projects showing their carbon saving potential would help.

PwC estimates £40bn each year is required on average to be invested in new low carbon and digital infrastructure over the period 2020 to 2030 - a doubling of investment on levels from 2020. That equates to circa £4.4bn in the Midlands. It states there already exists a "deep pool" of low cost, private capital already primed to invest - but

conversely around half of the estimated £40bn is in less mature technology that will not be suitable, and where finance will be more expensive (e.g. private equity) .

Public sector support for the creation of community share offers and bonds could help bridge that gap and attract more substantial private finance. Community share offers are beginning to appear in the UK (Bristol , Warrington, Leeds and others) but so far there appears to be very few in the Midlands; Abundance is in conversations with Telford & Wrekin Council regarding a potential bond and it has previously invested in small energy schemes in Hereford, Derbyshire and Leicester . Nationally, Abundance has ambitions to raise £10m from such schemes in 2022 (which could equate to circa £1m in the Midlands), with potential to rise to between £50m and £100m by 2025. Projects like these can also help raise awareness and public support for green infrastructure; one possible reason for lack of interest in the Midlands may be the absence of a well-developed pipeline of projects which could justify the commissioning of financial services to manage a community share offer.

Such community share offers will only ever be a tiny proportion of the total requirement, but useful for leveraging public finance and in turn, private finance. PwC recommends increased use of public/private vehicles to attract finance for the less mature technology - such as a green infrastructure fund . Giving the fund a remit to drive investment outside of London and the South East could simultaneously help deliver the government's Levelling Up agenda.

Some of the issues regarding the financing of green infrastructure are similar to those above regarding business innovation or adoption of green technology, in that they relate to the levels of resources available within agents (local authorities, businesses) and the level of detail required by funders and investors to manage risk. Despite declarations of Climate Emergencies, many local authorities lack the resources and expertise to develop green infrastructure ideas and aspirations far enough to turn them into investable propositions.

For example, economic development, including inward investment has traditionally been driven by job creation. Natural capital or energy infrastructure projects rarely create jobs at a significant scale. As a result, organisational structures treat natural capital, energy and transport projects separately from employment sites. If sources of public funding are going to diminish in the UK post-Brexit and post-Covid, further and rapid consideration needs to be given to organisational structures in places like the Midlands in order to capitalise on the growing supply of private green finance which will naturally

flow to the places where risks are lower and returns greater.

Nottingham City Council is a leading authority regarding energy but a rare exception, and Midlands Connect is an example of the partnership working that will be required. Additional government support through the Department for International Trade and Midlands Energy Hub is welcome, and should be widened to incorporate development finance expertise such as the DEFRA Natural Environment Investment Readiness Fund.



⁹⁵ Make UK (October 2021) p.15

⁹⁶ Green Finance Institute (2018) p. 66

⁹⁷ PwC (2020) p.4

⁹⁸ <https://bristolenergy.coop/>

⁹⁹ <https://www.abundanceinvestment.com/our-impact/investments>

¹⁰⁰ PwC (2020) p.21

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Interviews or other input

Lenders	Support Providers	LEPs/Growth Hubs
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Andy Veares, Metro Bank	Colette McHugh Putman, Nottingham University	Jon Bass, A2F Lead, C&W LEP
Beverley Gower Jones, Clean Growth Fund	Chris Fry, Accelar	Patrick Fleming, Midlands Energy Hub/BC LEP
David Baker, Mercia	Dean Barnes, Economic Growth Solutions	Serena Bacuzzi, Midland Energy Hub/GBS LEP
Eleanor Boardman, DSW Finance	Debbie Lewis, NatWest	Tim Yair, Midlands Energy Hub/ The Marches LEP
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