

MOBILIZING HIGHER EDUCATION FOR CLIMATE

Summary for decision-makers
of the report led by Clémence Vorreux, Marion Berthault and Audrey Renaudin, with the advice of Jacques Treiner, for the think tank *The Shift Project*.

THE CHALLENGE: TRAINING STUDENTS TOWARDS A FOSSIL-FREE ECONOMY

The issues raised by climate change have never been so pressing. They are closely linked with our energy mix - at 80% fossil today -, which has been driving global economic development for nearly 150 years. Whether it is to mitigate our impact, reduce our dependence or adapt to incoming upheavals, **the repercussions on our economy and our society will be of unprecedented magnitude.**

This prospect is deeply worrying and eminently complex. **Coping with it requires that the population is not only sensitized to it, but also informed and trained** - notably when it comes to future elected officials, voters, parents and **professionals from all sectors** (from health to industry, including culture and public service). It is not only a question of training in so-called « green » jobs. Indeed, although to varying degrees, **all professions** are concerned.

However, **climate-energy issues are still insufficiently taught, even more so in higher education**, which receives 6.5% of the « working-age » population (age 15-64) annually. Starting from this observation, *The Shift Project* sought to make an **inventory** of the way in which these subjects are approached, and identifies concrete **courses of action** around which to mobilize the higher education community. The end goal is to push a massive and rapid development of the teaching of climate-energy issues, therefore to provide the country with the proper human resources required for its climate objectives. Shortly after the launch of this project in early 2018, an unforeseen **massive mobilization** for the climate from members of the education sector ensued, high school and graduate students at the top.

THE ESSENTIAL ROLE OF HIGHER EDUCATION IN THE UNDERSTANDING OF THE FACTS

- **Despite the growing concern of the French population about climate issues, the causes of climate change remain poorly understood**, leading to misguided decisions on the solutions to be implemented.
- **The importance of education in climate change issues has been acknowledged at national and international levels**, yet the impetus of the French government in this area only concerns primary and secondary education.
- **Higher education is a privileged moment for training in climate-energy issues.** While primary and secondary education are a good time to raise awareness among the youngest and inform them as citizens, higher education, on the other hand, allows students to **gain a deeper understanding of the issues at stake**, and to **understand their link with their future jobs**. Continuous education should also offer this possibility to current professionals.
- **Most measures implemented in the higher education system currently revolve around the idea of the « sustainable campus »** (e.g.: real estate, waste, mobility, etc.), and rarely concern the actual programs. This desire for exemplarity should not shift the focus away from the fundamental vocation of the higher education system, which is the training of students.
- **The recent demand for climate action from students call for a profound academic response.** Their mobilization is a powerful lever to encourage higher education stakeholders to tackle this topic. But, due to a lack of teaching, some students turn to self-study, sometimes using unreliable sources. So while their involvement should be commended, it is not up to them to determine on their own the content of their learning: it falls to higher education stakeholders to provide a response commensurate with the challenge.

FEW COURSES, AVAILABLE TO A MINORITY OF DEGREES

76% of the analyzed curricula do not offer any courses addressing climate-energy issues to their students¹. In the remaining 24% of courses, less than half (11%) offer at least one mandatory course.

Climate-energy issues are mostly taught towards the end of studies: 66% of the courses addressing these issues are at Master's level. This could testify to the desire of educational officials to make the link between climate-energy issues and the jobs for which students are trained.

A HETEROGENEOUS APPROACH DEPENDING ON THE TYPE OF ESTABLISHMENT

In spite of a growing offer of « specialized » degrees, great disparities exist among the categories of establishments.

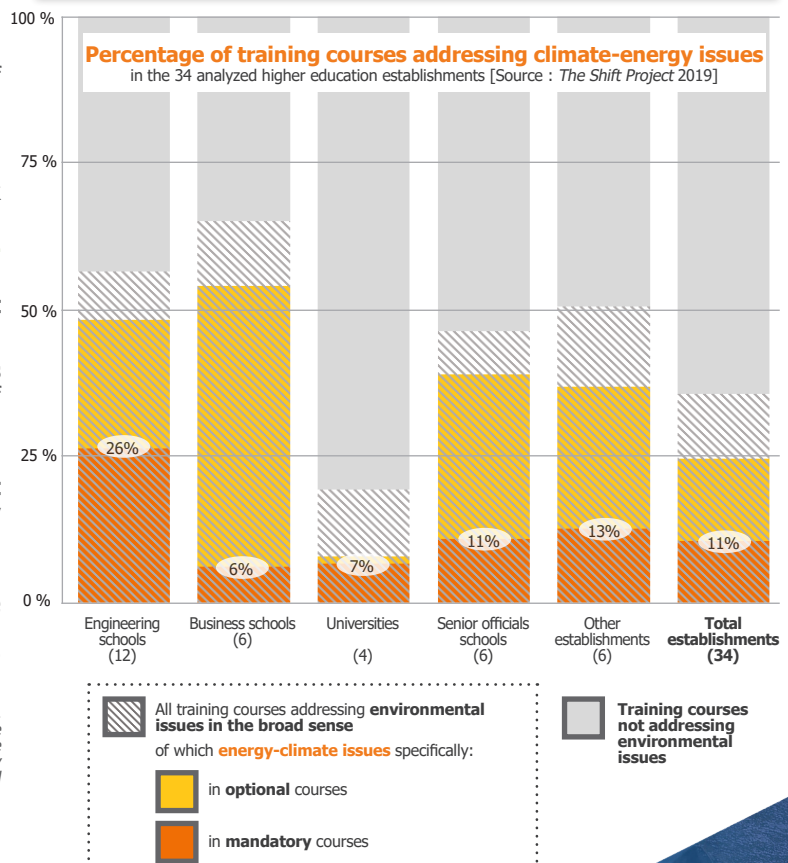
Business and engineering schools offer the most training courses addressing climate-energy issues, with respectively 54% and 48% of their degrees covering these topics in at least one course. In universities, this figure drops to 8%.

However, 26% of engineering training courses include at least one compulsory course covering the topic, compared with only 6% in business schools and 7% in universities.

Almost a third of training courses that deal with environmental issues in the broadest sense ignore climate-energy issues. We believe it is necessary to develop the teaching of climate-energy issues specifically, in addition to the legitimate and essential teaching of environmental issues.

¹All training courses for which we have observed that at least one course evokes, at one time or another, these issues are considered as "addressing" climate-energy issues, whether during 2 of the 60 hours of the mandatory lecture in the bachelor's cycle or during 18 of the 20 hours of an optional tutorial course in the master's cycle. Thus, the fact that a course "addresses" these issues does not prejudice either the quantity of courses nor the quality of their content. By "training", we mean courses: L1-L2-L3, M1-M2, specialized master's degree, school diploma, etc. The list of 34 establishments is available in the report.

UNPRECEDENTED FIGURES ON HIGHER EDUCATION



Initiated upon the suggestion of The Shift Project's Experts Committee, **this report is based on qualitative work:** a bibliographic review and interviews conducted with more than 140 higher education professionals. It was subsequently completed by collaborative workshops that brought together around 100 professionals in November 2018 and **enriched by an unprecedented quantitative analysis of the training courses of 34 establishments** (12 engineering schools, 6 civil servants schools, 6 business schools, 4 universities and a selection of 6 other establishments). The chosen sample gathers 2,450 training courses and nearly 300,000 students - just over 11% of the country's 2.68 million students. The Shift Project has chosen to **single out climate-energy issues** within environmental issues in the broader sense.

THE NEED FOR INSTITUTIONAL SUPPORT

Little action has been undertaken by the French government to train students in climate and energy issues. The signing of the Paris Agreement, however, commits France to train an entire generation to address the historic climate change challenge that will affect society as a whole. Unlike primary and secondary education - whose programs are defined by the States - higher education is characterized by a multiplicity of independent actors, thereby creating a heterogeneous approach on the teaching of climate-energy issues. Currently, the French Ministry of Higher Education, Research and Innovation (MESRI) considers that it does not have the mandate to influence curricula content. While there is no consensus at this stage on the exact role that the State, and in particular the MESRI, should play, **stakeholders are still waiting for a strong political signal** to tackle this challenge.

- **The government should define a national higher education strategy for climate**, support higher education institutions in its implementation and set up a national observatory to monitor the process.
- **The MESRI and the supervisory ministries have many levers** to encourage and support institutions: acting through representation in the schools' advisory boards, through funding, network coordination, etc. It could also create the function of Climate Vice-President within universities, who would be in charge of the evolution of the courses towards a better inclusion of climate-energy issues.
- **Assessment bodies play a key role.** The benchmarks of the High Council for the Evaluation of Research and Higher Education (HCERES) and the National Training Framework (CNF) could be revised at the request of MESRI to enhance the teaching climate-energy issues. The Engineering Titles Commission (CTI), independent of the State, could adopt the same priority. The current trend towards the integration of environmental issues must be accelerated and systematized: a large number of schools and universities seem ready for this.

A SYSTEM OF INTERDEPENDENT ACTORS TO MOBILIZE

FACILITATE THE TEACHERS' WORK

Many teachers have taken initiatives to integrate climate-energy issues into their courses, despite administrative hurdles, the compartmentalization of disciplines and a lack of support from their study departments. However this « community » remains highly fragmented, and does not recognize itself as such.

- **Initiate an academic and scientific reflection** to determine the best way to teach climate-energy issues: transversally or through dedicated courses? How to tailor the content depending on the discipline? How many hours should be dedicated to it? At what level of study? And how to train teachers?
- **Encourage the networking of voluntary actors** to facilitate exchanges, shed light on existing actions, structure their approaches, identify their needs and encourage the emergence of an active community.
- **Create a resource center**, materialized by a web platform allowing the sharing of educational material between stakeholders.

DEVELOP INTERDISCIPLINARITY IN THE SERVICE OF EDUCATION

Interdisciplinarity is essential for teaching climate-energy issues. However, despite the ministerial objectives, it remains difficult to put it into work. This is due to the French higher education system's segmentation, as well as "publication pressures" that professors are subjected to. Indeed, many professors are compelled to publish in well-rated academic papers on a regular basis, thereby being strongly encouraged to fully commit to their research field, leaving them little time or incentives to invest in teaching.

- **Allow teachers to learn climate and energy issues**, so that they can include these subjects in their courses. Promote teaching activities so that they can devote the necessary time to them without hindering their career progression.
- **Improve flexibility and permeability of the disciplinary system** to make the integration of climate-energy issues into the courses easier.

“ *When it comes to climate and energy, every citizen should be able to understand what the expert is saying, which requires at least 5 to 10 hours of training. Even to become an accountant or a high school principal, jobs unrelated a priori to climate-energy issues, this is a desirable minimum.*

If the profession concerned is at the heart of change, it is rather 50 hours minimum that should be aimed. In generalist training courses for future managers, such as business and engineering schools, it is therefore this volume that should be considered to get the basics of understanding this complex challenge. ”

Jean-Marc Jancovici, Head of The Shift Project and teacher

ENCOURAGE AND SUPPORT ESTABLISHMENTS

A growing number of departments are keen to integrate climate-energy issues into their courses, but are often overwhelmed by the scale of a problem they often know little about. While a change is under way, it is necessary to **ensure that the integration of climate-energy issues is carried out in all sectors and types of schools**, and does not remain limited to a few particularly committed establishments and technical fields.

Organizations bringing together institutional leaders, such as the Conference of higher education schools (CGE) and the Conference of university presidents (CPU), have already made these issues part of their strategic concerns.

Many civil society actors support the integration of transition and environmental issues in higher education and contribute to educational innovation. They can **act to create a suitable framework**, allowing a better integration of climate-energy issues in classes:

- **Identifying and communicating on private companies' needs** for professionals to deal with the challenge posed by climate change. The skills sought when recruiting must evolve notably. Because the employability of their students is the priority of school boards, this would encourage institutions to adapt their courses offer.
- **Reforming existing rankings and labels** to give more weight to the teaching of climate-energy issues. This would allow institutions to better promote the integration of these topics in their curricula. The rankings, which are very influential among students and administrators, currently favor criteria such as graduates' salaries, and attach little importance to the actual course content, let alone the teaching of environmental issues.
- **Integrating climate-energy issues into admission exams** (engineering schools, business schools, schools of international relations and political science, etc.) and therefore into preparatory courses. The public sector must also identify its own skill needs and then integrate these issues into public service exams.

HEADS OF ESTABLISHMENTS, IT'S UP TO YOU!

It is urgent to start, within each higher education establishment, the process that will lead to the integration of climate and energy issues into the curricula. University administrations' action is crucial to act on a large scale. Your autonomy allows you to do so, and **it is up to you, school boards, to take up this issue as soon as possible.**