



EDUCATING FOR CLIMATE RESILIENT BUSINESS TRANSITIONS: AN INNOVATIVE GRADUATE STUDIES CERTIFICATE PROGRAM

Case Study Final Report

France

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Educating for Climate-Resilient Business Transitions: An Innovative Graduate Studies Certificate Program | France Case Study¹

Executive Summary

The effects of climate change, such as rising temperatures, melting glaciers, and sea-level rise, are already having severe consequences on our planet, including extreme weather patterns, loss of biodiversity, and acidification of the oceans (IPCC, 2023). Climate change is thus an urgent and pressing issue that requires immediate attention and action by various actors ranging from individuals and companies to governments and supra-national organizations. In the face of this planetary urgency, it is essential that we educate current and future leaders about the science behind climate change, its impact on the natural world and human societies, and the actions we can take to mitigate and adapt to these effects. Businesses today are expected to play an increasingly active role in mitigating climate change, for example, by reducing their greenhouse gas (GHG) emissions, introducing circular business models, and developing climate-friendly technologies.

In this light, the present case study seeks to explore the importance of climate change education (CCE) in business schools and analyze how CCE is being integrated into the curricula of business schools using the example of the Climate and Business Certificate initiative developed at HEC Paris within the Society and Organizations Institute. As leading education institutions grapple with the challenge of how to properly incorporate climate change into already burgeoning curricula, it is essential that we analyze the effectiveness of existing methods to develop new models for educational excellence. Moreover, by discussing best practices from HEC Paris and delivering key lessons, this case study aims to provide an outlook on the ways in which stakeholders in business need to approach the growing challenge of climate change. Finally, the case study highlights how the CCE initiative enhances the knowledge of their students and promotes collaborative initiatives among business schools.

HEC Paris embarked on a journey to mainstream CCE throughout its curriculum, including the launch of the Climate and Business Certificate in 2022. The case study findings demonstrated the impact of the Certificate on several levels. First, it demonstrated how a leading business school can integrate CCE into its curriculum through a participatory process while creating an innovative educational offering for students. It thus showed how a business school can help shape future leaders who can fully integrate climate change considerations in their careers – whether or not they are directly related to the low-carbon and climate-resilient transition. Second, the findings demonstrated how integrating CCE into a business school's curriculum can help mainstream climate change topics in the business school itself. Indeed, the highly participatory process of setting up the Climate and Business Certificate at HEC Paris resulted in several spin-off projects, including short courses, workshops, and webinars that helped engage various stakeholders inside and outside the school in climate action. Finally, it demonstrated how integrating CCE into business schools creates momentum for collaboration and exchange of experiences and best practices, such as, for example, through the Business Schools for Climate Leadership (BS4CL) initiative.

This case study offers several lessons for business schools that are willing to integrate CCE into their curricula. First, it demonstrated the importance of political momentum and high-level engagement in the process, ideally spearheaded by the commitment of the Dean of the school as well as the engagement of internal “climate champions,” for example, dedicated professors who are willing to go an extra mile to advance CCE in their school. Second, the case

¹ The views in the report are not necessarily endorsed by the MECCE Project, which funded the research. This report was republished in 2025 following additional copy editing to increase the report's clarity.

study demonstrated the importance of the participatory process in the development of CCE initiatives, i.e., including consultations with professors, students, and corporate partners to ensure the support and “buy-in” of all relevant stakeholders. Third, the case study demonstrated the benefits of collecting formal and informal feedback from participants of the CCE initiative in order to enable constant improvement and relevance of the curriculum. Finally, the case study showed that CCE initiatives must be rooted in the best available science and involve a diversity of speakers to balance theory and practice, as well as a diversity of learning methods, such as lectures, case studies, and group and individual assignments.

CCE Initiative

The main objective of the Climate and Business Certificate initiative is to prepare students for navigating the complexities of climate change and decarbonization from a business and societal perspective. The Certificate offers a five-week program focused on understanding and experiencing the path toward Net Zero GHG emissions. Each week focuses on one of the five building blocks – understanding, decarbonizing, financing, experiencing and leading – that together form the basis for becoming agents of change to limit the temperature rise to 1.5°C as recommended by climate science. Table 1 provides an overview of the Certificate.

Table 1. Five building blocks of the Climate and Business Certificate at HEC Paris

Understanding the big picture, science, economics, policy	Transforming businesses for climate in key sectors of the real economy	Financing Climate and the financial sector: opportunities, risks and financial instruments	Experiencing Transition Campus Track 2/3: Company project	Leading and engaging all stakeholders in the transition

The Certificate employs a combination of learning methods, where each week consists of three or four days of classes and case studies, as well as one day of individual and group assignments. Classes are delivered by high-profile inspirational speakers from academia, companies, financial institutions, governments, and NGOs. It is also an interactive initiative that employs social network tools including LinkedIn and Twitter to keep students engaged and help them exchange ideas.

The central learning objectives of the Certificate are as follows. By the end of the Certificate, students should be able to:

- Understand the Net Zero transition stakes on macro (planet, society, economy) and micro (company, individual) levels.
- Analyze a company’s GHG emissions profile and design short- and long-term decarbonization strategies in different sectors of the economy.
- Understand the key financial aspects of the Net Zero transition for businesses and financial institutions, including emerging risks and opportunities.
- Engage and lead various stakeholders on climate change topics and inspire them to contribute to low-carbon and climate-resilient development.

The program thus engages students on three learning dimensions, thus supporting Action for Climate Empowerment:

- Cognitive: Transferring knowledge on climate science, policy, economics and finance that are essential for students to become agents of change throughout their careers.
- Social and emotional: Developing necessary soft skills to tackle business problems related to climate change through group projects, social media assignments, and presentations at the end of the Certificate.
- Action and behavioural: Developing action competencies both at the individual level – particularly through the “Transition Campus” during week four of the Certificate, where students experience personal behavioural changes – and at the collective level, e.g., through the practical hands-on experience with the company project.

Case Study Methods

The case study seeks to explore the importance of CCE in business schools and analyze how CCE is being integrated into the curricula of business schools using the example of the Climate and Business Certificate initiative developed at HEC Paris. As leading education institutions grapple with the challenge of how to incorporate climate change into already burgeoning curricula properly, we must analyze the effectiveness of existing methods to develop new models for educational excellence. Moreover, by discussing best practices from HEC Paris and delivering key lessons, this case study aims to provide an outlook on the ways in which stakeholders in business need to approach the growing challenge of climate change. Finally, the findings highlight how CCE initiatives enhance the knowledge of their students and promote collaborative initiatives among business schools. This case study was initiated by HEC Paris.

The methodology for this case study is based on a desk review of existing peer-reviewed and “grey” literature, interviews with key personnel involved in the development of the Climate and Business Certificate at HEC Paris, as well as an evaluation survey of students of the first edition of the Certificate that took place in 2022.

The first edition of the Climate and Business Certificate at HEC Paris took place in May 2022 with a total of 55 participants, including 11 French and 44 international students. The cohort included 25 female and 30 male participants. The breakdown by program was as follows:

33 Master’s students, 10 M2 students, six EMBA students, five MBA students, and one exchange student. The diversity of participants allowed for rich discussions in the classroom as well as fruitful collaborations during group assignments. Following the first edition of the Certificate, participants were asked to respond to the evaluation survey in order to gather their feedback and identify the strengths and weaknesses of various speakers, as well as the participant’s level of interest in different topics that were offered. Overall, the Climate and Business Certificate received an evaluation score of 4.32/5.00 (see Figure 1 below), which was the third-highest score among the nine Certificates that were offered by HEC Paris that year.

1. Global assessment of the course
(HALBHEER, Daniel)

Average	1 - Very unsatisfactory	2 (2)	3 (3)	4 (4)	5 - Excellent (5)	Answers
4.4	0%	0%	5%	50%	45%	40/55

2. Content (HALBHEER, Daniel)

Average	1 - Very unsatisfactory	2 (2)	3 (3)	4 (4)	5 - Excellent (5)	Answers
4.35	0%	0%	8%	50%	43%	40/55

3. Teaching qualities
(HALBHEER, Daniel)

Average	1 - Very unsatisfactory	2 (2)	3 (3)	4 (4)	5 - Excellent (5)	Answers
4.3	0%	3%	5%	53%	40%	40/55

4. Quality of the teaching material used
(HALBHEER, Daniel)

Average	1 - Very unsatisfactory	2 (2)	3 (3)	4 (4)	5 - Excellent (5)	Answers
4.25	0%	0%	10%	55%	35%	40/55

Figure 1. Overall evaluation of the first edition of the Climate and Business Certificate at HEC Paris.

Besides the overall evaluation, each speaker of the program was evaluated separately, including scoring across the four assessment dimensions – global assessment, content, teaching qualities, quality of teaching material – as well as qualitative feedback (strengths and weaknesses of each session). This allowed for the collection of valuable feedback that was considered when developing the second edition of the Certificate in 2023.

Case Study Findings

Climate Change Education in Business Schools

Despite clear scientific evidence on climate change, at least since the end of the 2000s, the climate change topic has generally not been very well integrated into business education (Patenaude, 2011). In this period, management journals have failed to integrate this topic in their publications (Goodall, 2008). A study conducted in 2014 found that only 2 of 13 selected business schools in the US offered specialized climate change classes, although 9 of 13 schools had broader academic centers and degrees focused on climate, energy or sustainability (National Research Council, 2014).

A recent study (AMBA and BGA, 2021), which included a survey of 597 senior leaders from business schools worldwide, revealed that almost 90% of the participants believe that their respective Business Schools bear some level of responsibility in addressing climate change.

However, only a mere 3% of the respondents consider their business schools' current efforts in tackling climate change as 'excellent.' This clearly indicates that leaders recognize the need for substantial improvements in their institutions.

Business schools can contribute to climate action through education and engaging their communities, e.g., alumni (Weybrecht 2020). Moreover, business schools possess valuable expertise in various domains, such as organizational transformation, performance measurement, operations, marketing, leadership, and governance, making them significant contributors to the battle against climate change (Galdon et al., 2022). Recognizing their potential impact, eight leading European business schools, including HEC Paris, joined forces

to launch the Business Schools for Climate Leadership (BS4CL) initiative, aiming to foster a community of responsible and knowledgeable business leaders through collaborative efforts and shared insights. Several other collaborative initiatives among business schools have been launched recently to promote climate action (Symonds, 2023).

Overall, the discussion surrounding climate change in business schools has undergone a significant transformation. Previously, climate change education was limited to small groups of passionate sustainability students. In the past two years, however, widespread support has emerged from influential figures, such as the Deans of eight prominent European business schools, who have made public commitments to foster climate research and education. The Deans of the eight BS4CL members said: "We mean to build the foundations with which businesses can lead global action to collaborate across sectors to limit climate change and to promote meaningful and visible progress" (Ethier 2021).

Climate Change Education in HEC Paris

Responding to the growing imperative of climate change education and relatively slow progress by the leading business schools, HEC Paris decided to speed up mainstreaming climate change and broader sustainability topics in its teaching and research activities. The factors behind this strategic move included both internal drivers – including leadership from the school's management, trailblazing work by the Society and Organizations Institute, and advocacy of professors and staff who acted as internal climate activists – and external drivers – demand from students and their future employers, European and international climate policy developments, increasing adoption of Net Zero emissions targets by countries and companies, etc.

This strategic shift could be observed in both the research and teaching activities of the school. Indeed, between 2020 and 2022, 38% of all articles published by HEC Paris faculty members were related to Environmental and Social Governance (ESG) topics. In the same period, ESG-related content represented 15%, 27% and 33% of total course hours in Masters, MBA and EMBA programs, respectively. Moreover, 50% of published case studies since 2020 are on ESG topics, including case studies on Alenvi's social impact, Best Buy's purposeful leadership, Bouygues's Sustainable cities, Stanley Black & Decker and Camif's purpose, Colas's carbon accounting, Danone's social innovation, Renault's mobility solutions, Schneider Electric' solar home systems, Veolia's community water distribution, to name only a few.

In addition to the above case studies, in 2022, HEC Paris created the Climate and Business Certificate under the leadership of the Society and Organizations Institute, a five-week flagship initiative aimed at equipping Masters, MBA and EMBA students with knowledge and tools necessary for navigating the climate transition from both business and societal perspectives. Certificates at HEC Paris are a set of interdisciplinary courses corresponding to approximately 100 contact hours, as well as business projects and other types of fieldwork related to a given sector. Until 2022, HEC Paris offered eight Certificates on topics ranging from data science to luxury. Climate change issues were indirectly tackled in the Energy and Finance Certificate and Inclusive and Social Business Certificate, but no dedicated climate Certificate was available.

Development of the Climate and Business Certificate at HEC Paris

The decision to create a dedicated Climate and Business Certificate was taken in 2021 following a series of discussions between the management of the school, representatives of the Society and Organizations Institute, and professors interested in spearheading the topic.

Daniel Halbheer – Associate Professor of Marketing, holder of the FII Institute Chair on

“Business Models for the Circular Economy”, and Academic Director of the Climate and Earth Center within the Society and Organizations Institute at HEC Paris – and Igor Shishlov – Adjunct Lecturer on Climate Change Economics at HEC Paris and Head of Climate Finance at Perspectives Climate Group – were appointed as Co-Directors of the Climate and Business Certificate and were tasked to develop the curriculum and prepare the launch of the first edition of the program in May 2022.

The Certificate’s content was then developed through a participatory process that included several iterations of the initiative and involved discussions with and feedback from various internal and external stakeholders including:

- The Dean of HEC Paris;
- Representatives of the Society and Organizations Institute;
- Professors involved in sustainability-related courses and research;
- Corporate partners interested in the climate change topic;
- Students from two associations dedicated to sustainability.

Once the program’s outline was ready, Daniel Halbheer and Igor Shishlov identified experts from academia, NGOs, policy, as well as the private sector to deliver high-quality and engaging content on each of the key topics. Throughout this process, they strived for a balance between academic rigour and the practicality of suggested tools and solutions. The Certificate thus offers a diversity of speakers and guest lecturers who bring both specialized expertise and different perspectives on climate change topics and corporate sustainability.

This is a major advantage as it effectively broadens the reach and scope of tools available to participants for effective climate action. Lectures, discussions, and case studies presented by industry leaders, academics, policymakers, and representatives of NGOs give participants a broad – yet comprehensive – overview of the different issues affecting corporate sustainability and understanding why and how businesses should consider climate change when making strategic and operational decisions. Funding for the Certificate was provided by the Society and Organizations Institute and the FII Institute.

A Multifaceted CCE Initiative

The first week of the Certificate focuses on understanding the big picture related to climate change and the ecological transition. It starts with a thought-provoking discussion on the relationship between the environment and society, followed by the introduction of planetary boundaries before zooming into the climate change problem. It then establishes a solid understanding of climate change science and transformations required to achieve Net Zero emissions. This is then followed by a discussion about the geopolitics of climate change and the evolution of the international climate frameworks. Finally, students dive into domestic climate policies that affect businesses in all sectors of the economy with a focus on the EU climate and energy policies.

The second week of the Certificate focuses on measuring and reducing companies’ GHG emissions and transforming the key sectors of the economy. First, students are exposed to the existing approaches to GHG accounting within a company (including Scope 1, 2, and 3 emissions) and the process of setting science-based targets (SBTs) to reduce its climate impact. Second, students learn about the marginal abatement cost curves (MACCs), how to identify and implement decarbonization strategies within a company, and how to develop circular economy solutions. Finally, students investigate several case studies in key sectors of the

economy – such as energy and transport – to learn how decarbonization strategies are developed and implemented in the real world.

The third week of the Certificate focuses on the financial aspects of the Net Zero transition. First, students explore the climate finance landscape to understand financial needs, sources of finance, climate finance instruments and current climate finance flows. Second, they learn about the evolving financial regulations that are increasingly integrating climate considerations and influencing investment decisions. Finally, students are presented with several case studies on climate action in different types of financial institutions, including private and public banks, investors, and insurance companies.

The fourth week of the Certificate offers students an opportunity to experience the transition hands-on through one of the possible tracks. The first option is to spend three days on the Transition Campus to personally experience behavioural transformations and challenge the conventional wisdom about the economy, society, and the environment. The second option is to do a practical, real-world project, where students work closely with representatives of a company to develop actionable decarbonization solutions.

The final week of the Certificate focuses on how to engage and lead all stakeholders in the Net Zero transition and the broader sustainability journey. This is achieved through a series of round tables with businesses, policymakers, and civil society. Students then present their final group projects to a jury. Finally, the Certificate concludes with a discussion on career opportunities in the climate change field and some inspirational testimonials from HEC Paris alumni who currently work on climate change solutions or broader sustainability topics.

Case Study Impacts

Reaching a development pathway consistent with the objectives of the Paris Agreement will require significant mobilization of resources – mainly from the private sector. In this light, it is of utmost importance that business leaders are fully aware of the climate change challenge and can assess risks and opportunities arising from the Net Zero transition. This case study demonstrated that business schools play an important role in this process by educating current and future business leaders. However, it also demonstrated that most business schools are lagging when it comes to CCE.

Responding to these challenges, HEC Paris embarked on a journey to mainstream CCE throughout its curriculum, including the launch of the Climate and Business Certificate under the leadership of the Society and Organizations Institute in 2022. The case study demonstrated the impact of the Certificate on several levels. First, it demonstrated how a leading business school can integrate climate change education into its curriculum through a participatory process while creating an innovative educational offering for students. It thus showed how a business school can help shape future leaders who can fully integrate climate change considerations in their careers – whether or not they are directly related to the low-carbon and climate-resilient transition. Second, the case study demonstrated how integrating CCE into a business school's curriculum can help mainstream climate change topics in the business school itself. Indeed, the highly participatory process of setting up the Climate and Business Certificate at HEC Paris resulted in several spin-off projects, including short courses, workshops and webinars that helped engage various stakeholders inside and outside the school in climate action. Finally, the case study demonstrated how integrating CCE into business schools creates momentum for collaboration and exchange of experiences and best practices, such as, for example, through the Business Schools for Climate Leadership (BS4CL) initiative.

One of the main points for improvement suggested by the participants of the first edition was

to go beyond the Net Zero transition in Europe and incorporate the considerations for businesses in developing countries. Another suggestion was to integrate the topic of biodiversity and its links with climate change. Both suggestions were successfully implemented in the second edition of the Certificate in 2023.

In addition to overwhelmingly positive evaluations by the participants, the Climate and Business Certificate was recognized by the HEC Foundation and Daniel Halbheer and Igor Shishlov were awarded a Bruno Roux de Bézieux Prize for the innovative educational initiative (Plague 2023). “Pedagogy has evolved in unheard ways these past years,” said jury member Anne Michaut, HEC’s Associate Dean (Education Track and Pedagogy). “These rewards recognize the importance of making our courses evolve, thus preparing students to navigate the complexities of the world they are entering.” (HEC, 2023).

Applicability and Scaling of the CCE Initiative

This CCE initiative offers several lessons for business schools that are willing to integrate CCE into their curricula. First, it demonstrated the importance of political momentum and high-level engagement in the process, ideally spearheaded by the commitment of the Dean of the school as well as the engagement of internal “climate champions,” for example, dedicated professors willing to advance CCE in their schools. Second, the initiative demonstrated the importance of the participatory process in the development of CCE initiatives, i.e., including consultations with professors, students, and corporate partners to ensure the support and “buy-in” of all relevant stakeholders. Third, it demonstrated the benefits of collecting formal and informal feedback from participants of the CCE initiatives to enable constant improvement and relevance of the curriculum. Finally, the case study showed that CCE initiative must be rooted in the best available science and involve a diversity of speakers to balance theory and practice, as well as a diversity of learning methods, such as lectures, initiative, and group and individual assignments.



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