

BOOSTING MITIGATION, **SETTING ADAPTATION** ■ **IN MOTION**

ANNUAL REPORT 2021
OF THE HAUT CONSEIL POUR LE CLIMAT

JUNE 2021

■ EXECUTIVE SUMMARY

The effects of public climate policies manifested themselves in 2019 by a significant reduction in emissions at national level and in most regions. The reduction observed in 2020 is mainly attributable to measures related to Covid-19. Nevertheless, current efforts are insufficient to guarantee achievement of the 2030 objectives, particularly in the context of the new European Climate Law. As climate conditions move beyond the ranges of natural climate variability, with increasing impacts, adaptation efforts must be rapidly deployed and integrated into climate policies as a whole.

FROM THE REGIONS TO EUROPE, SOME PROGRESS, TO BE STRENGTHENED

The downward trend in French greenhouse gas emissions strengthened slightly in 2019, with a decrease of 1.9% over one year, or -8.6 Mt CO₂e, for 436 Mt CO₂e emitted by France in its territory. Progress has been made, some of which is structural, in the sectors of buildings, industry and energy transformation, followed by agriculture, while transport has seen its emissions stagnate. Transport remains the sector with the most emissions (31% of emissions, of which more than half are attributable to private cars), followed by industry and agriculture (19%) then buildings (17%), energy transformation (10%) and waste (4%). Added to territorial emissions are international transport emissions, which are on the rise and driven by aviation, as well as emissions from international trade in goods and services. These results in a carbon footprint that could amount to 663 Mt CO₂e in 2019, about half of which comes from imports. Per capita, territorial emissions stand at 6.5 TCO₂e; the carbon footprint at 9.9 TCO₂e. In 2020, a pandemic year with an unusual activity profile, the territorial emissions of France may have fallen by 9%.

Most regions of France saw their emissions decrease over the period 2015-2018, sometimes significantly (Île-de-France, Centre-Val-de-Loire and Auvergne-Rhône-Alpes). Emissions from transport are on the rise overall (except in Île-de-France) and those from buildings are generally decreasing.

In Europe, since 1990, France has reduced its emissions slightly less than the European average, notably Germany

and the United Kingdom, which have made recent gains in the energy sector. Territorial emissions per capita remain lower in France than the European average. They are nevertheless higher in the transport and agriculture sectors, reflecting the comparative weight of these sectors in the countries. Strong sectoral disparities in emissions reductions exist in Europe, and France could draw inspiration from best practices, even if no European country stands out for its progress in the crucial transport sector. In addition, French imported emissions (net of exports) of CO₂ are higher than the European average, for a final carbon footprint that is close to the European average.

Due to the delay accumulated by France, the current rate of annual reduction will have to practically double to reach at least 3.0% by 2021 (-13 Mt CO₂e) and 3.3% on average over the period of the third carbon budget (2024-2028). France's first carbon budget (2015-2018) was exceeded by 62 Mt CO₂e cumulative, mainly due to emissions from transport and buildings. Revision of the SNBC2 (National Low-Carbon Strategy 2) led to a lack of ambition for the period 2019-2023. The indicative tranche of emissions for 2019, which targeted only a 0.3% reduction, was respected. This low-carbon transition is monitored by the SNBC indicators, which increase the transparency of public action and ensure its accountability. However, it would be worth strengthening these indicators and updating them more regularly to facilitate the steering of the implementation of the SNBC, as well as its use in the implementation of the action plans of the ministries requested by the

Prime Minister. In the next edition of the SNBC, it could be based on a typology of complementary indicators taking into account the physical transformations, public policies and finally the changes in the collective structures of our society, essential to the success of the trajectory towards the net zero emissions goal.

The Covid-19 pandemic has had an unprecedented, but temporary, impact on global emissions, with a reduction that could reach 5.9% in 2020. This temporary drop in emissions remains subject to rebound — with 5% growth

in emissions expected for 2021 — because it does not reflect lasting structural changes. Moreover, the concentration of CO₂ in the atmosphere has continued to increase. The stimulus plans of the main world economies have insufficiently integrated positive measures for the environment and the climate (17% for the OECD countries alone). In this context, the French recovery plan is well positioned on a global scale, with a third of its funding dedicated to mitigation (€28 billion), even if the bulk of its expenditure is in line with the continuity of current action, with insufficient reduction in emissions.

IMPROVED BUT STILL PARTIAL MONITORING OF PUBLIC POLICIES, IN A EUROPEAN FRAMEWORK THAT LEADS TO INCREASED AMBITION

The government's commitment made in early 2020 to require each ministry to have a climate roadmap is materialising too slowly. This positive progress, already welcomed by the HCC, allows appropriation of the SNBC, better steering and more coherent public policies. Ten ministries have been explicitly mobilised by the Prime Minister, including six recently. Only two of them, the Ministry of the Ecological Transition and that of the Economy, Finance and Recovery, have published their action plans. The HCC will pay particular attention to the establishment of this operational process, which should be monitored regularly.

Monitoring the recovery plan using a series of regularly updated indicators and maps is a significant transparency effort. With regard to climate-specific topics, only a third of the significant measures are monitored in this way. Several measures related to transport and agriculture escape monitoring, despite the importance of these sectors and the difficulties encountered in reducing their emissions. All the significant measures concerning the emitting sectors should be monitored, as should redeployment of credits. The independent committee responsible for the assessment must take into account the challenges of the low-carbon transition in its work. Analysis of the conditionalities of climate-related public aid calls for extension of their application and improvement of their level of ambition and consistency.

Regarding the assessment of climate laws more broadly, little has changed since the publication of the last HCC report on the subject. The impact studies remain insufficient and only marginally take into account the environ-

mental and climatic consequences of the proposed measures. The major framework laws established during the five-year term of the current government have still not benefited from the assessment scheduled a year after their entry into force. The climate and resilience bill marks an improvement in the quality of the impact study, with all the articles subject to an environmental study, and the majority of its articles assessed against the SNBC. However, no overall climate impact has been provided, qualitatively or quantitatively. The impact study should be updated at the end of the parliamentary phase and be used to better guide the drafting of implementing decrees.

Eleven of the thirteen regions of mainland France have updated a sustainable development plan (SRADDET), a step forward which must gradually converge with the national strategy and timetable. These plans will have to be evaluated six months after the new regional executives take office. The development of climate plans for inter-municipal public establishments is catching up. It is essential to link territorial action to the objectives of the SNBC and the multi-year energy programming, while initial studies show that the results of the actions carried out fall short of forecasts and the net zero emission trajectory. There is a general issue of aligning territorial planning documents with documents that are higher up than them in the hierarchy of standards. It is necessary to improve consultation between the different territorial levels and to synchronise the documents with the revision with the SNBC. Legal levers must be used more systematically by the public authorities to accelerate the low-carbon transition, with the concern of the French popu-

lation remains strong for the climate and the environment, despite the pandemic and its socio-economic consequences.

For its part, the European Union intends to strengthen its ambition by achieving carbon neutrality by 2050 and reducing its net greenhouse gas emissions by 55% by 2030.

The commitments of European countries remain heterogeneous and Germany has announced a goal of net zero emissions by 2045. The United Kingdom intends to reduce its emissions by 78% by 2035. A possible increase in France's 2030 target will have to be followed by an immediate adjustment of timetables and efforts, in particular in the transport sectors, the sector with the most emissions in France, and agriculture, which have little support from current European decarbonisation policies.

Policies implemented at national level must respond to the enhancement of European ambition. This could also be based on the extension of the European carbon credits market (ETS) to new sectors such as transport and buildings as proposed by the European Commission. In this case, it should be accompa-

nied by operational reforms, in particular the elimination of free quotas to industry. Developments in the European carbon market, which will take several years to take effect, will not exempt Member States from implementing sector-specific policies, such as a more ambitious rail policy, or from establishing measures to compensate for the negative effects of an expanded carbon market for the most vulnerable households.

The financing of public and private climate investments should be planned over the long term. In the context of the health crisis, the EU has increased its means of intervention, partially directed towards climate policies. These sums remain modest at European level and with regard to the reforms to be undertaken. These efforts must be relayed effectively by the Member States, especially over the long term. In the context of the transition, reviewing the budgetary rules of the Stability Pact could facilitate the large-scale public investments necessary for the decarbonisation of economies, which could be based on a shadow price for the climate, determined at European level.

MIXED PROGRESS IN THE VARIOUS EMITTING SECTORS GLOBALLY NOT ALIGNED WITH THE REDUCTION TRAJECTORY ANTICIPATED BY THE SNBC

Public policies are still insufficiently aligned with the 22 sectoral orientations of the SNBC analysed. Only one of them should see its objectives achieved, three could not be assessed, and six have not been implemented. Twelve of them correspond to policies that are only partially aligned, with significant uncertainty surrounding their achievement.

Transport remains the main source of greenhouse gas emissions in France, the only sector that increased between 1990 and 2019. This is also the case across Europe. The growth in transport demand and the lack of modal shift to rail are the two main factors hampering emission reductions. Changes in European or French regulations (greenhouse gas emission standards for vehicles, weight) do not allow the 2030 objectives to be achieved. The commitments made in return for the recovery plan are insufficient and not very binding. The levers of the structural changes identified have not been activated. **Overall, public mobility policies are not sufficiently aligned with the orientations of the SNBC.**

In the buildings sector, the decrease in emissions, which has been continuous since 2015, needs to be accelerated

in order to bring it in line with the pace anticipated by the SNBC. The ban on oil-fired boilers, which has been delayed, will have to be consolidated to facilitate a move towards total decarbonisation of heating. The overhaul of energy efficiency certification, necessary given their central place in the energy renovation policy, is however unsatisfactory. The concept of "low-consumption building" and the scope of the renovation of energy sieves are weakened. The resources provided for in the recovery plan must be increased, consolidated in the longer term and used more effectively, in order to contribute to the emergence of a sector that creates jobs. **Implementation of SNBC guidelines for the buildings sector is mixed.**

Emissions from industry have fallen by 41% since 1990, with a reduced rate over the past decade. Since 2010, the decrease is partly due to the improvement made in production processes through energy efficiency gains in manufacturing processes and to energy decarbonisation. Decarbonisation of the sector and its many sub-sectors is complex and cannot avoid residual emissions. Several measures in favour of the climate, mainly stemming from the stimulus plan, have been implemented, but this is also the case for new

measures favourable to fossil fuels, which will have an unfavourable impact. All public policies in industry are only partially aligned with the orientations of the SNBC.

In the **agricultural sector**, emissions reductions are low compared to other emitting sectors: **9% since 1990**. Methane emissions represent two-thirds of national methane emissions and are decreasing as a result of the reduction in herd size and the use of livestock manure in fermenters. France has reduced its agricultural emissions less since 1990 than its main European neighbours. The rate of reduction remains insufficient in light of the SNBC objectives. In addition, the gap between the assessment of carbon sinks currently recorded by national inventories and those anticipated by the SNBC (which are 20% higher) must be reduced. The decrease in the CO₂ absorption of French forests and meadows and the continued artificialisation of soils are to blame. Imported deforestation as well as the degradation of the world's forests are also behind a massive reduction in carbon stocks at global level. The European Union is the world's second largest player in this imported deforestation after China, and France contributes to it through its imports of soya for animal feed and palm oil for biodiesel. As for public policy, the reform of the Common Agricultural Policy (CAP) is currently the key topic. Several avenues exist for strengthening the CAP's contribution to climate action. In addition to national policies, European

action must help achieve as high a carbon storage as possible in agricultural soils, biomass and forests, avoid imported deforestation, and accelerate the reduction in methane emissions resulting from animal husbandry and nitrous oxide linked to the use of fertilisers. Sector players must get involved and be supported, both for mitigation and for adaptation. **Overall, public policies are not sufficiently aligned with the orientations of the SNBC.**

Emissions from energy transformation have fallen by 46% since 1990, especially over the past decade. The decrease continued with a 5.6% drop in 2019. About half of the emissions are linked to the production of electricity and a fifth to oil refining. The drop in emissions between 1990 and 2019 was mainly due to the development of nuclear power, a gradual substitution of coal and oil products by gas, then more recently by renewable energies, and improved energy efficiency. French emissions for energy transformation remain, per capita, well below the EU average, but the rate of decline remains within the European average. These decarbonisation efforts must be reinforced by policies supporting reduced use and consumption, and a strategic vision capable of steering investments, in particular towards the deployment of renewable energies. **There are several options for decarbonising the sector beyond its indicative trajectory adopted by the SNBC.**

AS THE IMPACTS OF CLIMATE CHANGE ALREADY AFFECT THE NATIONAL TERRITORY, THE IMPLEMENTATION OF ADAPTATION MUST BE ACCELERATED AND PLANNED AND EXISTING POLICIES NEED TO BE CONSISTENT

Two-thirds of the French population are already strongly or very strongly exposed to climate risk. Adaptation to climate change can no longer be reduced to one-off and reactive responses but must become transformational and proactive, to anticipate the continuing consequences of climate change which go beyond the ranges of natural variability and whose effects are already visible. Climate change is characterised by changes in the intensity and frequency of weather and climate extremes, but also in the recurrence of medium-intensity events, their date of onset, their location and their interactions. These trends will continue as a function of the level of global warming.

It is essential to acquire robust and reliable tools to identify and measure the impacts of climate change and allow the development of coordinated climate services. The risk analysis requires the most notable changes in the distribution of hydro-climatic processes to be looked at. They must be assessed considering the use of land, especially that of coastlines, river valleys or mountains. Global warming will have impacts on living and working conditions, health, standard of living or well-being. For land surfaces, it will result in a degradation in quantity or quality of water resources and biodiversity. It will also affect property and infrastructure. Finally, it will weigh on financial stability with the loss of value of certain assets, for example in agriculture.

Adaptation aims to limit the negative impacts of a changing climate. Climate risk is dynamic: hazards, vulnerability and exposure are constantly evolving, and interacting with the responses provided. These responses must therefore not increase the risk and lead to any maladjustment that would increase greenhouse gas emissions. The solutions must themselves be adaptable, and therefore regularly evaluated. Flexible measures, which can be reviewed and modified, are therefore to be favoured. They can be ad hoc and incremental. But the goal is for them to be systemic and ultimately transformative. The first challenge is to move away from reactive, sector-specific responses, defined on a case-by-case basis, to a proactive, preventive and participatory approach, which provides co-benefits for reducing emissions. Adaptation must lead to the resilience of the system in question, knowing that this resilience is not always synonymous with improvement. Adaptation is therefore a political and ethical issue, which questions what society wishes to protect.

Adaptation and mitigation are both essential and complementary. It is not possible to continue to emit greenhouse gases thinking that it will be possible to adapt to any level of climate change. The synergies between mitigation and adaptation are numerous, even if they are not systematic. Their interactions must be anticipated in order to be optimised. Unequal adaptation capacities must also be taken into account, with a view to just transition. In particular, it is necessary to consider the links between socio-economic and territorial inequalities and differential vulnerability to hazards. It is also necessary to arbitrate

between compensation and non-compensation and to ask the question of the financial responsibility of those who are exposed to the risks in full awareness, even though not all damages are compensable. These issues were not addressed in the climate and resilience bill.

Adaptation is the subject of numerous international, European and national texts, but the corresponding strategies, standards or plans generally lack direction. In France, the National Climate Change Adaptation Plan (PNACC) has defined, with all the stakeholders, some sixty disparate actions, which would benefit from a more ambitious trajectory being defined. At local level, adaptation is treated unevenly. Like at national level, it falls within several fields of action (crisis and emergency management, prevention, protection, preparation, post-crisis recovery and learning capacity), while relying on incremental and structural transformations within the territories. Each territorial level has a role to play. There are multiple instruments and levers and these must be based on a strengthened link between planning and adaptation, going beyond silo approaches and projecting themselves at different temporal and spatial levels. To make all the tools and actions consistent between the territories and the various levels, to offer a long-term vision by guaranteeing the continuity of the action and to integrate the challenges of just transition, a national climate change adaptation strategy must be drawn up, with quantified objectives and precise deadlines, by identifying priority sectors in conjunction with all stakeholders and territories.

GENERAL

. RECOMMENDATIONS

1. CLARIFY PUBLIC POLICIES THAT ARE STILL NOT VERY READABLE.

- The measures in place and the current decarbonisation timetables are insufficient to guide investments due to the lack of sufficiently clear and stable prospects in the medium and long term. The time horizons of the restrictive measures must be brought forward to engage the emitting sectors more rapidly towards the trajectory of the SNBC. For example, the date for ending the sale of combustion vehicles could be brought forward to 2030 as in the United Kingdom. Vehicle weight penalties should be applied sooner to significant vehicle categories. A phase out from fossil energy for heating buildings should be announced, or tax exemptions on fossil fuels, particularly for agricultural use, lifted. A strengthening of France's ambition for 2030, which will result from a strengthening of the European ambition, will be the opportunity to join this trajectory. The ongoing European reforms and the development of the SNBC3 in France must come together to establish a clear and meaningful carbon price trajectory.

2. FINALISE THE STRATEGIC DOCUMENTS WITHOUT DELAY AND MAKE THEM CONVERGE GRADUALLY TOWARDS NATIONAL OBJECTIVES.

- The current development of action plans by ministries and of sector-specific decarbonisation strategies, as well as sustainable development plans for local authorities, should enable all public and private stakeholders to take ownership of decarbonisation issues. They must now be completed and supplemented by establishing the necessary budgets and by allocating resources. They must align with the objectives of the SNBC and gradually converge France and its territories towards achieving climate objectives.

3. SUSTAIN THE SUPPORT AND INVESTMENTS WITHIN RECOVERY PLANS THAT CONTRIBUTE TO LOW-CARBON STRUCTURAL CHANGES.

- These investments (building renovations, development of public transport, development of carbon-free hydrogen, etc.) are essential for the low-carbon transition. Making them part of the continuity of the recovery plans would reassure investors and create new sectors and new jobs. European budgetary rules should also be reviewed to facilitate sustainable spending linked to the transition. Low-carbon conversion sectors must be supported and the co-benefits, especially for health, promoted.

4. IMPROVE PUBLIC POLICY ASSESSMENT AND MONITORING PROCESSES, WHICH REMAIN INSUFFICIENT DESPITE RECENT EFFORTS.

- Impact studies should make it possible to estimate the contribution (positive or negative) of laws to achieving climate objectives in order to guide the associated measures and decrees. Positive developments have taken place for the monitoring of the measures of the recovery plan, but the entire assessment process does not yet allow true steering of the trajectory. Regular monitoring would provide rapid feedback and insights on best practices in national and sector-specific policies among regions and neighbouring countries.

5. SYSTEMICALLY INTEGRATE CLIMATE CHANGE ADAPTATION INTO NATIONAL AND REGIONAL POLICIES.

- The impacts of a changing climate are already being felt and are set to intensify, even if the goals of the Paris Agreement are met. It is therefore necessary to prepare, by identifying the impacts at local level and by developing, working across ministry, with the stakeholders and the territories, a national adaptation strategy consistent with the SNBC. This must propose precise quantified objectives, temporal milestones and progress indicators, and identify priority sectors (for example water, agriculture, forestry, risk insurance or tourism).

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ABOUT THE HAUT CONSEIL POUR LE CLIMAT (THE HIGH COUNCIL ON CLIMATE)

The High Council on Climate (HCC) is an independent body tasked with issuing advice and recommendations to the French government on the delivery of public measures and policies aimed at reducing France's greenhouse gas emissions. Its purpose is to provide independent insight on government climate policy. The HCC was established on 27 November 2018 by the President of the Republic and then by Decree in May 2019. Its members are chosen for their expertise in the fields of climate science, economics, agronomy and energy transition.