

# The Role of Environmental Taxation in Ecological Transition and Achieving Sustainable Development The French Experience

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## Abstract:

This study focuses on the original thinking behind environmental taxes in France, emphasizing financial imperatives and environmental objectives. It provides an opportunity to present and clarify the role of environmental levies in achieving the environmental dimension of sustainable development by identifying what sustainable development is and environmental levies.

In addition to analyzing the French experience in the field of eco-taxes, the study has resulted in a number of findings.

**Keywords:** Environmental Tax, Ecological Transition, Sustainable Development, Environmental Conservation.

## 1. INTRODUCTION

Over the past decade, attention to sustainable development issues, particularly those related to the environment and its protection against various pollutants, has increased significantly. This stems from numerous conferences in this field. Among the tools available to address this situation, environmental collection stands out as a crucial tool, being a

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central and structural component of our economic and political model. It significantly impacts the behavior of economic actors, prompting them to integrate the cost of environmental damage into prices, thereby directing them towards more environmentally friendly production and consumption options. Taxes should cover all areas of environmental protection and conservation, such as combating climate change, air and water pollution, etc. In the European Union, fiscal and environmental policy defines the characteristics of all member states, including France, as one of the European countries most committed to improving the environmental situation. Within the framework of the Paris Agreement, the European Green Deal, and its climate plan, France has committed to combating climate change, aiming to achieve carbon neutrality by 2050. The implementation of measures in the context of environmental taxation requires consideration of various aspects, including those related to sustainable development.

**1.1. Research problem:** How does environmental levies contribute to the environmental dimension of sustainable development in France?

**1.2. Study Objectives:**

- Acquire an understanding of various concepts of environmental collection.
- Highlight the role of environmental levies in promoting sustainable development in France.

**2.THEORICAL BACKGROUND:**

**2.1. Environmental Taxation:**

Tax, initially defined by classical authors as the quintessential sovereign instrument to contribute to public burdens, has been assigned other objectives over time. It is now considered a tool of economic, social, and cultural policies. The concept of environmental taxation has emerged, involving the use of fiscal tools to support environmental

preservation policies.<sup>(1)</sup>

A fiscal measure falls under environmental taxation when it aims to encourage taxpayers to adopt more environmentally virtuous behavior. This taxation aims to shift the behavior of economic agents towards more environmentally friendly practices.<sup>(2)</sup>

Environmental taxation encompasses all taxes, duties, and levies whose base is constituted by a pollutant, a product, or a service that harms the environment or results in a levy on natural resources, according to the definition adopted by the OECD.<sup>(3)</sup>

## **2.2. History of sustainable development:**

Defined in 1987 by the Brundtland Commission as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs," the concept of sustainable development was endorsed by the first Earth Summit held in Rio de Janeiro in 1992.

## **3.Implementation of sustainable development goals in France:**

France has achieved a high level of quality of life, based on inclusive social protection systems and universal access to healthcare and essential services. It also has state-of-the-art public and private infrastructure in areas such as innovation, research, transportation, and communications, as well as in the preservation of cultural heritage. However, additional efforts are needed to preserve healthy ecosystems and manage natural resources sustainably.<sup>(4)</sup>

The concept of sustainable development emerged from a profound reflection on the detrimental effects of human activity on the

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(1) Pierre collin; environmental taxation and constitution, cairn.info subjects for reflection; n43; 2014; p. 73.

(2) El boukhari hayat; bentaleb sara; Environmental Taxation and Decarbonization of the Moroccan Industrial Sector: An Overview; International Research Journal; Volume 03; Issue 2; 2022; p. 215

(3) Enédicte Peyrol, How to Build Environmental Taxation for the Five-Year Term and Beyond, Green Economy Committee, 2022, p. 11

(4) report on the implementation of sustainable development goals presented on the occasion of France's voluntary national review at the high-level political forum on sustainable development, july 2016, new york, p. 06.

environment. One of the fundamental goals of sustainable development is to create a development model that integrates the economy, society, and the environment, recognizing their interdependence.<sup>(5)</sup>

### **3.1. France has committed to implementing the Paris Agreement on climate and promoting sustainable development.**

Energy Transition Law for Green Growth: Adopted on August 17, 2015, before COP21, this law legally translates France's voluntary commitment to reduce its greenhouse gas emissions by 40% by 2030 compared to 1990 levels. This law also sets objectives to increase the share of renewable energies to more than 30% of final energy consumption by 2030 and to reduce the share of nuclear power in electricity production to 50% by 2025.

Contribution to Climate Energy: The French government has introduced a "contribution to climate energy" on greenhouse gas emissions, combined with taxes on petroleum products.<sup>(6)</sup>

This measure aims to encourage the transition to cleaner energy sources and reduce polluting emissions.

These initiatives demonstrate France's commitment to taking concrete measures to combat climate change and promote sustainable development. They aim to reduce greenhouse gas emissions, promote the use of renewable energies, and encourage the transition to a more environmentally friendly economy.

### **3.2. France is actively engaging in the transition towards a green and sustainable economy by implementing various initiatives and policies:**

- "New Industrial France" Initiative: Launched in 2013, this initiative aims to position French companies in promising new

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(5) lukas diblasio brochard; sustainable development: issues of definition and measurability, thesis presented as a partial requirement for the master's degree in political science, université du québec à montréal; june 2011; p. 04.

(6) report on the implementation of sustainable development goals presented on the occasion of france's voluntary national review at the high-level political forum on sustainable development, july 2016, new york, p. 06.

economic markets while integrating environmental objectives. Two industrial solutions are particularly focused on energy transition: "new resources" and "sustainable cities."

- Government Program " Industry of the Future": This program aims to modernize the French production apparatus using digital technologies, with a goal of improving energy efficiency in industrial processes.

- Promotion of thermal rehabilitation of buildings and transport networks: French authorities encourage the implementation of solutions to improve the energy efficiency of buildings and transport infrastructures, as well as promoting carbon sobriety in cities and rural areas.

### **3.3. Preservation of biodiversity and ecosystems:**

France is taking measures to preserve its marine and terrestrial ecosystems, particularly in the face of soil industrialization, resource overexploitation, climate change, and pollution.

Regarding environmental taxation, it is considered as a tool of economic policy consistent with the general fiscal and budgetary framework. Two criteria can be used to define the environmental nature of taxation: the tax base related to pollution, energy, transport, etc., and the ecological purpose, which can be the use of tax revenues to finance environmental actions or as a tool to guide behaviors towards the environment.<sup>(7)</sup>

The scope of environmental taxation varies depending on the legal nature of the mechanisms considered as fiscal instruments, ranging from more or less broad:

- Taxes;
- Levies;
- Quasi-fiscal instruments, which resemble mandatory contributions but are not compulsory levies, such as eco-contributions.

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(7) énédicté Peyrol, How to Build Environmental Taxation for the Five-Year Term and Beyond, Green Economy Committee, 2022,p 18.

**Table 1:** Scopes of environmental taxation from major studies in this field:

| <b>Eurostat</b>                                                                                                                                    | <b>OCDE</b>                                                                                                                                    | <b>Tax council</b>                                                                                                                                    |
|----------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| Tax Base Criterion<br>National Accounting<br>Excluding tax expenditures<br>Four tax base categories (energy, pollution, resources, transportation) | Tax Base Criterion<br>The distinction between environmental taxes (seated on a negative impact on the environment) / environment-related taxes | Criterion of purpose taken into account ("related to the environment if it "taxes" elements that harm it") Broad scope: taxes, fees, tax expenditures |

Source: Florence Gomez; Philippe Gudefin; Inspecteurs des finances; special report n1; Overview of Environmental Taxation in France; 2019, p. 06.

### 3.4. Potential drawbacks of environmental taxation:

Certainly, taxes, like any environmental regulatory instrument, increase the costs for businesses, which partially pass them on to their prices (more or less depending on the state of competition). The risks of losing market share for affected industries and of deteriorating the trade balance are often highlighted, as well as the risk of relocation, according to the pollution haven hypothesis. However, there is currently no unequivocal empirical evidence on this point. And even, according to Porter's hypothesis, the incentive to innovate could lead to obtaining quality competitiveness gains that would offset price competitiveness losses. But this drawback is shared by all regulatory instruments, except subsidies (which can then pose the problem of compatibility with WTO rules).

Environmental taxes such as fuel taxes affect the poorest households more because they allocate a larger share of their budget to products whose use the regulator wishes to limit, without always having the possibility of adopting substitution behaviors. This potential regressivity makes it essential to provide for redistribution capable of

restoring equity among different categories of households: lump sum payments, proportional reduction of income tax, etc. <sup>(8)</sup>

### **3.5. Foreign environmental taxation and factors of social acceptability:**

Observing the development of environmental taxation abroad allows identifying certain factors that seem to improve its effectiveness and promote its social acceptability, and from which France could draw inspiration to ensure the success of the introduction of new environmental taxes. Building political consensus and gaining public support are essential. Some of these factors include:<sup>(9)</sup>

- The visibility of the tax trajectory and the progressive increase in the rate;
- Preserving business competitiveness;
- Compensating for inequalities and taking into account households' purchasing power;
- Consistency of environmental policy and the elimination of fiscal expenditures.

### **4. Statistics and analysis of environmental taxes in France:**

Nearly forty taxes tax products or activities harmful to the environment. This environmental taxation encourages households and businesses to adopt environmentally friendly behaviors by penalizing products or activities harmful to it. While environmental taxation mainly focuses on energy consumption from fossil sources, it also addresses other issues such as pollutant emissions, soil artificialization and biodiversity impact, as well as the consumption of natural

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(8) Mireille Chiroleu-Assouline; Environmental Taxation, Ultimate Economic Instrument; French Review of Public Finance - RFFP, 2011; HAL Open Science, pp. 05-06.

(9) Guillemette Guicherd, Pauline La Batie, and Raphael Culliford; Environmental Taxation in a spirit of social justice - Which levers to encourage ecological transition? - This report was produced in partnership with students from the Law Clinic of Sciences Po Paris. The Law Clinic of the School of Law of Sciences; 2021; p. 09.

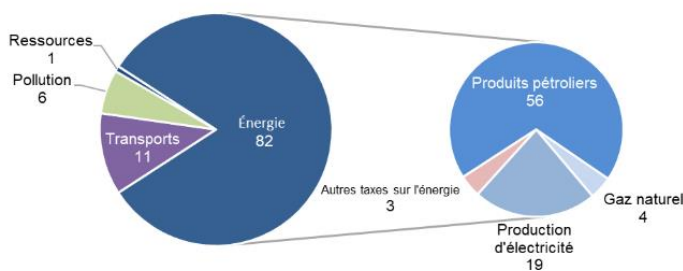
resources.<sup>(10)</sup>

#### 4.1. Energy taxes, main source of environmental tax revenues:

In 2022, the amount of environmental tax revenues, according to Eurostat criteria, amounted to 50.4 billion euros (B€), compared to nearly 41 B€ in 1995. Energy taxes are by far the most significant (over 41 B€), accounting for 82% of all revenues from French environmental taxation. This situation is largely explained by the amount of taxes on petroleum products, known as the domestic consumption tax on energy products (TICPE), which represents 68% of all energy taxation.

Taxes on transportation make up the second-highest category, with 11% of revenues (6 B€). This mainly includes taxes on vehicle registration certificates or on transport operators (highway concessionaires, civil aviation). Taxes on emissions represent only 6% of revenues (2.8 B€), and those on the extraction of natural resources less than 1% (381 million euros), mainly due to France's low extraction activity.

**Fig1:** Distribution of environmental tax revenues by category, in 2023 In %:



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*Note : données provisoires.*

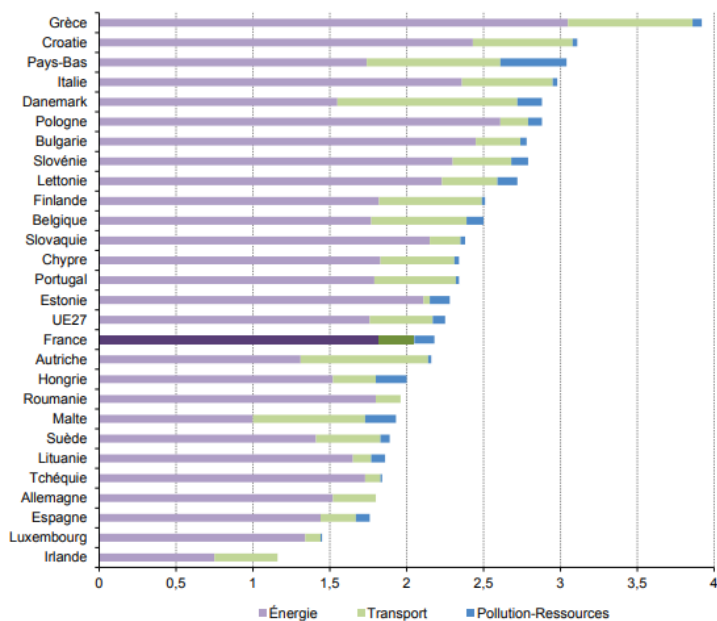
*Champ : France.*

*Source : SDES, 2023*

(10) Environmental Taxation - Synthesis of Knowledge in 2022; Published on 15/12/2022;

En 2022, French environmental tax revenues amount to 2.19% of Gross Domestic Product (GDP), slightly lower than the European Union average of 2.24%. Based on this criterion, France ranks 18th among European countries (out of 27). Some countries, particularly in Northern Europe (such as Denmark and the Netherlands), have stronger environmental taxation, leading to significantly higher revenues (over 3% of GDP in the Netherlands and Denmark). Conversely, several non-European OECD countries, such as Canada, Australia, or the United States, have lower environmental tax revenues than in Europe, mainly due to significantly lower energy taxes, especially on fuels.

**Fig 2:** share of environmental taxes by area in the GDP of the Member States of the European Union in 2020 As a % of GDP



**source:** Ministry of Ecological Transition and Territorial Cohesion, Environmental Assessment of France, 2023, p74.

In 2021, marked by the health crisis, environmental tax revenues experienced a significant decrease of 11% compared to the previous year. This decrease is attributed to the sharp decline in economic activity and travel, particularly affecting taxes related to transportation

(-12%) and energy (-11%). The tax on petroleum products (TICPE), which had been steadily increasing since 2010, also saw a decline of 14% compared to 2020, amounting to a decrease of 4.4 billion euros. This decline is primarily linked to the significant decrease in fuel consumption due to the confinement measures imposed by the health crisis.

#### 4.2. Households are the main contributors to environmental taxation:

Accounting for just over half (47%) of revenues, while businesses contribute the remaining 53%. This distribution varies depending on the areas concerned.

Environmental tax revenues can be collected by various actors, including the State, local authorities, and other beneficiaries such as special allocation accounts or State operators such as water agencies.

**Fig 3:** Evolution of environmental tax revenues by category In Billion €

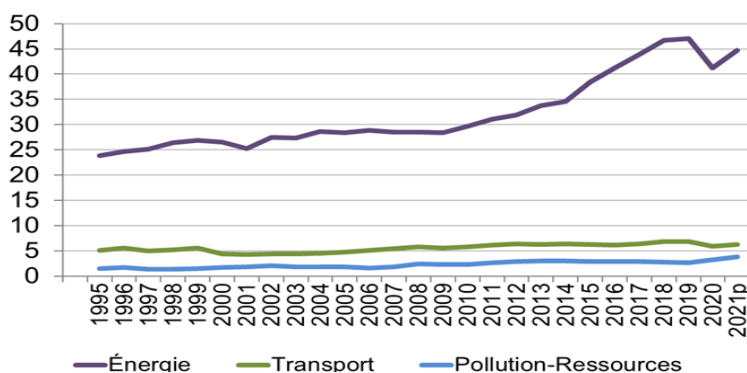
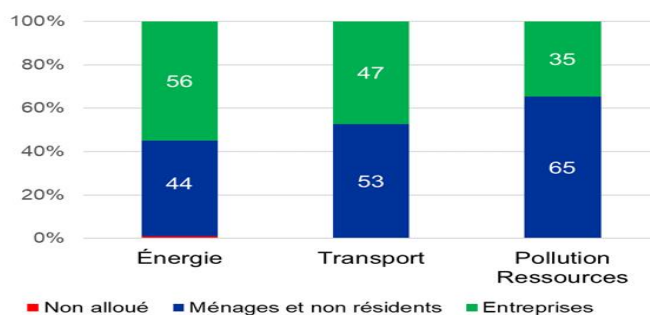


**Fig 4:** Environmental tax funding agents, by domain, in 2021 In %



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Note : données provisoires.

Champ : France.

Source : SDES, 2023

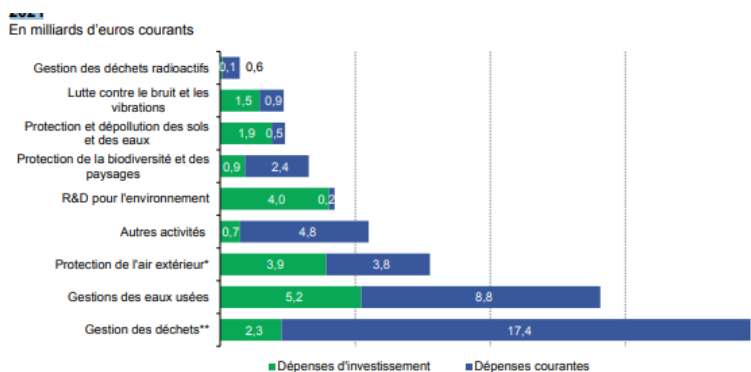
In 2021, a total of 54.3 billion euros were spent on environmental protection in France. These expenses include both public and private financial resources and cover various domains.

The two main domains that concentrated the majority of the funding were waste management, with 20.6 billion euros, and wastewater treatment, with 13.5 billion euros. Together, these two domains represent 63% of the total expenses. Other areas of expenditure include:

- Research and development, with 4.2 billion euros.
- Actions to protect the air (including a small portion dedicated to climate), with 3.6 billion euros.
- Protection of biodiversity and landscapes, with 2.5 B euros.
- Protection and decontamination of soil and water, also with 2.5 billion euros.
- Noise reduction, with 2.1 billion euros.
- Management of radioactive waste, with 700 million euros.

Additionally, 4.5 billion euros were allocated to other environmental protection activities, such as operating expenses of public administration and operators responsible for environmental issues.

**Fig 5:** Distribution of environmental protection expenses by nature and domain, in 2021.



**Source:** Ministry of Ecological Transition and Territorial Cohesion, Environmental Assessment of France, 2023, p15

Between 2000 and 2021, several areas of environmental protection have seen significant increases in expenditure:

- **Waste management:** This category has seen the highest progression, with an increase of 11.2 billion euros in current euros, representing an average annual growth of 4.2%. This increase is mainly attributed to the improvement in the quality of waste management.

- **Protection of soils and waters:** These areas have also shown a higher annual progression (+6.5%) compared to 2000. Although this growth rate is higher, the total amounts of these expenditures are less significant than those of waste management, with an increase of 1.7 billion euros.

- **Other environmental protection activities:** This category has also recorded significant growth, with an average annual progression of 5.6%. However, despite this sustained growth, the total amounts are lower than those of other areas, with an increase of 2.9 billion euros.

Despite a lower average annual increase, expenditures on wastewater management have also increased, with a total increase of nearly 3.8 billion euros compared to the year 2000.

Finally, expenditures on biodiversity and landscape protection have also increased at a sustained pace, with an average annual growth of 4.0%. This increase is notably linked to measures taken during the Grenelle Environment Forum in 2007 and the 2016 Biodiversity Law for the Reconquest of Nature and Landscapes.

#### **4.3. an increased expenditure for better waste management:**

In France, waste management is a major issue for both the economy and the environment. Waste comes from various economic actors, including households, industry, commerce, agriculture, and services. These wastes can be solid, liquid, or gaseous and may present various levels of hazardousness.

Here are some key points about waste management in France:

- **Quantity of waste:** The total amount of waste generated by various economic actors in France varies from year to year depending on various factors such as economic activity, environmental policies, and individual and collective behaviors.

- **Composition of waste:** Waste in France generally consists of household waste, industrial waste, commercial waste, agricultural waste, construction and demolition waste, hazardous waste, etc.

- **Waste management:** France has established a robust regulatory framework for waste management, including policies for source reduction, selective collection, recycling, energy recovery, and waste disposal.

- **Waste management objectives:** France has set ambitious goals for waste management, particularly regarding recycling and reducing waste landfilling.

- **Challenges and issues:** Despite progress in waste management, France faces several challenges, such as increasing waste production, the need to develop more efficient recycling channels, and combating illegal dumping.

These points highlight the complexity of waste management in France and the importance of addressing it comprehensively to achieve environmental sustainability and resource efficiency.

In 2022, various economic actors in France generated a total of 343 million tonnes of waste. Among these, inert mineral waste from the construction sector represents 65% of this mass, approximately 223 million tonnes. These inert mineral wastes are widely reused in the construction sector, mainly as fill material or for filling quarries.

Excluding mineral waste from construction, the total waste production in France amounts to approximately 120 million tonnes. Among these, waste from businesses accounts for about 90 million tonnes, while household waste amounts to approximately 30 million tonnes.

Every year, significant expenditures are made to collect and treat waste to prevent its adverse effects on the environment. These expenses include funding for the collection and treatment of hazardous and non-hazardous waste, as well as street cleaning and waste collection in public areas.

Wastewater treatment is also a significant component of environmental protection expenditures. In 2021, households, businesses, and public administrations invested a total of 13.5 billion euros in this area. This expenditure represents one of the main categories of environmental protection expenditures in France, which amounted to 54.3 billion euros in the same year.

## **5. CONCLUSION**

The evolution of the social and fiscal system in France towards more environmental taxes poses significant challenges, both in terms of distribution and competitiveness. Industrial operators are aware of the effectiveness and importance of fiscal tools in addressing environmental issues. However, the transition to environmental taxation is complex because it involves a new objective compared to the traditional goals of the tax system.

It is clear that environmental taxes do not yet have the place they deserve in the French tax system. Their design over time often reflects the pursuit of tax revenues rather than incentives to change polluting behavior.

For the reform of environmental taxation to succeed in France, it is crucial to assert the principle of polluter pays, determine appropriate tax levels for environmental damage, and ensure the full redistribution of tax revenues. This should be done independently of expenditures related to taxable goods.

Environmental taxes in France have relatively low tax rates compared to other EU member states, especially in the transport sector. However, there has been an increase in non-energy environmental taxes, which could indicate a trend towards gradually increasing other environmental tax rates.

To promote a harmonized approach within the EU, it would be useful to establish common standards for environmental taxes. This would help standardize the rules of the game in the European internal market.

For environmental taxes to be accepted by civil society and the industrial sector, the French government must improve communication about their justification and use. It would also be wise to redistribute a significant portion of the revenue from these taxes to households and industries, rather than dedicating them solely to environmental purposes or the state budget.

Finally, it is essential for lawmakers to design eco-taxes in a way that aligns with the intended goal while respecting the constitution and ensuring social acceptability.

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