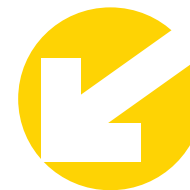




HOW DO FRENCH SMALL AND MEDIUM ENTERPRISES APPROACH THE CLIMATE EMERGENCY?



BPIFRANCE LE LAB

IN A FEW WORDS

Everyone should be aware that: SMEs (Small and Medium-Sized Enterprises) and MSBs (Mid-Sized Businesses) are vital for the French economy in terms of growth, jobs and local roots. However, faced with specific challenges, they are still little known: there is a knowledge gap about our SMEs-MSBs that is vital to fill.

Bpifrance Le Lab is the think tank on SMEs and midcaps. Its role: stimulate business managers to tackle the challenges of today and tomorrow.

Specifically, **Bpifrance Le Lab** works on:

- drawing the best ideas from research and the field;
- making the best use of managers' experiences and feedback;
- connecting managers to readers within a participatory research community.

Bpifrance Le Lab therefore encourages the emergence of ideas useful for SMEs-MSBs.

Its goal: well-rounded managers in thriving companies.

Find us on **bpifrance-lelab.fr**



INTRODUCTION

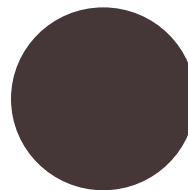
BY BPIFRANCE LE LAB

The climate and more generally the environment are now front-page news. Climate imbalance and its effects are not a new phenomenon but the growing awareness of it is; this is evidenced by climate marches, the breakthrough of the Green parties in the 2019 European elections and even these last few months with the Covid-19 crisis and the lockdown measures that revealed the impact of human activity on the environment (a marked drop in CO₂ emissions followed the almost total shutdown of human activity).

We are seeing civil society express itself through the elections. The French President's latest declarations after the Citizens Convention for Climate and the results of the municipal elections with several major cities won by the Green parties are an illustration of this. But what about the business world? And in particular the French SME-MSBs?

This is what we wanted to understand through this study. We started from our conviction that managers are the driving force for transformation in smaller, human-sized companies. It is they who motivate and guide their teams. In addition, they have to be convinced before progress is made on an issue. So, what do managers think about the climate? How do they integrate this into their strategies and actions?

To answer these questions, we conducted a survey among 1,000 respondents from mid-January to mid-March, in addition to interviews with experts and managers.



This study, which focuses on companies and not people, is a first. There is nothing magical or naive about it. Of course, managers are people like anyone else, but they are also company heads who have to ensure that their company is profitable so that it can survive and grow. If you only take one idea away from this study, it is that it's difficult to wear two hats at one time: of being an individual and a company manager at the same time. Even if these heads of businesses know that they have to do something, this is little reflected in their actions.

This study aims to be educational: the climate and the environment are complex issues to grasp. This is the subject of the first section. It also sheds light on how entrepreneurs are grappling with climate issues. This is covered in the second and third sections. Finally, it is inspiring and pragmatic: we suggest a simple method, which does not require significant financial investment to start addressing climate-related issues. This will be covered in the fourth section.

We have moved from a world still sceptical about the effects of climate and environmental imbalance in 5 to 10 years, to a world entirely convinced of these effects and now pondering the best way of tackling this. We know that this will need a response on several angles: individuals, consumers, public authorities and of course the business world. From this study, we understand that companies are crucial for ecological transition as they are at the heart of the production system, but at the same time, they cannot shoulder the responsibility and cost of this transition alone.

KEY POINTS TO REMEMBER



1 SME-MSB MANAGERS DEMONSTRATE A STRONG CIVIC AWARENESS, BUT ARE MORE CIRCUMSPECT WHEN IT COMES TO CORPORATE ENGAGEMENT

80% of managers questioned consider that climate change requires urgent action and 86% feel concerned by the global objectives to reduce carbon emissions⁽¹⁾. Yet, this personal reaction is not reflected in the company, where climate issues end up as the last of managers' priorities.

2 THEIR AMBITION IS DETERMINED BY THEIR MOTIVATION

67% of managers would adapt their companies to climate and environmental challenges out of conviction, rather than through opportunity or obligation. This is a strong indicator for understanding managers' levels of ambition. All the managers had implemented fairly standard measures, such as recycling or buying more environmentally-friendly equipments. However, a higher proportion of those who selected their suppliers based on environmental criteria or eco-designed their offer were "believers".

3 INFORMATION HAS AN IMPACT ON MANAGERS' LEVEL OF AWARENESS AND ACTION

The more SME-MSB managers search actively for information about the climate and the environment, the more they are aware of the risks, and the more actions they take in their companies. For example, 65% said that they included the climate in their strategy compared to 19% who did not look into the issue.

4 BUSINESS OWNERS WHO ARE MOST INFORMED AND WHO CONDUCT RISK AND OPPORTUNITY ASSESSMENTS PERCEIVE THE BENEFITS OF CLIMATE TRANSITION

68% of managers who had researched the subject had already implemented adaptation measures, compared to 47% of those who did no research. Similarly, managers who had already carried out a risk and opportunity assessment were almost twice as likely to actively research the issue and also twice as likely to be more acutely aware of the risks involved. Assessments are therefore vital for business managers looking to place climate issues more at the heart of its strategy.

⁽¹⁾ All these figures are drawn from the "Climat des affaires ou affaire de climat" (Business climate or climate business) survey conducted by **Bpifrance Le Lab** among 1,006 managers.

5 CLIENTS AND PUBLIC AUTHORITIES MUST BE ON THE FRONT LINE TO DRIVE ACTIONS AND EFFORTS

SME-MSB managers put clients and consumers should at the forefront of actions and efforts in terms of the climate emergency (54%), followed by the government authorities (51%). Companies come in third place (32%). Indeed, they expect a lot from their clients. 29% consider that their actions are hampered by the lack of client recognition. SME-MSB managers also expect to receive a lot of support from public authorities, by way of legislation and budgetary measures.

6 ACTION IS LARGELY TAKEN BY WAY OF SMALL GESTURES, INVESTMENTS AND EFFICIENCY

To reduce the impacts of business on the environment, most of the managers recycle, reduce their use of paper or plastic on their premises, install automatic light switches and air conditioning and replace their equipment with more efficient models.

7 TECHNOLOGY IS AN EXPECTED SOLUTION, BUT IS NOT ALWAYS AVAILABLE

For 59% of SME-MSB managers, science and technology are THE solution for dealing with climate and environmental issues. This is evidenced by marked choices. For those who consider they can reduce their carbon and environmental footprints within 5 years, investment in new technologies is highly popular (71% and 67% respectively). However, this tech-friendly approach comes up against the current limits of technology. Indeed, this is the second stumbling block mentioned by managers who believe they are unable to reduce their carbon and environmental footprints.

8 THREE MAIN OBSTACLES EXPLAIN WHY MANAGERS ARE STILL NOT VERY AMBITIOUS ABOUT REDUCING CARBON EMISSIONS

73% of managers stated that they will be able to reduce emissions in the next five years, but only 13% will be able to do so significantly. The three main obstacles to action are the lack of financial resources, the absence of technology and the lack of customer awareness.

4 popular beliefs

Popular belief 1

Most companies have reduced their carbon emissions over the last 5 years

☐ TRUE

☒ FALSE

It appears that only 45% of SME-MSBs say they have reduced their emissions over the last few years. Simply being aware of the climate emergency does not necessarily result in taking action, since three-quarters of those who have not reduced their carbon emissions believe that there is a climate emergency all the same.

Popular belief 2

The more international companies are, the more sensitive they are to global targets to reduce CO₂ emissions.

☒ TRUE

☒ FALSE

20% of managers with an international client base outside of Europe do not feel concerned by these objectives. This percentage decreases to 18% for those with local clients and 9% for those with European clients.

Popular belief 3

Young entrepreneurs are the most tech-friendly

☐ TRUE

☒ FALSE

Older managers are over-represented among the technophiles. Indeed, managers aged over 65 are three times more likely than managers aged under 40 to be fully convinced that technology is the solution to environmental or climate issues.

Popular belief 4

The youngest entrepreneurs are the most convinced about adapting their company to climate and environmental change

☐ TRUE

☒ FALSE

The youngest entrepreneurs are not the ones who would act most out of conviction. But neither would the most experienced. In fact, the largest share of managers who would act out of conviction are those between 55 and 64 years of age. 71% of them responded in this way, compared to 62% of those under 40. Finally, the smallest proportion is for those aged over 65, at just 56%. This cohort is over-represented among the managers who would act only if forced to do so (20% compared to 10% for all the respondents).

Methodology

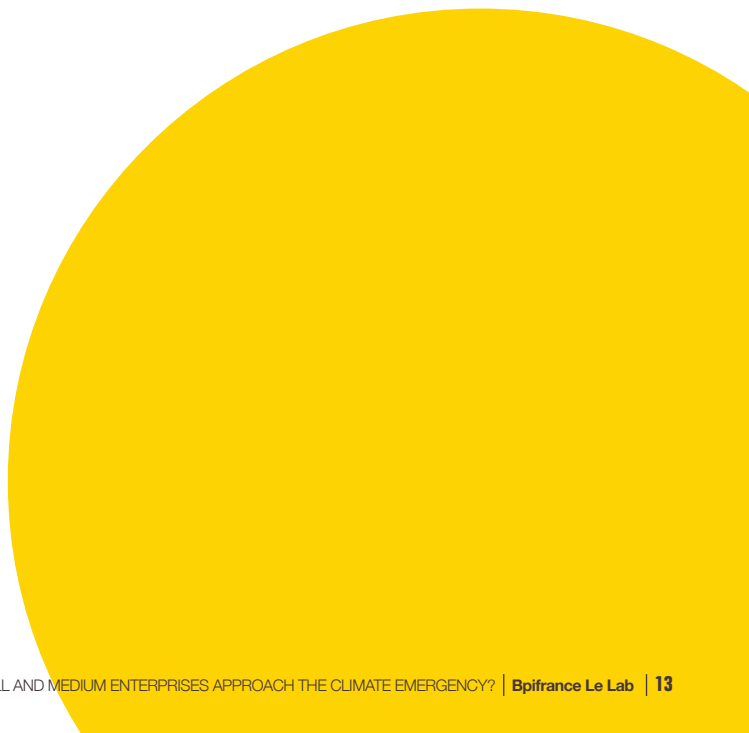
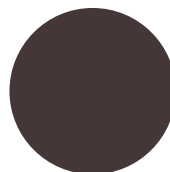
The study used a quantitative and qualitative approach. An online survey was conducted among 85,143 managers of SMEs and MSBs between 23 January and 18 March 2020 (turnover of between 2 million and 1.5 billion euro).

The survey allowed us to collect a total of 1,006 responses (response rate of 1.2%).

In addition, interviews were conducted with experts and managers, as were analyses over 3 economic sectors (food-processing, transport and construction):

- 19 managers;
- 10 experts in different sectors (food-processing, industry, energy, construction and transport).

Finally, 288 open-ended comments were written at the end of the questionnaire by the respondents. Several, mostly anonymous, comments have been reproduced verbatim in the study.

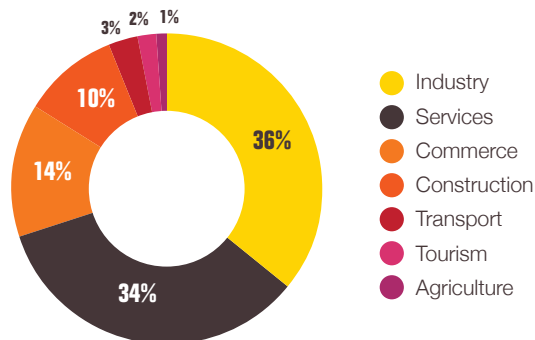


The main characteristics of the survey sample

Breakdown by industry sector

• DISTRIBUTION OF MANAGERS, BY SECTOR OF ACTIVITY

(by % of respondents)



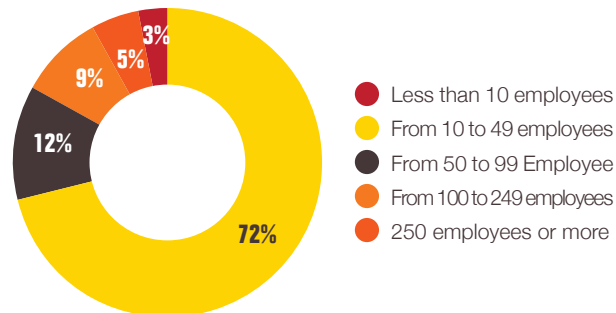
Comparison with national statistical data

- Industrial companies are over-represented in our sample (36% of respondents) relative to their weight in the base population (22%).
- There is also a slight over-representation of service companies (34% vs 28%) and, conversely, an under-representation of commercial companies (14% vs 29%) in the sample of respondents.

Breakdown by company size

• DISTRIBUTION OF MANAGERS, BY COMPANY SIZE

(by % of respondents)



Comparison with national statistical data

- Companies with 10 to 49 employees are under-represented in our sample (12 % of respondents) relative to their weight in the base population (83 %).
- A slight over-representation of companies with more than 50 employees (12% vs 9%, 9% vs 5%, 5% vs 3%) should also be highlighted.

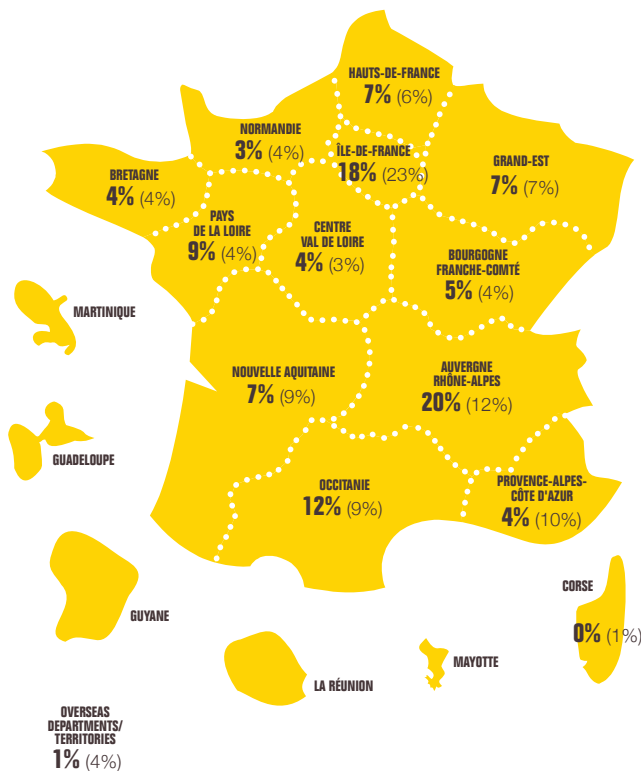
Source: **Bpifrance Le Lab**, "Business climate, or climate business?" survey, 1,006 responses used, Insee [French national institute for statistics & economic studies].

Source: **Bpifrance Le Lab**, "Business climate, or climate business?" survey, 1,006 responses used, Insee.

Geographical distribution

X%: survey data

(X%): national data



The geographical distribution of respondent companies is

RATHER BALANCED compared to the national average



We note three over-representations in our sample:

- in Auvergne-Rhône-Alpes (+ 8 points)
- in the Pays de La Loire (+ 5 points)
- in Occitanie (+ 3 points)

We also note three under-representations:

- in Provence-Alpes-Côte d'Azur (-6 points)
- in the Île-de-France (-5 points)
- in the French overseas departments/territories (-3 points)

Source: **Bpifrance Le Lab**, "Business climate or climate business?" survey, 1,006 responses used, Insee.

Source: **Bpifrance Le Lab**, "Business climate or climate business?" survey, 1,006 responses used, self-employed database and DADS [Annual declaration of social data] (2012).

HOW DO FRENCH SMALL AND MEDIUM ENTERPRISES APPROACH THE CLIMATE EMERGENCY?

**01. DON'T IGNORE
THE COMPLEXITY..... 20 - 47**
—

**02. WHAT DO MANAGERS THINK
ABOUT THE CLIMATE?..... 48 - 93**
—

**03. WHAT ARE THE RISKS
AND OPPORTUNITIES
FOR SME-MSBS?..... 94 - 125**
—

**04. WHAT MEASURES ARE TAKEN
TO BEGIN TRANSITIONING?..... 126 - 171**
—

DON'T IGNORE
...

...
THE COMPLEXITY

01.

Climate change

An old subject that has now become a hot topic

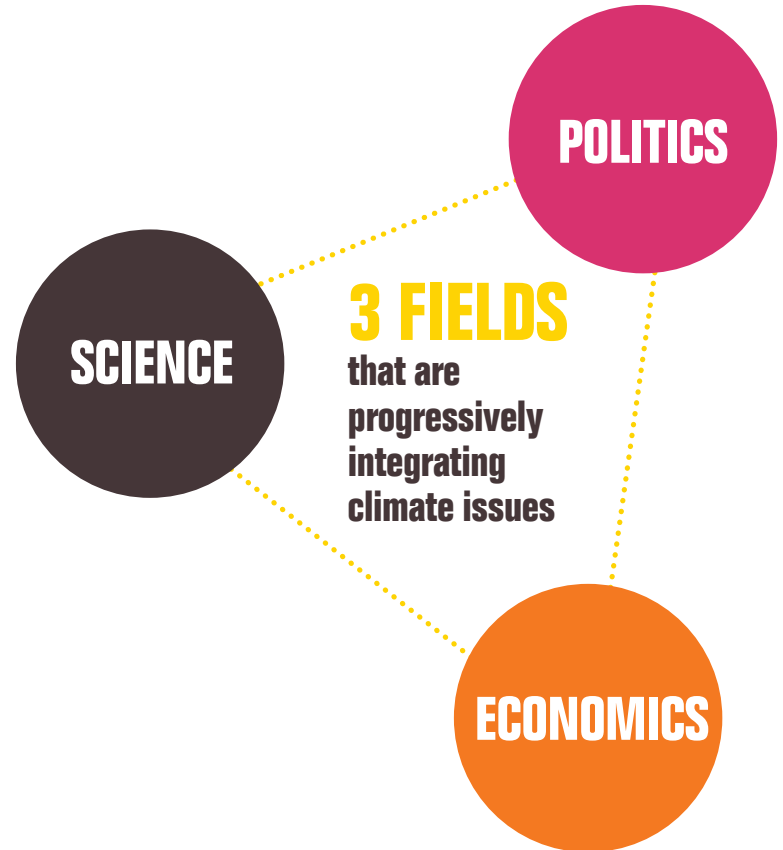
Climate challenges have become a central issue in debates. Although the initial warnings about the impact of CO₂ on the climate date back to the end of the 19th century, an acceleration in events since the end of the 90s explains the current high level of attention. On a scientific level, the work of the Intergovernmental Panel on Climate Change (IPCC) has confirmed in particular that the climate change we are currently experiencing is indeed anthropogenic in origin, i.e. linked to human activities.

In parallel with the improvement in our knowledge of the risks that climate change poses to our societies, several international conferences have been held with a view to finding agreements between States. The 2015 Paris Agreement commits these States to drastically reducing their carbon emissions in order to achieve neutrality⁽¹⁾ as quickly as possible, so that the mean temperature does not increase by more than 2°C over the long term, and to do everything possible for global warming to remain below 1.5°C.

In the 2019 “Green Deal”, the European Union committed to a roadmap of investments and funding tools to achieve carbon neutrality⁽¹⁾ by 2050 in Europe. Similarly, at the end of 2019, the European Investment Bank announced that it would stop financing fossil fuels by 2022. It has also undertaken to devote half of its investments to environmental projects from 2025 onwards.

Societal pressure has only increased in recent years, and even more in the first half of 2020 with the health crisis and lockdown measures that led to a drastic reduction in CO₂ emissions and, along with this, a real awareness of the impacts of human activity.

⁽¹⁾ Carbon neutrality, as defined by the IPCC, is the state in which any residual anthropogenic CO₂ emissions are balanced globally by anthropogenic CO₂ removals.



• THREE AREAS THAT ARE PROGRESSIVELY INTEGRATING CLIMATE ISSUES

SCIENCE

1896

S. Arrhenius,
1st estimation
of the impact of CO₂
on the climate

1990

1st IPCC
report

1995

2nd IPCC
report

POLITICS

1972

Stockholm
conference,
United Nations
Environment
Programme

1992

Rio Summit,
United Nations
Framework
Convention
on Climate
change

1997

Kyoto
Protocol,
1st restrictive
targets
to lower
greenhouse
gas emissions

2001

3rd IPCC
report

2007

4th IPCC
report

2014

5th IPCC
report

2018

Special
IPCC
Report:
1.5°C

2022

Release
date for
the 6th
IPCC report

2009

Copenhagen
conference
No concrete
commitments,
but declaration
on 2°C target

2015

Paris
Agreement
Target of 2°C
by 2100,
and if
possible
1.5°C,
plus carbon
neutrality
after 2050

2019

- [French] Energy-climate Act; the "ecological and climate emergency" and carbon neutrality by 2050 target in France included in the act.
- The European Parliament declares the climate and environmental emergency
- Presentation of the "Green Deal" for Europe

ECONOMY

2015

Energy
transition Act
in France,
climate stress
tests and
publications
on climate risks
by banks
and insurance
companies

2019

European Investment
Bank, commitments
in favour of the climate,
moving away from fossil
fuels

2017

Task Force on climate-related
financial disclosure, method
for publishing information on
climate-related financial risks

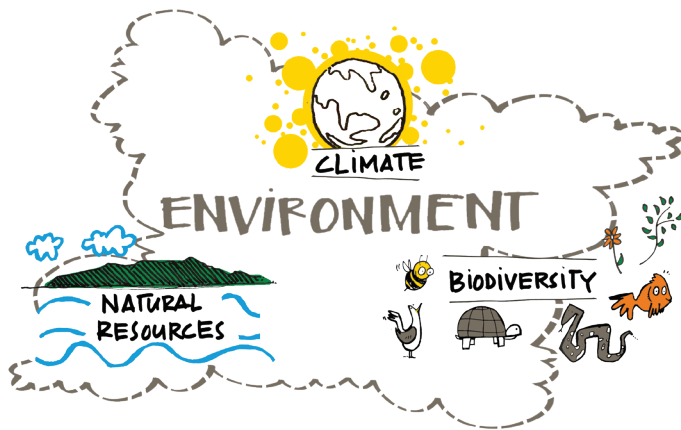
Environment vs climate

Two distinct but related concepts

We frequently hear people talk of climate transition or environmental transition, as if they were almost the same thing. Yet, the climate is not the environment and the environment is much more than the climate.

Etymologically speaking, environment means “that which surrounds us”. As such, it encompasses all natural conditions likely to act on living organisms, as well as human activities. The climate is therefore a fundamental dimension to be understood but should not overshadow other aspects.

In this study, which focuses on climate and the changes it is undergoing, we will also deal with issues related to the environment as a whole, and in particular biodiversity and natural resources.



A few definitions:

Climate

“The climate is a set of meteorological conditions that characterises the average state of the atmosphere in a given location.”⁽¹⁾

Biodiversity

“The diversity of living species and their genetic make-up.”⁽¹⁾

Biodiversity covers the multiplicity of species and environments that were created by evolution on Earth. It is also a “library of knowledge and technological innovations, such as biomimicry.”⁽²⁾

Biodiversity is also a source of services such as water purification, soil fertilisation, etc.

Natural Resources

These may be renewable, i.e. stocks of resources reform over time depending on the level of extraction and use (e.g. marine resources).

They may not be renewable, as is the case with mining resources or oil.

⁽¹⁾ Larousse dictionary.

⁽²⁾ [French] Ministry of Ecological and Solidarity Transition, www.ecologique-solidaire.gouv.fr/biodiversite-presentation-et-enjeux, 20 May 2020.

Climate, biodiversity and natural resources

Permanent interactions

Climate and biodiversity

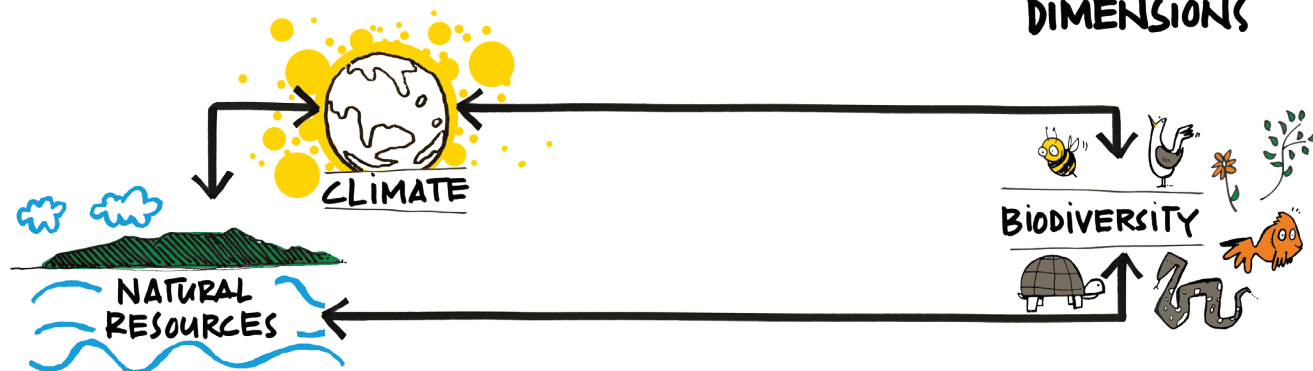
The climate is a parameter that determines key factors such as temperature, humidity and rainfall. A change in the climate leads to changes in these parameters and therefore the properties, location and even the disappearance of certain ecological niches for a given species. This is how climate change can have significant impacts on biodiversity. The gradual disappearance of the Great Barrier Reef off the coast of Australia is one of the most emblematic examples of the impact of climate change on biodiversity.

Biodiversity also has an impact on the climate, both on a local and a global scale. For example, by capturing atmospheric carbon, forests, wetlands, peat bogs and oceans contribute to limiting the greenhouse gas effect; this then, is why deforestation, wetland degradation, etc. have a negative impact on climate change.

Climate and natural resources

The climate also has a very strong influence on the availability of natural resources in space and time. For example, in France, the expected decrease in rainfall in summer, due to climate change, will probably make summer droughts worse in certain parts of the country.

Natural resources are also crucial for climate change, as is the way they are managed. The use of fossil fuels, which emit carbon, contributes to driving climate change. Using technologies that emit less carbon, such as electric cars or intermittent sources of electricity generation that are coupled with large batteries, requires exploiting new natural resources, such as lithium and cobalt, which are available in more or less limited quantities. These can also generate pollution and destroy ecosystems to the detriment of biodiversity and human societies, particularly in developing countries where such resources are found.

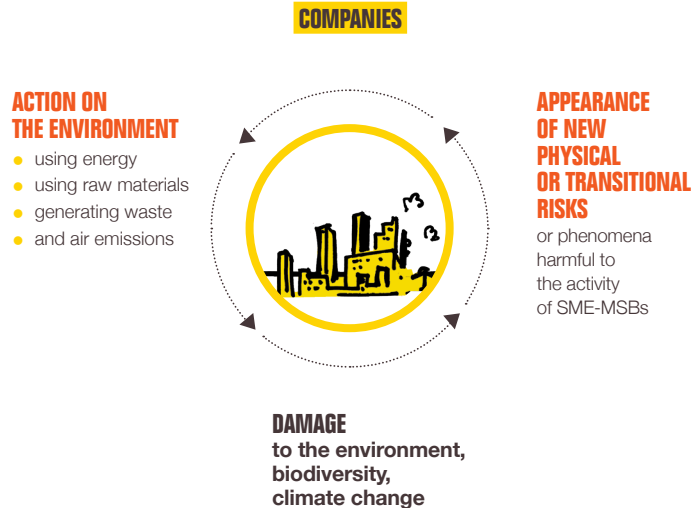


The environment and business

Interconnected impacts

Climate and the environment are becoming important issues for all companies, and no longer just in industries with high-carbon emissions or heavily regulated sectors.

We distinguish between two levels of impact: those on the environment linked to business activities and, conversely, those on business activities linked to changes in the environment.



Managers need to identify which of their business activities have an impact on the environment and climate. By nature, companies use multiple energy and raw material resources to offer products and services. Thus, they exert multiple pressures on the environment, by polluting, emitting carbon or generating waste.

In addition, the deterioration of climate and environmental conditions affects companies' economic activities, either by the emergence of new physical risks (heat waves, floods, etc.), or by transition risks (carbon tax, new environmental standards, etc.).

Consequently, reducing one's ecological footprint is as much about corporate environmental responsibility as it is a question of long-term economic pragmatism for company managers. Let us look at the example of the French Constitutional Council's decision of January 2020, which decreed that environmental protection could justify infringements on the freedom of enterprise.



Covid-19

and its connection with environmental damage

Before becoming a global pandemic threatening a huge number of human lives, Covid-19 was, according to our current level of knowledge, a virus that started in wild animal species.

It should be pointed out that 75% of emerging diseases⁽¹⁾ are zoonoses, i.e. diseases of animal origin. Nearly three-quarters of zoonoses originate in wild animals⁽²⁾. Their rate of occurrence has continued to increase since 1940 due to the increased contact between wildlife and humans and domestic animals, the loss of biodiversity (which normally acts as a “filter”), and even climate change in some cases. Covid-19 appears to be an illustration of this, since it is thought to be the combination of two different viruses from a species of bats and a species of pangolin. It was apparently transmitted to humans in a market where live animals were on sale.

The Covid-19 pandemic is not a new phenomenon. Indeed, diseases such as Ebola or Severe Acute Respiratory Syndrome (SARS) are similar examples. Originally developed in wild animals, Ebola was spread through the bushmeat trade, whereas the SARS outbreak, a coronavirus like Covid-19, originated in bats and their close proximity to humans.

While zoonoses are nothing new, what is new is the frequency at which these diseases are transmitted to humans. There are several reasons for this:

- inhabited areas are getting closer to areas of virgin forest due to deforestation. Normally, an ecosystem is supposed to be self-regulating. When one animal species develops a new virus, enough other species are contaminated to create immunity that limits transmission to humans. The increasing pressure which humans are placing on biodiversity, via economic activity, agriculture or urbanisation, is eliminating these intermediate species and bringing humans ever closer to wild species. For example, 100 million hectares of tropical forest were cut down between 1980 and 2000 and 85% of the wetlands have been removed since the beginning of the industrial era. With the destruction of forests, villagers on the edge of deforestation send potentially contaminated meat to large cities, thus spreading the new viruses;
- eating and exporting wild animals (snakes, bats, pangolins, etc.), creates a direct link between virus-generating species and humans. The presence of infected wildlife in markets alongside livestock or poultry breaks the species barrier, as was the case with SARS and as appears to be the case with Covid-19.

As such, the COP 15 of the Convention on Biological Diversity (CBD) in China at the end of 2020 could be an opportunity to negotiate a global agreement on protecting animals, not only to conserve rich biodiversity, but also to protect humans.

⁽¹⁾ Emerging diseases are those that appear in a population or that once existed but are now increasing in incidence or geographical extent. Examples include HIV, Ebola, Bird flu and Creutzfeldt-Jakob (Mad Cow) disease.

⁽²⁾ United Nations Environment Programme (UNEP), *UNEP Frontiers 2016 Report: Emerging Issues of Environmental Concern*, 2016.

Climate change, an aggravating factor in new emerging infections and virus propagation

Like seasonal flu, Covid-19 could be a phenomenon destined to return repetitively over time, in line with the seasons. While nothing is yet certain about the link between Covid-19 and climate change, results for other emerging viruses point to a significant link. Climate change is likely to increase the impact of epidemics in the future.

In particular, with rising average temperatures, climate change would increase the incidence of Crimean-Congo haemorrhagic fever, as well as the life of the Zika virus. The latter is transmitted by a mosquito living in subtropical and temperate zones.

Countries that were previously protected from viruses by their climate may now be able to sustain the conditions for the viruses to spread. We are therefore simultaneously seeing a lengthening of the duration of epidemics and an increase in their frequency in several countries around the world.

For example, in 2019, a scientific journal showed that the rise in global temperatures could result in certain mosquitoes, such as the tiger mosquito carrying yellow fever or chikungunya in particular, moving to northern countries, and even as far as Alaska⁽¹⁾.

Another consequence of global warming is the melting of ice caps, and notably the thawing of the permafrost layer, which could lose up to 70% of its surface area by 2100, according to the IPCC. This layer of ice contains organic matter, carbon, but also virions, viral particles that are to viruses what seeds are to plants. In 2014, a team of researchers led by Chantal Abergel and Jean-Michel Claverie, demonstrated that it was possible to reactivate two giant 30,000-year-old viruses⁽¹⁾ that are harmless to humans. This discovery suggests that known viruses and microbes which have disappeared from the surface could start to re-circulate if rising temperatures thaw the deepest layers.

Thus, diseases such as smallpox, which was present in Siberia in the 19th century, or older viruses against which we have no immunity, could also be released. Anthrax is one such example: a child in the Yamal Peninsula of Siberia died in August 2016, after the corpse of a 70-year-old (sic) reindeer infected with this bacterium thawed⁽²⁾.

⁽¹⁾ Sadie, J. Ryan et al, "Global expansion and redistribution of Aedes-borne virus transmission risk with climate change", *PLOS Neglected Tropical Diseases*, vol. 13, No. 3, 2019.

⁽¹⁾ Julien Bourdet, "Le mystère des virus géants", *CNRS Le Journal*, 2014.

⁽²⁾ Hortense Chauvin, "Pandémie de Covid-19 : la première d'une longue liste en raison du dérèglement climatique ?" *Actu Environnement*, March 2020.

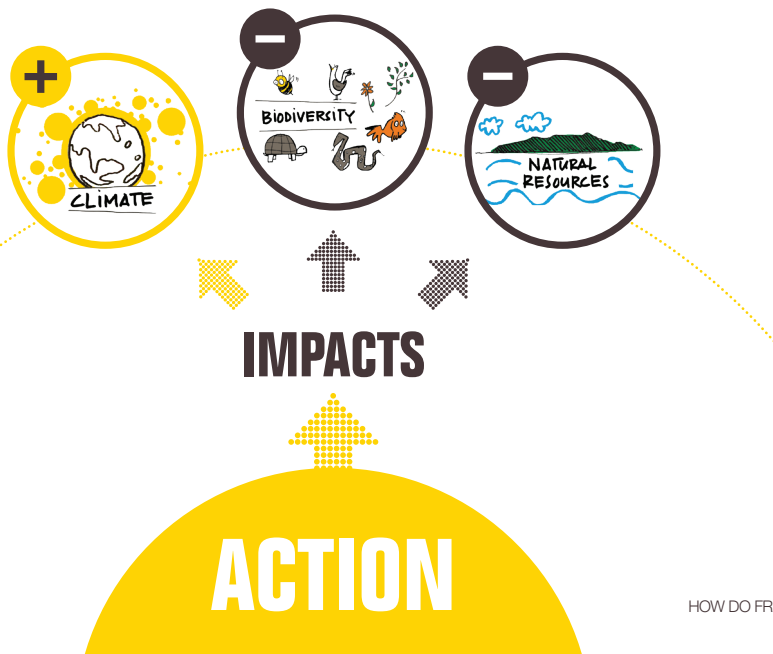
Complex challenges

The paradoxes of wanting to do the right thing

Companies must therefore take into consideration three environmental dimensions (climate, biodiversity and natural resources) in their activities. The difficulty with this approach is that there are no ready-made solutions or simple answers. And wanting to act positively on one dimension can generate negative impacts on another.

HAVING A POSITIVE EFFECT ON ONE DIMENSION

may create negative effects on the others



The example of plastic substitution



Replacing plastic in single-use packaging with other materials, such as glass (86% of which is recycled in France), would reduce pollution and impacts on biodiversity by limiting waste on land and in the oceans, as well as the use of oil in plastics manufacturing.

But this substitution is not without its problems, particularly when it comes to distribution to private individuals. Indeed, existing alternatives can lead to an increase in CO₂ emissions in freight transport if, for example, plastic was replaced with glass, which is heavier and therefore requires more fuel for the same distance. Increased demand for glass would also require increased use of sand, which is a non-renewable natural resource. Only a local glass deposit system can improve the carbon footprint of glass. Finally, from a health point of view, questions also remain about bulk bins and all-paper containers, which are not "food-safe" approved. Consequently, a "good" solution for biodiversity, may not be as good for the climate or natural resources.

A manager speaks

“Today, all our customers are asking for glass bottles, glass jars; yet manufacturers have long since proven that the carbon footprint for glass is terrible compared to that of plastic, especially because of its transportation.”

Pascale Cartier, CEO of *La Vie Saine*,
A chain of organic supermarkets
Turnover: €23M

The example of tomato production

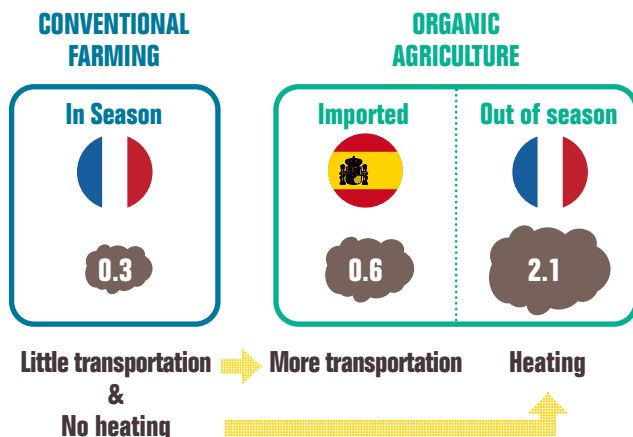


In France, the market for organic food is experiencing double-digit annual growth rate and accounts for 5% of household food consumption. But despite having significant environmental and health benefits, buying “all organic all the time,” can have a negative impact on the climate if such produce is imported or grown out of season.

As a result, the carbon footprint of an organic tomato, grown in France but out of season, is seven times higher than a seasonal tomato, due to the highly energy-intensive heating of greenhouses⁽¹⁾.

• CARBON FOOTPRINT OF 1 KG OF TOMATOES, BY PRODUCTION METHOD

(kg of CO₂ equivalent per kg of tomatoes)



⁽¹⁾ Bpifrance Le Lab according to the Ademe [French Environment & Energy Management Agency] Carbon Database.

The example of fossil fuel substitution



Research work and numerous projects are trying to replace fossil fuels with electrical power and renewable energies, such as wind and solar power. While such reasoning is understandable, green power, whether solar, hydroelectric, wind or geothermal, may sometimes have a life cycle that is anything but environmentally friendly.

As an example, although 90% of the materials from a dismantled wind turbine can be recycled, the remaining 10%, blades up to 160 metres in length, are currently very difficult to recycle because their composite materials (glass and carbon fibre, electronics, etc.) do not allow for efficient separation. They therefore usually end up as landfill.

Complex challenges which should not, however, block virtuous measures

We could list many examples of the paradox of wanting to do the right thing. The objective is to recognise and illustrate the complex issues that companies face when considering climate and environmental issues. This is not to say, however, that this complexity should stop companies from acting. It must be integrated and accepted by SME-MSB managers. In terms of the climate, other types of impact should not be overlooked when searching for the most appropriate solutions.

QUESTIONS TO...



Sophie Chénel

Manager of Procédés Chénel International

- Business: Paper architecture
- 20 employees
- 2019 Turnover: €3M
- Region: Île-de-France

**“I believe the emergency lies
in doing things differently”**

When we think paper, we think of recycling, how does that work with your composite paper?

It is made of polyester, cellulose and glass fibre and is therefore not recyclable, unless you invest in a factory capable of re-dispersing the fibres. There is one French company which does that very well. They have a factory in Italy, but that required a budget of around €50 million to build it. We don't have that kind of budget. So, we have to find an industrial partner.

What is the problem for you? Is it a process issue?

I've talked a lot, I've talked a lot about my life, I've asked for a lot of help. And, in fact, today, if I had one request, it would be this: that we can find industrial units capable of recycling. Because we cannot do this without industrial support or sharing information. Today, everyone takes pride in saying: "Look, I have designed a product from recycled textiles." or "Hey, I have a recycled product designed using plastic caps found on Senegalese beaches." But when you ask what tools were used to achieve that, they reply "My tools are confidential." It's very unfortunate that this is the way the economy is organised today: you don't share, and you defend your turf. I believe the emergency is in doing things differently. For example, one industrial unit could inspire another, which would act differently if there was a local target market.

Is recycling something you have been thinking about for a long time?

We've been looking for a solution for years. It's hard not to be convinced that we have to do something different today. But customer-driven demand (luxury key accounts) is recent. For example, L'Oréal has only recently switched to non-plastic packaging. It's generational. And now I am urgently looking for a way to recycle my product. And now, we know how to do it.

What solution did you find in the end?

A manufacturer in the Czech Republic is able to recycle one hundred percent of our waste. And not just once, because there is no chemistry involved. And this manufacturer is very concerned about transparency.

Previously, to recover the aluminium they used incineration. Then, when the country joined the European Union, they were told: "Incineration is no longer permitted", so they thought: "Now, that's a problem for us. What can we do?" And so, this restriction became a worldwide patent whereby, quite simply, they shred everything, then use hot-presses to make extraordinary sheets which they resell to the construction industry.

How did you hear about them?

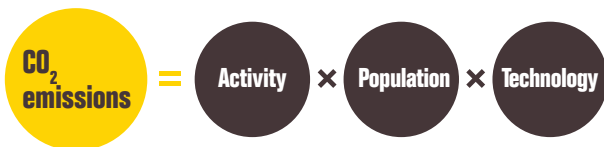
Through our ecosystem. There are material libraries that collect things and keep us informed. But we needed to do a lot of testing before we found the right solution. Now we are very happy. The second phase will now be to develop it in France, because I would really like to work with a French company.

Carbon emissions

Three types of levers to reduce them

In general, environmental impacts and more specifically carbon emissions are the product of three main factors.

The Kaya identity, (developed by the Japanese economist of the same name in the 1990s to shed light on the debates on the challenges of reducing carbon emissions), highlights the major factors that contribute to CO₂ emissions. Below, we present a simplified version⁽¹⁾.



Activity: This is an action, such as a journey, consuming a resource, manufacturing, consumption, etc. It may represent a vital need (feeding oneself) or a convenience (lighting). There is a strong correlation with one's standard of living

Population: The volume of activity matters. The same activity, if performed by one person or several million (such as driving a car or streaming a film), will not have the same overall consequences in terms of CO₂ emissions.

Technology: In the broadest sense, this is the technical method used to perform the activity. If you want to eat a tomato ("food" activity), this may be grown locally or come from far away; it can be in season or grown in a greenhouse, etc. Every technology has a different level of carbon emissions for the same activity.

Therefore, contrary to popular belief, technology is not the only possible answer to solve climate issues.

Reducing the carbon footprint involves behaviour and lifestyle, consumer choices, political choices, scientific knowledge, available technologies and the costs of their implementation.

More generally, this equation works for the three dimensions already mentioned: climate, biodiversity and natural resources. The specific measurements to be taken for each lever may vary depending on the dimension you wish to preserve.

Example: travel



If I want to reduce transport-related CO₂ emissions, I can:

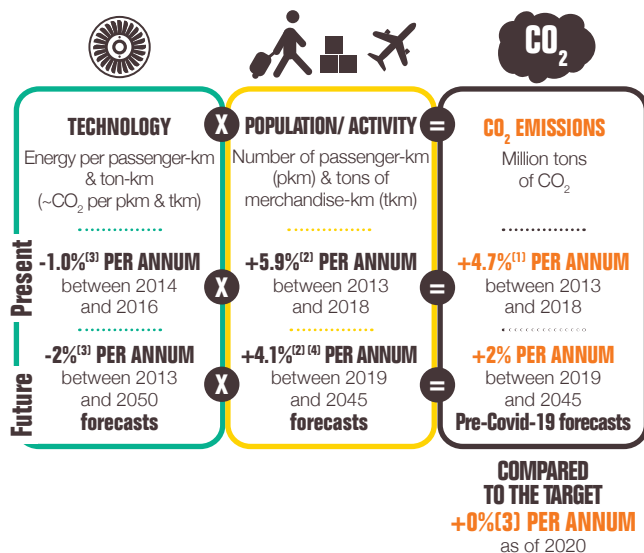
- **activity:** reduce the distance travelled or eliminate non-essential travel;
- **population:** limit the number of people who need to travel each day (e.g. telework, relocation, videoconferencing) or maximise the use of public transport;
- **technology:** use less carbon-emitting technology: cycling, walking, biogas-powered buses, etc.

⁽¹⁾ **Bpifrance Le Lab** according to Jean-Yves Wilmotte, "Le défi mondial : résoudre l'équation de Kaya", *Carbone 4*, 26 June 2013 and MIT "The IPAT equation", 2008.

The air travel conundrum

The air transport sector is a good illustration of the issues behind these different levers. Despite significant gains in energy efficiency, aviation carbon emissions were increasing by 4.7% per annum⁽¹⁾ and are expected to continue to rise by 2% per annum by 2045 (**data pre-dating the Covid-19 crisis**). The sector therefore faced a major challenge to stabilise its CO₂ emissions as of 2020, not counting the effects of the pandemic. So, since disruptive technologies are unlikely to mature before 2050, other short-term levers will be needed.

• SIMPLIFIED KAYA IDENTITY APPLIED TO THE AVIATION SECTOR



⁽¹⁾ Brandon Graver, Kevin Zhang, and Dan Rutherford, "CO₂ emissions from commercial aviation", *ICCT Working Paper*, September 2019.

⁽²⁾ International Civil Aviation Organisation (ICAO), Presentation of 2018 Air Transport Statistical Results.

⁽³⁾ International Energy Agency, "Tracking Transport - Aviation", May 2019.

⁽⁴⁾ ICAO, *Long-Term Traffic Forecasts Passenger and Cargo*, July 2016.

Reducing CO₂ emissions currently involves improving energy efficiency and offsetting measures

Improvements in aircraft fuel efficiency, thanks to new aircraft models and optimised flights, have made it possible to reduce fuel consumption for each kilometer travelled per passenger or per ton of freight by more than 40% since 2000⁽³⁾. Increased aircraft load factors have also contributed to this⁽³⁾. More recently, airlines have committed to offset all or part of their carbon emissions. This solution is the subject of debate and the general consensus is that CO₂ emissions must first and foremost be reduced at their source.

The electrification of aircraft seems unlikely before 2035 and then only for small models^{(5) (6)} because of technical barriers and projects that have been suspended⁽⁷⁾. Similarly, a hydrogen-powered aircraft is not expected to be available before 2035⁽⁶⁾. Use of biofuels also remains very marginal⁽⁹⁾. The question of how to stop the growth of carbon emissions from 2020 onwards therefore arises in the short and medium term. The Kaya identity suggests other types of less consensual solutions: introducing a tax on kerosene could quadruple the price of a plane ticket⁽⁶⁾, thereby excluding a large part of the population from this mode of transport. Or, more radical solutions, such as banning the use of aircraft, particularly for domestic flights. The debate remains open and clearly no solution would appear simple to implement.

⁽⁵⁾ Marie Maurisse, "L'avion électrique d'EasyJet est loin de décoller," *Le Temps*, 11 April 2019.

⁽⁶⁾ Julian Allwood, "The only way to hit net zero by 2050 is to stop flying," *Financial Times*, 7 February 2020.

⁽⁷⁾ David Kaminski-Morrow, "Airbus and Rolls-Royce made the joint decision to bring the E-Fan X demonstrator to an end in April 2020", *Flight Global*, 24 April 2020.

⁽⁸⁾ [French] Ministry of the Economy and Finances, Plan to support the aviation sector, June 2020.

02.

**WHAT DO
MANAGERS
THINK...**

**...
ABOUT
THE CLIMATE?**

Climate and the environment for company managers

Multiple opinions ⁽¹⁾...

1 An important issue in the eyes of managers

“ Every little gesture counts, we are all concerned. “I am the first to take action” must be the motto for each and every one of us. ”

Manager of company leasing public works vehicles
Turnover: between €2M and 5M

“ It is important to build strong awareness among companies of the real changes to be made in order to adapt, without resorting to greenwashing. ”

Manager, Packaging industry
Turnover: between €2M and 5M

2 Motivated and committed managers

“ [As I am] very concerned about environmental issues, I wanted to include this dimension in our various shops. Environmental responsibility should not stop at the point of sale. We are constantly looking for solutions to reduce our energy use and our impact on the environment. ”

Manager, Chain of opticians
Turnover: between €5M and 10M

“ I think that there are now effective ways of thinking about this, but our focus in projects should be on stakeholders. Being at the end of the value chain, we are limited in our actions and our resources, but there are still things we can do, if there is an interest and a momentum for change. This problem is above all a problem of general awareness for the individual and not just for companies. ”

Manager, Complex machine tool parts
Turnover: between €2M and 5M

⁽¹⁾ All these quotes are taken from the questionnaires we collected. This is also the case for the other quotes in the rest of the study, except the ones where the respondent is explicitly named.

3 But also the willingness to act is hampered by the economic situation

“ An SME is first and foremost concerned with its order books, customer satisfaction and financial health. We do not have the resources to implement an extremely proactive environmental policy apart from adapting to changes, meeting our customers' needs in this area and remaining vigilant when faced with new opportunities. ”

Manager, Joinery work
Turnover: between €2M and 5M

4 A small number of climate-sceptic managers in the sample

“ I don't think that climate change is related to human activity, but rather that we are in a cycle that the Earth has already gone through in the past. ”

Manager, Mechanical and electronic engineering design firm
Turnover: between €5M and 10M

“ Although I am a great advocate of the ecological approach, I am not sure that it is human activity that is causing global warming. Nevertheless, I think we must all make an effort to reduce pollution significantly. ”

Manager, Close-circuit TV system
Turnover: between €2M and 5M

5 Changing behaviour is a solution for some

“ The best way to save energy is not to use it, but every type of energy is necessary for economic development in our society. It will be essential, if difficult to accept, that we change our individual and collective consumption patterns worldwide, in order to reduce our impact on biodiversity and other consequences of climate change. ”

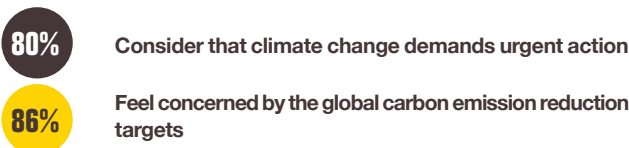
Manager, Wholesale trade of petroleum products
Turnover: between €100M and €200M



The climate is indeed an emergency

with subtle nuances depending on the manager's motivations

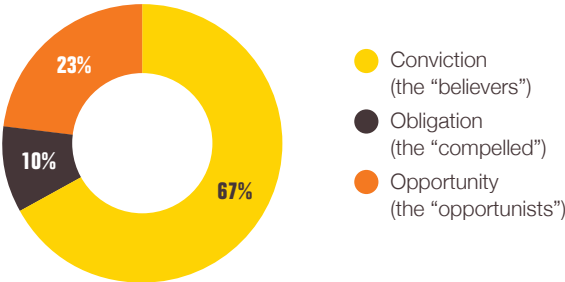
Our survey shows that SME-MSB managers are fully aware of the importance of climate issues



However, sensitivity to the subject varies depending on the type of reason. In fact, we asked managers about their main reason for adapting their companies to climate and environmental challenges. 67% told us that they are doing it or will do it out of conviction (in this document we will now call them the **“believers”**), 23% said they saw it as a business opportunity (these are the **“opportunists”**) and 10% are acting under obligation (these are the **“compelled”**).

MAIN REASONS FOR ADAPTING THE COMPANY TO THE CHALLENGES OF CLIMATE AND ENVIRONMENTAL CHANGES

(by % of respondents)



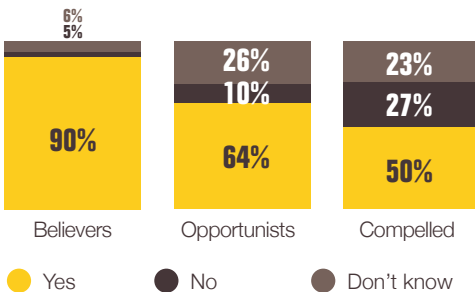
Source: **Bpifrance Le Lab**, “Business climate, or climate business?” survey, 1,006 responses used.

The level of conviction does not depend on the size of the company, the dynamics of the business, or the type of manager.

It should be noted that 90% of “believer” managers consider that climate change requires urgent action, compared to 64% of “opportunists” and only 50% of those who feel “compelled”.

SME-MSB MANAGERS CONSIDERING THAT CLIMATE CHANGE REQUIRES URGENT ACTION

(by % of respondents)



A manager speaks

“The subject is central to the future of humanity, but there is still a natural separation between professional and personal views! This is certainly wrong, and the two will have to be reconciled through widespread awareness, a broader regulatory framework, but also by making managers accountable, provided that we do not jeopardise our often-fragile economies.”

Manager, Digital sector
Turnover: between €10M and 20 M

Source: **Bpifrance Le Lab**, “Business climate, or climate business?” survey, 1,006 responses used.



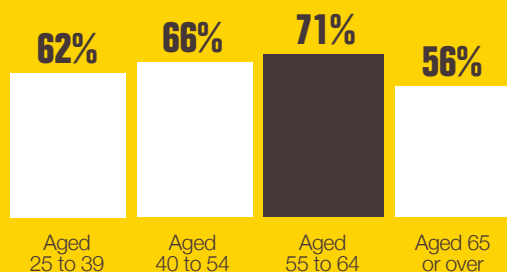
WHAT IS THE MOTIVATION TO ACT? AGE AND THE BUSINESS SECTOR ARE TWO DIFFERENTIATING FACTORS

Who are the “believer” managers, i.e., those who act out of conviction and not out of opportunism or an obligation to adapt their company to climate and environmental challenges?

Contrary to what one might think, the youngest entrepreneurs are not the ones who are most convinced. The largest share of “believers” is amongst the 55-64 age group:

71% of them act out of conviction, compared 62% of those under 40. The share of believers is the weakest among those over 65 (56%), who at the same time form the strongest group of those who feel “compelled” (20% compared to 10% in all the other age groups).

• SHARE OF “BELIEVER” SME-MSB MANAGERS, BY AGE GROUP (by % of respondents)

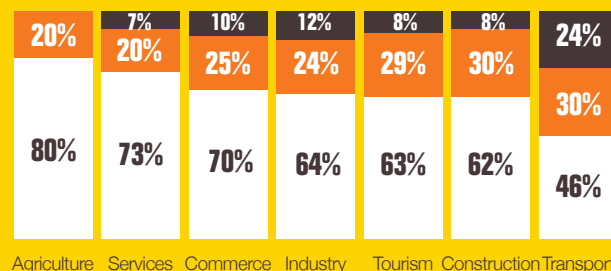


On the other hand, there are more “believers” in the agriculture and services sectors, with 80% and 73% respectively.

In contrast, the transport sector has the largest number of managers who would only adapt if compelled (24%), probably due to the already strict environmental regulations and the lack of economically viable technological alternatives in the short term.

Tourism, construction and transport have the largest share of managers who would make changes out of opportunism (around 30%).

• DISTRIBUTION, BY SECTOR, OF THE REASONS FOR SME-MSB MANAGERS TO ADAPT THEIR COMPANIES TO ENVIRONMENTAL ISSUES (by % of respondents)



- The obligated
- The opportunists
- The believers

Source: **Bpifrance Le Lab**, “Business climate, or climate business?” survey, 1,006 responses used.

An obvious concern but not linked to corporate strategy

While the climate is clearly perceived as an emergency for managers, the fact remains that in general, only:

51%

State that they have included climate issues in their corporate strategy (largely through investments and efficiency measures, as we will see below)

32%

State that they monitor climate issues internally

It therefore seems that they look at the climate emergency more as a “private individual” than a company manager. Moreover, 58% of the “believers” are including climate issues in the company’s strategy and 37% follow climate issues internally, compared to 30% and 16% respectively for those who feel “compelled”.

A manager speaks

“As a manufacturing company with 15 employees, the subject seems very complicated to address. Personally, I feel very concerned by the subject, and I would like to steer my company towards more virtuous practices. However, we are subject to very strong constraints and have limited resources. The measures implemented seem derisory to us, but we stick to them out of conviction.”

Manager, Manufacturing industry
Turnover: between €2M and 5 M

Source: **Bpifrance Le Lab**, “Business climate, or climate business?” survey, 1,006 responses used.

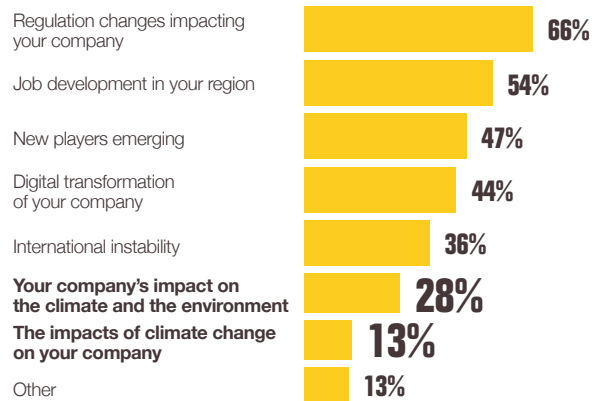
The climate exerts very little influence on the strategies of the companies surveyed, since these issues are at the very bottom of manager’s concerns (see graph below).

We also note that managers have not fully integrated the above-mentioned climate loop and/or have not yet experienced it too much. Indeed, managers mention the impact of climate change on their company half as often as the impact of their business on climate change (13% compared to 28% respectively).

Although SME-MSB managers are particularly concerned with combatting climate change, their concern⁽¹⁾ for their company, through everything that can have a more immediate impact on it (regulations, employment, etc.), “takes precedence” in what appears to be an irreconcilable choice between championing the environment and protecting their companies.

• ISSUES THAT HAVE THE GREATEST IMPACT ON THE CORPORATE STRATEGY OF SME-MSB MANAGERS, AFTER ECONOMIC ISSUES

(% of respondents, three responses listed in order of importance)



⁽¹⁾ Bruno Latour, “À quoi tenons-nous ?”, *Revue Projet*, January 2020.

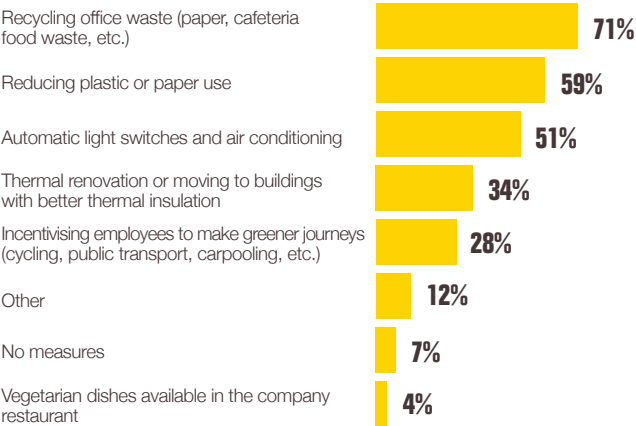
Few measures implemented

Energy efficiency prioritised

Since SME-MSB managers have difficulty making the connection between climate and strategy, they are slow to take action and when they do, the measures are often correlated with the implementation costs. Most respondents have implemented “small measures” such as recycling (71%) and reducing the use of plastic and paper (59%). These measures are fairly simple to carry out, can be implemented at little cost whatever the company size. More expensive measures, such as thermal renovation, for which the ROI is not obvious, still have a more marginal take up.

MEASURES APPLIED IN “COST CENTERS” TO REDUCE ENVIRONMENTAL IMPACT

(by % of respondents, multiple responses possible)

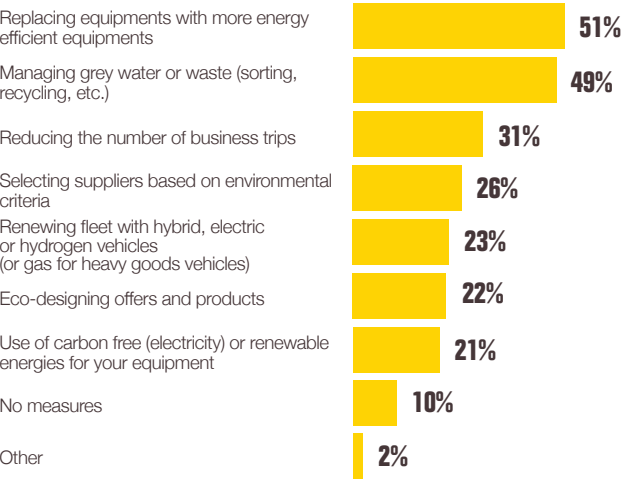


Source: **Bpifrance Le Lab**, “Business climate, or climate business?” survey, 1,006 responses used.

Managers are taking steps to comply with regulations and reduce operating costs. 51% percent are renewing their equipment for newer, less energy-consuming equipment, and 49% are managing grey water or waste. Conversely, practices with less tangible results, such as selecting suppliers on environmental criteria (26%), are relatively unseen among SME-MSBs.

MEASURES IMPLEMENTED IN “PROFIT CENTERS” TO REDUCE ENVIRONMENTAL IMPACT

(by % of respondents, many possible answers)



Source: **Bpifrance Le Lab**, “Business climate, or climate business?” survey, 1,006 responses used.

Actions are taken further by “believer” managers

The “believers”, i.e. those managers who would adapt their companies to climate issues out of conviction, differ from other managers in the type of measures implemented: they do more than the others.

There are few differences in the “usual” measures. For example, nearly half of SME-MSB managers are actively managing grey water and waste, which is often a result of regulatory obligations.

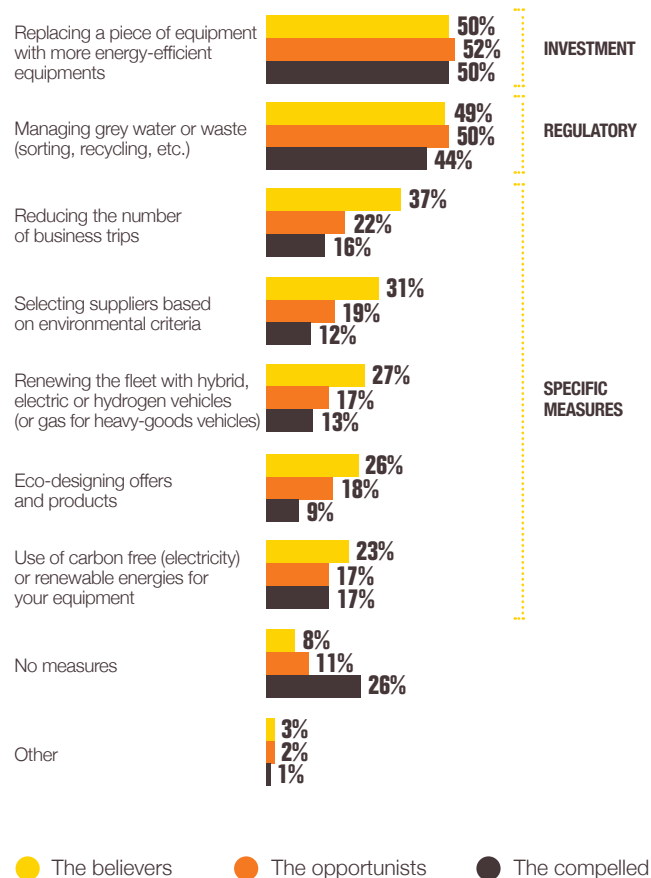
Similarly, half of the managers are replacing equipments with more energy efficient equipments, with no differentiation between the reasons. Return on investment is clearly positive and quickly visible.

The “believers” stand out when it comes to more specific measures, even though these are still rather limited. This is the case for reducing the number of business trips, selecting suppliers based on environmental criteria, renewing the vehicle fleet, using eco-design and carbon free energy.

We also noted that a quarter of the “compelled” do not implement any measures at all.

• MEASURES IMPLEMENTED IN PROFIT CENTERS

(by % of respondents, multiple responses possible)



Source: **Bpifrance Le Lab**, “Business climate, or climate business?” survey, 1,006 responses used.

Anticipating future measures

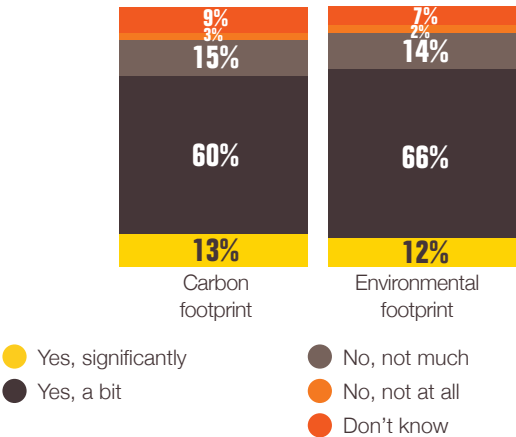
Ambitions remain limited

Looking ahead to the next five years, 60% of SME-MSB managers think they can reduce their carbon footprint “a little,” compared to only 13% who say they can do “a lot.” The same is true for the environmental footprint, where 66% said they could reduce it “somewhat” over the next five years.

This is a major challenge when we understand that in order to stay below an increase of 1.5°C, the world must reduce its carbon emissions by more than 6% per year by 2030⁽¹⁾.

This is a value equivalent to the impact that the Covid-19 crisis will have had in 2020⁽²⁾.

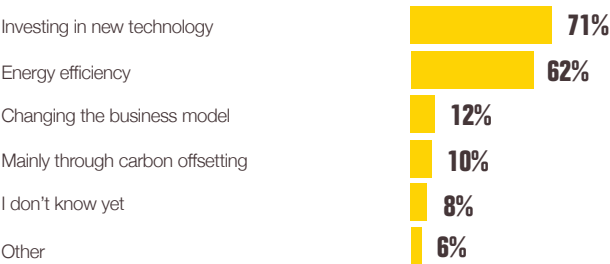
- ABILITY TO REDUCE THE CARBON AND ENVIRONMENTAL FOOTPRINT IN THE NEXT 5 YEARS**
(by % of respondents)



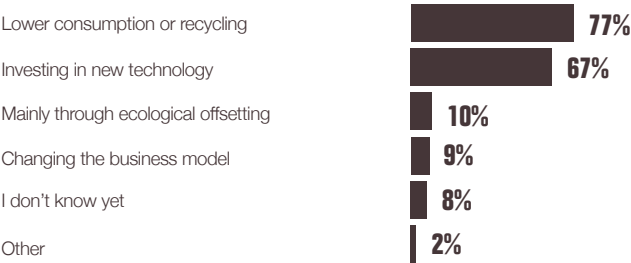
Source: **Bpifrance Le Lab**, “Business climate, or climate business?” survey, 1,006 responses used.

Another sign of these limited ambitions is that few managers see changing their business model as a potential lever to reduce their footprint (12% and 10% to reduce the carbon and environmental footprint respectively). The majority (around two thirds of respondents) are focusing on optimising the existing model with a certain economic return (energy efficiency, lower consumption), and on investing in new technology, as shown in the two graphs below.

- LEVERS TO REDUCE THE CARBON FOOTPRINT WITHIN 5 YEARS**
(by % of respondents, multiple responses possible)



- LEVERS TO REDUCE THE ENVIRONMENTAL FOOTPRINT WITHIN 5 YEARS**
(by % of respondents, multiple responses possible)



⁽¹⁾ UNEP, *Emissions Gap Report 2019*, 2019.

⁽²⁾ Corinne Le Quere, “Temporary reduction in daily global CO₂ emissions during the COVID-19 forced confinement,” *Nature Climate Change*, May 2020.

QUESTIONS TO...



Marie-Laurence Le Ray

Deputy Director of Ecodis

- Business: Design and distribution of eco-products
- 100 employees
- 2019 Turnover: €28M
- Region: Brittany (France)

“It would make no sense for us to have our products travel far afield, outside Europe!”

What concrete measures are you taking to help reduce your impact on the environment?

We are trying to implement as many things as possible as an SME. It's in the company's DNA, it's our *raison d'être*! The company designs and distributes ecological products with everything that this implies: long life, high quality materials (wood, paper, cotton), certifications, proximity, use of renewable supply sources.

Each employee undergoes an onboarding programme on arrival. We make them very aware.

But we are not looking for climate change activists either. This is a subject of discussion with our employees, but not a selection criterion when hiring. And overall, they are proud to work with us. We also try to encourage carpooling, soft mobility and we have a policy of totally recycling our waste.

Our products come from France or Europe (except for textiles which come from Turkey or India, but not China). We also focus on selling in France and Europe. It would make no sense for us to have our products travel far afield, outside Europe! We also take care to preserve our local know-how, local jobs and craftsmanship.

How do you measure and monitor your impact?

We have been measuring our carbon footprint since 2010. Our company is growing, so our overall CO₂ emissions are growing too. But over the last nine years, we have reduced the tonnage of our CO₂ emissions per ton of goods shipped by 17%. That is quite satisfying. We have introduced measures such as ensuring trucks are full when they leave, having fewer delivery points, and larger deliveries.

Finally, we offset one hundred percent of our CO₂ emissions by financing international projects (more energy-efficient cooking stoves in countries in the South, for example).

What are the levers and obstacles with regard to your actions?

We are looking for innovations (more local, less chemistry, etc.). Sometimes we invent something completely new, such as small organic cotton bags that are very thin and durable for carrying vegetables.

As for obstacles, we deliberately refuse to go after market share when it comes from too far away and has a negative impact on the planet. This is the case, for example, in the market for stainless steel thermos bottles, as they are only produced in China. Yet that would be a gigantic pocket of development for us. On the other hand, we have stainless steel straws manufactured in Europe by investing in a relocated company.

What would be your key message to SME managers today?

The more involved we become in these environmental and climate-friendly practices, the more we can learn from each other. At Ecodis, we are very vigilant about fair pricing. Our goal is to make our products accessible to as many people as possible. We're not highly-dependent on our suppliers; that's a strong point. We stock 1,300 products; we have 3,500 different customers and we do not work with hypermarkets and supermarkets. It's already a kind of resilience.

Each sector has its specific actions

Using a sectoral analysis, we get a clearer picture of the measures implemented and for example, can see how regulations or consumer expectations weight the results.

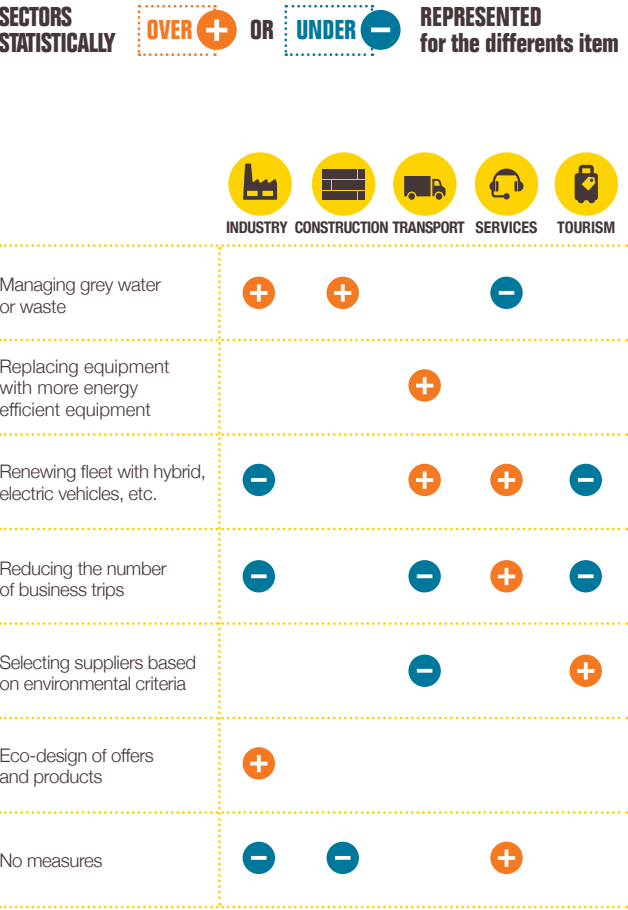
Industry and construction are over-represented among companies who actively manage grey water and waste. To some extent, regulation has as role to play. Industry is also over-represented in the eco-design of services and products: the innovative capacity of this sector is an important lever.

Logically, replacing a vehicle fleet with more efficient vehicles or ones with alternative engines are the two main levers of action for SME-MSBs in the transport sector. By its very nature, this sector is limited in reducing the number of business trips, even if it is possible to optimise the logistics chain.

Being less subject to environmental regulations, SME-MSBs in the service sector are trying to reduce the number of business trips and use alternative vehicles.

SME-MSBs in the tourism sector, which includes accommodation and catering, are over-represented among companies that select suppliers on environmental criteria. The change in consumer expectations in terms of traceability and transparency, towards more sustainable tourism, could explain this trend.

MEASURES IMPLEMENTED IN “PROFIT CENTERS” TO REDUCE ENVIRONMENTAL IMPACT PER SECTOR



Source: **Bpifrance Le Lab**, “Business climate, or climate business?” survey, 1,006 responses used.

Why are there so few actions?

Three main obstacles

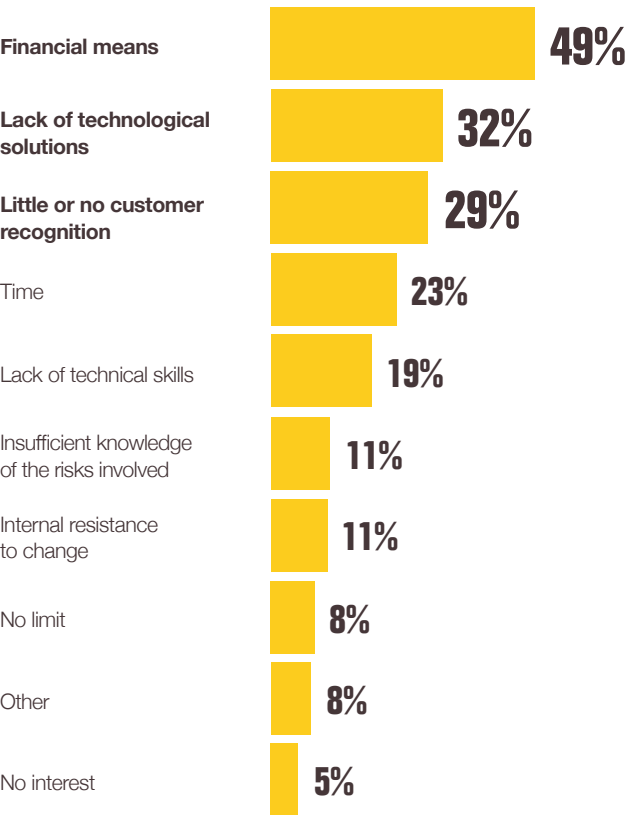
To clearly understand the differences between the principled position and actual measures, it is vital to look at the obstacles. The lack of financial resources is by far the main obstacle preventing SME-MSB managers from reducing their CO₂ emissions (for 49% of respondents).

The two other obstacles after a lack of financial resources are each mentioned by around 30% of managers:

- little or no customer recognition (mentioned by 29% of respondents): customers and consumers who would be interested in equivalent products or services that are better for the climate or the environment, are not prepared to pay much more (see interview with P. Moati, page 76 [sic]). Others are not necessarily interested in environmental criteria, regardless of whether the price is the same or different. Finally, any additional cost is an obstacle for part of the population, regardless of the carbon or environmental footprint of the product or service;
- The lack of technological solutions (mentioned by 32% of respondents): some managers have set themselves the goal of providing the same product or service, at an equivalent cost, but generating fewer carbon emissions thanks to innovative technology, but this is not always possible.

• OBSTACLES TO REDUCING CARBON EMISSIONS

(by % of respondents, maximum of 3 answers per respondent)



Source: **Bpifrance Le Lab**, “Business climate, or climate business?” survey, 1,006 responses used.

Public authorities on the front line to facilitate the transition

It therefore appears that SME-MSB managers are eagerly waiting on public authorities (in the broadest sense). They are looking for both financial incentives, in the form of subsidies/grants and tax relief, and regulations to level the playing field for all market players.

The lack of financial resources can occur in different situations: replacing machinery or tools that are more energy efficient and emit less carbon, replacing a fleet of vehicles, property renovation work, etc. As the link between economic activity and the climate is not clear enough for SME-MSBs, the trade-off between investing in order to achieve tangible results in the short term and a climate-related investment, with an uncertain and distant return on investment, means the latter option is viewed unfavourably.

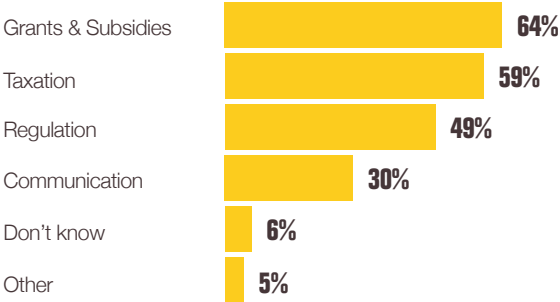
A manager speaks

“ In general, I am seeing that it is difficult for an SME to invest and put effort into development relating to these issues, while securing repeat business. I also find that it is difficult for SME's to access grants/subsidies (given the size of the companies and the time such applications take). ”

Manager, Construction sector
Turnover: between €5M and 10M

• TYPE OF SUPPORT EXPECTED FOR A CLIMATE AND ENVIRONMENTAL TRANSITION

(by % of respondents, multiple responses possible)



Two thirds of managers expect support from the State and ministries to assist them in the climate and environmental transition. More than a third also expect support from local authorities or the European Union.

• WHO SHOULD FIRST AND FOREMOST SUPPORT SME MANAGERS IN THE TRANSITION OVER THE NEXT 5 YEARS?

(by % of respondents, maximum three responses per respondent, only the three most popular are shown here)



Source: **Bpifrance Le Lab**, “Business climate, or climate business?” survey, 1,006 responses used.

Customers and consumers

Need to drive demand

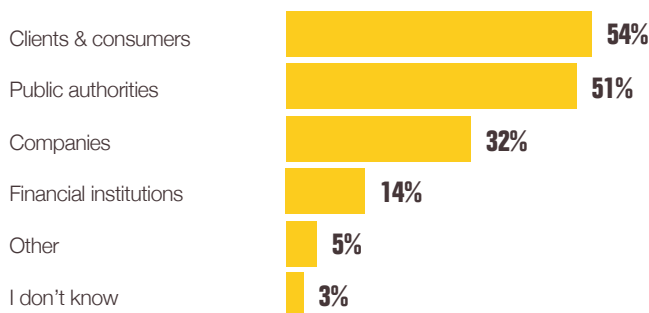
In addition, 54% of managers believe that urgent climate action and effort must primarily be driven by clients and consumers, both in B2C and B2B.

This data shows that managers are clearly expecting a growth in demand: are customers ready to pay more, if necessary? If this is not the case, the companies who would undertake climate friendly measures may end up being punished financially.

It is therefore reasonable to conclude that SMEs will not make a huge effort until customers and consumers are prepared to pay for the possible additional costs of factoring climate and environmental issues into their products and services.

• THE STAKEHOLDERS, IN THE EYES OF SME-MSB MANAGERS, WHO SHOULD BE DRIVING EFFORTS WITHIN THE FRAMEWORK OF THE CLIMATE EMERGENCY

(by % of respondents, 2 responses possible)



Source: **Bpifrance Le Lab**, "Business climate, or climate business?" survey, 1,006 responses used.

A manager speaks

“ Only consumers can make things change and we are all consumers. ”

Manager, Sustainable agricultural fertilisers
Turnover: between €10M and 20M

“ We are extremely dependent on weather and water conditions. We work in all the water courses of France and so are on the front line witnessing the effects of climate change. But before making a profound transformation, we have to find solutions to some obstacles. We can't solve the problems on our own. Project owners (especially public project owners) are looking for low prices. This limits major investments and additional costs. However, very few alternatives exist at similar costs to polluting items (especially for transport). ”

Manager, aquatic environment engineering design firm
Turnover: between €2M and 5M

Customers' lack of awareness had already been highlighted in a study on CSR (Corporate Social Responsibility) and suppliers⁽¹⁾. Despite the importance of CSR criteria in calls for tender and in the certifications required by public or private clients, suppliers do not manage to value CSR performance through prices. Our survey supports this point.

The lack of transparency on the evaluation criteria is also criticised. Any measure that goes beyond regulation or that does not have an immediate economic gain is therefore less obvious to implement.

⁽¹⁾ **Bpifrance**, PwC, Orse, "RSE: la parole aux fournisseurs !," *the CSR Observatory*, January 2020.

EXPERT OPINION

The customer's impact in B2C



Philippe Moati

Associate Professor of Economics
at the University of Paris-Diderot
Co-founder of Obsoco
Member of the **Bpifrance Le Lab**
Strategic Guidance Council

“Today, there is a desire to include the issue of responsibility into consumption, but the consumer speaks louder than the citizen.”

Are consumers willing to change their buying behaviours and participate in the ecological transition in this way?

You can sense that there is an inclination. Within the framework of our surveys, we have shown that the majority of French people would like to improve their consumer behaviour, whether it is a larger or smaller quantity than before. This proportion has significantly grown over the last five years, and there is a degree of dissatisfaction with the prevailing consumer spending model, with mass over-consumption.

Moreover, within the framework of another survey on what the French people see as being an ideal society, we showed that an ecological utopia won hands down. One cannot help but relate this result to the sharp rise in environmental awareness in France, particularly over the last two years. This awareness, related to the increased dramatization caused by increasing talk of collapse, incites us to act. Of course, in this case, we are talking about ideals, and aspirations, and actual behaviour is always a compromise between ideals and restrictions, but this shows that the ground is fertile. And the surprise is that wanting to enjoy such a utopia is not simply linked to fear of the effects of global warming or the environmental crisis. People are drawn to a more modest lifestyle and spending behaviour: short circuits, pooling and sharing, buying second-hand, making it yourself, etc., on top of a desire to slow down and refocus on our local area.

What does “better consuming” mean for the French people?

In general, it comes down to quality. On top, is the safety of what is bought, but just behind we find product durability (associated with condemning programmed obsolescence), respect for the environmental and stakeholders, as well as local production. Consumers are particularly responsive to offers that include both an individual and a collective benefit. This is typically the case with second-hand purchases, where saving money is complemented by the satisfaction of having spared natural resources. The same goes for purchasing capital goods.

In practice, does this desire to “better consuming” translate into accepting to pay more for products or services that are more climate or environmentally friendly?

If the desire for quality is to be matched by action, consumers must be given credible information about quality that commits them to accept to pay a higher price. However, much remains to be done in this area. The success of the “Red Label” in the food sector should convince us of how committing ourselves to quality objectives can reap rewards.

More problematic is the willingness to pay more for a product that only offer benefits in terms of responsibility (without any direct consumer benefits). Today, there is a desire to include the issue of responsibility into consumption, but the consumer speaks louder than the citizen. The price premium must stay very low, at the risk of only reaching the small fraction of consumers who are most at odds with the dominant consumption model. But these people, who view their consumption as a quasi-political act, are becoming increasingly numerous.

What are the implications of this emerging consumption momentum for SME-MSB managers?

Companies can take something from this. I would give managers the following advice: work on building a link between the responsibility aspect and consumer benefits. The willingness to pay is there, but I think that it's about offering them a win-win situation: providing both a consumer benefit and a collective benefit for society. We all want to do something, but we don't want to commit hara-kiri. And if we want to validate such an approach to moving our products upmarket, we have to put in the effort to point out the quality.

Moreover, when you are a SME, you don't need to run a mass-market campaign, so there are opportunities to be seized. Consumers are all profoundly different, and I think that today those who are in favour of meaningful and responsible consumption, are not just activists. We are no longer dealing solely with a niche market. This does not, however, do away with having an effective marketing approach, knowing how to create a sales argument and having products that nonetheless meet customers' expectations.

I think that's what we have to remember: if we only focus on responsibility, the sacrifices must not be huge and it must be offset by a kind of personal gratification, the feeling of contributing to the common good... There's always a reward!



QUESTIONS TO...



Jean-Marc Chalot

Chairman of Pharmatis

- Business: Health Sector
- 260 employees
- 2019 Turnover: €42M
- Region: Hauts-de-France

“We are still very dependent
on our clients.”

Do you feel that the company is committed to climate and environmental issues?

For an SME like us, our major focus is on environmental and energy saving issues.

Pharmatis is a pioneer in this field, as it has been ISO 14001 certified since 1998, in other words, for over 20 years! And we have built awareness with our staff by being certified for environmental protection and compliance. However, when it is purely and simply a question of production, it becomes quite complicated: we are still very dependent on our clients, because we are a subcontractor.

Is the customer your main obstacle?

My biggest obstacle is indeed our clients (laboratories). They decide if I can or should change the packaging. They set the manufacturing process and the type of packaging. We can only suggest other formats, cheaper materials for example. Other than boxes, our (primary) packaging cannot be recycled because it is multi-layered. Similarly, developing new packaging that can be recycled is potentially time consuming and costly. To change the size or type of material, we need to conduct biocompatibility and stability studies. It can take up to two years of work to obtain approval. Then, we have to submit the administrative application for the Marketing Authorisations, which can take more or less time to obtain depending on the country. In fact, clients only take interest for a new product, a change of form (such as from a vial to a stick), or a new formulation. They want us to design a new, highly innovative product rather than modify an old one.

According to “believer” managers

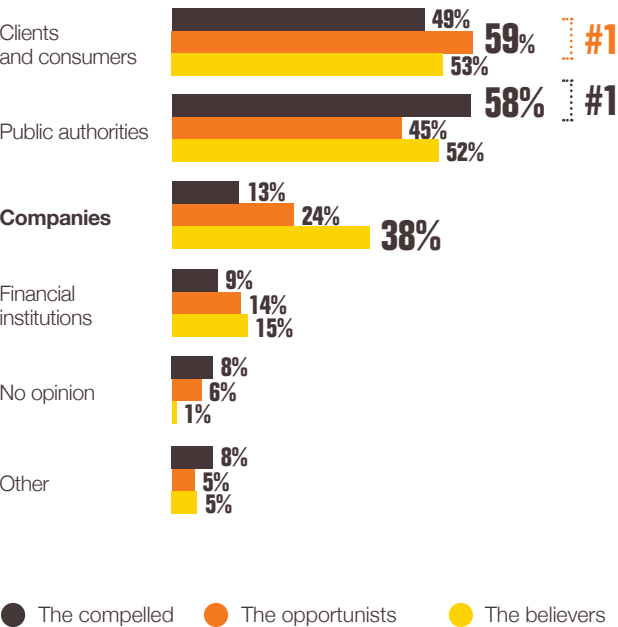
the company is a more active stakeholder when dealing with the climate emergency

Even if “believers” consider that clients and consumers should be the first to drive efforts in terms of the climate emergency, they, more than other managers, consider that the company has a major role to play in responding to this emergency. This is the case for 38% of them, or three times as many as the “compelled” (13%) and 14 points more than the “opportunists” (24%).

“Opportunist” managers rely on the demand lever more than the other two profiles. They are notable for the primary importance they give to customers and consumers (59%), which should make it possible to create new “climate-compatible” markets.

As for “compelled” managers, they put the emphasis on public authority action regarding the climate emergency (58%). Indeed, there are managers who are in a difficult situation for structural reasons, because their business sector limits their scope of action by its very nature (transport, for example). There are also managers for whom the climate is not an issue. In both cases, public authority action makes sense, both to support SME-MSBs in difficult circumstances and to regulate companies that would otherwise drag their heels when considering any climate transition.

• **STAKEHOLDERS WHO SHOULD LEAD THE WAY IN TERMS OF THE CLIMATE EMERGENCY - BY MOTIVATION TYPE**
(by % of respondents, two possible answers)



Source: **Bpifrance Le Lab**, “Business climate, or climate business?” survey, 1,006 responses used.

Source: **Bpifrance Le Lab**, “Business climate, or climate business?” survey, 1,006 responses used.

Is technology the answer to everything?

Managers are expecting a lot from it

Technological innovation seems to be key for many managers when addressing the climate and environmental emergency. In the absence of available solutions, it seems understandable that this is one of the first obstacles identified by SME-MSB managers.

A strong technophile trend is indeed emerging from our respondents. A large majority (59%) of managers see science and technology as “the” solution to these issues, despite the lack of current available solutions. It is worth noting that younger managers are the least likely to choose technology as the sole solution. Only 5% said they “strongly agree”, three times fewer than managers aged 65 and over.

The role of technological progress regularly comes up in discussions as an inevitable way of addressing key societal issues such as mobility, access to information, etc. The climate doesn’t escape this. We often hear that technology will solve climate and environmental issues. Our survey confirms this from the point of view of SME-MSB managers.

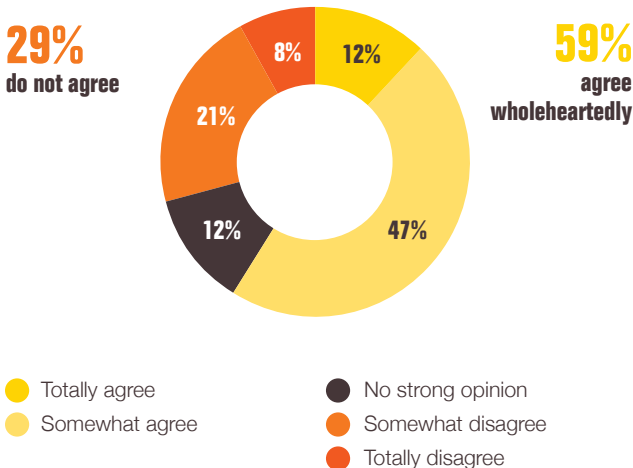
A manager speaks

“Most of our carbon emissions come from our refrigerated delivery trucks and cars. No solution exists to replace this under the [current] conditions of use.”

Manager, Food Trade
Turnover: between €20M and 50M

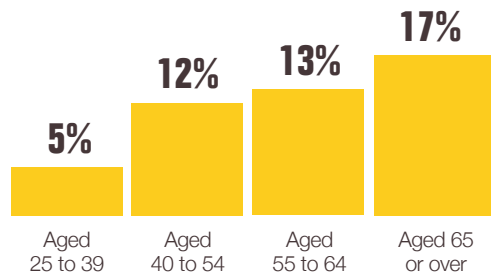
• SCIENCE AND TECHNOLOGY ARE “THE” SOLUTION TO CLIMATE AND ENVIRONMENTAL PROBLEMS

(by % of respondents)



• SHARE OF SME-MSB MANAGERS WHO “TOTALLY AGREE” BY AGE GROUP

(by % of respondents)

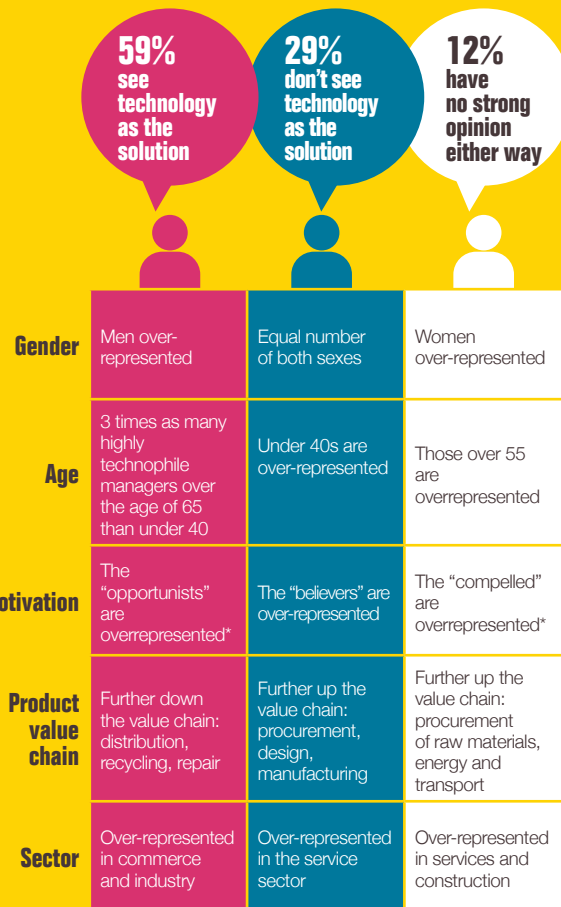


Source: Bpifrance Le Lab, “Business climate, or climate business?” survey, 1,006 responses used.



BETTER UNDERSTANDING MANAGERS AND THEIR RELATIONSHIP WITH TECHNOLOGY

Although technology is perceived by a majority of SME-MSB managers as the solution to climate and environmental issues, it is useful to dig deeper in order to identify factors that may explain this belief or conviction. Certain criteria provide a more nuanced picture of this issue, such as business sector or age. It is also interesting to look at the company's position in the value chain.



Source: **Bpifrance Le Lab**, "Business climate, or climate business?" survey, 1,006 responses used.

The managers who seem the furthest away from the constraints of processing and procurement, technical centers, and centers for the production of goods or services, are more numerous in considering technology as a solution. For example, only 29% of managers from the raw material or energy supply chains are waiting for “the” technological innovation solution, compared to 82% of managers from the repair sector.

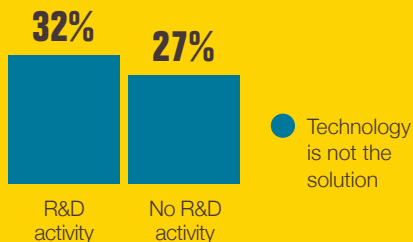
Are those who are most technology-friendly like this because they are less aware of the technological limits to action? It is difficult to say for sure.

A possible answer might also be found in R&D. Companies that have R&D activities are slightly more likely to look for the solution to climate issues elsewhere than in technology.

This observation could be explained by the fact that these companies are aware of the technological limits in terms of maturity, costs and time to disseminate them on a large scale⁽¹⁾.

• THE POSITION OF MANAGERS WITH REGARD TO TECHNOLOGY, DEPENDING ON WHETHER OR NOT THEY CONDUCT R&D ACTIVITIES IN THEIR COMPANY

(by % of respondents)

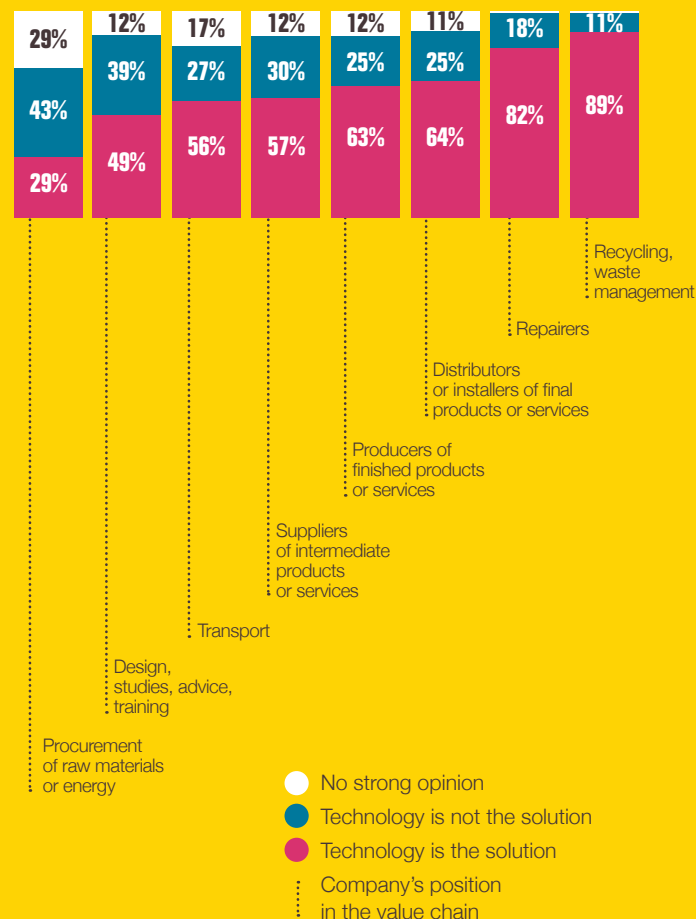


⁽¹⁾ With the exception of recycling, which is a sector that is increasingly calling on technological solutions to meet to the great diversity of products and materials to be recycled (physical, chemical, biological solutions, etc.) and to obtain better quality at the end of the recycling process.

Source: **Bpifrance Le Lab**, “Business climate, or climate business?” survey, 1,006 responses used.

• MANAGERS APPROACH TO TECHNOLOGY AS A SOLUTION FOR THE CLIMATE AND THE ENVIRONMENT ACCORDING TO THEIR POSITION IN THE VALUE CHAIN

(by % of respondents)



Source: **Bpifrance Le Lab**, “Business climate, or climate business?” survey, 1,006 responses used.

Technology could indeed provide part of the answer to the climate and environmental emergency, but there is currently little appetite for investment.

+ 50%

Total global investment in the energy field would need to increase by 50% to meet the 1.5°C target (i.e. \$830 billion per year)⁽¹⁾⁽²⁾. At the same time, the share of fossil fuels in the energy mix must be reduced.

x 6

Also on a global level, annual investments in low-carbon technologies and energy efficiency in all economic sectors must be increased six-fold by 2050⁽¹⁾, if we are to generate 70 to 85% of our electricity needs from renewable energies in 2050⁽¹⁾ (compared with 26% in 2018⁽³⁾).

x 2

In Europe, this means doubling the funding for renewable energies and energy-efficiency in transport, the residential-tertiary sector and industry^{(4) (5)}.

+ 35%

Finally in France, climate-related investments reached €46 billion in 2018. This needs to increase by 35% per year in the short term to meet the carbon neutrality pathway⁽⁶⁾.

⁽¹⁾ IPCC, *Global warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development and efforts to eradicate poverty*, September 2019

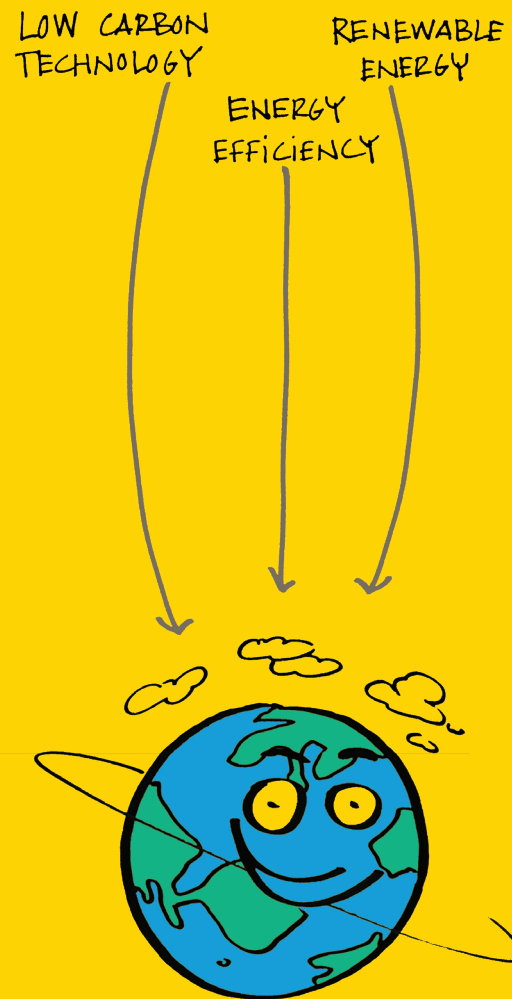
⁽²⁾ IEA, *World Energy Investment 2019*, May 2019.

⁽³⁾ IEA, *Renewables 2019*, October 2019.

⁽⁴⁾ European Court of Auditors, *EU action on energy and climate change*, 2017.

⁽⁵⁾ European Environment Agency, *Financing Europe's low carbon, climate resilient future*, July 2017.

⁽⁶⁾ Hadrien Hainaut, Maxime Ledez and Ian Cochran, *Landscape of climate finance*, 2019 edition, I4CE, September 2019.



**WHAT ARE
THE RISKS AND
OPPORTUNITIES
...**

**...
FOR
SME-MSBs?**

03.

Global warming and companies by 2050

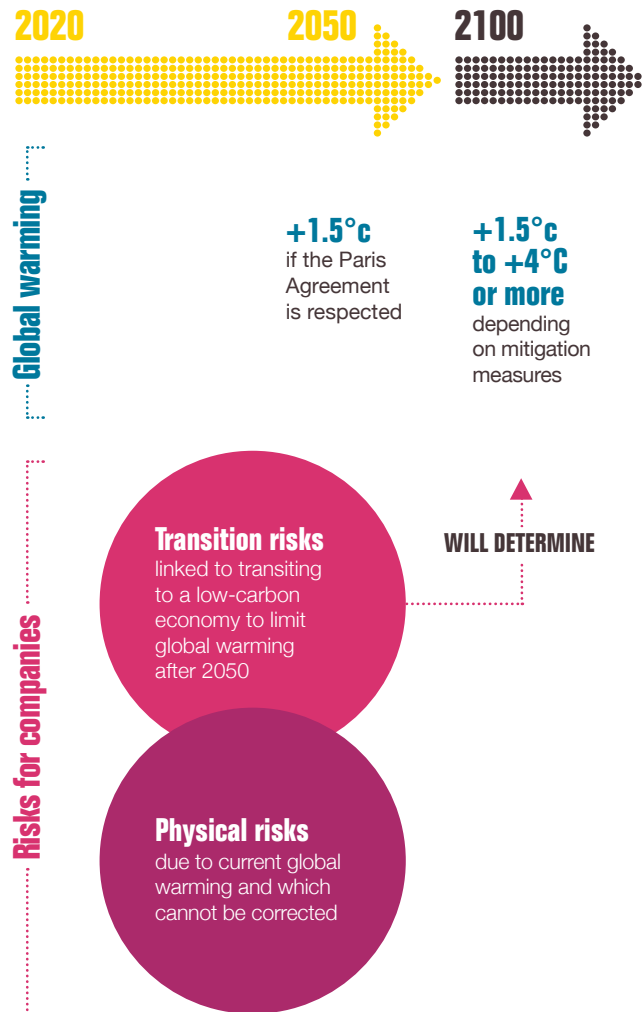
Compared to the pre-industrial era (1850-1900), human activities have already caused the world to warm by about +1°C. It will probably reach +1.5°C by 2050 at the current rate⁽¹⁾.

Whatever the actions to reduce greenhouse gas emissions taken between 2020 and 2050, the effects on the climate will be quite similar by 2050 due to system inertia. On the other hand, the various forecasts of the state of the climate diverge sharply after 2050, depending on the efforts made over the next thirty years.

The period we are entering between 2020-2050 is therefore the critical stage for the future of the climate, hence the currently widely used term “climate emergency.”

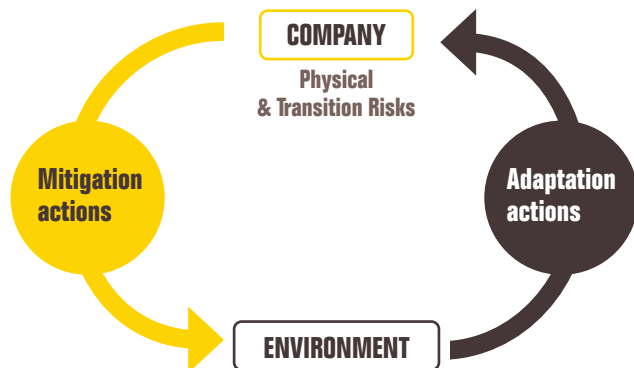
Consequently, by 2050, companies will face two types of risk: physical risks resulting from climate change (flooding of an industrial site, for example) and risks of transitioning to a low-carbon world (an additional tax, for example), with impacts to a greater or lesser extent on their business models depending on the actions implemented.

⁽¹⁾ IPCC, *Global Warming of 1.5°C*, op. cit.

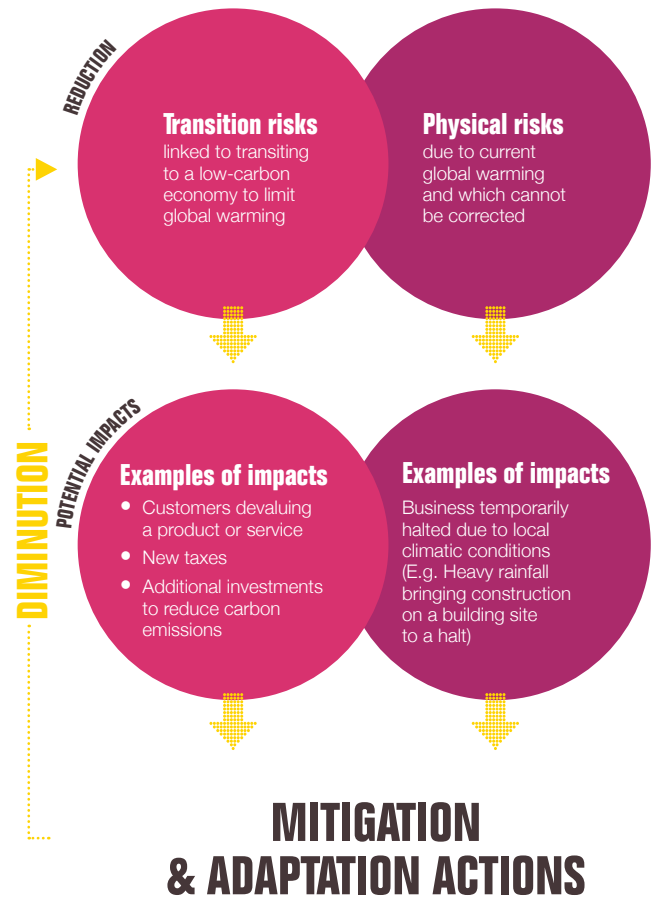


Global warming and companies by 2050

Companies must respond with so-called mitigation and adaptation actions (terms enshrined by the IPCC): the first to limit the company's impact on the climate (and more broadly on the environment) and the second to limit the impact of climate change (and more broadly environmental changes) on the company.



- CYCLE BETWEEN THE RISKS WEIGHING ON BUSINESSES AND MEASURES TO LIMIT IMPACTS BY 2050



What types of risks are we talking about?

Physical risks

The first type of risk concerns the physical risks that are a direct result of the warming temperature, with, for example, increasingly recurrent extreme one-off weather events (see Focus below).

This type of risk is difficult to manage because it is impossible to control. SME-MSBs have no other choice than to adapt to these new business conditions, either directly and locally, or through enhanced risk management with suppliers or customers, who may be subject to these physical risks.

These risks can be grouped into two categories:

Chronic physical risks

These are risks that affect daily life and that tend to change. For example, if the average temperature is higher, slightly less snow is seen each year, or the infrastructure gradually deteriorates due to heat or temperature variations.

Managers were able to confirm these risks in the context of the survey⁽¹⁾: the lack of snow impacts a small mountain hotel business; temperatures become too hot for working in the construction industry or even for private tutoring; complaints from customers about a lack of air-conditioning in the premises or failure to maintain heating systems because customers use them less.

⁽¹⁾ The examples cited here are taken verbatim from the responses to our survey.

A Manager speaks

“Following a hailstorm, we had too many claims to deal with. The employees were overwhelmed, tired, and one person resigned.”

Manager, Real estate sector
Turnover: below €2M

Acute physical risks

These are more occasional but very powerful risks. Examples include heat waves lasting a few days, droughts lasting a few weeks, or thunderstorms and floods lasting just one day. Although fairly brief, these events can result in very significant material damage and bodily harm.

Some of the managers interviewed have already had to deal with this type of event: less fodder available for an SME in the animal feed sector because agricultural production was cut back by a drought; particularly difficult conditions in a day-care during a heat wave, or employees in the real estate sector who were overworked following a hailstorm. Although they are very often negative, these risks also create opportunities for companies, for example an industrial equipment manufacturer who was called in by a customer following a flood.



PHYSICAL RISKS: STRONGER HEAT WAVES AND MORE FREQUENT NATURAL DISASTERS

We are already noticing a continental climate that is experiencing heat waves⁽¹⁾ more often than before.

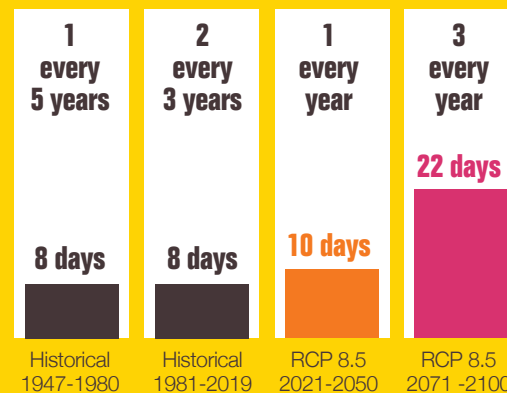
Their frequency has increased from one every five years between 1947 and 1980 to two every three years between 1981 and today, with an average duration of eight days remaining more or less stable.

So, in 2019, two short heat waves of very high intensity hit mainland France. Each lasting six days, these broke many records. This trend is set to increase in the future both in terms of duration and frequency. Regardless of the chosen scenario, by 2050, the average duration of these episodes should increase slightly and occur more frequently. If we take the IPCC scenario corresponding to a continuation of the current momentum, without carbon emission reduction measures, known as the "RCP8.5 scenario", their frequency would increase from eight to ten days per year on average, but above all, they are likely to be occurring in France every year.

Finally, this type of development will be similar, and even much stronger, in different regions of the world, heralding major disruptions to global economic activity.

• FREQUENCY AND AVERAGE DURATION OF HEAT WAVES⁽¹⁾ IN METROPOLITAN FRANCE AT DIFFERENT TIMES: PAST, PRESENT AND FUTURE

(in number of days per heat wave)



Source: **Bpifrance Le Lab** according to Météo France: Annual climate assessments, online portal: "Climat HD."

In the longer term, unless all States take significant action to reduce greenhouse gas emissions, France could experience an average of three heat waves each year, each lasting 22 days, with an intensity potentially similar to or greater than the 2003 heat wave.

The only possible action to avoid this undesirable future is to drastically reduce carbon emissions between 2020 and 2050.

⁽¹⁾ According to Météo France, heat waves are defined here as 5 consecutive days with a maximum temperature 5 degrees higher than normal 1976-2005.

PHYSICAL RISKS: METEOROLOGICAL RISKS

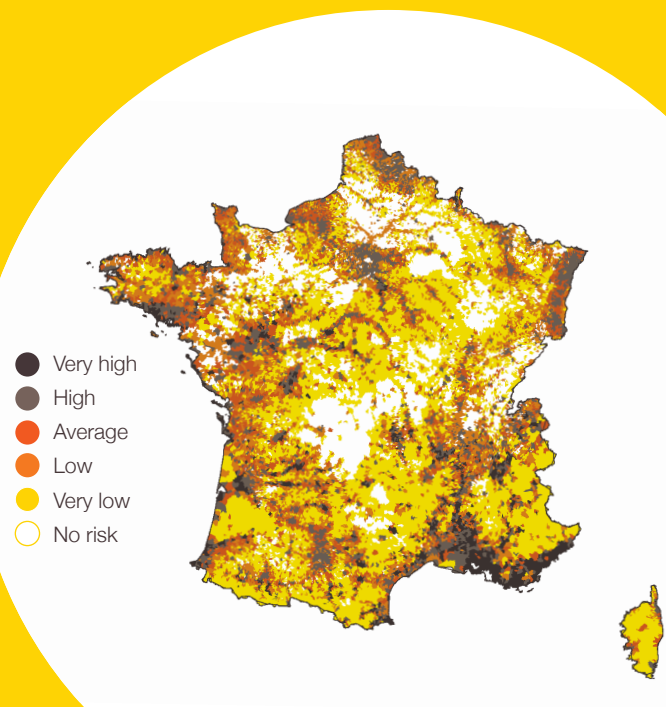
If we look at weather-related risks, we can see that in 2016, they already potentially affected six out of ten people in France⁽¹⁾ and the frequency of the resulting events is increasing. Climate change seems to play a role, although it is difficult to know how much, and other factors also influence it (urban sprawl, crowding in downtown).

In all cases, it can be seen that the annual frequency of so-called "very serious"⁽²⁾ events almost quadrupled between 1997 and 2017 compared with the period 1950-1996. The frequency increased from one event per year to 3.6 events per year. Flooding accounts for the majority of these.

Meteorological risks include sea flooding or submersion, landslides, coastal erosion, forest fires, avalanches, and storms or cyclones (for French territory overseas), but not heat waves. These risks are likely to cause casualties or damage to property and the environment, depending on their location and the population concerned.

These risks are therefore already likely to directly affect the activity of SME-MSBs, which makes them a significant parameter to be included in the manager's strategy, in terms of location, premises layout and action plans in the event of being affected.

• METEOROLOGICAL RISK INDEX⁽¹⁾ IN MAINLAND FRANCE IN 2016



⁽¹⁾ The weather risk index is drawn up for each municipality, by crossing population density with the number of weather risks reported by the State services.

⁽²⁾ A very serious event which caused at least ten deaths or more than 30 million euros in material damage.

Source: **Bpifrance Le Lab** according to the Ministry of Ecological and Solidarity Transition (MTES), General Commission for Sustainable Development (CGDD), "Climate risks: six out of ten French people are already concerned", Jan. 2020.

What risks are we talking about?

Transition risks

The second type of risk concerns those linked to low-carbon transition. While this transition often brings additional constraints, it can also offer opportunities for companies interested in taking advantage of them or that have been able to turn the corner early enough so as not to be subsequently affected by them. Unlike physical risks, transition risks are more predictable, even if they can be spread over a fairly long time period. In this case, SME-MSBs will find it easier to anticipate changes for their business, take action in advance and transform this transition risk into an opportunity to reach other customers, adapt, or even restructure their offer and gradually rethink their business model.

Transition risks can be grouped into four categories⁽¹⁾.

Regulation-related risks

These are standards, taxes, tax incentives, etc., that are intended to help develop products, services or behaviours that contribute to reducing carbon emissions. Climate-related regulations are likely to be tightened in the future. Some of the managers interviewed are already experiencing these impacts: changes to thermal insulation standards and new certification labels introduced for an air conditioning equipment manufacturer, or CO₂ emission standards in the automotive sector that are changing the products supplied by an equipment manufacturer.

Market-related risks

Clients or consumers are becoming increasingly attentive to certain environmental criteria such as energy audits for real estate, packaging types or labels in the food-processing industry. This trend can be expected to continue, or even accelerate following the Covid-19 crisis. Transparency and respect for the environment should continue to play an increasingly central role in customer choices.

Reputation-related risks

A company or a sector's positioning on climate issues can affect its image. An ethical position will improve its image with customers; the reverse is also true, and this may increase in the future. For example, the impact can also be felt in the financial sector.

In the case of exposure to climate risks and without implementing adaptation strategies or changing its business model, a company may also find itself penalised, such as by the refusal of an investment fund of an entry into the capital.

Technology-related risks

These are the potential additional costs for buying low-carbon equipment or carrying out research and development in-house in order to develop low-carbon technologies. This is particularly the case in the automotive sector, which is currently undergoing major changes to manufacture electric, hybrid or hydrogen vehicles.

Source: **Bpifrance Le Lab** according to Morgane Nicol et al, "How should financial actors deal with climate-related issues in their portfolios today?", Executive Summary, I4CE, April 2017.

⁽¹⁾ The examples cited here are taken verbatim from the responses to our survey.

EXPERT OPINION



Vivian Depoues

Project Manager,
Climate Change
Adaptation Institute
for Climate Economics (I4CE)

“Services dedicated to climate adaptation offer a real potential for innovation.”

Why do physical climate risks or those related to the low-carbon transition seem hard to grasp?

The paradox is that the various stakeholders affected - regardless of whether they are economic, political, or individual - seem to be increasingly aware of the issues at stake without always grasping the scale of transformations required to solve the problems. Consequently, it is important initially to bring the scale of the issue closer to that of the solution involved. You would then clearly see that these are not small measures, and that it would have a huge impact on companies in a wide variety of sectors, not only in the energy sector. The proposals of the Citizens Convention for Climate are a good example of this.

How can we anticipate transition-related risks?

There is no single possible transition scenario, but while it is difficult today to state exactly what future regulations, carbon prices and behavioural changes will be, there are still elements we can build on. This is, for example, the case of the National Low Carbon Strategy (plan defined by the State to achieve carbon neutrality, ed.). This means defining what this implies sector by sector, in terms of technical, regulatory or tax changes. This outlines a path that translates into investment needs, potential jobs and innovations, as shown by the work of the Landscape of Climate Finance. Generally speaking, you need to take a forward-looking stance and look beyond historical data.

How about the need to adapt to the consequences of climate change?

Adaptation to climate change is the process aiming at making the economy and regions better able to cope with climate changes, now and on an ongoing basis. This translates into a diversity of very concrete projects - on water, buildings, infrastructure, etc. - which concern many stakeholders, including SMEs.

First and foremost for economic stakeholders, this means managing the physical risks to which they are exposed. For example, we know that a heat wave like the one in 2003 is already twice as likely today as it was then and could become a normal event by 2050. So, we thus need to work proactively to help regions and the economy adapt. Indeed, services dedicated to adaptation (e.g. climate services, resilient building methods, nature-based solutions) offer a real potential for innovation. The relevant skills and responses need to be developed to include climate issues in all the infrastructure and business that are, or will be, impacted by climate change.

One example is making cities more resilient to heat waves. To do this, some solutions such as “dewatering” the soil, or planting - draw on existing techniques. Other solutions will have to turn to innovation to find new materials, for example. We are already seeing a number of start-ups coming up with possible solutions for these issues.

It also means anticipating changes for sectors, such as winter tourism in mid-mountain areas, which are already confronted with climate change. These sectors can adjust in the short term but must also consider more radical changes (diversification or even converting their offer) in order to avoid situations comparable to de-industrialisation in which regions suffer because businesses have disappeared.

Three affected sectors

Specific issues and risks

Up to now, we have talked about risks for any company, regardless of its size or business sector.

Let us now focus on a few specific sectors. Five stand out as the main contributors to global warming in France (in terms of greenhouse gas emissions): transport (29%), building/residential (20%), agriculture and forestry (19%), industry (18%) and energy conversion (11%)⁽¹⁾.

In addition to emissions, each sector also has an environmental impact, producing waste, polluting (other than CO₂), and exploiting natural resources, etc.

Three of these five sectors were examined in a non-exhaustive manner in this study in order to illustrate different types of climate risks. They were chosen because they emit high amounts of greenhouse gases (building, transport) or their significant exposure to the consequences of climate change (food-processing).

TRANSPORT



CONSTRUCTION



FOOD-PROCESSING



⁽¹⁾ Citepa, *Greenhouse Gases and Air Pollutants. Report on emissions in France from 1990 to 2017*, SECTEN format, July 2019.



TRANSPORT SECTOR

The challenges

- Road transport is responsible for the majority of greenhouse gas (GHG) emissions in France final energy consumption and it is the worst emitter of all transportation modes: in 2015, road transport accounted for more than 80% of the transport sector's consumption, followed by air (15%), rail (~2%) and inland navigation (0.4%)⁽¹⁾.
- Passenger cars and vans are the main emitters of CO₂ (77%), ahead of heavy goods vehicles (22%) in the road sector.
- For the alternatives - electric, natural gas, hydrogen and biofuel vehicles - questions persist about their environmental cost over their entire life cycle. For example, the question of recycling battery for electric vehicles needs to be answered. For hydrogen vehicles, the dilemmas arise upstream, as current hydrogen production emits high levels of GHG.
- Tools for comparing companies on the basis of their ecological impact are being developed, bringing transparency but also pressure from the customer. At the same time, French road transport service providers have a legal obligation to inform their customers of the quantity of GHGs emitted when transporting their goods.

⁽¹⁾ Ademe, "Chiffres clés", www.ademe.fr/expertises/mobilite-transport/chiffres-cles-observations/chiffres-cles.

Sector-specific objectives

2030



- 30% CO₂
heavy goods
vehicles



- 37% cars

2040



End of sale
of internal
combustion
vehicles

2050



- 60% CO₂

The major risks related to climate change

• Examples of physical risks

- extreme heat can soften tarmac roads, causing faster wear and tear;
- maintenance needs and higher investment are likely to increase with more frequent flooding and intense rainfall. Impacts on road stability and safety will require, in particular, additional drainage facilities.

• Examples of transition risks:

- incentives for buying electric cars, whether positive or negative, are increasing, with the ban on selling or buying fossil fuel vehicles coming into effect by 2040;
- companies in the transport sector with more than 500 employees will be obliged to report on their climate and environmental impact from 2022 (new European taxonomy)⁽¹⁾;
- in the longer term, a kerosene tax for air transport could be discussed.

⁽¹⁾ All the documentary resources concerning the European taxonomy on sustainable activities are available on the European Commission's website: https://ec.europa.eu/info/publications/sustainable-finance-teg-taxonomy_en.

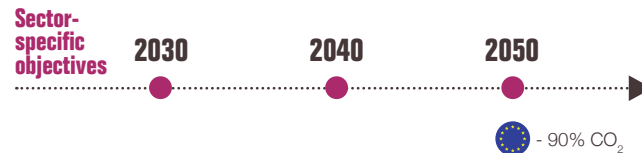


BUILDING SECTOR

The challenges

- The building sector is highly energy-intensive due in particular to a housing and building stock that is not very energy-efficient.
- It is the largest sector for energy-use, accounting for 44% of French energy consumption (compared with 31.3% for transport)⁽¹⁾.
- Many challenges still exist for constructing new, high-performance buildings and improving the performance of the existing building stock (with buildings that leak energy or energy classes F or G, estimated to affect between 7 and 8 million buildings in France).
- Construction accounts for 40 million tonnes of waste per year, making it the largest waste emitter. Only a few sectors recycle; for example, PVC (plastics), which recycles 700,000 tonnes per year, or wood, which is converted into particleboard.
- Recycling concrete in concrete construction field is still very rare.

⁽¹⁾ Ministry of Ecological and Solidarity Transition, "Énergie dans les bâtiments", www.ecologique-solidaire.gouv.fr/energie-dans-batiments



The major risks related to climate change

• Examples of physical risks:

- significant changes in temperature, humidity, and especially droughts that dry up the groundwater tables, may cause subsidence;
- urban heat island phenomena (difference of 1 to 4°C in summer conditions between the urban center and the surrounding areas) may increase, leading to a need for buildings capable of cooling or which do not retain heat in summer.

• Examples of transition risks:

- the new environmental regulation for new buildings (ER 2020), planned for 2021, will require all phases of the building life cycle (from materials, through the construction phase and up to demolition) to be included in the carbon footprint. This regulation requires that all new buildings must be "passive" (i.e., where the energy generated is greater than the building's needs);
- companies in the building sector with more than 500 employees will be obliged to report on their climate and environmental impact from 2022 (new European taxonomy)⁽¹⁾.

⁽¹⁾ All the documentary resources concerning the European taxonomy on sustainable activities are available on the European Commission's website: https://ec.europa.eu/info/publications/sustainable-finance-teg-taxonomy_en.



FOOD-PROCESSING SECTOR

The challenges

- The food-processing industry is faced with major challenges regarding soil, air and water pollution, packaging and the method used for transporting food.
- Food represents 24% of the carbon footprint of French households, according to the Ademe.
- The sector is very sensitive to the climate risks.
- CO₂ emissions associated with food products are not necessarily proportional to the distance travelled. For example, fruit or vegetables produced locally in greenhouses but out of season can have a greater environmental impact than the same products coming from foreign countries where they are grown outdoors, as explained above (the organic tomato). As another example, the emissions per kilometre travelled and per tonne transported are 100 times lower for a trans-oceanic cargo ship than for a van weighing less than 3.5 tonnes.⁽¹⁾
- Plastic food packaging is increasingly used and barely recycled.

⁽¹⁾ Ademe, "Alimentation - Les circuits courts de proximité", *Les Avis de l'Ademe*, September 2017.

Sector-specific objectives

2030

2040

2050

 -35% CO₂

The major risks related to climate change

- **Examples of physical risks:**
 - increasing droughts and heat waves would affect agricultural production;
 - the same is true for changes in temperature and seasonality;
 - agricultural soils could also be increasingly depleted.
- **Examples of transition risks:**
 - single-use plastic packaging will be phased out by 2040;
 - a minimum level of recycled plastic in packaging could become the norm (e.g. the European requirement of 25% recycled material in PET bottles by 2025);
 - companies in the food-processing sector with more than 500 employees will be obliged to report on their climate and environmental impact from 2022 (new European taxonomy)⁽¹⁾.

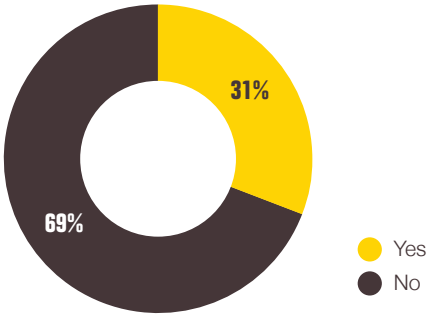
⁽¹⁾ All the documentary resources concerning the European taxonomy on sustainable activities are available on the European Commission's website: https://ec.europa.eu/info/publications/sustainable-finance-taxonomy_en.

Risks already experienced that mainly affect procurement and staff

Our survey shows that these risks are not theoretical. Indeed, one third of the SME-MSB managers surveyed said they had already been affected by climatic and environmental events.

- **SME-MSB MANAGERS ALREADY AFFECTED BY CLIMATIC AND ENVIRONMENTAL EVENTS**

(by % of respondents)

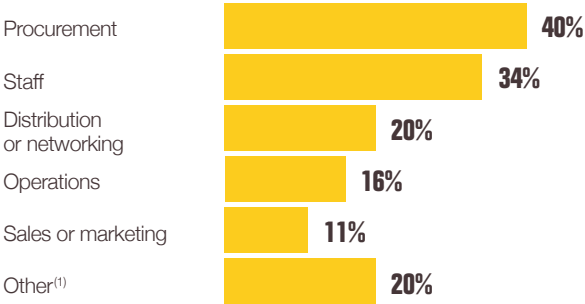


This concerns procurement, mentioned by 40% of managers already affected (increase in the price of raw materials, drop in volume), staff, mentioned by 34% (employee absence due to be trapped by bad weather), distribution or networking, mentioned by 20% (inability to deliver products or services), or operations, mentioned by 16% (e.g. flooding of facilities). Impacts on sales or marketing (image problem due to proven pollution by the sector, loss of customers) are relatively less frequent.

Source: **Bpifrance Le Lab**, “Business climate, or climate business?” survey, 1,006 responses used.

- **TYPES OF IMPACTS ON THE COMPANY’S ACTIVITY**

(by % of respondents impacted by climate and environmental events, multiple responses possible)



The impacts can also be positive for SME managers.

In the survey, 10 managers (out of the 303 declaring that they had been affected) reported positive effects for their business. In addition to an increase in demand following material damage, some report a change in demand:

A manager speaks

“ In our case, these changes have a positive impact on our customers who, driven by societal pressure, are reviewing their farming practices and increasing their orders with our company, which offers solutions to support these changes. ”

Manager, Complex machine tool parts
Turnover: between €5M and 10M

⁽¹⁾ The “Other” response includes physical impacts related to floods, storms and heat, regulatory impacts, as well as positive impacts for business.

Source: **Bpifrance Le Lab**, “Business climate, or climate business?” survey, 1,006 responses used.

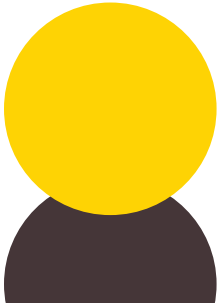
Future risks

with an expected increase over impacts

Regardless of whether they have already been affected, many managers are anticipating a variety of impacts in the future, whether related to transiting to a low-carbon world or to new climate conditions.

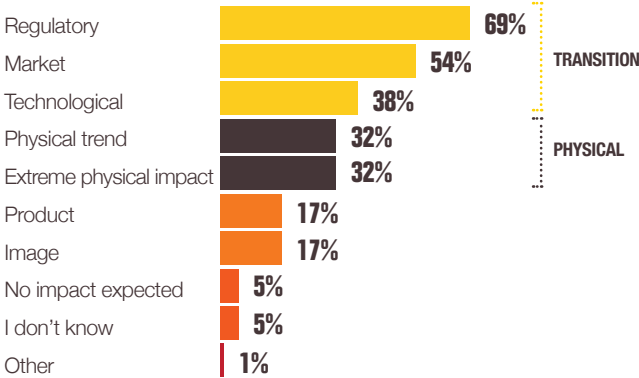
A large majority of the managers surveyed thus expects climate or environmental regulations to be tightened (69%) and they also expect changes to the market (54%). More than 30% expect technological developments and physical impacts (38% and 32% respectively).

Finally, it is worth noting that 17% of managers anticipate an impact on the way the company, and/or its products or services are perceived, based on its impact on the climate or the environment. This type of risk may even go as far as potential court cases for having contributed significantly to climate imbalance and its harmful consequences. Conversely, a company that has an ethical approach to these issues may perform well, not only with regard to its customers, but also its suppliers and employees.



• TYPES OF CLIMATIC OR ENVIRONMENTAL IMPACTS ANTICIPATED BY MANAGEMENT IN THE NEXT 5 TO 10 YEARS

(by % of respondents, responses multiple)



A manager speaks

“ The transition to environmentally-friendly manufacturing will not be possible at SME level without regulation backed by aid in the form of subsidies and tax reductions. This transition must be very rapid if we want results, but few company heads are aware of this challenge and therefore unfortunately they must be forced to change their behaviour both personally and as company managers. But the State and local authorities must set an example by providing recycling facilities and by including climate responsibility in their actions. ”

Manager, Cutlery Manufacturer
Turnover: below €2M

Source: **Bpifrance Le Lab**, “Business climate, or climate business?” survey, 1,006 responses used.

A necessary adaptation to manage risks and seize opportunities

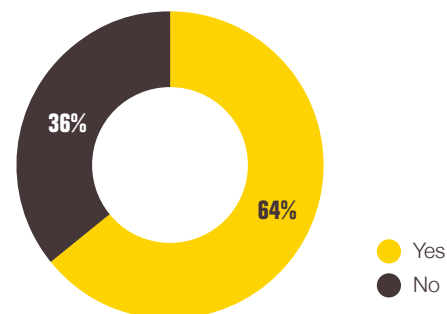
Not all sectors will be equally affected, but all companies will have to implement adaptation measures.

The ability of companies to limit the impact of physical and transition risks, or even to seize market opportunities, will depend on their ability to adapt, ideally by anticipating and in particular through risk and opportunity assessments (see Section 4). Or, failing that, as a result of an impact that has already occurred.

In fact, after being affected, two-thirds of the managers interviewed had implemented adaptation measures. However, that still leaves a third of respondents who have not adapted their business, even after an impact. In particular, there are managers who feel blocked because, by its very nature, their business sector limits their wiggle room.

• MANAGERS STATING THAT THEY HAVE IMPLEMENTED ADAPTATION MEASURES FOLLOWING DIRECT OR INDIRECT IMPACTS

(by % of respondents already impacted by climatic or environmental events)



Source: **Bpifrance Le Lab**, "Business climate, or climate business?" survey, 1,006 responses used.

A manager speaks

“ Global warming is becoming a constant issue in our agricultural trades. We are finding it increasingly difficult to obtain reliable results, to access patents, because the years are no longer the same: too hot, less rain, more climate risks... results that have been discussed for the last ten years or so! ”

Manager, Plant production R&D
Turnover: between €2M and 5M

A manager speaks

“ Awareness of this issue is recent (2019) as are the first measures implemented internally (reduction of the carbon footprint). The next step is to adapt our service offer to give our customers choices and to be eco-disruptive compared to the competition. ”

Manager, Digital sector
Turnover: between €10M and 20 M

04.

**WHAT
MEASURES
ARE TAKEN
...**

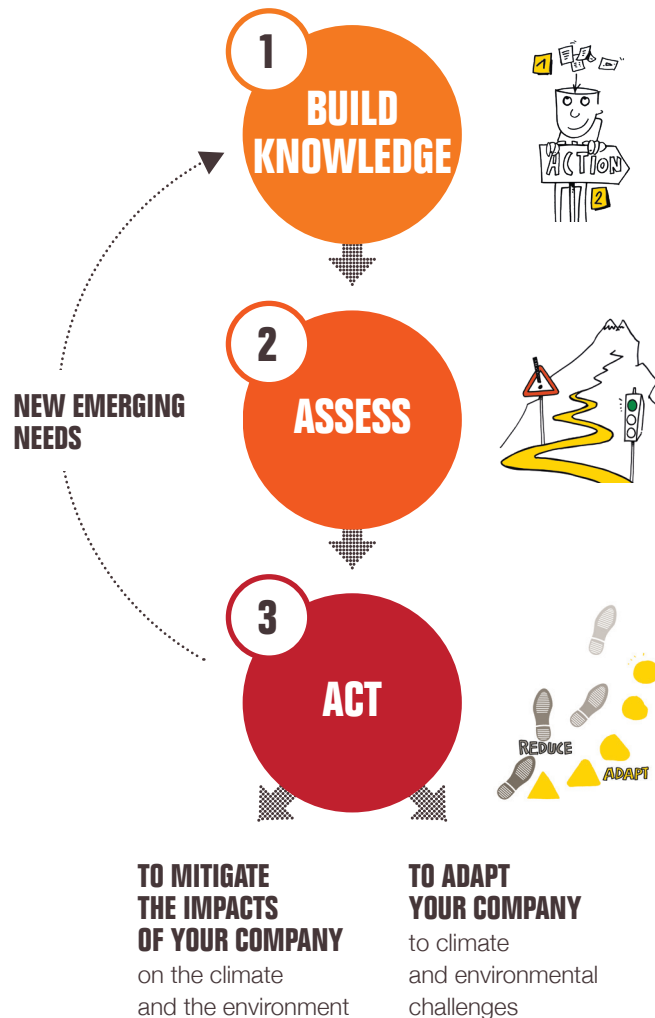
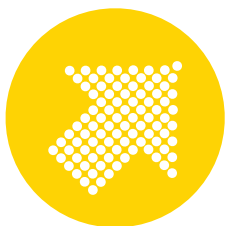
**...
TO BEGIN
TRANSITIONING?**

Taking action

A virtuous circle

How do you take action? As Laurence Capossele, Co-Founder, Co-Director of Cetup, Director and Global Compact Ambassador, testifies, it is a virtuous circle: from small steps to quick wins, a company will then move on to deeper and more crusading actions.

WE ARE PROPOSING AN APPROACH THAT INCLUDES 3 ACTIONS



QUESTIONS TO...



Laurence Capossele

Co-founder, Co-Director of Cetup,
Director and Global Compact Ambassador

- Business: Personal and dedicated transport
- Staff: 200 Employees
- 2019 Turnover: €15.5M

“ You have to think simply. ”

What would your first piece of advice be to a SME-MSB that wishes to embark on an approach favouring the better consideration of climate and environmental issues?

I am often asked this question. Today, I recommend a tool that I discovered with Global Compact: the 17 UN Sustainable Development Goals ⁽¹⁾.

It must be approached with a great deal of simplicity. Just take the map of the 17 SDGs, read each of the SDGs and ask yourself “What are we doing in our company about this?”

For example, the first SDG is “no poverty.” Now, clearly the first thought that comes to mind is of some distant countries where there is a lot of poverty. But we can also think much more locally, within our own country. Using this idea, isn’t creating jobs a way to fight poverty and therefore exclusion? SDG 14 is a call to action for the oceans. So, once again, ask yourself the question: what can we do for the oceans? Removing plastic coffee cups, for example, is often a much more virtuous action than one might think. The impact is huge. You mustn’t hesitate in estimating the effect over a full year.

The 17 SDGs are painted on Cetup’s walls. When our partners visit us, they do the exercise, and it’s not uncommon for them to realise that they are already doing quite a bit. It is a cross-functional tool within the company that each department, service and employee can use, and which becomes a collective challenge.

The UN has been working on this map for three years and we celebrated its fourth anniversary in September 2019. Using this tool, simply, collectively and between organisations is one of the solutions to the economic, societal and environmental challenges of our time.

⁽¹⁾ The 17 SDGs are available at this address www.un.org/sustainabledevelopment/fr/goals-sustainable-development



ACTION No. 1

Learn to act

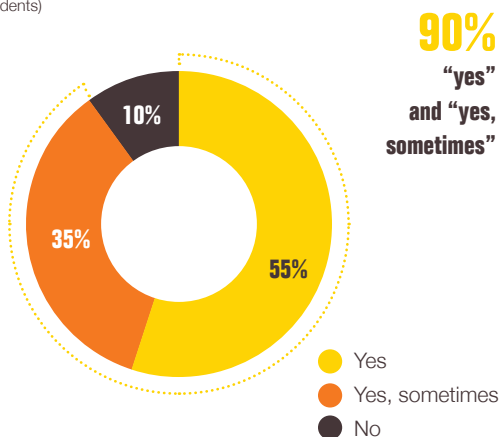
Managers are interested but are far from being experts

The first action is to seek out information. Good news: 90% of SME-MSB managers tell us that they research climate and environmental issues, and 55% of them do so actively.

The strong media coverage, particularly since the Paris Agreement, has therefore not escaped the attention of company heads. We also noted that their knowledge increases through peer-to-peer discussions. In Germany, for example, networks to share ideas and experiences on energy efficiency seem to have proved their worth by disseminating information at a “lower cost” ⁽¹⁾.

• DO MANAGERS INFORM THEMSELVES ABOUT CLIMATE AND ENVIRONMENTAL ISSUES?

(by % of respondents)



Source: **Bpifrance Le Lab**, “Business climate, or climate business?” survey, 1,006 responses used.

⁽¹⁾ Antoine Bonduelle, Stéphanie Goujon “TPE-PME, comment réussir le passage à la neutralité carbone?” *Les Avis du CESE*, September 2018.

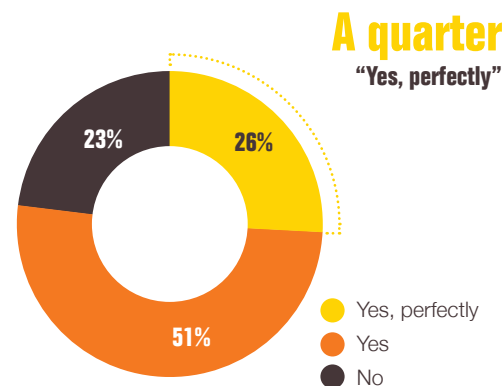
Yet some concepts are still poorly understood: when asked whether they fully understood certain fundamental notions on climate change (2°C scenario, climate change mitigation and carbon neutrality), only a quarter of the business owners claimed to have a perfect grasp of these concepts (an indicative bibliographic list is available in the appendix to help managers find useful sources).

While sensitivity to the climate emergency is very much present among the managers interviewed, there is still considerable room for improvement in terms of the level and quality of information.

This is all the more important as certain concepts such as “carbon neutrality” have a direct impact on them.

• DO MANAGERS FULLY UNDERSTAND THE CONCEPTS OF “SCENARIO 2°C”, “CLIMATE CHANGE MITIGATION” AND “CARBON NEUTRALITY”?

(by % of respondents)



Source: **Bpifrance Le Lab**, “Business climate, or climate business?” survey, 1,006 responses used.

Learn to act

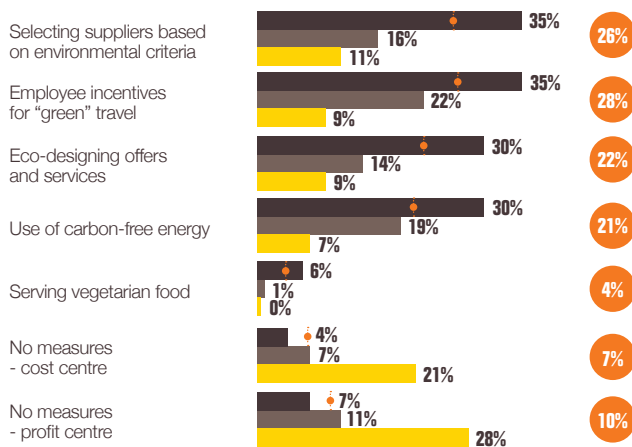
The level of information amplifies the action

The importance of researching the issue has a direct effect on ambitions. The more managers are informed, the more they act to implement mitigation measures in order to reduce their company's impact on the climate and the environment.

It is not possible to know whether the approach of actively finding out information precedes taking action, or whether an initial willingness to act triggers the search for information. Pragmatism would probably say that the two are reciprocal.

• MEASURES IMPLEMENTED IN PROFIT AND COST CENTERS

(by % of respondents, several answers possible)



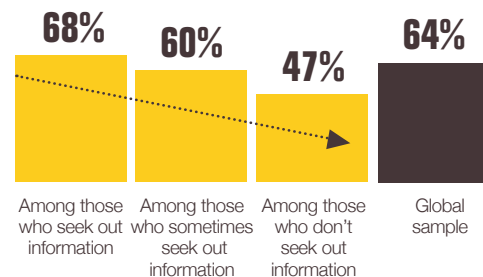
● Managers who seek out information
 ● Managers who sometimes seek out information
 ● Managers who don't seek out information
 ● Global sample

Source: **Bpifrance Le Lab**, "Business climate, or climate business?" survey, 1,006 responses used.

Following this logic, our survey shows that implementing adaptation measures (following a direct impact) and including the climate in the company's strategy, are positively correlated to the amount of information to which the manager has access to.

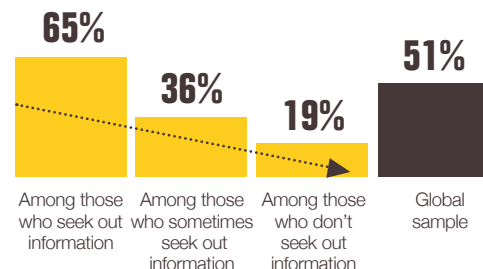
• MANAGERS WHO STATED THAT THEY IMPLEMENTED ADAPTATION MEASURES FOLLOWING A CLIMATIC OR ENVIRONMENTAL IMPACT

(by % of respondents)



• MANAGERS DECLARING THAT THEY ARE INTEGRATING THE CLIMATE ISSUE INTO THEIR CORPORATE STRATEGY

(by % of respondents)





ACTION No. 2

Evaluate your risks and opportunities

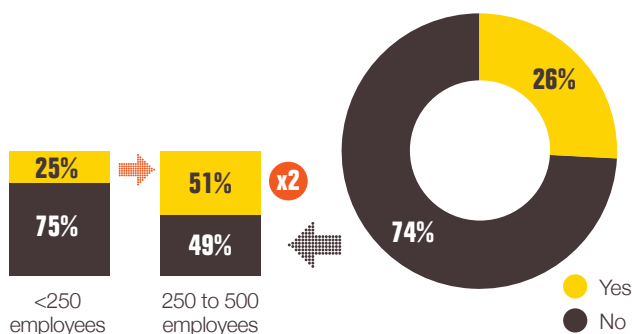
Assessment strengthens action

The second action is to assess both the risks of climate-related impacts and the opportunities to be seized.

However, only a quarter of SME-MSB managers have ever carried out a risk and opportunity assessment. This proportion is twice as high among companies with 250 or more employees (51%), potentially due to regulatory requirements (see page 159). This raises the question of the resources, both financial and human, needed for such an approach. In the absence of a full assessment by an external firm, less expensive approaches can be initiated. Below we propose an initial affordable approach for any company willing to invest some time on these issues.

ASSESSMENT OF THE CLIMATE CHANGE-RELATED RISKS AND OPPORTUNITIES FOR THEIR COMPANIES OVER THE LAST 5 YEARS

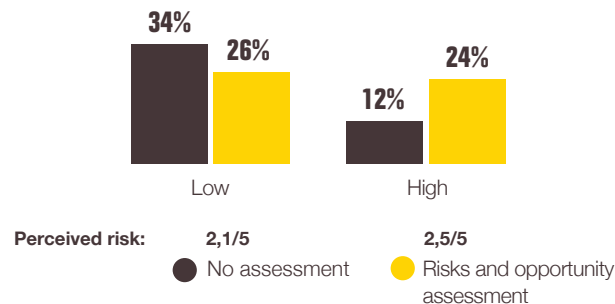
(by % of respondents)



Source: **Bpifrance Le Lab**, "Business climate, or climate business?" survey, 1,006 responses used.

LEVEL OF RISK TO THEIR COMPANIES PERCEIVED BY MANAGERS WITH REGARD TO CLIMATE OR ENVIRONMENTAL ISSUES

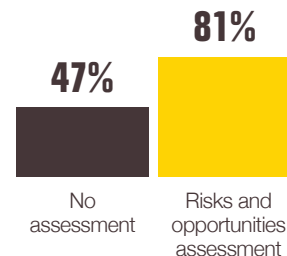
(scores between 0 and 5, with 5 being the highest risk, grouped as "Low" if 0 or 1; "High" if 4 or 5)



Interpretation: 12% of managers who have not conducted a risk/opportunity assessment feel that their company is at high risk. This is twice as high among managers who have assessed risks and opportunities (24%).

SHARE OF MANAGERS WHO ACTIVELY SEEK OUT INFORMATION AMONG THE MANAGERS WHO HAVE CARRIED OUT AN ASSESSMENT (OR NOT)

(by % of respondents)



This assessment is beneficial. Of the managers who have already carried out such an assessment, almost twice as many actively seek out information and also twice as many have a more precise understanding of the risks involved. Thus, after researching the question, the assessment is an essential step in the process of moving towards a more climate-compatible business.

Source: **Bpifrance Le Lab**, "Business climate, or climate business?" survey, 1,006 responses used.

Simplified assessment process

A process which any SME can follow



Example: with the need to completely replace the fossil fuel car fleet due to regulations and restrictions on driving into city centres: What are the opportunities? (Differentiation from the competition? Access to free car parks, etc.). In what time frame will it be replaced? What is the annual replacement rate? What are the associated resources? (investments, subsidies, human resources to raise and mobilise).

We propose a simplified approach to risk and opportunity assessment for SME-MSBs⁽¹⁾. This process is composed of three steps. The objective here is to propose an exercise that does not necessarily require external advice. It may be led by the managers themselves, internal project managers or via other schemes such as work-study or the *Volontariat Territorial d'Entreprise* (VTE = regional voluntary work placement scheme). It will then offer a first overall vision for a company.

It requires investing time, but we believe this is necessary nonetheless in view of the importance of the impacts related to climate and environmental issues, both now and in the future. However, the more technical the considerations are and the greater the expertise required, the more important it will become to be supported in this process.

STEP 1

Recreate what your company's future business environment will be like. This is both the most critical and the most difficult step

Transitioning to a low-carbon world: mainly via regulatory changes (standards, taxation, subsidies) which are more predictable than social changes (see the appendices for useful resources for this exercise):

- what regulatory changes are already planned? (e.g. phasing out of fossil fuel vehicles and single-use plastic packaging);
- what regulatory changes are under discussion? (e.g. carbon tax at EU borders, ban on domestic flights).

⁽¹⁾ This exercise is loosely based on an approach developed by I4CE for the Compagnie des Alpes. For more details, see Vivian Depoues and Benoît Leguet, "Se situer dans la transition énergétique : un impératif pour toutes les entreprises", I4CE Climate Brief, No. 53, May 2018.

Climate imbalance: what are the weather conditions in France or in other procurement or distribution areas? This factor now seems to be the least known or the most underestimated, even though it is part of the effect loop presented in the first section (see page 28). Paradoxically, increasingly accurate climate projections are available, including on a regional scale. This allows for having a fairly accurate picture of future weather conditions.

Resources such as Météo France, the forecasting work of the Senate, the Ministry of Ecological and Solidarity Transition, and certain local authorities and NGOs are enlightening in this respect. At an international level, the work of the IPCC and various experts who disseminate the issues widely in the media are valuable sources.

STEP 2

Establish the associated risks and opportunities specific to your business sector

Management, employees, partners, customers and external advisers can be mobilised within the framework of brainstorming workshops to consider what the climate-induced changes in the business environment could mean in practice. Using tools such as the environmental “version” of the Business Model Canvas can be useful for this type of exercise⁽¹⁾. This helps to frame discussions, to look at the current risks, but also the benefits that could be expected from a wave of adaptation measures that may impact on the company to a greater or lesser extent. This may indeed lead the company to rethink its business model in the long run.

⁽¹⁾ Alexandre Joyce and Raymond Paquin, “The triple layered business model canvas: A tool to design more sustainable business models”, *The Journal of Cleaner Production*, No. 135, 2016.

While managers will initially be able to carry out risk and opportunity exercises on their own, specialised support will prove essential for more strategic actions by the company. Indeed, the virtuous circle will lead managers to question entire sections of their business model, or even eventually completely change it. These are decisions that require as complete and refined a view as possible.

STEP 3

Create a tailored course of action

It will take a long time to adapt the company. Indeed, the financial and human resources that an SME or MSB can draw on are limited. You will therefore need to set clear objectives over different time frames (two years, five years, ten years, or even longer when possible). For each action deadline, priorities must be set via intermediate steps, which will serve not only as stages, but will also be a way to maintain the interest and commitment of the entire company.

There are two reasons why this process needs to take place over a long period of time. Firstly, these issues will be regulated gradually and will often be planned at international levels before being transposed into French law. This leaves companies with a window of anticipation (discussion with the business sectors). Secondly, climate projections to 2035 and beyond are already known. These are two factors that may reduce the overall uncertainty in which SMEs and MSBs operate overall.

EXPERT OPINION



Michel Cardona

Senior Advisor, Financial sector,
Risks and Climate Change,
Institute for Climate Economics (I4CE)

“For companies, the key is to be aware
of the scale of the problem.”

We are seeing a significant gap between the amounts needing to be invested for climate transition, especially by companies, and the actual sums invested, how do you explain this?

For several years, I4CE has been measuring this gap in France between the very significant investments which need to be made, both to reduce carbon emissions and also adapt to the effects of climate change, and the amount actually invested. One might assume that there is not enough money available, but this is the opposite of what economists are saying. Since the recession of 2007-2008 there is a lot of cashflow as a result of very accommodating monetary policies. The problem is rather one of allocating this cashflow.

One explanation put forward by financial and political stakeholders is the lack of “green” projects developed by companies. The problem would appear to be that they do not realise that they can ask their bank to finance this type of project. But for some observers, the problem is even further upstream: although managers are personally aware of the issues at stake, they have yet to fully grasp that they are also concerned as entrepreneurs. In any case, they have no clear vision of what they need to do to transform their business, both in order to grasp the opportunities but also to limit the risks associated with climate change. Without this upstream preparation, they are unlikely to go to their bank to ask for a loan. This puts banks in a comfortable position: they can say that they are ready to finance projects (even if in reality, they are much less interested than they let on); in any case, few companies come to see them.

Isn't the lack of “green” projects developed by entrepreneurs due to a lack of profitability?

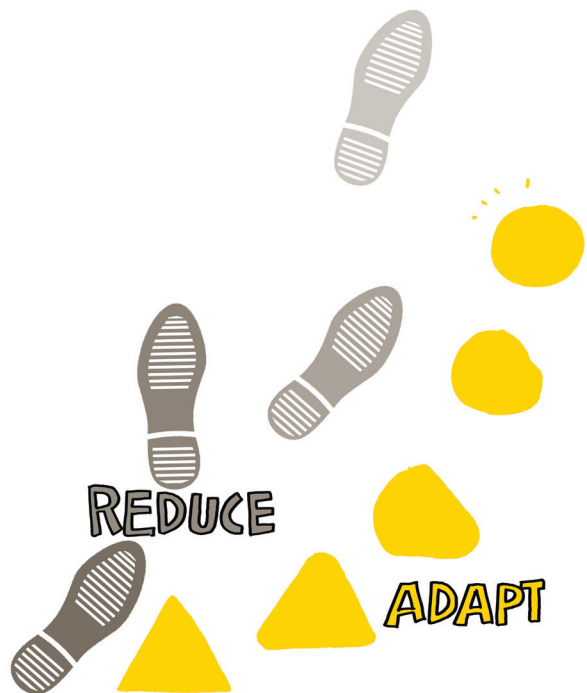
It's a thing we want to look at more closely. When the financiers say, “it's not that we don't want to, it's because we don't have enough projects.” That's going a bit too fast. I think instead, they should say “We don't have enough green projects that bring us the desired level of profitability.”

However, the situation is more complicated because there are other types of obstacles that may also interfere: the lack of clear indications from the public authorities on what transitions are needed in the sectors, market imperfections, which mean that real prices or risks are not well reflected, or even the short-term approach of financiers who do not want to fund projects beyond the short term, which penalises long-term investments, etc.

Are there ways to encourage companies to develop more projects and get investors to finance them?

For companies, especially SMEs and MSBs, the most important thing is being aware of the scale of the problem, which should lead managers to reflect and say “we are going to be affected, so out of necessity we will have to do something”, and start looking at what they can do.

For financiers, additional incentives are needed that could differ (fiscal, regulatory, etc.). When it comes to financial regulations, capital requirements could be adjusted to fund more green and less brown practices. There may also be a need to think about how to change bank business models, so that they are prepared to finance this type of project, which requires a longer and therefore riskier commitment. Financing the transition is complicated. The challenge is to shift collective preferences.



ACT *to* ADAPT *the* COMPANY

ACTION No. 3

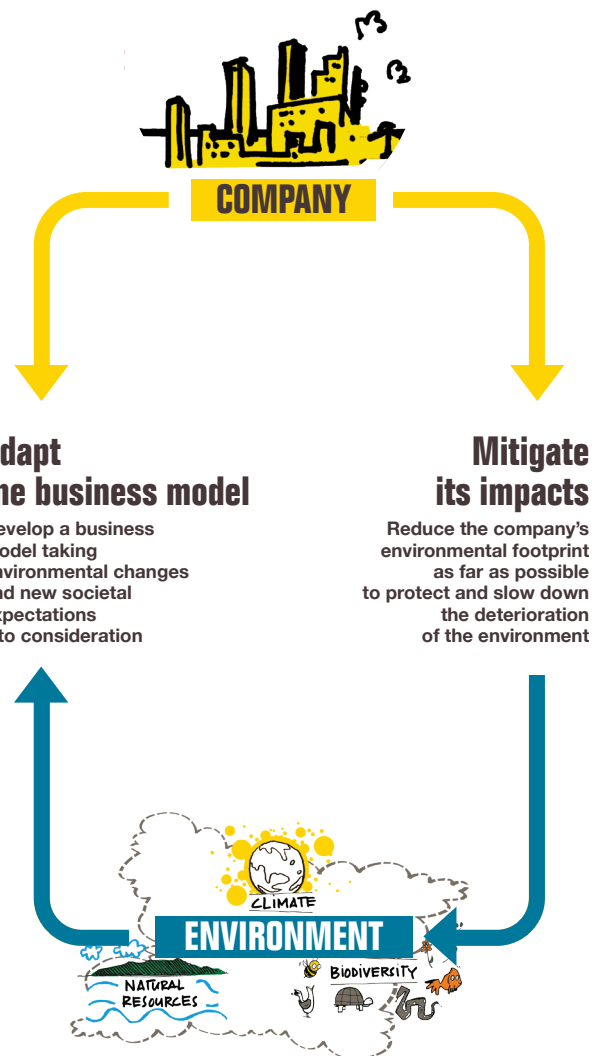
Act to adapt the business model and mitigate its impacts

Once you have researched the issue and assessed your risks and opportunities, it is now time to take action.

We distinguish two levels of actions to be taken simultaneously:

- mitigate the company's impact on the climate and the environment.
Issue: protecting the environment.
- act to adapt the company and its business model to the impacts of climatic and environmental imbalances, and new societal expectations.
Issue: develop a sustainable and durable business model.

These two types of action are complementary and act on the performance and even the future long-term existence of the company. Indeed, it is difficult for a company to perform well in a totally imbalanced world where natural disasters are increasing and where biodiversity is gradually disappearing. It is also difficult to achieve longevity by relying on a business model that uses depleting resources or that proposes offers that do not meet consumers' expectations in terms of sustainable development.



Mitigate the company's impacts

to protect the environment

To mitigate impacts, you must first start by measuring your use of resources and the impact of your business on the environment. The next step is to reduce these to the best cost-benefit levels.

The aim of reducing your use of resources and your impacts is to maintain a habitable planet, with a viable climate and environment, and one where it is still pleasant to live.

The impacts on the environment generated by the company are multiple and they concern in particular:

- its internal processes (e.g. production methods, locations, etc.);
- its inputs or outgoing flows (e.g. supplier logistics, distribution and marketing channels, etc.);
- the use of its products and services (materials used, methods of use, recycling capabilities or not).

It is important to have an overall vision of your company's impact on these different dimensions. For example, by focusing on your company's major resource requirements (energy, water, raw materials), you can already identify the impacts generated and introduce measures to limit their negative effects on the environment.

Mitigating impacts is also a regulatory issue for many companies, particularly in certain sectors such as manufacturing or construction (managing waste, air emissions, discharges in water, for example).



It is also an economic issue, because all other things being equal (i.e. without heavy investments):

- reducing your use of resources means directly improving your balance sheet thanks to the savings made;
- reducing your impact can involve optimising your processes, travel, organisation, etc. and therefore also saving money and/or time.

Finally, there is also an image issue, since consumers and employees are increasingly sensitive to the actions of companies in terms of climate and environmental protection⁽¹⁾.

⁽¹⁾ **Bpifrance Le Lab**, *Attirer les talents dans les PME et ETI*, January 2018 and *Croître avec la révolution écologique*, November 2015.

QUESTIONS TO...



François-Henri Deutsch

Chairman of Eif-Astute

- Business: Parapetroleum sector (sampling systems)
- 9 employees
- 2019 turnover: €2M
- Region: Île-de-France

**“Decarbonization makes sense,
but there is little room for manoeuvre.”**

Is climate change affecting or will it affect your company?

The climate issue is gradually affecting our company: the longer the time frame, the greater the challenge. Although the current impact on day-to-day business is still limited, it is already influencing our offer. Specifically, our clients are currently focusing on the decarbonization (i.e. reducing carbon emissions) of their production, by switching from oil to gas, for example.

On the other hand, there may be risk factors for us if climatic variations are such that the temperature reaches fifty degrees outside! This is because we will need to insulate our products and regulate their temperature to ensure that our continuous analysis of representative production samples is accurate.

Can reducing the company's impacts on the environment, such as decarbonization, generate profits?

Our employees and clients have been very concerned by the rapid change in transport modes, such as carpooling or cycling. This is good for the climate. We have moved, in the aim of reducing their transport time. As a result, our employees are happier and, of course, more productive. Similarly, some levels of teleworking now seem to us to be a sustainable option. For producers, decarbonization is an additional cost that must be included in the sales price. Therefore, either this meets regulatory constraints that apply to everyone, or we have to find an opportunity to turn this into a competitive advantage. Decarbonization makes sense, but there is little room for manoeuvre.

Does transitioning to a low-carbon world bring opportunities for SME-MSBs?

From an industrial point of view, the transition means a change in the mix of products and services offered, and therefore a loss of turnover on existing business but with opportunities to be seized.

Our oil customers are making the transition to gas. This is a real change, and some refiners have had to change their production capabilities. In terms of services, smart grids are becoming more prevalent.

Then there are technical issues filled with uncertainty. If we switch to electricity, how do we store the power? What about the role of hydrogen, which allows for transplanting energy? Finally, which method will come out on top? What should SME-MSBs propose?

As a company, we sell hydrogen fuel cell products. These cells can be combined with wind turbines, which seems rather positive for our company's growth. For the rest, the opportunities induced by climate change appear to be very indirect. At this stage we can estimate that this represents an additional turnover of 15% in the short term.

Then, the day when real incentives are implemented (carbon taxes, European regulations applicable to imported products), our clients will invest, and we will have equipment to sell to them. However, today, they have no good short-term visibility of the immediate profitability that the low-carbon transition would procure. The climate is therefore not yet fully their priority!

In addition to carbon, we also offer "eco-technologies." However, the main thing is to reduce their response time by installing measuring instruments directly on the production lines while simultaneously reducing waste.

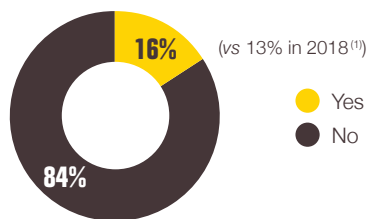
Mitigate the company's impacts

Measuring its carbon footprint

Measuring the carbon footprint can help mitigate impact. But only 16% of respondents said they had done so, a slightly higher figure than in the **Bpifrance Le Lab** study on CSR conducted in 2018⁽¹⁾ (when the percentage was 13%). However, the practice increases with the size of the company, the more likely they are to do this exercise. Aside from the issue of means, regulations require the largest companies to carry out this type of exercise in a more or less simplified manner.

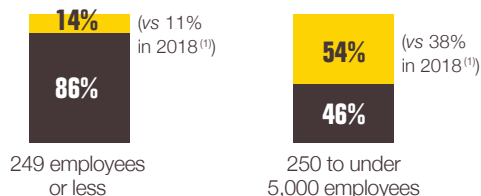
• ASSESSMENT OF THE COMPANY'S CARBON EMISSIONS, FOR THE LAST 5 YEARS

(by % of respondents)



• HOW COMPANY SIZE INFLUENCES CARBON EMISSION ASSESSMENTS

(by % of respondents)



The GHG report (BEGES) has in fact been a regulatory obligation for companies with more than 500 employees since 2010. This is an assessment of the greenhouse gas (GHG) emissions produced by the company. It is accompanied by a summary of the measures envisaged to control and reduce these and must be repeated every four years. The assessment focuses on “Scopes” 1 and 2 (direct emissions and indirect emissions related to the use of electricity, heat and steam). Scope 3, which includes other indirect emissions (purchasing raw materials, employee travel, waste, etc.) is not mandatory, although it often represents the largest share of the carbon footprint for SMEs⁽¹⁾.

Moreover, the energy audit has been mandatory since 2015 for companies with more than 250 employees. Three activity sectors are audited: construction, industrial processes and transport.

For the most advanced, it is then a question of subsequently evaluating their carbon strategy. The Ademe's Assessing low Carbon Transition® (ACT) method examines this strategy with regard to the sector's decarbonization pathway⁽²⁾.

Bpifrance has made a simplified tool available online: the “Climatometer,” for VSEs and SMEs wishing to do a self-assessment of their ecological and energy transition maturity level and the circular economy. Other tools can be used to measure the ecological footprint (impacts on air quality, water, soil, biodiversity, etc.), such as the Life Cycle Assessment (LCA) applied to products or services, or, at the company level, the Diag-Eco-Flux proposed by Bpifrance and the Ademe.

⁽¹⁾ Antoine Bonduelle and Stéphanie Goujon, TPE-PME, *comment réussir le passage à la neutralité carbone ? op. cit.*

⁽²⁾ Ademe & QICE Group “Expérimentation française de la méthode ACT auprès des PME et ETI, synthèse du rapport d'opération,” May 2018.

⁽¹⁾ **Bpifrance Le Lab**, *Une aventure humaine. Les PME-ETI et la RSE*, March 2018.

Adapt the business model to make it sustainable

Beyond measures needed to limit a company's negative impacts on the environment, managers must also re-examine and adapt the business model to environmental issues.

This requires questioning the way you design, produce and distribute your offers, etc., with the challenge of finding the necessary balance between profitability and added societal and environmental value.

Building a sustainable business model means, for example:

- working on a full cost basis and factoring in the negative external effects generated by your business model;
- aligning all your company stakeholders in a sustainable business model, whether they are end-users, the bank or investor, employees, suppliers, etc. Indeed, some financing will be based on environmental and climate constraints (see European taxonomy); external partners may also request more CSR certifications; clients will also want to see proof of the efforts undertaken by the company; and employees will be able to request real commitments;
- actively contributing to the 17 SDGs⁽¹⁾;
- questioning strategies based on programmed obsolescence and chasing sales volume, models that are high consumers of resources and energy and which place significant pressure on the environment;
- moving from a product to a use, by charging for integrated solutions⁽²⁾. In this case, the company no longer sells a product or service, but the performance promised by that product or service (for example in the form of pay per use). These models contribute to the increased durability of the products, a necessary condition for high performance over time.

⁽¹⁾ See page 162.

⁽²⁾ **Bpifrance Le Lab**, *La transformation à l'ère du digital. Un guide pratique à destination des dirigeants*, March 2019.

Building a sustainable business model also requires rethinking the company's *raison d'être* and its contribution to society. The Covid-19 crisis has further amplified this need for meaning and authenticity among consumers and employees. It requires companies to take ownership of the issue, at the risk of being boycotted or ignored.

Examples of SME-MSBs having placed the climate and the environment at the heart of the company



Savco (boiler maker, €8.9 million in turnover in 2018): faced with cheaper competitors, in 2011, the company decided to differentiate itself through a CSR approach and a very strong environmental component. In 2013, it was certified ISO 14001, a specific standard on environmental management. This has for example, resulted in technological innovations on various devices, reducing its carbon footprint in several cost areas, setting up channels for different types of waste, training its employees and raising their awareness of these issues, etc.

Résistex (lighting sector, turnover of €15.3 million in 2018): the company has been committed to “green growth” since 2008. The company is now determined to reduce the carbon footprint by 40% in ten years, to seek less energy-intensive lighting solutions and to transform its business model. Indeed, rather than simply selling lights, the company now offers support services to take account of the lighting result once installed and thus reducing the amount of electrical energy required.



NATIONAL LOW-CARBON STRATEGY AND THE SDGs

For inspiration and to help ask the right questions to adapt their business model, companies can look at programming documents such as the [French] National Low Carbon Strategy (SNBC), or international agendas such as the Sustainable Development Goals.

These documents set out the major climate and environmental guidelines.

National Low Carbon Strategy

This is the roadmap set by France to tackle climate change and achieve carbon neutrality by 2050. It is a foundation document, which gives guidelines per sector. Managers and their employees can use this to anticipate the long-term impact on their activities.

Sustainable Development Goals (SDGs)

These are 17 goals defined by the United Nations, based on the triptych: tackling poverty, sharing prosperity and protecting the environment. It contains goals on sustainable consumption, access to decent jobs, protecting the oceans, etc., all elements that can also serve as inspiration for SME-MSB managers within the framework of their actions.

NATURE-BASED SOLUTIONS: A CONCRETE ADAPTATION METHOD

Nature-based Solutions (NBS) are defined by the International Union for Conservation of Nature (IUCN) as actions to protect, sustainably manage and restore natural or modified ecosystems that address societal challenges effectively and adaptively, simultaneously providing human well-being and biodiversity benefits.

In an urban context, it's mainly about making the buildings and roads greener. In addition to strengthening local biodiversity, the two positive effects sought are:

- limiting the risk of flooding by dewatering the soil;
- mitigating heat islands: green spaces and urban parks reduce the temperature by 2.5°C compared to the surrounding areas⁽¹⁾.

For SME-MSBs, this concept can be applied to the layout of the company's sites and treating grey water. NBSs can be more economical than conventional developments.

Non-exhaustive list of possible measures:

- planting streets, squares and roadsides, with isolated or non-isolated trees, gardens, isolated beds, or green spaces allowed to grow freely;
- planting building façades and flat roofs;
- soil dewatering: in pedestrian areas or low-traffic roads (e.g. car parks), use of porous materials or drains to make it easier for water to run off into the soil;
- phyto-purification of grey water: creation of wetlands to manage rainwater, wastewater, including industrial water;
- use of bio-sourced materials for insulation or use of local, recycled or deconstruction materials.

⁽¹⁾ CDC Biodiversité "Évaluation socio-économique des Solutions fondées sur la nature", Biodiv 2050 No. 17, May 2019.

QUESTIONS TO...



Jean-Marc Chalot

Chairman of Pharmatis

- Business: Health sector
- 260 employees
- 2019 turnover: €42M
- Region: Hauts-de-France

“If a major drought were to knock us for six, that would be my priority, but we can't fight on all fronts.”

Can climate imbalance have a negative impact on your production?

Yes, for ingredients, such as Agar-agar for example (seaweed used in making gums). Like any natural product, it can become scarce, or contaminated. It's an example of potential fragility, but not a real threat. We could replace this seaweed.

Then, looking at global warming, as we work a lot in air-conditioned environments, we would probably have a bigger energy bill.

This could have a real impact in the future when our suppliers start running out of certain resources. For example, we could run out of boxes, which is something we use a lot of. Also, we use a lot of water, mainly for cleaning. Water scarcity would pose a real problem. If a major drought were to knock us for six, that would be my priority, but we can't fight on all fronts.

Do you have someone responsible for these issues in-house?

We have to have an environmental safety officer, given our business, because we produce emissions. But a “Mr. Climate” is more for larger companies. Furthermore, I think it depends very much on how close the company's business is to climate-related activities. And we don't have much that is related to the climate here.

How important is it for your company to adapt to climate and environmental issues?

Many issues are more important to us than global warming. Our top priorities today (in order) are staff safety, product quality and production.

However, we have already implemented many back-up solutions or solutions for operating in poor conditions (computer hacking, factory fire, accident, explosion), which may also concern a climate-related event. Indeed, our clients are already very demanding in this respect.

Then, internally, we have set up a carpooling system, because we are a bit isolated and poorly served by public transport. We also do a lot of conference calls with our clients and/or employees.

Do you see opportunities for product development to address these kinds of issues?

This may be in the choice of excipients, such as gums (gel aspect, which densifies the product). If we start making natural gums, we will use less energy. The more sophisticated they are, the more expensive they are to produce. If we have the free reign with a formulation, we would suggest sugar syrup, for example. It is common, easy to make, less expensive, does not require the addition of preservatives and is stable. Whereas sweeteners are chemicals, and more expensive.

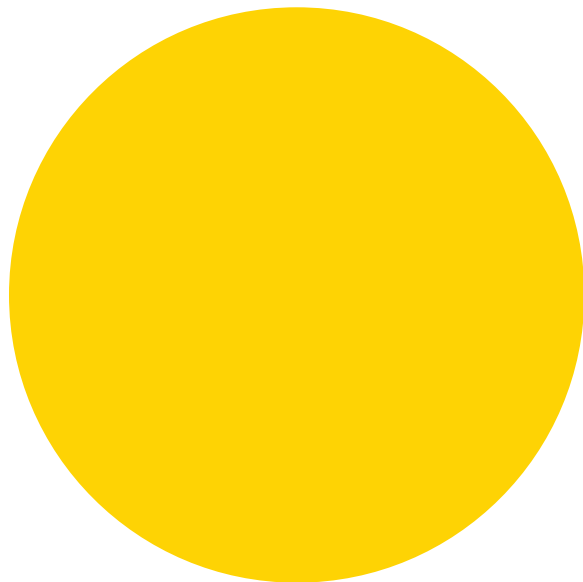
Conclusion: action calls for ever more action

The climate at the center of corporate strategies

The recommendations presented in this study make it possible to initiate a positive approach to climate and environmental issues, with the aim of heralding a more ambitious and profound positioning, going as far as changing the company's business model.

Climate and environmental issues are rarely considered in isolation. Indeed, this aspect often forms part of a CSR approach, one part of which focuses on environmental issues⁽¹⁾. In this respect, a company can have many reasons for acting: willingness to adapt to transition risks, particularly regulatory risks; the company's overall strategy to put the climate and the environment at the heart of its business model; the normal course for surviving in the face of changes that reduce a business model's viability, etc.

The key is to remember that the company's commitment can start with a limited approach restricted to a few initiatives. Gradually, this commitment will become more comprehensive and systematic. Technological advances will often remain central but insufficient. An SME or MSB involved in a global climate and environmental transition process will, in fact, roll out a set of initiatives that will fundamentally change its business model and the way it operates.



⁽¹⁾ **Bpifrance Le Lab**, *Une aventure humaine. Les PME-ETI et la RSE*, March 2018.



**ACKNOWLED-
GEMENTS ...**

**...
AND
BIBLIOGRAPHY**

Non-exhaustive bibliography

Information on climate change and the associated environmental risks

- COMMISSARIAT GÉNÉRAL AU DÉVELOPPEMENT DURABLE [FRENCH GENERAL SUSTAINABLE DEVELOPMENT COMMISSION], *Risques climatiques : six français sur dix sont d'ores et déjà concernés*, January 2020, available at: www.statistiques.developpement-durable.gouv.fr
- DANTEC Ronan & ROUX Jean-Yves, *Adapter la France aux dérèglements climatiques à l'horizon 2050 : Urgence déclarée*, Information Report, Senate, No. 511, May 2019, available at: www.senat.fr
- IPCC, *Climate Change 2014: Summary Report Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*, 2015, available at: www.ipcc.ch
- IPCC, *Global warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development and efforts to eradicate poverty*, September 2019, available at: www.ipcc.ch
- JOUZEL Jean (dir.), *Le climat de la France au XXI^e century. Regionalised scenarios: 2014 edition for metropolitan France and overseas regions*, Volume 4, Ministry of Ecological and Solidarity Transition, August 2014, available at: www.vie-publique.fr
- MÉTÉO FRANCE, "Bilans climatiques annuels", Online portal "Climat HD", available at: www.meteofrance.fr

General information on the environment and the climate, related to adapting and transitioning to a low-carbon world

- INTERNATIONAL ENERGY AGENCY, *Sustainable Recovery*, June 2020, available at: www.iea.org
- AGENCE RÉGIONALE DE LA BIODIVERSITÉ [FRENCH REGIONAL BIODIVERSITY AGENCY], *Climat : la nature source de solutions en Île-de-France*, Recueil de propositions pour la COP21, November 2015, available at: www.arb-idf.fr
- EUROPEAN COMMISSION, *Action Plan: Financing Sustainable Growth*, March 2018, available at: eur-lex.europa.eu
- DÉPOUES Vivian, GRANGER Frédéric, LEGUET Benoît, *Se situer dans la transition énergétique : un impératif pour toutes les entreprises. An approach co-constructed with the Compagnie des Alpes*, *Climate Brief*, I4CE, No. 53, May 2018, available at: www.i4ce.org
- HAINAUT Hadrien, LEDEZ Maxime & COCHRAN Ian, *Panorama of Climate Finance*, 2019 Edition, I4CE, September 2019, available at: www.i4ce.org
- EUROPEAN COMMISSION, *Taxonomy: Final report of the Technical Expert Group on Sustainable Finance*, March 2020, available at: ec.europa.eu
- [FRENCH] MINISTRY OF ECOLOGICAL AND SOLIDARITY TRANSITION, *Stratégie Nationale Bas-Carbone, La transition écologique et solidaire vers la neutralité carbone, Synthèse*, March 2020, available at: www.ecologique-solidaire.gouv.fr
- Novethic, an online information site on sustainable finance and the sustainable economy, for companies and financial stakeholders (a subsidiary of Caisse des Dépôts Group), available at: www.novethic.fr
- UNITED NATIONS ORGANIZATION, "Sustainable Development Goals," available at: www.un.org

Acknowledgements

The authors would like to thank in particular the 19 managers who agreed to talk to our teams or those of QualiQuanti on their ideas and actions for the climate and the environment:

Yasmina Auburtin (On Est Prêt); **Arnaud Bayeux** (Shoemakers); **Marie-Dominique Bogo** (batiRIM); **Damien Cacouault** (Agilcare); **Laurence Capossele** (Cetup/Global Compact); **Pascale Cartier** (La Vie Saine); **Jean-Marc Chalot** (Pharmatis); **Sophie Chénel** (Procédés Chénel International); **Alice Cotte** (La Ruche qui dit Oui); **Hervé Dépéry** (La Précision); **François-Henri Deutsch** (Elf-Astute); **Emmanuel Duet** (DEI); **Thibault Laconde** (Callendar); **Marie-Laurence Le Ray** (Ecodis); **Michel Malvy** (Bamboo Fibers Technology); **Jonathan Schor** (CPC Packaging); **Jonathan Sebbane** (Sogaris); **Silvano Trotta** (Atelio); **Gaetan Vidal** (Rexia SAS).

The authors are very grateful to the 10 experts interviewed directly, or through QualiQuanti, for their insightful analyses within the framework of drafting this study:

Gérard Aspar (retired, Saint-Gobain Group); **Frank Bénédic** (founding consultant of ID Strat); **Michel Cardona** (I4CE); **Vivian Depoues** (I4CE); **Thierry Laval** (L'Atelier Consommateur et Citoyen); **Didier Livio** (Deloitte Développement Durable); **Philippe Moati** (Obsoco); **Sébastien Nerva** (EpaMarne); **Aurélien Rouquet** (Neoma Business School); **Guillaume Uster** (Gustave Eiffel University, Lille campus).

Bpifrance Le Lab would also like to thank the 1,006 managers of SMEs and MSBs who agreed to answer our questionnaire and who made this study possible.

The authors would also like to thank **Eric Bodson**, **Cécile Malichier** and **Marie Rabaté** of the Banque de France for their valuable proofreading of the questionnaire, and the discussions which helped to guarantee its quality.

The authors would like to thank the **Bpifrance** staff who contributed to this study:

- Bpifrance's marketing team, **Stéphane Bisconte**, **Nadia Ejdaa**, **Léa Estermann**, for their considerable efficiency in managing the online questionnaire;
- the Documentation team for their exhaustive vigilance;
- **Pascale Courcelle**, **Philippe Kunter**, **Thomas Saleh**, **Pauline Schertzer** and **Clotilde Vernet**, for the many discussions on climate, their advice and opinions;
- **Edouard Combette**, **Gilles Schang**, **Samia Ben-Jemaa**, **Aurélien Hüe** and **Jacques Solleau** for presenting us with the landscape of companies working on ecological and environmental transition;
- **Gabrielle Delmon** and **Louis Fonteneau**, intern project managers at Bpifrance Le Lab for their contributions to the analyses and interviews, as well as the whole Lab team!



bpifrance-lab@bpifrance.fr



www.bpifrance-lab.fr



[www.twitter.com/BpifranceLeLab](https://twitter.com/BpifranceLeLab)

Contacts

Elise TISSIER,
Director of **Bpifrance Le Lab**
elise.tissier@bpifrance.fr

Aurélien LEMAIRE,
Study manager, **Bpifrance Le Lab**
aurelien.lemaire@bpifrance.fr

Laura PARMIGIANI,
Study manager, **Bpifrance Le Lab**
laura.parmigiani@bpifrance.fr

Barbara LÉVY-ORTÉGA,
Responsible for interviews
with SME-MSB managers
barbara.levyortega@bpifrance.fr

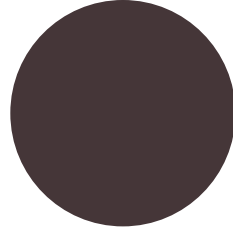


Guillaume Lagane, Eurl Facilitation graphique

Bpifrance

27-31, avenue du Général Leclerc
94710 Maisons-Alfort Cedex
Tel.: 01 41 79 80 00

bpifrance.fr



**SERVING
THE FUTURE**

