

Guide to ESD in practice

Students facilitating low carbon solutions in organisations: connecting sustainability and employability through experiential learning

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1. Intended outcomes

1. Support students across business disciplines, through a capstone module, to apply sustainability knowledge, understanding, skills and attributes developed through their undergraduate studies and make evidence-based recommendations to businesses.
2. Provide a rich, applied and practice-oriented 'hands on' learning experience and context which supports critical review of sustainability issues, facilitating insights within and across business disciplines.
3. Create direct benefits for all students, stakeholder groups and businesses involved in the consultancy projects and create and share evidence of the environmental and societal impacts.

2. Participants

Staff, including academic module team, tutors and admin to support the delivery of the project and provide student experience. Academic team delivers lectures, seminars and learning sets. Admin staff support business development and recruitment of organisations and business for projects as clients.

Organisations and businesses provide projects for students to engage with the experiential learning activity. Organisations and businesses provide project briefs, resource consumption data and arrange a site visit for students to have real-world experience.

Final-year undergraduate business students undertake the real-world consultancy project within an assessed and credit bearing final-year module. Students act as sustainability consultants and collect, collate, analyse and interpret the data. Students share findings and recommendations with the client to help in their sustainability and carbon reduction journey.

Students work in multidisciplinary teams of four to five from all business disciplines (for example, Accounting and Finance, Economics, Management and Marketing). As a result, the work is scalable and is currently offered to all students at Nottingham Business School (NBS), Nottingham Trent University to choose as an option against the research project.

3. Activity/project

Within the project, multidisciplinary student teams work with businesses and provide sustainability and carbon management consultancy to address identified challenges and opportunities presented within the client project brief. Student teams work with data and materials provided by the client to assess carbon footprint as a baseline and produce carbon management recommendations to support carbon and sustainability related activities and strategies. Findings and recommendations are presented by teams at a client poster event. The event includes a mini conference with keynote speakers and an opportunity for networking.

Important to the overall consultancy activity and project are the following:

- + Recruitment of businesses and organisations is critical to provide the focus and core experiential elements of students' consultancy work and module learning outcomes.
- + Timely sharing of data from clients (energy consumption, waste, water, travel etc) is important to support the analysis of an organisation's current carbon management performance and guide recommendations for the future.
- + Communication between stakeholders and partnership working is essential to support the smooth running of the consultancy project and ongoing maintenance and development of relationships.

The overall delivery of the module follows the approach below.

- + The consultancy project is part of the Sustainability in Enterprise Project (SiEP) module undertaken by circa 180 students per year working in multidisciplinary teams of four to five students allocated by the module leader at the start of the module.
 - + Businesses and organisations are allocated at the start of the module to the multidisciplinary teams of students.
 - + Students undertake carbon management consultancy work based on an audit of a participating business (mostly SMEs) and, based on the findings, the recommendations and an action plan are produced.
 - + The project is 'delivered' within 15-20 weeks supported by lectures, seminars and learning sets culminating in the submission and assessment of a group presentation (showcased via a poster event/conference) and individual consultancy report as summative assessment.
 - + Underpinning inputs are formed around eight one-hour lectures which focus on the topic and theory assessing a company's current position (carbon footprint) to inform action. Eight seminars take forward lecture content to support consultancy and are one and a half to two hours each week. Student teams have two learning sets to meet the tutor as a team and seek formative feedback on their consultancy poster. Additional one to one support is also available, if required.
 - + Supported by these inputs, students work hands-on and learn through this experience (with an opportunity to apply theory to practice and interpret practice in the context of theory). Early engagement and dialogue with participating businesses and organisations are important.
 - + Work with the client is primarily led by student teams with tutor facilitation as necessary, with formative assessment along the way, and this work directly benefits students, companies and staff.
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- + Student posters are shared with the client to feedback consultancy findings and recommendations to improve carbon management and sustainability about two-thirds of the way through the module. The module runs for circa 18 weeks in total. Feedback using grading grids is provided by academic staff and verbal feedback is provided by businesses and organisations at the event.

Overall observations

- + The SiEP is not only a classroom-based activity and requires some pre-planning and change to current teaching and learning practice to support the consultancy work of students.
- + The project is 'real' and hands on and benefits knowledge and transferable skills/competences.
- + Students gain a holistic understanding of all business functions and their potential contributions to climate change mitigation and high-impact climate solutions.
- + It is important to recognise the dual role of organisations/businesses and students/student teams in project work such as this. The SiEP is not only about education about carbon management and sustainability, but also about the development of actionable plans for 'real' organisations based on hands-on engagement with organisations by students.
- + A key challenge can be the recruitment of organisations and businesses but there are various approaches that can be used for this purpose. These include direct recruitment, work with partners (with additional benefits), recruitment of organisations by student teams, engagement with the relevant university team/s such as employability and external engagement (with again knock on benefits) and so on. Experience suggests that there are many benefits and impacts of working with these organisations and businesses – the effort is worth it to support student experience!

4. Assessment or evaluation

4.1.1 Assessment of student outcomes

The SiEP module has two assessments: group poster presentation (formative) and individual consultancy report (summative). The presentation is delivered via an event/conference and after that, the consultancy report is submitted individually building on the group consultancy work.

Student teams have opportunities for formative feedback through the module in seminars and learning sets.

The institutional approach to assessment is used, based on pre-determined criteria linked to the module learning outcomes. Feedback against these criteria and comments on areas of strength and opportunities for improvement are provided.

Student work is assessed by seminar tutors; the poster event offers an opportunity for industry feedback to students, particularly for their individual report. The event offers the opportunity to network with businesses and stakeholders, enhancing a broader range of employability skills and competencies.

The event has an element of a conference where a keynote and businesses deliver talks to inspire students and share practices/insights. Student teams are given prizes that support the recognition of innovation, teamwork and specific areas of good practice.

4.1.2 Feedback on the module

Student feedback highlights the hands-on nature of the project and the benefits as well as wider outcomes with reference to sustainability and employability. The project provides experience of working with a business, knowledge, skills and competencies to help boost their employability in a competitive market.

Feedback from organisations and businesses is positive with multiple benefits highlighted for the business. The consultancy support is appreciated by them, and they get value out. Many of the SMEs are at the early stage of their sustainability journey, so they appreciate free consultancy support.

Research is ongoing to measure the impact of this student knowledge exchange activity on both businesses and students.

5. Useful resources

Useful handbook to support and guide work: [Doing Business in a New Climate](#) by Paul Lingl and Deborah Carlson is a step-by-step guide to reducing organisation's climate impact. It walks you through the key activities of greenhouse gas management/carbon management, including measuring, reducing, and offsetting emissions, as well as developing a strategy.

Information about the current project and its benefits: [Bespoke sustainability and carbon management consultancy for SMEs in Nottingham](#)

Case study 1 - [Sustainability in Enterprise – Leonard Design Architects](#)

Case study 2 - [Sustainability in Enterprise - Millward](#)

Article which explores the integration of sustainability and employability through practice and experience-based work:

Winfield, F and Ndlovu, T (2019): "Future-proof your Degree': embedding sustainability and employability at Nottingham Business School (NBS)", *International Journal of Sustainability in Higher Education*, 20 (8): 1329-1342. Available at: doi.org/10.1108/IJSHE-10-2018-0196

6. Example of practice

This project has contributed to, and has influenced, university strategy at the Nottingham Trent University. For the Nottingham Business School, commitment to sustainability is longstanding and reflects the aims of the university and the [needs of all students](#). This project has contributed to supporting the external accreditation with EQUIS and AACSB.

The focus on experiential learning and employability is key to the success and relevance of the work related to direct and wider/longer term outcomes. This ensures that students (and organisations through the work of the students) make connections between important priority areas such as sustainability, sustainable development goals (SDGs), employability, and enterprise (as noted in the recent QAA Business and Management Subject Benchmarks).

Previously, Subject Benchmarks did not directly connect these priorities, although QAA and Advance HE [Education for Sustainable Development \(ESD\) guidance](#) does identify the importance of transformative change through attention to the SDGs and ESD competences.

The work in this project preceded recommendations and work by other schools and institutions in the areas of carbon management/climate literacy and ESD. When designed in 2010, the project embraced and embedded active, participative, problem-based and experience-driven learning. This was important as it underpinned the competence-based outcomes, grounded in an ability to design, and lead changes, while recognising the [challenges that were faced by organisations and businesses involved specifically SMEs](#).



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