

STRATÉGIE NATIONALE BAS-CARBONE



Stratégie NATIONALE BAS-CARBONE

Summary for decision-makers



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Transition to a low-carbon economy

The National Low-Carbon Strategy (SNBC) was established by the Energy Transition for Green Growth Act No. 2015-992 of 17 August 2015. It outlines the approach to be adopted to reduce our greenhouse gas (GHG) emissions. It sets in motion the transition to a sustainable, low-carbon economy. It facilitates the management of policies for reducing greenhouse gas emissions by public decision-makers.

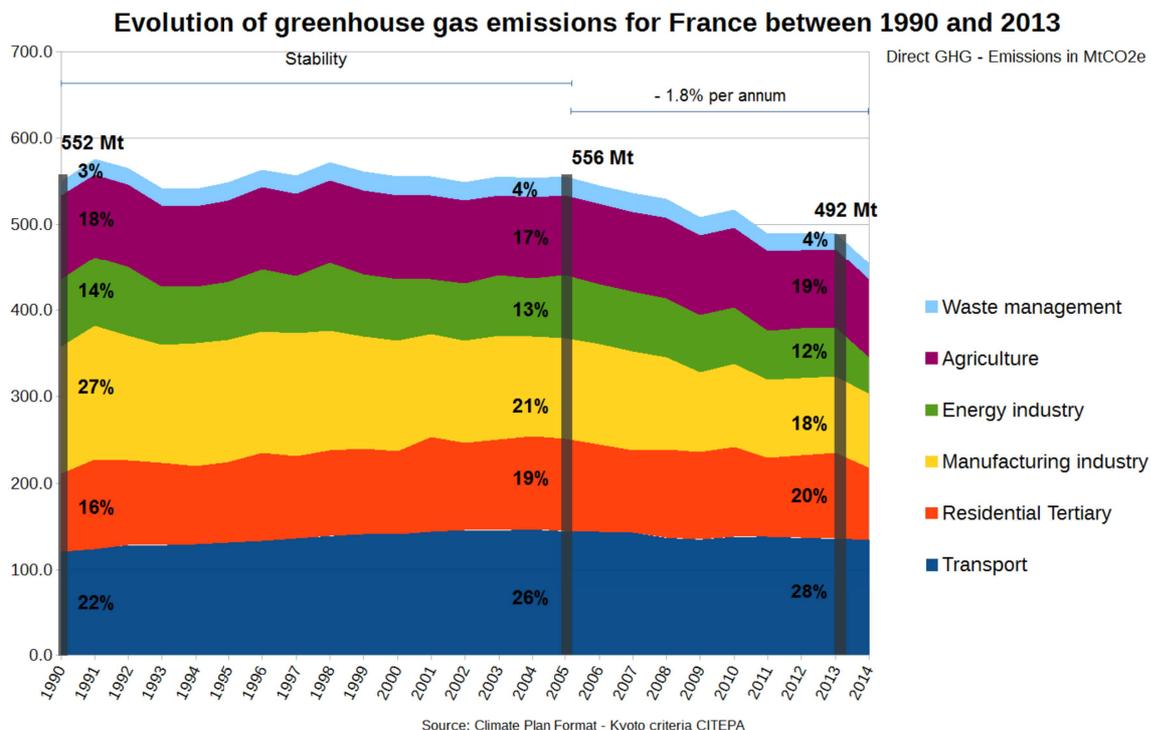
The National Low-Carbon Strategy aims to cut greenhouse gas emissions by 75% by 2050, while making it possible to stay within the carbon budgets set for the periods 2015-2018, 2019-2023 and 2024-2028 and honour the commitment made by France toward the European Union to reduce its GHG emissions by 40% by 2030.

Carbon budgets

Definition: carbon budgets define the upper limits for France's greenhouse gas emissions, expressed in millions of tonnes of CO₂ equivalent per year. They are set for periods of four to five years to enable management of the structural changes in greenhouse gas emissions while reducing certain temporary effects, such as changes in winter weather conditions.

- **Progress made**

Since the early 1990s, GHG emissions have fallen by 11% and the level of per capita GHG emissions in France is one of the lowest among developed countries. This is the result of the commitment made by France to energy management and decarbonisation of the energy mix since the late 1970s.



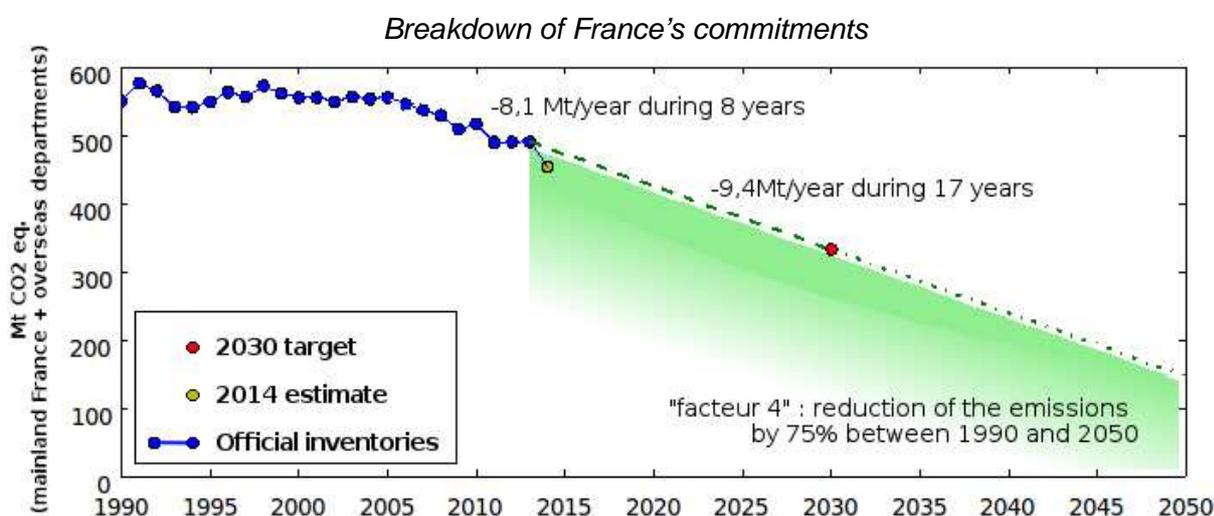
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The policies that have already been implemented to mitigate climate change should enable us to achieve our targets for the reduction of national greenhouse gas emissions by 2020. However, we must look beyond this and act to reduce the national carbon footprint, which remained stable between 1990 and 2012 owing to the increase in emissions linked to imports.

• The French Project

Beyond 2020, France has set itself even more ambitious reduction targets, in particular with the Energy Transition for Green Growth Act :

- 40% reduction in its total emissions by 2030 compared with 1990
- 75% reduction in its total emissions by 2050 compared with 1990 ("factor 4" scenario)



Reducing our GHGs to 140 Mt in less than two generations is a real challenge. It requires average reductions of between 9 and 10 Mt CO₂e per year until 2050. This means increasing the pace of reduction compared with the period 2005-2013, while ensuring the continued economic development of our country through green growth, without exporting our emissions by relocating activities that emit the most GHGs abroad, or limiting our ability to meet food security targets.

Therefore, major changes across the entire economy are vital. Massive investment is required and an overhaul in production and consumption patterns is essential.

The transition to a low-carbon economy depends on significantly strengthening energy saving efforts and decreasing the carbon intensity of the energy used. This transition must take into account all aspects of the National Strategy of Ecological Transition towards Sustainable Development (SN-TEDD), in particular including the targets relating to the restoration of biodiversity and efforts to tackle air pollution.

This strategy provides the general framework and clarifies the nature of the considered solutions. At a later stage, it must be supplemented by sectoral programmes of action, which will provide opportunities to carefully select the chosen solutions and optimise their implementation.



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Over the next 10 years, France will aim to reduce its carbon footprint, in particular through :

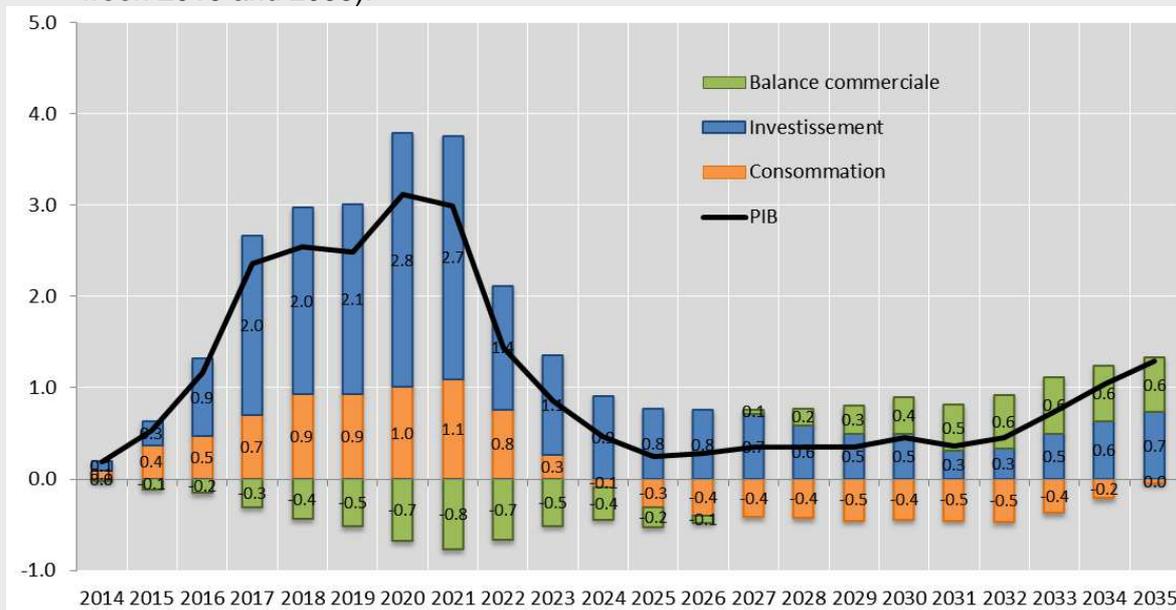
- a reduction in the carbon intensity of the economy: developing renewable energies, using bio-based materials (e.g. timber in construction), encouraging cleaner, more mindful travel, especially via low-carbon technologies, and awareness-raising among consumers ;
- a major development of energy savings in all sectors, especially industry, buildings and transport ;
- the development of the circular economy: eco-design, recycling and reuse.

This approach will be firmly rooted at the local level through the positive energy territories for green growth, regional climate-air-energy schemes, and territorial climate-air-energy plans.

Impact of the National Low-Carbon Strategy on jobs and growth

The energy transition and the development of a low-carbon economy will also enable France to :

- be less dependent on imported fossil fuels, thus reducing its energy bill and its carbon footprint ;
- support growth and thereby increase GDP compared with the trend-based scenario over the next two decades ;
- increase job creation (an average of between 100,000 and 350,000 extra jobs between 2015 and 2035).



Difference in GDP (in %) between the trend-based scenario and the reference low-carbon transition scenario (Seureco)

France is not the only country to put in place measures for the transition to a low-carbon economy. COP21 in Paris was an opportunity for France to call for greater efforts from all countries, to share concrete solutions to achieve this and highlight the mutual benefits it will bring (sharing lessons learnt and reducing carbon footprint, among others).



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Many other countries are already actively engaged in the process. The United Kingdom, for example, has established a carbon plan and chosen to structure its mitigation policy around carbon budgets. Very early on, Sweden introduced a significant tax reform, increasing taxes on fossil fuels. More generally, the European Union has set itself the goal of reducing its emissions by 40% by 2030 compared with 1990.

- **Reference scenario - broad outline of France's strategy**

Origin of the reference scenario

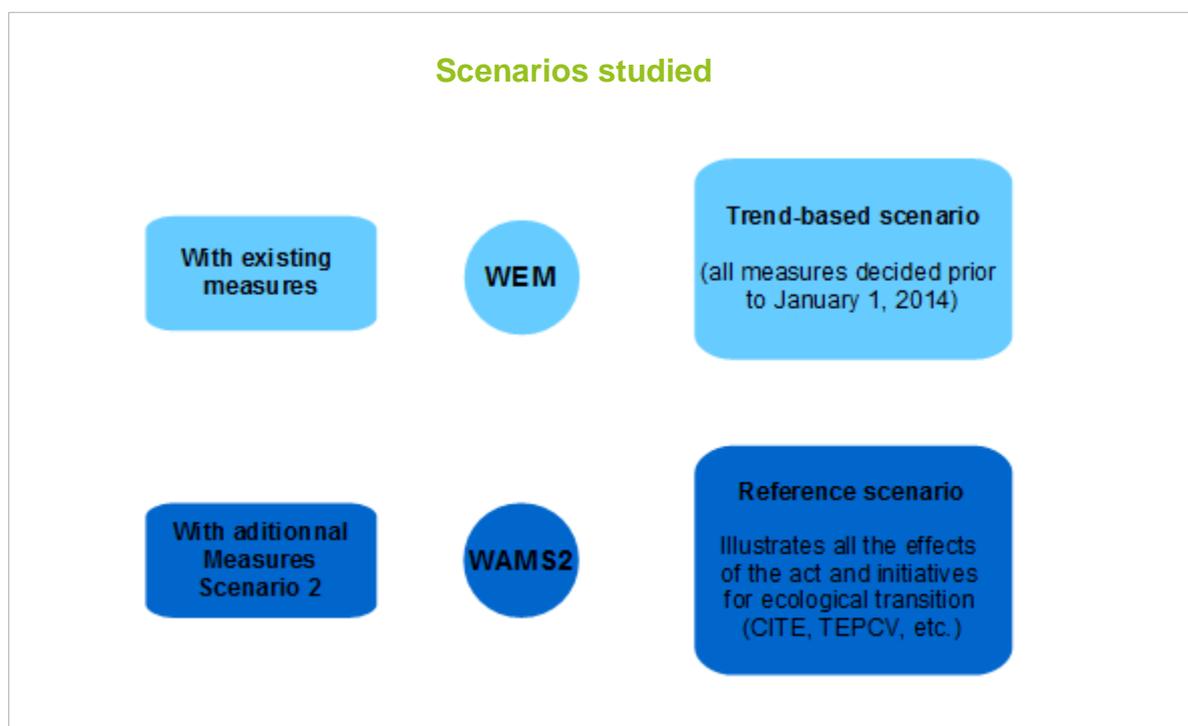
This scenario models an ambitious implementation of all the measures provided for in the Energy Transition for Green Growth Act, as well as those that support energy transition. The scale of ambition of the measures was set to meet the targets contained in the Act. The scenario was discussed with stakeholders and was assessed from a macroeconomic perspective.

Scope

The scenario illustrates the magnitude of the efforts to be made as well as the expected transformations and co-benefits. **It is not prescriptive**, and primarily constitutes a reference for orientation purposes. In fact, comparative analysis of the measures, both between sectors and within the same sector, and the consideration of fairness, competitiveness and acceptability, which would be useful in order to hone and prioritise these measures, should be pursued and increased, particularly within the context of sectoral or regional planning or programming.

Therefore, the scenario is not an action plan: it rather presents a possible path for achieving our objectives. It will allow qualitative and quantitative analysis of any discrepancies over time, and may contribute to identifying corrective measures.

It will also enable short- and medium-term sector-specific recommendations to be made in relation to this strategy, and is described in section 2.2 of the strategy.



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Recommandations transversales

- Reducing the carbon footprint by placing it at the heart of decision-making

The reduction in national emissions is a valuable monitoring tool, but is not sufficient to fully measure France's contribution to global warming. To take the indirect impacts of France into account, the strategy promotes more systematic consideration of carbon footprint issues and, more generally, environmental footprint issues :

For sectoral policies

- From now on, the financing of public projects should take into account the impact of these projects in terms of emissions. That entails promoting life cycle analysis (LCA) (notably within the regulatory framework and as a project selection criterion for public contracting authorities). This type of analysis is particularly useful for optimising transport infrastructure and buildings.

For regional policies, including in particular the “GHG-neutral” region approaches, which represent an opportunity to mobilise efforts, the recommendation is to :

- promote the consideration of indirect emissions generated by an activity or a region beyond its energy consumption in greenhouse gas emission assessments (consideration of “scope 3”).

Awareness-raising among the public on the impact of consumption choices

- Valoriser les pistes simples permettant de réduire les émissions:
 - privilégier les produits durables et réparables ;
 - s'engager dans une dynamique d'économie circulaire en privilégiant les services à la propriété : la location, l'emprunt (recours aux plates-formes collaboratives), le covoiturage, etc. permettent souvent de satisfaire des besoins de service de manière plus économique et moins émettrice que l'achat ;
 - réduire le gaspillage alimentaire et encourager les consommations en phase avec la saisonnalité des productions ;
 - diminuer les émissions de leur bâtiment (gestes simples, comportements vertueux, développement du service public de la performance énergétique, déploiement du passeport rénovation énergétique,...).
- Implement energy transition by redirecting investment

Awareness-raising among institutional stakeholders, companies and the public on the impact of their investment choices

The first challenge is to **redirect investment** towards projects that contribute to energy transition rather than hindering it :



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- creation of labels and indicators enabling more comprehensive consideration of the elements relating to environmental issues, such as the “energy and ecological transition for the climate” label ;
- improve the operational consideration of “carbon risk”, notably through the implementation of Article 173 of the Energy Transition Act ;
- provide clarification at a very early stage regarding the reduction path that France intends to follow, and thereby raise awareness among investors about the fact that certain assets are susceptible to depreciation, and should not be prioritised in an investment portfolio. It is a question of continuing to support long-term investment issues (and accordingly, low-carbon issues) systematically and repeatedly ;
- make tax benefits conditional on making the use of funds raised more environmentally friendly (e.g. sustainable development savings account).

Strengthen the example set by institutional investors



- Develop analyses of the carbon footprint and green footprint of assets by institutional investors such as Bpi France, improve their non-financial reporting by highlighting the contribution of assets to energy transition and impose a future greening of the investments offered by the various State-controlled bodies (article 173 of the Energy Transition Act) ;
- Increase the importance of environmental clauses in public tenders. In particular, the Energy Transition for Green Growth Act laid down targets and means relating to the example set by public construction and the development of clean vehicle fleets ;
- Have an exemplary policy in development assistance and support for the international development of French companies (climate section in the project portfolio of the Agence Française de Développement, review of the criteria for benefitting from export credits, etc.).

Gradually increase the carbon portion of domestic energy consumption taxes without raising taxes overall

- Gradually increase the carbon portion, based on the fossil carbon content, of domestic energy consumption taxes, to cut greenhouse gas emissions fourfold. This increase will be offset by a reduction in taxes on other products, work or income. The objective is to go from EUR 22/tCO₂ in 2016 to EUR 56/tCO₂ in 2020 and EUR 100/tCO₂ in 2030 (in 2015 EUR). The supplementary budget for 2015 already includes an increase to EUR 30.5/tCO₂ in 2017.
- More generally, mobilise price signals (customisation of heating costs, etc.) to encourage consumers to reduce their use.
- Alongside this, increase efforts to combat fuel poverty. The instruments put in place are primarily aimed at a structural fall in consumption, while supporting home energy retrofits and promoting the development of alternative transport in rural areas, such as car pooling. They are supplemented by the social energy tariffs and energy cheques established by the Energy Transition Act.



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Maximise the leverage effect of government funding

In particular through the creation and deployment of a guarantee fund for energy transition and the identification of better means of securing already profitable energy efficiency investments.

- **Create conditions for the successful development of a bio-based economy**

The development of the bio-economy (material and energy recovery) using materials such as wood and non-food agricultural production (straw, hemp, etc.) provides both an opportunity for growth for our regions, a channel for growth for a wide range of companies (industrial, agricultural, forestry, construction) and promising solutions that can contribute to reducing the carbon footprint of our consumption.

The contribution from forestry and agriculture earmarked to supply the materials, energy and chemical industry must be made in harmony with existing industries (especially for food production, the primary purpose of agriculture) and balances in production systems must be sought to prevent conflicts of use. To achieve this :

- efficient supply and processing systems must be fostered, enabling the best possible mobilisation and use of bio-resources (envisage intercropping and intermediate crops, use crop residues not required to maintain soil quality, etc.) ;
- furthermore, the sustainability of these sectors must be assessed on a regular basis, in order to ensure high environmental quality for these new sectors and co-benefits for biodiversity ;
- innovation in this area will remain a priority for the public authorities.

- **Identify opportunities for more sustainable land management**

The trend towards soil sealing of agricultural land and the expected development of various non-food uses of biomass from agriculture and forestry requires special vigilance with regard to the conflicts of use that the different expectations and issues facing agriculture and forestry generate, in terms of the production of food, timber, energy and materials, the management of natural resources, the preservation of biodiversity, and the supply of other environmental amenities. The disappearance of agricultural and natural land must be halted over time, and heavily reduced by 2035, in line with the recommendations on territorial and urban development. For agricultural land in decline, it is a question of harnessing innovative recovery techniques enabling sustainable management and enhancing production potential.

- Promote solutions that fulfil people's needs while significantly slowing down the artificial development of land.
- In regional or development projects: implement measures ensuring that the carbon stock in soils is not damaged. In particular, investigate how to bring nature into cities (through the replanting of car parks, for instance) and bring together the residential, employment and leisure sectors to reduce the land take dedicated to transport infrastructure.



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- **Support regional project initiatives and bring together all the energy surrounding these projects**

- Multiply project areas, support project efforts and optimise projects: (development of “positive energy territories for green growth” (TEPCV), “zero wastage zero waste territories” (ZGZD) etc.) experiments, and labelling ;

- Involve all regions in territorial climate-air-energy plans (PCAET) at the intermunicipal level, and facilitate access to the data required to establish regional carbon audits and action plans (implementation of article 179 of the Energy Transition Act) ;

- Facilitate and support the involvement of education institutions in the implementation of appropriate actions in regional plans and schemes relating to energy transition for the green growth of their region (PCAET, regional climate-air-energy scheme (SRCAE) in the regional planning, sustainable development and equality between territories scheme (SRADDET), TEPCV, TZGZD, etc.) ;

- Speed up the transition to sustainable campuses by making higher education institutions exemplary with regard to energy performance and, more generally, social responsibility ;

- Encourage the establishment of regional approaches to managing jobs and skills, and promote the development of qualifications, particularly in the construction sector.

- **Use ambitious R&D and training policies as a basis**

More generally, efforts to provide structure and support to R&D should be continued and expanded to **encourage the development and rapid dissemination of future technologies**, for a carbon-free world. Training policies and their funding must give high priority to energy transition to establish excellence pathways in renewable and low-carbon energies as well as in energy efficiency. As provided for in the Energy Transition Act, multi-annual energy programming (MEP) will include a component relating to professional transitions. It is vital that France puts itself in a position to take **leadership in these technologies to control consumption and emissions, and to replace fossil fuels**, in order to rapidly gain a foothold in the global market for low-carbon energy services and equipment. This ambition is in keeping with the ambition defined within the context of the Energy Union, which aims to make Europe the global leader in the field of renewable energy.

- **Consider the issues involved in the transition to a low-carbon economy in defining the State's major strategic directions**

This covers the plans and programmes that have an immediate impact on greenhouse gas emissions, as well as cross-cutting directions, such as the National Energy Research Strategy. Large parts of the energy transition are dependent on significant research and development efforts. This is notably the case with the bio-economy, the increased pace of progress relating to energy efficiency, the major development of renewable energies and the improvement of synergies between transport methods being sought.



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Recommandations sectorielles

• Low-carbon transport

Transport is the sector that emits the most greenhouse gases (27% of GHG emissions in 2013). Compared with 2013, the target in the reference scenario is to reduce transport emissions by 29% by the third carbon budget, and by at least 70% by 2050.

Strategic objectives and immediate actions

To achieve these ambitious targets, the policies put in place must, in particular, make it possible to speed up :

1. the improvement in vehicle energy efficiency (the goal is an average of 2l/100km for new light duty vehicles sold in 2030) ;
2. the transition to low-carbon energies. In particular, it is important to anticipate the time frames for developing refuelling infrastructure (charging points for electric cars and gas delivery units) required for the transition to low-carbon transport, and coordinate its deployment by all parties concerned (State, local authorities, public institutions, businesses, households).

Other levers must also be mobilised :

3. management of travel demand (through remote working, spatial planning and other measures) ;
4. improvement in vehicle occupancy rates (car pooling) and more generally, improved use of existing vehicles and networks (article 44 of the Energy Transition for Green Growth Act) ;
5. the modal shift of people and goods to non-road and non-air transports (such as railways, walking and cycling, etc.), which should be favoured in investment in transport infrastructure and land development choices.

• Low-carbon buildings

In 2013, direct emissions produced by the residential-tertiary sector accounted for 20% of GHG emissions (nearly one quarter if the indirect emissions associated with electricity and heat generation for buildings are taken into account). Compared with 2013, the target in the reference scenario is to reduce these emissions by 54% by the third carbon budget, and by at least 87% by 2050.

Strategic objectives and immediate actions

The different action levers should make it possible to reduce energy consumption by 28% compared with 2010 by 2030, and to further reduce the greenhouse gas emissions associated with construction and the long-term use of buildings through :

- the construction of new buildings with high energy and environmental performance : implementation of the 2012 regulations and the future regulation based on a life cycle analysis of the environmental impacts of a building will make it possible to significantly reduce GHG emissions throughout the lifetime of buildings ;



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- increasing energy retrofit efforts, by both renovating the building envelope and improving the energy and climate efficiency of systems (e.g. heating, domestic hot water, cooking, etc.) so as to have a fully renovated set of buildings that comply with “BBC (low-consumption building) renovation” standards by 2050 ;
- improved management of consumption relating to behaviours and the use of electricity (in addition to the implementation of European directives (eco-design and labelling)), strengthening of consumer information systems, such as communication activities on hidden consumption, the identification of underperforming devices online, the deployment of connected smart meters, etc.

To achieve this, all the cross-cutting recommendations regarding funding, the development of local chains, professional training and consideration of the carbon footprint must be implemented.

- **Low-carbon agriculture**

Agriculture accounts for around 19% of the greenhouse gas emissions produced by France recorded in the carbon budgets, to which emissions associated with changes in agricultural land use are added.

Compared with 2013, the target in the reference scenario is to reduce agricultural emissions by 12% by the third carbon budget, and twofold compared with 1990 by 2050.

The policies set for the agricultural sector should enable it to join the national effort to reduce GHGs, while retaining its competitiveness and offering green growth and job creation opportunities, since they make it possible to :

- **guarantee food security and support the bio-economy while ensuring the supply of non-food products ;**
- protect the environment and natural resources (water, biodiversity, soils, air, etc.), protect public health, protect the countryside and social dynamics.

Five factors play an important role in achieving the targets :

- cultivation and livestock rearing systems and practices, which, for the same output of agricultural produce, can emit more or fewer GHGs ;
- rural land planning and land use ;
- the efficiency of the entire food supply chain up to the end consumer, which enables waste and indirect emissions to be reduced ;
- food demand (composition of diets, quantities, product origin, etc.), which influences the composition of agricultural production ;
- techniques for adapting to climate change, which enable production systems to be maintained or improved.

The main targets involve reducing the direct emissions of the agricultural sector (N₂O, CH₄), storing or keeping carbon in soils and biomass, and using biomass over fossil fuels (for the production of bio-based materials or energy).



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Strengthened implementation of the agro-ecological project

Achieving these targets requires strengthened implementation of the **agro-ecological project, and in particular** :

- optimisation of the use of inputs (fertiliser, animal feed, etc.) and efforts toward achieving autonomy with local resources (replacement of mineral fertiliser by organic fertiliser, protein autonomy and the optimisation of animal rations, etc.) ;
- the diversification of crop rotation and the development of leguminous plants ;
- the conservation of permanent grassland and the development of agroforestry, hedges and other agro-ecological infrastructure ;
- land cover and an increase in the amount of organic matter in the soil ;
- the development of high added-value production ;
- the energy performance of agricultural buildings and equipment and significant development of agricultural methanisation.

- **Forest-Timber-Biomass**

Today, four levers make it possible to offset around 15 to 20% of national emissions :

1. the replacement of energy-intensive materials with bio-based products ;
2. energy recovery in relation to bio-based products or waste from these products, to replace fossil fuels ;
3. carbon storage in wood and wood-based products ;
4. carbon sequestration in the forest ecosystem.

It is a question of promoting multifunctional forestry, and **in particular, increasing the added value** of uses **while increasing the amount of timber collected** per year and making areas of agricultural decline the subject of sustainable management efforts. Synergies and uses should also be boosted in connection with the development of co-products and waste from bio-based sectors, their recycling and their use for energy generation purposes. More broadly, the management of all biomass uses must be strengthened and optimised. High environmental quality should be aimed for in all projects designed to improve resource mobilisation, taking particular account of biodiversity issues.

The implementation of these objectives is dependent on :

- the consolidation of small forest estates, or at least their management, ensuring they are renewed regularly (redevelopment of wasteland, conversion of coppices, including impoverished coppices, with the modification of species where necessary, etc.) ;
- a tax framework promoting the dynamic and sustainable management of resources ;
- the efficient use of bio-based resources in all economic sectors (industry, construction, furnishing, packaging, energy systems, etc.) ;
- close monitoring of sustainability and in particular, impacts on soils and biodiversity ;
- reinforced and shared monitoring of movements of materials and economic data.



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- **Low-carbon industry**

The emissions produced by industry account for 18% of GHG emissions in France. They have fallen by 27% since 1990 (see section 1.1 for the reasons for this). 75% of these emissions are subject to the EU Emissions Trading System (EU ETS).

Compared with 2013, the target in the reference scenario is to reduce industry emissions by 24% by the third carbon budget, and by 75% by 2050.

By 2050, the transition to a low-carbon economy will be achieved through :

- Improving energy efficiency to manage demand for energy and materials by product ;
- Recycling, reuse, the replacement of carbon-intensive materials with less carbon-intensive ones, such as bio-based materials, and energy recovery to reduce consumption of energy and materials ;
- Energy substitution in order to reduce the share of energies with high emission levels in industrial consumption and materials.

In the longer term, the development and deployment of carbon capture and storage (CCS) will play a significant role in achieving targets.

Concerning implementation issues, it is useful to signal :

- the studies published by the French Environment and Energy Management Agency, ADEME, which highlight a significant techno-economic pool that is not exploited due to a lack of financing capacities (companies primarily dedicate their investment capacities to developing their production process rather than energy savings), which could be exploited as soon as innovative funding schemes can be implemented ;
- the need to make the carbon price signals visible and predictable, in order to limit lock-in effects (investment decisions that are not consistent with the necessary medium-term changes) ;
- the need to prevent emission reduction tools from leading to deindustrialisation.

- **Low-carbon energies**

Emissions caused by energy generation account for just 12% of GHG emissions in France, and 85% of these emissions fall under the EU Emissions Trading System (EU ETS). They fell by 27% between 1990 and 2013.

Strategic objectives and immediate actions

By 2050, the work of the 2020-2050 trajectory committee towards a low-carbon economy assumes a reduction by a factor of 20 compared to 1990, i.e. almost complete decarbonisation of the sector. This translates into :

- an acceleration in **energy efficiency gains** (by a factor of two in the Energy Transition for Green Growth Act): a fall in the energy intensity of GDP and the importance of managing carbon energy consumption, transfers of use to electricity.



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- **a drastic decarbonisation of the energy mix by 2050 (by a factor of 10)** : (fall in gCO₂/kWh of electricity and heating networks). The ambition that lies behind these scenarios is based on the assumption of a significant deployment of carbon capture and storage (CCS) systems by 2050. If this is not the case, then the efforts to decarbonise energy generation must be transferred to other options, including other sectors of the economy.

In the power generation sector, it is primarily a question of :

- Avoiding investing in new fossil fuel thermal production facilities as much as possible. The multiannual energy programmes should precisely control the need for new thermal production facilities according to the policies set for other sectors, the objectives of security of energy supply and the need for flexibility in the electricity system, while adhering to the carbon budgets and decarbonisation targets of the electricity system over the long term.
- Reducing the emissions produced by existing facilities by making the carbon price high enough.
- Providing for the possibility of deploying carbon capture and storage systems or using carbon for fossil fuel plants which will be in operation by 2050 (by retrofitting where necessary), taking account of the storage options available when choosing where to locate facilities.
- Improving the flexibility of the system without increasing emissions: the integration of renewable energies will eventually require increased flexibility. This notably requires the development of :
 - The flexibility of the hydroelectric sector, since this renewable energy sector enables significant peak production ;
 - Smart networks and storage tailored to needs: weekly storage to deal with the intermittent nature of wind power by 2030, and daily storage to manage photovoltaic generation after 2030, once it reaches significant levels ;
 - Transfers between energy systems (power-to-gas, power-to-heat) ;
 - Connections with neighbouring countries to maximise the proliferation of renewable energy generation.

In the heat generation sector, it is primarily a question of orienting generation towards renewable heat sources and heat recovery, and developing urban heating networks, to enable increased use of renewable energy and recovery through heating systems.



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- **Make waste treatment one of the pillars for developing a more circular economy**

 The waste treatment sector accounted for 4% of French GHG emissions in 2013. Compared with 2013, the target in the reference scenario is to reduce transport emissions by -33% by the third carbon budget, and by at least 80% by 2050.

The actions levers in order of long-term priority are as follows :

1. Avoid waste production through prevention (eco-design, increasing the lifetime of products, repair, limiting food waste) and reuse (circular economy) ;
2. Increase the material recovery of waste which cannot be avoided (recycling, widespread use of source separation of bio-waste by 2025) ;
3. Recover the energy from unavoidable and non-recoverable waste in material form ;
4. Reduce diffuse methane emissions from landfill sites and sewage treatment plants, including the non-recoverable part in particular ;
5. Cease incineration without energy recovery.

These five action levers must be implemented collectively. **In addition to the fall in direct emissions, they will enable a reduction in emissions in the production and consumption sectors.** The transition to a more circular economic model is at play in the broad sense that it constitutes a paradigm shift in our production and consumption model (material, resource and energy savings; sustaining value, wealth and jobs). These levers must supplement efforts to engage in the short term to ensure the collection and recovery (or flaring) of emissions produced by waste storage facilities and the energy and climate optimisation of sewage treatment plants, when making structural investments in them, in order to achieve much more systematic collection and recovery of the biogas and residual heat produced.



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Carbon budgets

- **Definition of carbon budgets**

To achieve its long-term targets, France has adopted 'carbon budgets' at the national level, which are broken down into the major activity sectors for information purposes. These are caps on greenhouse gas emissions established to systematically ensure over ten years' visibility with regard to progress in reducing emissions. They cover five-year periods (four years for the first budget) so that analysis of compliance or non-compliance with them cannot be overly influenced by situational phenomena (a particularly mild or harsh winter, upwards or downwards fluctuations in the price of fossil fuels, etc.).

- **Application**

Carbon budgets are tools for monitoring progress in reducing emissions. They should make it possible to measure progress and check/identify whether France is on the right track towards achieving its targets. In particular, the indicative breakdown by activity sector (resulting from the forward studies set out in the following section) should not be regarded as a rigid compartmentalisation of targets, but as a primary sectoral breakdown to guide overall management. Therefore, this breakdown is an integral component of the set of indicators for this strategy, providing indications about the risk of deviating from the global target and any need for corrective measures, without anticipating the sector in which these additional reductions must take place (see part 4 of the strategy).

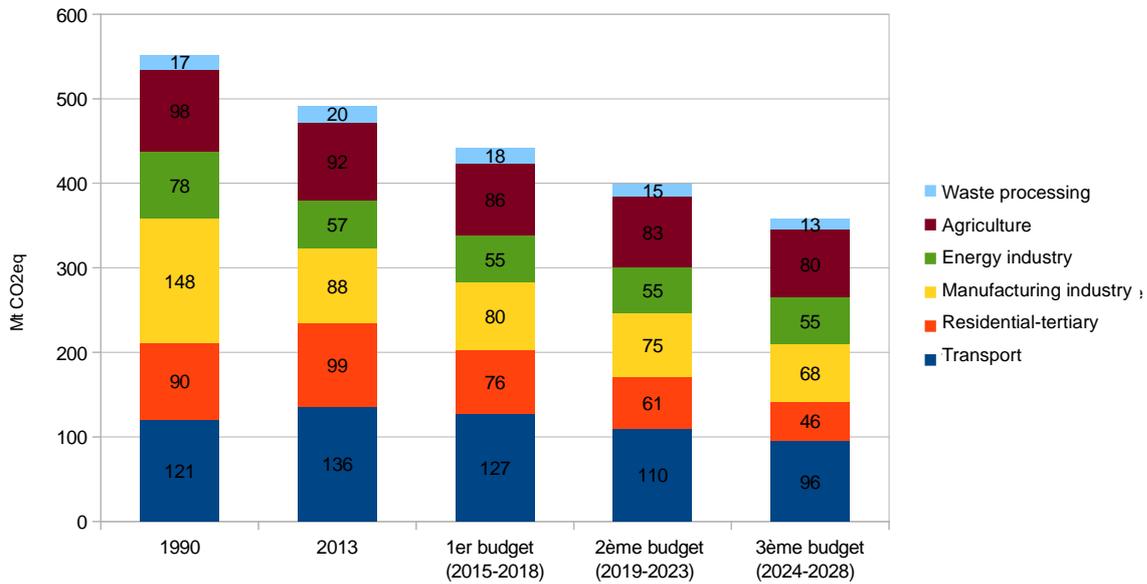
| Average annual emissions (in Mt CO ₂ eq) | 1990 | 2013 | 1 st budget carbone 2015-2018 | 2 nd budget carbone 2019-2023 | 3 rd budget carbone 2024-2028 |
|--|------|------|--|--|--|
| All sectors | 552 | 492 | 442 | 399 | 358 |
| EU ETS (excluding international aviation) | | 119 | 110 | n.d | n.d |
| Other sectors | | 373 | 332 | n.d | n.d |

The distinction between sectors in the EU Emissions Trading System could not be determined for the second and third budgets insofar as the exact shape depends on directives and regulations that will be implemented to apply the decision made by the European Council in October 2014, when a target of a 40% reduction in European emissions was agreed.



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Indicative sectoral distribution



Consistency : Before each update of the strategy, the expert committee must analyse the consistency of the measures implemented with the paths enabling compliance with the carbon budgets previously set (for example, at the end of 2018, the expert committee must deliver an opinion on the consistency of the measures implemented with the carbon budgets for 2015-2018, 2019-2023 and 2024-2028).

