HAUT CONSEIL
pour le **CLIMAT**

MOVING BEYOND STOCKTAKE TO **IMPLEMENTING SOLUTIONS**

ANNUAL REPORT 2022
HAUT CONSEIL POUR LE CLIMAT

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. EXECUTIVE SUMMARY

The impacts of human-induced climate change are worsening in France, as is the case in every region of the world, with an escalation of the chronic and acute effects, and significant human, material and financial consequences. France's response to global warming is progressing but remains inadequate and adaptation policies suffer from a lack of strategic objectives, resources and monitoring. In 2021, climate transition governance was strengthened and new measures were taken for most of the sector-specific orientations of the National Low Carbon Strategy (SNBC).

Nonetheless, there are still major risks of failing to reach the targets set by France for greenhouse gas reduction. These risks and the strengthening of the European objectives call for a step change in climate action in France. In the current geopolitical context, this is all the more important as it would reduce France's heavy reliance on the import of fossil fuels and mineral fertilisers. To rise to these challenges, a fair vision of ecological transition must be shared by public and private stakeholders and deployed in all sectors and territories.

THE IMPACTS OF HUMAN-INDUCED CLIMATE CHANGE ARE WORSENING IN FRANCE, WITH CHRONIC AND ACUTE EFFECTS, AND ALREADY SIGNIFICANT MATERIAL AND FINANCIAL CONSEQUENCES

- The human influence on global warming, through greenhouse gas (GHG) emissions, are a scientifically proven fact, as demonstrated by the 6th Assessment Report from the Intergovernmental Panel on Climate Change (IPCC). It is the main factor in the rising frequency and intensity of extreme heat and rainfall events, and contributes to the increase in droughts. Sea levels are rising at an ever-faster rate. Climate-related risks will increase for each additional increment of global warming.

- The impacts of climate change are worsening in France, with chronic and acute effects, particularly due to more intense extreme heat events amplified in cities by the urban heat island phenomenon, droughts, and extreme rainfall. The material and financial consequences are already significant, especially for infrastructures, agricultural yields and ecosystems (dying forests).

  The impacts on human health are also significant (excess deaths). The exposure to coastal hazards due to rising sea levels (chronic flooding at high tide, rapid submersion, coastal erosion) and coastline recession is also growing significantly.

- In France, the year 2021 was marked by several significant weather events, the probability of occurrence or intensity of which were accentuated by human-induced climate change. Due to a mild winter, early plant growth followed by a late frost in April caused significant damage to fruit trees and vines. The rainfall deficit reappeared in spring 2022, after a temporary respite in 2021. Intense rainfall caused flooding in urbanised areas and damage to crops in late 2021.

DESPITE A PARTIAL REBOUND AFTER COVID-19, FRANCE'S GREENHOUSE GAS EMISSIONS IN 2021 CONTINUE A DOWNWARD TREND, AT A RATE CLOSE TO THAT OBSERVED OVER THE DECADE. CO_2 ABSORPTION BY FOREST CARBON SINKS DECLINED SHARPLY BETWEEN 2013 AND 2019 BEFORE INCREASING IN 2020

- Greenhouse gas emissions in France have increased again, rising by approximately 6.4% between 2020 and 2021 to reach 418 $MtCO_2e$, but remain 3.8% below their 2019 level and 23.1% below their 1990 level. The estimated rate of reduction over the period 2019-21 (a fall of 1.9% per year) is close to the rate observed over the decade 2010-19 (a fall of 1.7% per year).

- All the main GHG-emitting sectors are now witnessing a decline in emissions. The fall is well established and structural in the building, industry and energy sectors. However, it has slowed down since 2015 in the latter two sectors. The decline is recent and has yet to be confirmed in the transport and agriculture sectors. France's carbon footprint, half of which can be attributed to imports, has been decreasing since at least 2010, but remains 1.4 times higher than the emissions produced on French territory. In contrast, the absorption of CO_2 by forest carbon sinks declined sharply between 2013 and 2019, only to increase slightly between 2019 and 2020.

Emissions over 2019-21 are below the average cap included in the second carbon budget (2019-23) set by the revised National Low Carbon Strategy (SNBC2), mainly due to the effects of the Covid-19 pandemic, as well as the increase in the emissions cap in the second carbon budget when SNBC2 was revised. Activity only partially resumed in 2021, making it more difficult to determine the contribution of the effects of the mitigation policies.

- France's 2030 climate targets will be strengthened following the EU climate law adopted in July 2021. The "Fit for 55" package currently under discussion will raise France's 2030 emissions reduction target to 50% below 1990 levels for gross emissions (from the current target of 40%) and 54% for net emissions. This implies a doubling of the annual rate of emissions reduction to an average of -16 $MtCO_2e$ (-4.7%) over the period 2022-30, which should be compared to the observed annual reductions of -8.1 $MtCO_2e$ (-1.7%) since 2010 and to the current SNBC2 target of -12 $MtCO_2e$ (-3.2%).

OF THE 25 ORIENTATIONS OF THE NATIONAL LOW-CARBON STRATEGY (SNBC), ONLY 6 BENEFIT FROM MEASURES AT THE LEVEL REQUIRED TO ACHIEVE THE CARBON BUDGETS.NEW MEASURES WERE TAKEN IN 2021 ALIGNED WITH MOST OF THE ORIENTATIONS OF THE SNBC.

- It is worth pointing out the new measures introduced in 2021 for 19 of the 25 sector-specific orientations in the SNBC. However, measures for only six of the orientations are considered to match the level required to achieve the carbon budgets.

There is still a major risk of failing to reach the carbon budgets for most (19) of the orientations, including four orientations for which the measures taken are totally out of step with the SNBC.

Among the most noteworthy steps forward, the Haut Conseil pour le Climat has acknowledged the repositioning of climate action at Prime Ministerial level, the implementation of climate action plans by several ministries, and the efforts to secure public funding.

- **For the agricultural sector (19% of national emissions):**
  - Emissions from agriculture are currently in line with the sector-specific carbon budgets set out in the SNBC2. However, the sector's reduction target could be doubled if the EU's "Fit for 55" package is taken on board. France's COP26 commitment to reduce its methane emissions by 30% in 2030 must be carefully monitored as regards ruminant emissions.
  - In its current version, the National Strategic Plan for the future Common Agricultural Policy 2023-27 would only help to achieve half of the climate targets set by the SNBC2 by 2030. The budgetary provisions attributed to the climate and the criteria for granting aid must be reinforced to better align this plan with the SNBC2 and with the "Fit for 55" package. The measures that emerged from the "Varenne agricole de l'eau" forum have set in motion short-term adaptation strategies for the sectors involved, which must be made compatible with the systemic transitions required in the longer term.
  - The annual reduction path for nitrous oxide (N_2O) emissions adopted by the Climate and Resilience Law is pending the publication of an implementing decree. A levy could be introduced on mineral nitrogen fertilisers once their prices have returned to the average level seen in recent years.
  - Good practices for storing organic carbon in agricultural soils have received little support and developments in methodology still need to be harmonised. Technology development funds focusing on digital technology, robotics and genetics could further innovations with the potential to reduce emissions.
  - An analysis of the consistency of the measures implemented with the SNBC2 and specific recommendations for the agriculture sector are provided in Section 2.1.

- **For the building sector (18% of national emissions):**
  - Emissions from the building sector decreased by 1.9 $MtCO_2e$ per year over the first carbon budget period (2015-18) but by only 0.2 $MtCO_2e$ per year over 2019-21. The annual decrease will need to exceed the 3-4 $MtCO_2e$ targeted by the SNBC2 over the 2022-30 period, to anticipate the ambitions set out in the new "Fit for 55" package. Since 2015, there has been a decline in the end consumption of oil and gas, and an increase in electricity and renewable thermal energy, mainly due to the development of heat pumps.
  - The RE2020 environmental regulation for new buildings is shaping the strategies applied the construction industry, but will need to adapt to the revised European directive on the energy performance of buildings.
  - The substantial subsidies and funding schemes set out in the Recovery Plan do not encourage comprehensive extensive renovation. As confirmed in the first assessment made by the energy renovation observatory, the number of renovation operations has risen sharply, but these measures do not consistently target high-performance operations.
  - The eradication of heat sieves is made even more necessary given the energy crisis, and it accounts half of the effort required to attain the targets in Multiannual Energy Plan (PPE) in terms of building sector energy consumption. Yet this issue still receives inadequate little support, with ill-adapted regulations and aid schemes.
  - In the absence of sustainable public funding beyond 2022, the deployment of an ambitious and durable renovation programme cannot be guaranteed, which undermines the efforts made to structure the renovation sector and increase professionals' skills.

- An analysis of the consistency of the measures implemented with the SNBC2 and the specific recommendations for the buildings sector are detailed in Section 2.2.

- **For the forestry-wood sector, land use (offsetting 4% of national emissions):**

  - After a considerable 72% decline between 2013 and 2019, net forest carbon sinks increased by 14% in 2020 (the last year for which data is available) compared to 2019. This difference with the SNBC2 (down 60%) is largely explained by a degradation of the forest sink caused by three factors: a drop in biological production, greater mortality and higher removals.

  - The forestry-wood sector needs to be significantly restructured to bring it into line with the SNBC2 target and the “Fit for 55” package. Investments in forest renewal have progressed, but still fall below the level required to adapt French forests to climate change by 2050.

  - The national strategy to tackle imported deforestation should be extended to other countries, and there should be support to make it an EU-wide strategy.

  - The Climate and Resilience Act aims to achieve Zero Net Land Take (ZAN), as set out in its Article 192, and in the Biodiversity Plan. To achieve this goal, the fight against artificial land development should be extended to the parking and storage areas of commercial facilities and to sites in the logistics and e-commerce sectors.

  - An analysis of the consistency of the measures implemented with the SNBC2 and the specific recommendations for the forestry-wood and land use sector are detailed in Section 2.3.

- **For the energy sector (10% of national emissions):**

  - The energy sector is the only sector where actual emissions are significantly lower than the sector-specific carbon budgets indicated in the SNBC2. However, the pathway to the complete decarbonisation of the energy sector still lacks a systemic approach. Energy efficiency and sobriety measures are not deployed widely enough.

  - The electricity grid is not adapted to the increase in production capacity linked to growing electricity uses (mobility, buildings, industry), and to the necessary diversification of renewable energy vectors.

  - Renewable energy deployment is insufficient to meet the current 2030 targets, which will be strengthened by the new European climate law.

  - 69% of France’s electricity was produced by nuclear energy in 2021, but as the nuclear installations age, their availability is reduced. The investments announced to renew facilities will take more than a decade to come to fruition.

  - The development of carbon-free hydrogen could meet targeted certain decarbonisation requirements (industrial processes, air and sea transport, and possibly heavy goods road transport), but on timescales that remain uncertain.

  - Emergency measures in response to rising energy prices and the war in Ukraine could have structural consequences on the long-term emissions trajectory, and undermine the achievement of sector-specific climate targets if they are maintained in the long term. Substituting Russian gas by liquefied natural gas (LNG) could generate both stranded assets and an increase in France’s carbon footprint. An analysis of the consistency of the measures implemented with the SNBC2 and the specific recommendations for the energy sector are detailed in Section 2.4.

- **For the industrial sector (19% of national emissions):**
  - The industry sector has to accelerate the pace of its emissions reductions in order to meet future carbon budgets and the ambitions set out in the EU's "Fit for 55" package. Annual reductions are expected to exceed the 2.2 $MtCO_2e$ targeted by the SNBC2 over 2022-30. For comparison, they were 1.8 $MtCO_2e$ on average over 2018-21.
  - Four decarbonisation roadmaps have been drawn up by the strategic committees for the sectors (chemicals, cement, mining and metallurgy, paper) that account for nearly 75% of industrial emissions. These roadmaps fall short of the ambitions set out in the SNBC2. They do not take into account changes in demand or changes in jobs, and are not particularly operational.
  - Climate funding is increasing, but remains below the level required to meet decarbonisation goal by 2030. The France 2030 plan provides for €4 billion to develop innovative technologies, but the effects of this will only be felt after 2030. Climate-unfriendly spending concerning industry in the State's "green budget" has not been cut. Little funding is in place to support the various sectors and professional transitions.
  - Progress has been made to strengthen the legislative and regulatory framework on industrial emissions in the field of construction materials with the RE2020, and, to a lesser extent, in the public procurement sector with the Climate and Resilience Act. At the European level, the revision of the Emissions Trading Scheme (ETS) and the Border Adjustment Mechanism (BAM) may allow for structural progress, depending on how they are rolled out.
  - An analysis of the consistency of the measures implemented with the SNBC2 and the specific recommendations for the industrial sector are detailed in Section 2.5.

- **For the transport sector (30% of national emissions):**
  - The transport sector, the largest emitting sector in France, needs to accelerate the pace of its emissions reductions considerably if it is to meet future carbon budgets and the ambitions of the EU's "Fit for 55" package. Annual reductions are expected to exceed the 3-4 $MtCO_2e$ targeted by the SNBC2 over 2022-30, to anticipate the new European objectives. In comparison, emissions from this sector decreased by 0.7 $MtCO_2e$ per year over the period covered by the first carbon budget (2015-18) and 4.5 $MtCO_2e$ per year over 2019-21.
  - Progress has been made in developing decarbonisation strategies, but it is not systematically rolled out operationally and funding is not guaranteed for the long term. The decarbonisation strategy for air transport has not been pursued so far, despite the technological and industrial demonstrators, and it does not address demand management.
  - The share of electric cars (9.8%) in new car registrations gathered pace in 2021. The greening of the vehicle fleet supported by the Recovery Plan, European standards and the measures in the Mobility Act have contributed to this acceleration. However, the deployment of electric recharging infrastructure lags behind. Schemes to encourage renewal of private vehicles do not sufficiently target low-income households and professionals, whose activities depend on their vehicles.
  - The roll-out of low-emission mobility services is continuing, but it is too slow and disparate, and not really operational at this stage. The implementation of the new measures provided for by the Mobility Framework Act remains highly variable. In rural areas, the development of alternative mobility solutions is not backed by the necessary resources. The shift to cycling continues, but there is a need for new infrastructure and support for the French cycle industry.
  - An analysis of the consistency of the measures implemented with the SNBC2 and the specific recommendations for the transport sector are detailed in Section 2.6.

THE EUROPEAN CLIMATE LAW AND THE "FIT FOR 55" PACKAGE, CURRENTLY UNDER DISCUSSION, REQUIRE AN UNPRECEDENTED ACCELERATION IN EMISSIONS REDUCTIONS IN ALL SECTORS. AT THE INTERNATIONAL LEVEL, THE GOAL OF NET ZERO, ADOPTED BY A GROWING NUMBER OF COUNTRIES, REQUIRES STRONGER COMMITMENTS BY 2030 AND FUNDING FOR ADAPTATION IN DEVELOPING COUNTRIES THAT IS AT LEAST CONSISTENT WITH THE COMMITMENTS ALREADY MADE.

- The Glasgow COP26 bolstered international climate action by implementing the Paris Agreement and involving a growing number of countries in net zero targets. However, firm commitments, mainly extending beyond 2030, will not limit global warming to 1.5 °C as they stand. The Glasgow Climate Pact adopted at the end of COP26 reaffirms that the current decade requires accelerated global climate action. The signatory countries have committed to strengthening their short-term targets from 2022.

- The publication of the IPCC's 6th Assessment Report underscores the need for an immediate global response to keep global warming well below 2°C and as close to 1.5°C as possible. The report demonstrates that there are solutions for deep emission cuts by 2030, including solutions concerning demand and services, in all the emitting sectors, but that the next few years will be critical. Most notably, financial flows must be reoriented to low-carbon investments and increased for adaptation measures.

- Numerous crises are undermining multilateral action for the climate, and the objectives to support developing countries are not being met. Implementation of the Paris Agreement, based on the principle of voluntary contributions, and the cross-border, cross-generational scale of climate change, demand unprecedented international cooperation. Climate finance mobilised by developed countries for developing countries amounted to $79.6 bn in 2019, compared to the $100 bn per year commitment, which itself falls below the actual financing needs of developing countries.

- The war in Ukraine has revealed the vulnerability of France and Europe to imports of hydrocarbons and raw materials such as fertilisers.

  Beyond immediate crisis management measures, France's response must prioritise actions that build resilience to external shocks and speed up the reduction of greenhouse gas emissions. The European RepowerEU plan to accelerate the decarbonisation of the economy is a step in this direction. Sobriety will help us become less dependent on fossil fuel and mineral fertiliser imports, while contributing to our climate objectives. Speeding up the deployment of renewable energy and changing agricultural production practises to include less mineral nitrogen fertilisers will contribute to lower emissions, while reducing trade dependency on Russia and other countries.

- The European climate law adopted in July 2021 raises the climate ambitions for 2030 and the "Fit for 55" package currently under discussion requires an unprecedented acceleration of emissions reductions in all sectors. This package of proposals changes the architecture of European climate policy, with a revision of the Effort Sharing Regulation (ESR), Emissions Trading Regulation (ETS) and the Regulation on the Accounting of Greenhouse Gas Emissions and Removals from Land Use, Land-Use Change and Forestry (the LULUCF regulation). The revision of the EU ETS could include the introduction of a new, separate system for road transport and buildings and adjustments for international transport. In addition, the EU package creates a Carbon Border Adjustment Mechanism (CBAM).

- Specific recommendations for European and international dimensions are detailed in Sections 3.1 and 3.2.

CLIMATE GOVERNANCE IS NOW UNDER THE RESPONSIBILITY OF THE PRIME MINISTER, WHO WILL OVERSEE ITS IMPLEMENTATION FOR EACH MINISTRY AND ITS INTERMINISTERIAL AND TERRITORIAL IMPLEMENTATION, IN CONJUNCTION WITH THE NEW FRENCH CLIMATE AND ENERGY STRATEGY (SFEC) AND BY INTEGRATING ADAPTATION.

- Environmental planning is now under the responsibility of the Prime Minister. The planning instruments available are inadequately developed and coordinated. Implementation, including at the budgetary level, must involve the entire government and ensure coordination between the national and regional levels. While the SNBC2 has increased awareness of climate objectives among administrations, the future SFEC must go further and become an instrument for operational management of France's climate action.

- Formal and regular management of climate action requires more continuous monitoring of indicators and public policy evaluations. The irregular nature of Ecological Defence Council meetings, which has not convened since December 2020, and the large number of subjects covered have not allowed for this monitoring so far. The climate plans published by the ministries are more of a list of public actions than a solid programme of actions with measurable effects. The sector-specific roadmaps are not fully aligned with the SNBC2 and lack a steering mechanism to make sure that the objectives are met. Furthermore, they do not have the capacity to engage economic operators and little progress was made during the year to evaluate laws from a climate perspective.

- The lack of long-term public climate finance programming means that businesses, households and public stakeholders do not have the necessary visibility. The evaluation of climate-unfriendly measures still lacks transparency and regularity.

- Action on social norms, which are powerful levers for structural change, is required to encourage the whole of society to commit to carbon neutrality. Exemplary public and private decisions, regulation of advertising that is not compatible with low-carbon lifestyles, and a greater focus on climate issues in the media all form part of this action.

- Specific recommendations on governance are set out in Section 3.3.

- Climate policy planning and implementation in the territories are gaining momentum, but are not sufficiently linked to national objectives. It is essential that actions are consistent between the different levels and at different timescales. To carry out diagnoses, draw up local strategies and roll out action plans effectively, the territories have varying resources, means and skills at their disposal, which calls for support from the State to meet the challenges of a fair transition.

  - The adoption of regional and local climate planning tools is gathering pace. The PCAET (territory climate-air-energy plan) and SRADDET (regional scheme for planning, sustainable development and territorial equality) include targets that are broadly aligned with the 2030 emissions reduction objective, but not with the 2050 carbon neutrality goal. The SFEC process did not include a review of territorial plans and strategies.

  - State and local actions are not sufficiently coordinated, and similarly actions are coordinated between regions.

  - Ecological and climate planning does not adequately integrate the national dimensions of land-use planning. At the local level, the time frames for land-use planning and urban development are out of step with the timescales of intensified climate change and its impacts and risks.

  - Regional and local planning documents are not sufficiently evaluated.

The SRADDETs have been reviewed but there is no shared methodology. Meanwhile, the number of PCAETs s is increasing, but there is no follow-up or evaluation planned at local authority level.

- The raising of the European climate objectives implies accelerated action in the territories, at a time when the number of dedicated State operators has decreased. Territorial funding and engineering allocations remain insufficient and non-permanent, and the increasing use of calls for projects excludes the less well-off authorities.

- Specific recommendations for the territories are set out in Section 3.4.

Adaptation policies lack strategic objectives, resources and supervision, and are not joined up with the SNBC. As things stand, France is not ready to deal with future climate change. Although there are already many instruments available, they need to be consolidated, improved and completed rapidly. Planning is an underused tool, particularly on a national scale. Adaptation actions may be local, but a global and national strategic vision, anticipating the impacts of global warming and resettlement, is necessary. Inadequate adaptation is a major risk, likewise the sense of injustice.

- The SFEC is an opportunity to turn the National Climate Change Adaptation Plan (PNACC) into a genuine national adaptation strategy, with a global vision of the actions involved, defined objectives, milestones, and resources for its operational roll-out in the territories, as well as better coordination with the SNBC.

- France already has some powerful instruments (risk prevention, crisis management, compensation), but land-use planning and urban development remain underused. The sustainability of the compensation instruments is under threat.

- Resettlements and redevelopments are poorly anticipated. Given the growing needs, national and regional solidarity is under-resourced.

- Due to a lack of shared methodology, adaptation is not adequately evaluated. The risks of inadequate adaptation need to be better identified. These risks are high if the adaptation approach is curative rather than reactive. Inadequate adaptation comes with negative effects that accentuate inequalities and thus increase resistance to change.

- Equity, sustainability and a sense of justice are vital if efforts are to be socially acceptable. It is important to explain the co-benefits, encourage co-construction, and consider local contexts, knowledge and values to foster ownership.

- Specific recommendations on adaptation are set out in Section 3.5.

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