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# GHG Emissions Reduction: Scientific Rigour and Stakeholder Engagement



By [Atalay Atasu](#) and [Attila Cselotei](#) , INSEAD

## **How a step-by-step approach to sustainability helped INSEAD ensure meaningful results.**

The [latest report](#) by [the Intergovernmental Panel on Climate Change](#) makes it clear: business and government can do more to address climate change. Without intervention, the planet is projected to warm 4.5°C above preindustrial levels between now and 2100. If that happens, climate scientists predict catastrophic consequences. Glaciers will melt, coastal cities will flood, biodiversity will be lost, and businesses and the economy will [face dire consequences](#).

As world leaders grapple with this grim scenario at [COP27](#), the path forward requires radical action. Leaders and organisations must take quick and decisive steps to implement policies that reduce greenhouse gas (GHG) emissions and help limit global warming to the recommended [1.5°C threshold](#). And INSEAD, as the Business School for the World, must lead by example.

What does this mean? In line with [our school's mission](#) and commitment to [“walk the talk” on impact](#), we have the responsibility to put the bold leadership, innovative thinking and ethical decision making that we teach our students into practice. So, earlier this year, we made a pledge to reduce greenhouse gas emissions across our four campuses by [67% by 2035](#) and created a measurable action plan featuring concrete steps.

The nearly three-year process leading to this pledge was rigorous, difficult and time-intensive. But it offers important lessons for others embarking on a similar journey. These are the four steps we took, which leaders and organisations could use when considering their own GHG emissions reduction planning and execution.

### **Step 1: Measure and account for all GHG emissions**

First, we documented key activities at INSEAD and measured the emissions released by those activities. We engaged internal departments and a French consultancy specialised in climate actions and emission tracking to help collect and analyse this data across our four campuses in Fontainebleau, Singapore, Abu Dhabi and San Francisco.

In line with best practice, our activities were organised into three areas, or scopes, of carbonisation:

- Scope 1 encompasses everything that we own, operate and perform on our premises or property that leads to GHG emissions, such as the gas boilers we use to heat water on campus.
- Scope 2 encompasses the emissions from the generation of the energy we purchase to operate our facilities. Some of that energy comes from burning gas.
- Scope 3 encompasses GHG emissions resulting from activities in our value chain, such as flights taken by our faculty, staff, students and alumni traveling to and across our campuses or emissions embedded in goods and services we use.

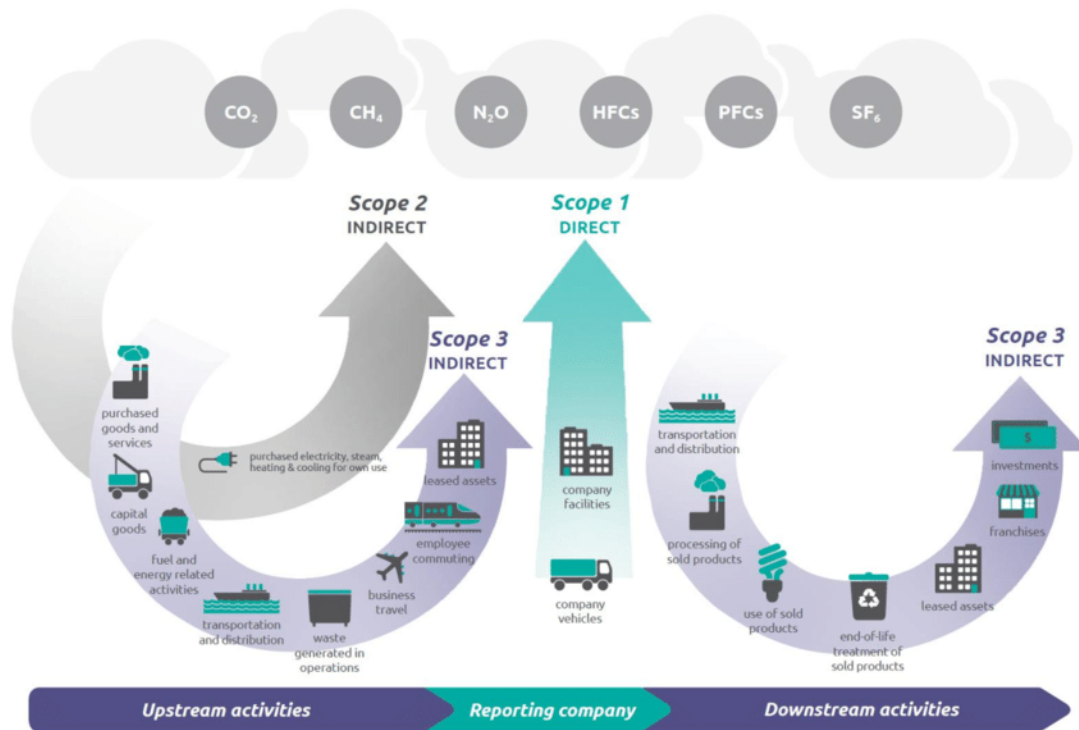


Figure 1 Scope 1, 2 and 3 Emissions. © [GHG Protocol](https://www.ghgprotocol.org/)

Through this process, we were reminded of the importance of relying on data – rather than intuition or perception – to discern between high-emission activities and low-emission ones. For instance, it would be easy to assume that our largest campus in Fontainebleau generates the most emissions in INSEAD. In fact, Fontainebleau accounts for only 30 percent of emissions, while Singapore accounts for 60 percent. This is due to differences in climate (higher temperatures require more air conditioning) and differences in energy options (most energy in the Southeast Asian region is gas-based).

### Applying rigour to stakeholder engagement and decision-making

When developing our climate pledge, we didn't just apply rigour to our climate science. We also took a rigorous approach to our stakeholder engagement and business decision-making. That meant convening faculty, staff and experts from within and outside INSEAD to form two committees: a Steering Committee and a Faculty Advisory Committee. Our goal was to avoid internal or external pressures that might inadvertently lead to undesirable outcomes.

## Steering Committee (2020-2022)

- Objective: Perform calculations and undertake scenario planning.
- Members:
  - Three staff members from the office of INSEAD's Chief Operating Officer
  - Two staff members from the Hoffmann Global Institute for Business and Society
  - Two staff members from the INSEAD Facilities Office
  - Three INSEAD faculty members
  - Team of external consultants

## Faculty Advisory Committee (2021-2022)

- Objective: Check and verify data prepared by the Steering Committee, narrow options for INSEAD and finalise language in INSEAD's climate pledge.
- Members: Six INSEAD faculty members

## Step 2: Identify and quantify options for reducing emissions

Once we understood where our carbon emissions were coming from, we started exploring which levers we could pull to reduce them. We brainstormed internally, as well as approached several engineering companies and consultancies to get a comprehensive list of options. We then analysed the feasibility and potential benefit of those options, which spanned from automation systems to energy management systems, solar installations and more.

For instance, while evaluating the feasibility of covering the entire Fontainebleau campus in solar panels, we found that it would only generate about 10 percent of our total energy needs. We also wanted to avoid contributing to the future wave of [solar trash](#) when we dispose the solar panels at the end of their 15 to 20-year life cycle.

However, we determined that solar energy is an important option for the Singapore campus, which has less access to clean energy. As a result, we signed a three-year contract with [Flo Energy](#), which operates a solar energy farm in Malaysia, to deliver 100 percent zero- carbon energy to the Singapore campus. At the time of signing the contract, the cost of solar energy was about 15 percent higher than carbon-based or gas-based energy.

However, due to the current geopolitical situation, it is now only half the price. This unexpected outcome, while positive in this case, demonstrates the challenges of making forecasts.

The transition to lower carbon operations will have a tangible impact on GHG emissions, but requires a number of behavioural changes. For example, if everyone on the Fontainebleau campus does not use warm water to wash their hands in the restroom, it would reduce total energy consumption of the campus by 1.3 percent. Similarly, optimising the scheduling of amphitheatres used for lectures can reduce the number of rooms used per day, lower energy needs for cooling and the corresponding emissions."

### **Step 3 Determine how much it would cost**

After identifying the most feasible solutions, we determined how much it would cost to implement them to arrive at the most impactful and economically viable levers.

To that end, we worked with economists at INSEAD to assess the costs and benefits of our options. This revealed that, on the Fontainebleau campus, investing in geothermal energy is a no-brainer. Spread over 15 years, drilling geothermal wells has a negative cost and the largest potential for emissions reduction.

This option is especially viable because we found an existing study about the location of geothermal wells in Fontainebleau. We are now running tests to determine where we can locate the volume of water flow needed to run most of our heating and cooling in Fontainebleau using geothermal energy.

## Abatement curves

Zoom on Fontainebleau & Singapore abatement cost of levers identified

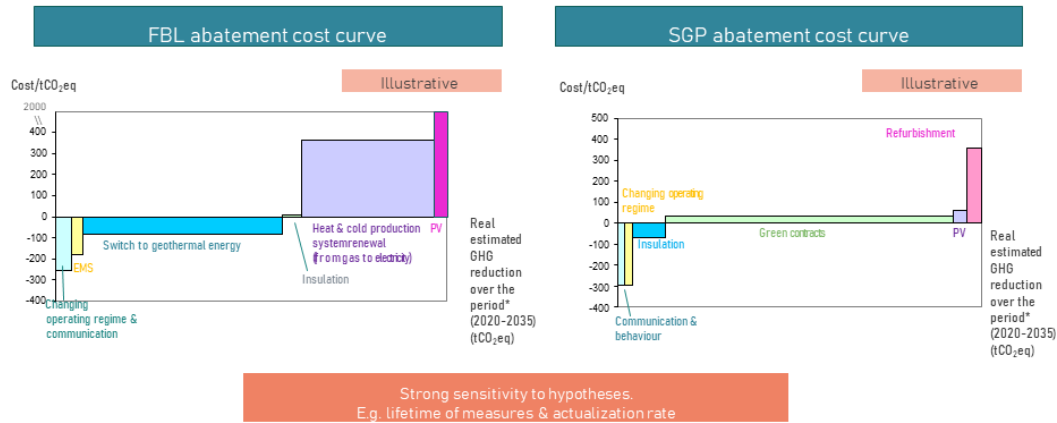


Figure 2: Developing abatement curve graphs offered a clear indication of the economic efforts involved in pursuing the different technical options available. *i-care* consulting agency on environmental transition.

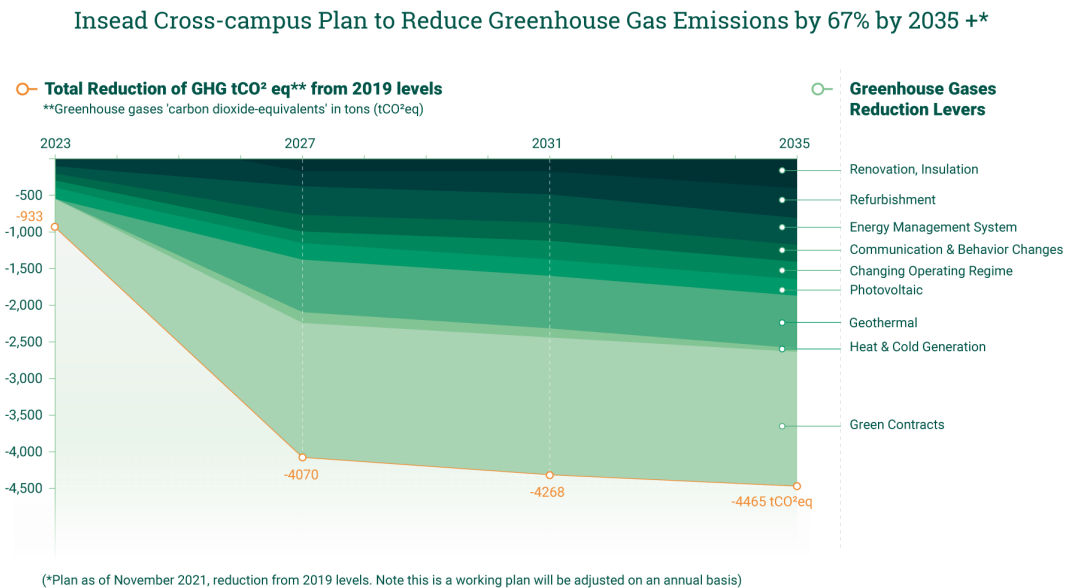
### Step 4: Engage key stakeholders for buy-in

In the crucial final step, we shared and discussed our findings with a broader group of faculty and staff members. We explored the school's future carbon reduction strategy, impact of potential solutions on our business model, implications for our brand and reputation and other issues such as the economic impact.

In the end, we presented two plans for consideration: Option 1 was based on compliance with France's statutory requirements, new energy regulations in Abu Dhabi and expected legislation in Singapore. It necessitated a reduction of our energy consumption in France by 40 percent by 2030. Option 2 was to exceed that baseline and align more closely with our mission of serving as a "Force for Good". For this, we need additional capital outlays to tap on geothermal energy, which would reduce our GHG emissions by 67 percent – and potentially up to 82 percent – on each of our campuses by 2035.

Option 2 received unanimous support from the various stakeholders and was approved by the Dean and the Board of INSEAD. Achieving this alignment

and buy-in from different stakeholders across INSEAD was crucial to our process.



*Figure 3: INSEAD GHG Reduction Pledge*

## Our next step: Addressing emissions in Scope 3

While Option 2 addresses emissions resulting from our assets and the energy we purchase (scope 1 and scope 2), it doesn't impact emissions from our operations (scope 3), which account for the majority of INSEAD's total emissions. So, what shall we do about this?

INSEAD is now following the same process outlined for scope 1 and 2 emissions to tackle scope 3 emissions, using a scientific approach that engages all of INSEAD's stakeholders. Our experience from scope 1 and 2 taught us the importance of every constituent at INSEAD agreeing to the course of action, as it will have implications on what we do, who we are and why we exist.

We know, for instance, that if we decide to restrict air travel for everyone in our community, we must consider what that means for our core mission of bringing people and cultures together. If we decide to move our courses online, we must consider whether that detracts from our value proposition or dilutes the learning experience. In short, INSEAD needs to address the



broad GHG emission trade-offs around the reality of our context as a global business school.

INSEAD is not alone in facing these kinds of dilemma. Every leader and organisation must consider trade-offs when balancing the needs of society or their economy with the needs of the environment. We hope that the process we went through could provide other organisations with a framework to approach this pressing challenge. For a start, a rigorous analytical approach and broad stakeholder engagement is crucial to reaching a good solution.

### Find article at

<https://knowledge.insead.edu/responsibility/ghg-emissions-reduction-scientific-rigour-and-stakeholder-engagement>

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### About the author(s)

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### About the series

#### Crossroads: Business & Society

The **Hoffmann Global Institute for Business and Society** at INSEAD explores the intersection of business and society. The challenges of our times are unprecedented, and the decisions made by leaders today determine the future. HGIBS aims to equip these leaders to make decisions in ways that deliver positive outcomes for business, communities, people and our planet in line with globally agreed sustainability goals.

The UN Sustainable Development Goals offer a cohesive and centralised framework for discussing a new development model that is good for all people and the planet. INSEAD is aligning more closely with the SDGs as more businesses use the 17 global goals to enhance their contributions to society.

This series provides much-needed clarity regarding what the SDGs mean for strategies, operations and business models.

#### Sustainable Business



The **INSEAD Sustainable Business Initiative** (SBI) was founded to develop novel solutions for business challenges at the interface between social and environmental responsibility. INSEAD faculty in SBI actively collaborate with academic institutions and businesses, as well as support organisational sustainability transformation.

Besides research and teaching, SBI also develop frameworks and tools to help business leaders integrate sustainability into core business functions and innovate business models to create value for companies and society. SBI aspires to be a collaborative platform for sustainability- and circularity-focused organisations to share best practices and ideas, and form partnerships.