

<b>Institution: University of Derby</b>		
<b>Unit of Assessment: 17</b>		
<b>Title of case study: Building pro-environmental business capabilities through enterprise support provision</b>		
<b>Period when the underpinning research was undertaken: 2001–2020</b>		
<b>Details of staff conducting the underpinning research from the submitting unit:</b>		
<b>Name(s):</b>	<b>Role(s) (e.g. job title):</b>	<b>Period(s) employed by submitting HEI:</b>
a) Dr Fred Paterson b) Dr Polina Baranova c) Professor Carley Foster d) Elaine Conway e) Dr Amanda Lee f) Dr Tracey Wond g) Professor David Rae h) Professor Clare Brindley	a) Associate Professor of Sustainable Business and Low Carbon Business Network Project Lead b) Senior Lecturer (Strategic Management) c) Professor of Services Marketing/ Head of the Centre for Business Improvement d) Senior Lecturer (Accounting) e) Senior Lecturer (HRM) f) Senior Lecturer (Business) g) Head of the Centre for Entrepreneurial Management h) Dean of Research	a) 2012–present b) 2009–present c) 2016–present d) 2014–present e) 2017–present f) 2013–2020 g) 2001–2006 h) 2016–present
<b>Period when the claimed impact occurred: October 2016–July 2020</b>		
<b>Is this case study continued from a case study submitted in 2014? No</b>		
<b>1. Summary of the impact</b> (indicative maximum 100 words)		
<p>Since 2012, researchers from Derby Business School have pioneered Pro-environmental Enterprise (PE) support strategies and generated impact for individual SMEs and regional policy. This includes:</p> <p><b>1) Policy level impact:</b> by developing specific PE practice, informing the LEP Energy Strategy and Local Industrial Strategy, and influencing policymakers and implementers.</p> <p><b>2) Economic impact on SMEs:</b> by supporting access to low carbon goods and services markets through the creation of a PE network comprising over 130 SMEs and secondary environmental impacts; including carbon reductions and improved energy performance.</p> <p><b>3) Practitioner impacts:</b> increased awareness of pro-environmental business approaches.</p>		
<b>2. Underpinning research</b> (indicative maximum 500 words)		
<b>Context</b>		
<p>For almost two decades, an important strand of Derby Business School's (DBS) research has focused on effective SME support, acknowledged in REF 2014 as internationally significant. Whilst this research has continued it has also diversified, moving to explore how SMEs can be better engaged and supported towards pro-environmental business outcomes.</p>		

**Main research contributions:**

Over several years (2001–2006), Rae and his team studied entrepreneurial learning to understand how entrepreneurs developed their attitudes, behaviours and practice. They developed several research-driven frameworks [3.1] relating to entrepreneurial learning, underpinned by the development of entrepreneurial capability. The importance of ‘opportunities arising from contextual learning’ – particularly networking, ‘shared learning’, and ‘relational aspects’ of entrepreneurial learning emerged in many examples of Rae’s work (2004) [3.1].

Inspired by Rae’s [3.1] work and driven by early research that identified that enterprise support initiatives were poorly configured towards encouraging pro-environmental practice, Baranova, Paterson and Conway built upon Rae’s earlier enterprise research, applying it to PE practice, capabilities and leadership (2012–2019) [3.2, 3.4, 3.6]. The integration of enterprise research, learning through networking as an enterprise support mechanism and the focus on SMEs’ capabilities in this environmental context was particularly innovative at this time.

Baranova and Conway (2013–2015) [3.2] undertook research commissioned by two local authorities that involved 141 SMEs. They found a desire to engage with pro-environmental activities and access to peer support activity and that SME leaders considered it important to collaborate with their wider supply chains to achieve pro-environmental outcomes. Building upon this, Baranova and Meadows (2017) [3.3] developed an approach to SME pro-environmental capability-building, that advocated collaboration and stakeholder engagement as pivotal to the wider shift towards a low carbon economy.

Further research by Baranova and Paterson (2015–2017) [3.4], sought to explore SME perceptions of pro-environmental practice and enterprise support provision. Data from 120 SMEs, found an appetite for pro-environmental activity, yet respondents felt there were inadequate PE support interventions. They found that SMEs lacked confidence in managing pro-environmental activity and a lack of advice and knowledge to build pro-environmental business cases [3.4]. This led to recommendations for greater policy-level support.

In 3.5, Foster and Brindley (2016–2018), explored SME owners’ engagement with networking and found that support networks need to be configured carefully to ensure value for participants. They found that SME owners were sceptical about regional, publicly funded initiatives. Where networks were valuable, they were context/sector-specific and brought together various stakeholders in the supply chain. Foster and Brindley concluded by calling for more innovative approaches to networking to maximise their value and usefulness for SME owners.

The subsequent D2N2 LEP commissioned study [G3.2] explored the skills needs of the low carbon sector, finding both significant gaps and niches of PE innovation in every sector (Paterson *et al*, 2018). On top of this insight, trends research into the regional PE sector (2015–20, summarised in 5.3b - in collaboration with the East Midlands Chamber), both informed the programme of support offered through the ERDF funded pro-environmental business network [G3.1] and influenced local policy development [5.3c].

**3. References to the research** (indicative maximum of six references)

Derby Business School researchers are indicated by black, underlined text:

**[3.1]** Rae, D. (2004) ‘Practical Theories from Entrepreneurs’ Stories: Discursive Approaches to Entrepreneurial Learning’, *Journal of Small Business and Enterprise Development*, 11(2), 195-202. DOI: <https://doi.org/10.1108/14626000410537137> (Peer-reviewed).

**[3.2]** Baranova, P. and Conway, E. (2017) ‘Transition to a Low Carbon Economy: An SME Perspective’. In Baranova, P., Conway, E., Lynch, N. and Paterson, F. (eds.) *The Low Carbon Economy: Understanding and Supporting a Sustainable Transition*. London. Palgrave Macmillan, 87-115 (Peer-reviewed).

[3.3] Baranova, P. and Meadows, M. (2017) 'Engaging with environmental stakeholders: Routes to building environmental capabilities in the context of the low carbon economy', *Business Ethics: A European Review*, 26(2), 112-129. DOI: <https://doi.org/10.1111/beer.12141> (Peer-reviewed).

[3.4] Baranova, P. and Paterson, F. (2017) 'Environmental capabilities of small and medium sized enterprises: Towards transition to a low carbon economy in the East Midlands', *Local Economy*, 32(8), 835-853. DOI: <https://doi.org/10.1177%2F0269094217744494> (Peer-reviewed).

[3.5] Foster, C. and Brindley, C. (2018) 'Female entrepreneurial networking in the marketing services sector'. *Qualitative Market Research: An International Journal*, 21(2), 182-201. DOI: <https://doi.org/10.1108/QMR-11-2016-0106> (Peer-reviewed).

[3.6] Conway, E. (2014) 'Assessing Sustainability Support to Small and Medium Sized Enterprises (SMEs)', *International Journal of Performability Engineering*, 10(4), 377-386. (Peer-reviewed). Available from the University of Derby online research archive: <https://derby.openrepository.com/handle/10545/605213>

Two separate projects were funded in relation to this research:

**[G3.1]:** ERDF (2016–22)

Total funding for University of Derby Business School contribution to the D2EE Low Carbon Project, 2016-2022 is GBP341,000. This is out of a total University of Derby grant award of GBP1,600,000 and an overall project value of GBP4.500,000 with equivalent match from the three partner organisations that takes the overall project value to nearly GBP9,000,000.

**[G3.2]:** Learn Direct (2018) GBP30,000.

To read the final report on this Learn Direct project, see Paterson, F., Baranova, P., Neary, S., Hanson, J., Wond, T., Lee, A., Clarke, L. (2018) 'Key skills and training needs of the D2N2 Low Carbon and Environmental Goods & Services Sector', Final Report, University of Derby (commissioned research quoted in D2N2 Energy Strategy 2019–2030).

#### 4. Details of the impact (indicative maximum 750 words)

The extensive body of research insight into pro-environmental SME needs, cited above, focused activity on two key groups: (1) policy implementers who configure PE provision; and (2) SMEs directly. Impactful activities included:

**Forming a Low Carbon Business Network (LCBN):** To embed the principles of shared learning [in 3.1, 3.2, 3.3, 3.5] and capability-building [3.2, 3.3, 3.4], DBS secured ERDF funding for the LCBN as part of the ERDF D2EE project. Activity tailored to the needs of SMEs included: three sustainable business marketplace events; three sustainability summits (two jointly with the East Midlands Chamber of Commerce); network events; a 'Green Growth' acceleration programme; expert workshops; bespoke consultancy; and environmental management accreditation (emerging from 3.4 and G3.1). In its latest phase, the network evolved from its focus on local SMEs, to offer support for providers across England – hosting events and providing advice about how to support SMEs with pro-environmental practice to LEPs, local enterprise initiatives, and local authorities nationally. These bespoke sector support needs emerged directly from the underpinning research.

**Dissemination of pro-environmental capabilities:** Emerging interest in the pro-environmental capabilities framework [3.3, 3.4] led to further practitioner-based dissemination activity and generated advisory opportunities (e.g. West Yorkshire Combined Authorities, Hull City Council, as well as collaborative research opportunities with Aston, Brighton and Liverpool John Moores Universities).

**Regional/national advisory roles:** The innovative and timely nature of the research and ensuing activity, led to the team's involvement in regional strategy development as well as national advisory roles such as the Sustainability Leaders Forum.

### Impact on regional policy actors

Statements by policy stakeholders demonstrate a range of impacts [5.2a-e]. Engagement with regional policymakers led to a change in the way enterprise support is delivered to SMEs [5.2c], as well as informing strategic development [5.2e]. Research into low carbon and environmental goods and services trends and skills needs [G3.2, 5.3b] is cited in the LEP's Regional Energy Strategy [5.3c] and is influencing the ongoing D2N2 Science & Innovation Audit (SIA) as well as the refreshed Strategic Economic Plan (for 2019–2030) [5.2e]. Paterson supported the Regional Energy Strategy as an Advisory Group member with reference to business development, training, skills shortages, sector mapping and supporting low carbon, energy and renewable sector supply chains to strengthen SME energy support programmes [5.2a-e].

The increased profile of these issues at a policy level also resulted in the appointment of pro-environmental SME representatives to the D2N2 Innovation Advisory Board to champion the low carbon sector – and staff representation on the Energy Strategy Group as a direct link to the underpinning research on low carbon leadership [5.2e]. The research [3.3, 3.4, 3.6] has also informed the establishment of the award-winning Energy Efficiency Grant scheme at Derby City and Derbyshire County Councils [5.2b] and has been credited by the D2N2 LEP as providing a blueprint for enterprise support that combines business growth interventions with improved environmental outcomes of participating enterprises [5.2c].

### Impact on SMEs

LCBN support for 33 SMEs has resulted in increased awareness and improved practice of SMEs towards environmental objectives, improved access to low carbon and environmental goods and services markets/supply chains. It has also enhanced CSR policies, and supported SMEs to adopt environmental standards [5.1a,b,c, 5.2d].

Since 2016, the wider LCBN has grown by 5% per month on average and currently comprises 150 members representing 130 firms [5.3a]. The impact of the network was evident from 2017 to the present day in the form of improvements to financial, productivity and sustainability indicators of the network SMEs. For example, the network helped Recon Electrical Ltd to embed low carbon capabilities and develop partnerships with LED manufacturers that resulted in tangible savings for customers [5.1a]. One client identified energy savings of GBP2,625 p.a. that meant the return on investment was just 19 months. 11 SMEs have been directly supported to attain environmental accreditations leading Investors in the Environment to estimate associated reductions of up to 5.4t of CO<sub>2</sub>e by the end of 2020 [5.2d].

The development of three LCEGS marketplaces raised awareness of PE support and improved engagement with PE-focused activity. The East Midlands Chamber of Commerce (EMCC) report increased engagement from businesses in pro-environmental themed events, with a 5% increase in the average participation rate from 2016 [5.2a]. The 'Investors in the Environment' (IIE) scheme has also reported increased interest from LCBN SMEs for pro-environmental business management practices. Motion Vehicles Ltd credits the network with improvement in its market position and strengthening 'green' credentials of its brand [5.1b]. After participating in the Green Growth acceleration programme, Eco Voltz Ltd experienced an increase in demand for its electric bikes and a 15% increase in the product's share of the firm's turnover [5.1c].

## 5. Sources to corroborate the impact (indicative maximum of 10 references)

### 5.1 Evidence group from SMEs

**[5.1a]** Online case study in *Chesterfield News* (published: 11 December 2018) showcasing our project's impact on Recon Electrical Ltd and their clients (accessed: July 2019).

**[5.1b]** A statement from the Managing Director/Owner, Motion Vehicles Ltd. This interview data was recorded in December 2019 and transcribed on the 15 March 2020.

**[5.1c]** Data from Eco Voltz Ltd. This interview data was recorded in August 2019 and transcribed on 13 March 2020.

### **5.2 Evidence group from regional partners**

**[5.2a]** A statement from the Sector Forum and Representation Manager, East Midlands Chamber of Commerce (25 March 2020).

**[5.2b]** A statement from the Energy officer, Derby City Council (19 May 2020).

**[5.2c]** A statement from the Partnership Manager, Growth Hub, D2N2 LEP (31 March 2020).

**[5.2d]** Data from the Regional Coordinator, 'Investors in Environment' Environmental Management Accreditation (7 January 2019).

**[5.2e]** A statement from the Chair of the D2N2 Energy Steering Group, Head of Energy Services, Nottingham City Council (29 April 2020).

### **5.3 Public evidence group**

**[5.3a]** Carney Green (2019). 'ERDF D2EE Low Carbon Project' evaluation report.

**[5.3b]** Paterson, F., Baranova, P. and Gallotta, B. (2020) 'Pro-environmental business and clean growth trends for the East Midlands 2020', University of Derby.

**[5.3c]** D2N2 LEP. (2019) 'Energy strategy 2018-2030: D2N2 Clean Industrial Revolution'.