

Investing in Climate can Help France Drive its Economic Recovery

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The Institute of Economics for Climate is a think tank with expertise in economics and finance whose mission is to support action against climate change. Through its applied research, the Institute contributes to the debate on climate-related policies. It also publicizes research to facilitate the analysis of financial institutions, businesses and territories and assists with the practical incorporation of climate issues into their activities. I4CE is a non-profit organization founded by the Caisse des Dépôts and the French Development Agency (AFD).

SUMMARY

Confronted with a health crisis that has caused a global social and economic shock, public authorities face a threefold dilemma: mobilize the health system to save lives; safeguard the economy to protect incomes and jobs; and negotiate a recovery strategy that will lead towards a more resilient society. Following the initial focus that must be on overcoming the health emergency itself, actions that contribute to climate goals can be an effective part of improving both the economy and the resilience of our society. Today, the European Union and countries around the world are adopting major economic support

programs. In this report, I4CE proposes a set of actions based on a quantified analysis for France across seven sectors that are covered by the National Low-Carbon Strategy (*Stratégie Nationale Bas-Carbone, SNBC*). I4CE's proposal calls for a public finance package of 7 billion euros per year that is estimated to trigger 19 billion euros of additional public and private investment. Altogether, this package would contribute to the economic recovery post-crisis, while simultaneously reinforcing our society against future shocks without reducing France's contribution to international climate goals.

KEY FIGURES

A PUBLIC
STIMULUS of:

7 billion
euros/year

in **7 key sectors of
the low-carbon transition**
to generate

19 billion euros/year
of additional
INVESTMENT

Investing in climate and economic recovery in France

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MEASURES

5 Pro-Recovery Pro-Climate Areas of Action

- 1. Public investment**, particularly in public buildings and transport networks.
- 2. Public co-financing**: grants, subsidized loans.
- 3. Obligations** to carry out retrofitting of existing buildings, targeted and phased over time.
- 4. Financial mechanisms** enabling projects to start with little or no upfront capital ("zero out-of-pocket").
- 5. Technical support**, integrated into financial tools, for local governments, households and companies.

Responding to the health emergency, protecting the economy and recovering from the COVID-19 crisis

Like many other countries, France is facing a health crisis that is causing a severe economic shock. Economic experts do not yet fully comprehend this shock due to the high number of unknowns. Indeed, growth, unemployment and debt are being subjected to an unprecedented public health crisis.

Regarding the timing of collective action, one thing is clear: at the height of the health emergency, the priority is to slow down the epidemic, to ensure the continuity of services that are essential to the functioning of our society, and to support the mobilization of the health system on a massive scale. During this period, the economic protection of activities that have been brought to a standstill involves covering short-term unemployment and supporting the cash flow of companies. Beyond this “economic resuscitation” phase, a crisis recovery strategy will have to be deployed by mobilizing public policy, particularly public investment capacity and taxation. In France, the recovery strategy’s effectiveness will also depend on the coordination of national and European responses.

I4CE is convinced that climate action is not an obstacle to a crisis recovery, but an effective response to the demand for resilience that is likely to emerge in European societies. For this reason, I4CE contends that a recovery package must prioritize those policies and actions that support outcomes in three areas:

- 1. Environnement:** by maintaining the credibility of the Green Deal, by preserving the industrial capital of low-carbon sectors, by adapting our economy to climate change;
- 2. Economy:** by contributing to the revival of activities in the short term while simultaneously reducing exposure to future crises: oil price shocks, food and industrial supply, etc.;
- 3. Health:** by reducing the vulnerability of society to health threats, particularly through the improvement of air quality and reduction of fuel poverty.

The health crisis cannot be an excuse for putting climate action on hold for another decade. Experience from the 2008 financial crisis shows that recovery strategies lacking climate ambition have lasting consequences. The relative paucity of pro-climate measures in the 2008 response partly explains the accumulated shortfall on climate goals of France in 2020, as pointed out by the High Council for Climate Change (*Haut Conseil pour le Climat*, HCC)¹. Therefore, public authorities must at all costs avoid

economic stimuli that damage the environment or health. The 2019 I4CE report on the environmental effects of government budget expenditure and revenue identified a number of “wrong directions” for stimuli, particularly comparatively lower taxes on fossil fuels².

Staying on Track with the France’s Climate Goals

Even in view of the major economic shock ahead, the French National Low-Carbon Strategy (SNBC) remains a useful and essential benchmark for developing a pro-climate economic recovery package. The strategy sets out how France plans to reduce its greenhouse gas (GHG) emissions from each sector through 2030. Drawn up by the government following consultations with stakeholders and revised last year, it has also been communicated to Europe and to the signatories of the Paris Agreement.

In previous studies³, I4CE has quantified the levels of investment needed to achieve the objectives of the SNBC and the short-term energy-focused French Multi-annual Energy Plan (*Programmations pluriannuelles de l’énergie*, PPE). Based on this analysis, I4CE identifies in this report the measures and public finance package that could put the country back onto an ambitious climate trajectory. This includes developing key economic activities and strengthening our collective capacity to deal with future shocks.

I4CE has looked at seven sectors that are particularly significant because they account for two-thirds of the France’s low-carbon investment. For each sector, I4CE has assessed the investment objectives expressed in the SNBC and has proposed pro-climate pro-recovery measures, together with a financing plan that assesses the contributions of governments, companies, households and financial institutions.

These sectors are: (1) retrofitting of private housing, (2) retrofitting of tertiary buildings (public and private), (3) deployment of low-emission passenger cars, (4) urban public transport infrastructure⁴, (5) rail infrastructure, (6) cycle paths and network, and (7) renewable electricity generation.

I4CE recognizes that the SNBC and PPE represent more than just investments in these sectors, and that essential public action is needed in other areas. I4CE also recognizes that action taken to reduce GHG emissions does not preclude the need to adapt buildings, infrastructure and equipment to climate change.

1 Haut Conseil pour le Climat, « Rapport annuel du Haut Conseil pour le Climat: Neutralité carbone juin 2019, agir en cohérence avec les ambitions ».

2 Fetet, M., Perrier, Q. and Postic, S. (2019). A first 360-degree climate assessment of France’s State budget, I4CE, Paris, France: https://www.i4ce.org/wp-core/wp-content/uploads/2019/12/2019-11-28-GreenBudget_VA-I4CEb-1.pdf

3 I4CE, Landscape of Climate Finance in France, 2019 Edition: <https://www.i4ce.org/download/landscape-of-climate-finance-in-france-2019-edition/>

4 This includes bus, metro, and tramway rolling stock and networks.

Maintaining pre-crisis project timelines, and accelerating where possible

For an effective contribution to the crisis recovery, climate investment sectors must be ready to accelerate their activities. These sectors, while already representing significant economic activity estimated at 46 billion euros in France in 2018, have shown considerable growth in recent years. For example:

- The National Housing Agency (*Agence Nationale de l'Habitat*, ANAH), as part of the national fuel poverty program (Programme Habiter mieux), supported 117,000 housing units in 2019, compared with 40,000 in 2016. I4CE believes that this growth momentum can continue;
- Every six months, renewable energy professionals respond to calls for tenders issued by the Energy Regulation Commission. Before the crisis, the teams were already prepared to manage the increase of activities planned in the PPE;
- The public works sector is involved in major programmes to extend public transport networks, such as the Grand Paris Express. The associated investment has almost doubled from 3.1 billion euros to 6 billion euros between 2012 and 2018.

Moreover, staying on schedule and maintaining the pre-crisis financial commitments of public and private actors is essential, particularly given that the central and local governments have been engaged for several years in communication activities to encourage households, companies, banks, investors, researchers and young professionals to engage with and take risks in these economic areas.

Scaling-Up Pro-Recovery Pro-Climate Measures across 5 Areas

I4CE proposes around 30 actions to stay on track with SNBC goals. All of these measures are listed in the appendix and can be grouped according to five areas of action:

- 1. Direct public investment** in the retrofitting of national and municipal buildings, electrification of public vehicle fleets, or public transport infrastructure;
- 2. Public co-financing**, in the form of grants for the retrofitting of private housing, the purchase of electric vehicles by households and companies, and the retrofitting of tertiary buildings. This co-financing partly compensates for the fall in the price of fossil fuels, which is likely to discourage project developers from investing in energy efficiency or renewable energies based on savings;
- 3. Obligations to conduct energy retrofitting work**, targeted and phased over time, with the objective of achieving results in terms of energy consumption and greenhouse gas emissions.

This would apply in particular to owners of energy-intensive housing, buyers of old housing or companies owning tertiary premises;

- 4. Financial mechanisms**, such as long-term and/or low or zero-interest loans distributed by both public and commercial banks. This would aim to support economic actors, particularly low-income households and SMEs, to overcome up-front capital limitations to launching projects and purchasing low-emission equipment;
- 5. Technical support**, delivered as part of financial mechanisms when possible, for local governments, households and companies that are not in a position to plan heavy operations.

A 7 billion euros per year public stimulus package to trigger 19 billion euros in additional annual investment

- **The French State** should increase the existing level of support for climate investment an additional 4.3 billion euros per year. This should be made up of 1.3 billion euros for off taking guarantees for renewable electricity producers and 3.0 billion euros for the co-financing of households, companies and local governments that undertake new investments;
- **Local governments** should increase current levels of investment and co-financing by 2.1 billion euros per year. This increase could be financed with limited to no impact on their budgets through the use of by project-specific instruments, such as national grants, white certificates (*Certificats d'économies d'énergie*, CEE) or loans from public and commercial banks. In the medium term, a further increase in local authority investments should be made from their general budget or from resources related to national cross-cutting calls for projects, such as the Positive Energy Territories (*Territoires à Energie Positive*, TEPOS). While not costed here, local governments should scale-up their capacity to provide support to project developers in their localities or help professionals in transition sectors with training. In turn, it should be noted that local governments are dependent on the technical support that the French central government can provide through its decentralized services (e.g. the regional services of ADEME, CEREMA), the cost of which is not included here;
- **State-owned banks** should increase by 2.3 billion euros per year their new commitments to businesses, local governments and project companies. Of this total, an additional 300 million euros should be loaned each year through credit lines via commercial banks.

Over and above these actions, energy suppliers subject to the CEE framework should increase their contributions to the relevant sectors by 1.3 billion euros, funded in part from an increase in the volume of certificates, as well as increases in certificate value. **Public infrastructure management companies** (such as RATP and SNCF Réseau), co-financed by public authorities and

borrowing from banks and financial markets, should increase annual investments by 600 million euros. Finally, commercial banks should offer increase participation in credit line programs to offer more concessional loans to project companies and households, amounting to a total of 1.2 billion euros in additional annual commitments.

OVERVIEW OF THE PRO-CLIMATE PRO-RECOVERY PACKAGE BY SECTORS AND BY FUNDER

(In billion of euros per year)	Current Annual Average Levels (2016-2018)	Short Term Annual Increase, and Average Annual Total (2020-2023)		Medium Term Average Annual Level (2024-2028)
State and national agencies	7.5	+4.3	11.8	19.8
Local governments	4.3	+2.1	6.3	6.9
Public banks	2.6	+2.3	4.9	4.3
Total public*	12.7	+6.5	19.1	26.9
Commercial banks and financial markets	10.9	+8.3	19.2	38.4
Companies and those subject to CEE	1.6	+2.5	4.2	6.0
Households	6.8	+1.6	8.5	5.0
Total private	19.3	+12.5	31.8	49.4
COMBINED	32.0	+19.0	51.0	76.4

* Excluding double accounts, e.g. where the State funds local governments, local government loans from public banks, etc.



Retrofitting of Private Housing

KEY FIGURES

Increase
PUBLIC FUNDING
from:

1.9
billion euros
per year

to

2.1
billion euros
per year

for the **energy retrofitting of private homes**,
to reach

16.1 billion euros per year
OF INVESTMENT

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MEASURES

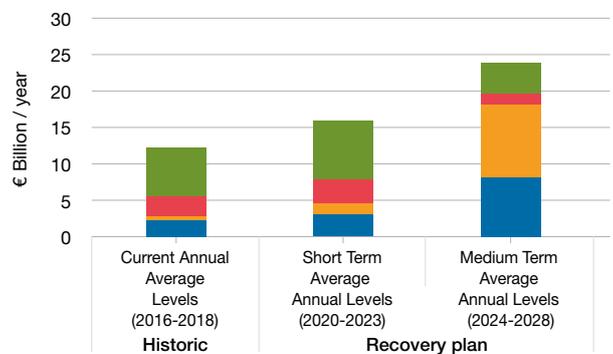
1. In the short term, maintain public support for energy retrofitting through one-off actions (replacement of equipment or the insulation of sections of buildings).
2. From today, create a funding support mechanism proportional to the energy savings achieved and extend the repayment period for zero-interest eco-loans (*Éco-prêt à taux zéro, eco-PTZ*).
3. Strengthen and maintain support measures over time and develop integrated proposals for complete retrofitting.
4. Phased retrofitting obligations, particularly at the time of sale or purchase.
5. In the medium term, switch completely to support only comprehensive retrofitting, financed mainly by the eco-PTZ.
6. Provide training on comprehensive retrofitting for building professionals.

FUNDERS

(In billion of euros per year)	Current Annual Average Levels (2016-2018)	Short Term Average Annual Levels (2020-2023)	Medium Term Average Annual Level (2024-2028)
State & agencies	1.9	2.1	5.9
Local governments	-	-	-
Public banks	-	-	-
Commercial banks and financial markets	3.2	4.7	11.5
Companies and those subject to CEE	0.6	1.3	2.4
Households	6.6	8.1	4.1
COMBINED	12.4	16.1	24.0

FINANCING INSTRUMENTS

Financing the retrofitting of private housing



- **Grants:** tax credit for energy transition (*crédit d'impôt à la transition énergétique, CITE*), white certificates (*certificats d'économie d'énergie, CEE*), aid from the French Housing Improvement Agency (*Agence nationale pour l'amélioration de l'habitat, ANAH*) and the Thermal Retrofitting Assistance Fund (*Fonds d'aide à la rénovation thermique, FART*).
- **Concessional debt:** Interest-free eco-loan (*Eco-PTZ*).
- **Commercial debt:** household borrowing from retail banks under market conditions.
- **Equity capital:** savings and current household income, dedicated to retrofitting.

Scope: financing the cost of energy retrofitting work on housing, excluding support for households and professional sectors (e.g. training). The VAT reduction of for these works of 5.5% is not taken into account in the financing.

KEY CONTRIBUTIONS OF SECTOR

ENERGY & CLIMATE

The SNBC forecasts that the private housing stock will reach the average "low energy" (*bâtiments basse consommation, LEB*) level by 2050. However, to meet targets energy retrofits must increase in volume and quality.

ECONOMY

According to ADEME's *Marchés et Emplois* study, the energy retrofitting of residential buildings represents a market of 29 billion euros and more than 200,000 jobs (full-time equivalent, FTE).



Energy Retrofitting of Tertiary Buildings

KEY FIGURES

Increase
PUBLIC FUNDING
from:

0.5
billion euros
per year

to

1.3
billion euros
per year

for the **retrofitting of tertiary buildings**,
to reach

2.9 billion euros per year
OF INVESTMENT

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MEASURES

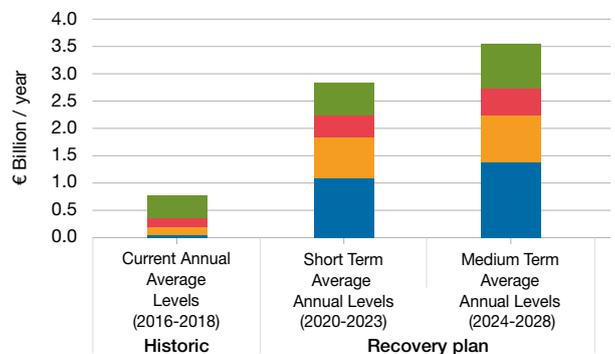
1. Introduce direct support to compensate for lower energy prices: for example, a tax credit of up to 15% of the cost of the work.
2. Adopt a decree by 2022 on tertiary retrofitting, that will apply to more than 60% of the building stock and targeting a 60% reduction of consumption between 2019 and 2050.
3. Maintain the Local investment support fund (*Fonds de soutien à l'investissement local*, FSIL/ *Dotation de soutien à l'investissement local*, DSIL) for local governments, targeting project development costs (audits, research).
4. Double the value of grants for white certificates.
5. Offer subsidised 40-year loans for the retrofitting of community buildings.
6. Offer investment grants to connect buildings to heating networks.

FUNDERS

(In billion of euros per year)	Current Annual Average Levels (2016-2018)	Short Term Average Annual Levels (2020-2023)	Medium Term Average Annual Level (2024-2028)
State & agencies	0.2	0.5	0.6
Local governments	0.2	-	0.1
Public banks	0.1	0.7	0.8
Commercial banks and financial markets	0.2	0.4	0.5
Companies and those subject to CEE	0.1	1.2	1.5
Households	-	-	-
COMBINED	0.8	2.9	3.6

FINANCING INSTRUMENTS

Financing of tertiary building retrofitting



- **Grants:** Local investment support grants (DSIL), white certificates (CEE), energy transition tax credit (CITE).
- **Concessional debt:** concessional loans from the CDC *Banque des Territoires* and the European Investment Bank.
- **Commercial debt:** financing by corporate balance sheet, either by borrowing from commercial banks or by issuing bonds on financial markets.
- **Equity capital:** the general State budget, local government resources, company funds.

Scope: financing the cost of energy retrofitting work on tertiary, public and private buildings. It should be noted that the above-mentioned CITE is an instrument that does not currently exist for the tertiary sector.

KEY CONTRIBUTIONS OF SECTOR

ENERGY & CLIMATE

The tertiary sector accounts for 17% of final energy consumption in France. The SNBC calls for the retrofitting of tertiary sector buildings by an average of 3% per year between 2015 and 2050. Regarding State-owned buildings, the target is to reduce energy consumption by 15% by 2022 compared with 2010.

ECONOMY

The tertiary building retrofitting market is identified as one of the key sectors in the French Great Investment Plan (*Grand Plan d'Investissement*), with 1.8 billion euros dedicated to the retrofitting of State buildings over the next five years.



Urban Public Transport Infrastructure

KEY FIGURES

Increase
PUBLIC FUNDING
from:

1.6
billion euros
per year

to

2.5
billion euros
per year

for the extension and retrofitting
of urban public transport infrastructure,
to reach

6.5 billion euros per year
OF INVESTMENT

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MEASURES

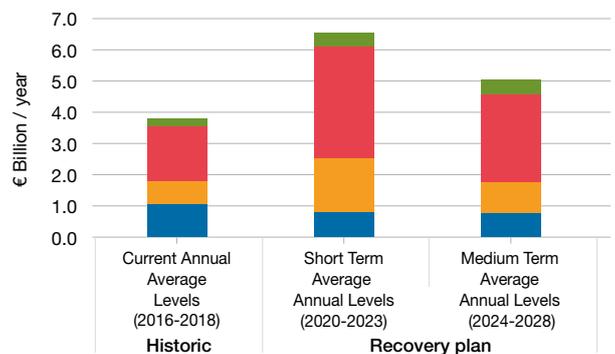
1. Optimize urban transport networks and diversify offers with a view to limiting operating costs and improving services.
2. Encourage investment, even larg-scale programs, that delivers lower operating costs as passenger numbers rise.
3. Increase commercial speeds with exclusive public transport routes (bus lanes) to compete effectively with road transport.
4. Implement an active parking management policy, for example by establishing park and ride schemes combined with high parking prices in cities.
5. Maintain in 2020 the launch of the planned “Fourth Call for Proposals” for exclusive public transport routes (bus lanes).
6. Increase the tax on company payrolls to support public transport (*versement transport*).

FUNDERS

(In billion of euros per year)	Current Annual Average Levels (2016-2018)	Short Term Average Annual Levels (2020-2023)	Medium Term Average Annual Level (2024-2028)
State & agencies	0.2	0.2	0.2
Local governments	0.5	0.3	0.3
Public banks	0.9	2.0	1.2
Commercial banks and financial markets	1.8	3.5	2.8
Companies and those subject to CEE	0.2	0.2	0.2
Households	0.2	0.3	0.3
COMBINED	3.8	6.5	5.0

FINANCING INSTRUMENTS

Financing urban public transport infrastructure



- **Grants:** state and local government grants for infrastructure managers.
- **Concessional debt:** concessional loans from the CDC *Banque des Territoires* and the European Investment Bank.
- **Commercial debt:** loans to local governments from commercial banks or the issuing of bonds by infrastructure managers on the financial markets.
- **Equity capital:** local government resources.

Scope: investment in urban public transport infrastructure includes dedicated lanes for bus rapid transit, railways and tunnels for trams and underground trains. The extension and regeneration of the rail network in Ile-de-France is included in the rail investments section.

KEY CONTRIBUTIONS OF SECTOR

ENERGY & CLIMATE

The SNBC calls for the shift to more energy-efficient modes to decarbonize the transport sector. The strategy aims to improve the availability of public transport in urban transport networks.

ECONOMY

18,000 jobs are associated with the development of public transport infrastructure according to ADEME’s *Marchés et Emplois* study. This sector generates 2.8 billion euros of activity in France annually.



Rail infrastructure

KEY FIGURES

Increase
PUBLIC FUNDING
from:

1.7
billion euros
per year

to

2.7
billion euros
per year

for the development and regeneration
of the rail network,
to reach

4.1 billion euros per year
OF INVESTMENT

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MEASURES

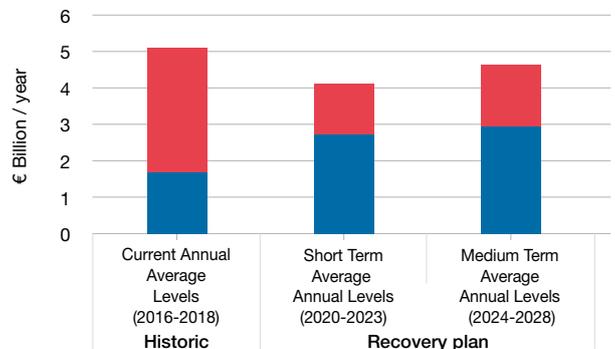
1. Re-evaluate the investment trajectory of the Performance Contract between the State and SNCF Réseau to take into account the increase in the cost of civil engineering sites.
2. Ensure that the State covers at least 50% of retrofitting and improvement-related investment.
3. Establish a program to control and reduce costs through productivity gains on the investment program.

FUNDERS

(In billion of euros per year)	Current Annual Average Levels (2016-2018)	Short Term Average Annual Levels (2020-2023)	Medium Term Average Annual Level (2024-2028)
State, Europe & agencies	0.7	1.9	2.1
Local governments	1.0	0.8	0.9
Public banks	-	-	-
Commercial banks and financial markets	3.5	1.4	1.7
Companies and those subject to CEE	-	-	-
Households	-	-	-
COMBINED	5.1	4.1	4.6

FINANCING INSTRUMENTS

Financing of railway infrastructure



- **Grants:** EU grants, grants from the *Agence de financement des infrastructures de transport de France*, local governments (particularly regional) and the *Métropole du Grand Paris*.
- **Commercial debt:** issue of bonds by SNCF Réseau on financial markets.

Scope: investments in the rail network include those made for the regeneration of the rail network as well as extensions (new high-speed lines).

KEY CONTRIBUTIONS OF SECTOR

ENERGY & CLIMATE

The development of rail infrastructure contributes to reducing the carbon footprint of passenger and freight transport. In particular, improved performance of the network would make it possible to limit the growth of air transport and heavy goods vehicle traffic.

ECONOMY

The rail infrastructure sector accounted for more than 20,000 full-time equivalent jobs in 2017 according to ADEME's *Marchés et Emplois* study. The existing rail network accounts for 9% of land freight transport.



Cycling infrastructure

KEY FIGURES



MEASURES

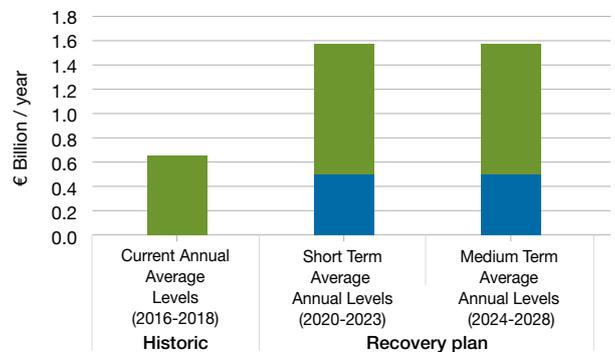
1. Provide local governments with the human resources and technical support to develop cycling policies and plans.
2. Allocate more financial resources to local governments for the construction of cycling infrastructure, particularly through the Fund to support local investment (*Dotation de soutien à l'investissement local*, DSIL) and the Cycle fund (*fonds vélo*).
3. Establish an obligation to develop cycle lanes in proportion to the road network for medium and large cities, based on the social housing model.
4. Impose sanctions to support the implementation of 1996 LAURE law obligation to create cycle routes in urban areas.

FUNDERS

(In billion of euros per year)	Current Annual Average Levels (2016-2018)	Short Term Average Annual Levels (2020-2023)	Medium Term Average Annual Level (2024-2028)
State & agencies	-	0.5	0.5
Local governments	0.7	1.1	1.1
Public banks	-	-	-
Commercial banks and financial markets	-	-	-
Companies and those subject to CEE	-	-	-
Households	-	-	-
COMBINED	0.7	1.6	1.6

FINANCING INSTRUMENTS

Financing cycling infrastructure



KEY CONTRIBUTIONS OF SECTOR

ENERGY & CLIMATE

The SNBC forecasts a higher modal share of cycling in the coming years. In terms of the number of short-distance trips, the modal share of cycling would rise from 3% in 2018 to 12% in 2030 and then to 15% in 2050. The presence of local cycling infrastructure is one of the key factors in the take-up of cycling.

ECONOMY

There is strong growth in the manufacture, distribution and repair of bicycles (urban and electric bicycles), with a quadrupling of associated investment between 2013 and 2017 according to ADEME, which identifies 1,300 jobs (FTE) associated with the internal market.

■ **Grants:** fund to support local investment (*Dotation de soutien à l'investissement local*, DSIL) and the Cycle fund (*fonds vélo*).

■ **Equity capital:** general budget of local governments, mainly budget for development and maintenance of the road network.

Scope: investments in bicycle lanes and paths, signage and parking.



Low-carbon Passenger Vehicles

KEY FIGURES

Increase **PUBLIC FUNDING** from:

0.2
billion euros per year

to

1.0
billion euros per year

for the **acquisition of low-carbon passenger vehicles**, to reach

6.2 billion euros per year
OF INVESTMENT

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MEASURES

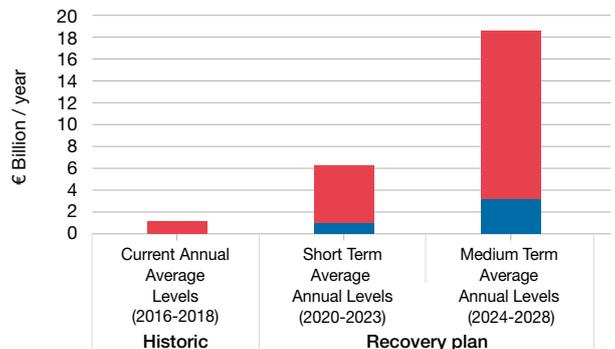
1. Maintain European targets imposed on car manufacturers to reduce CO₂ emissions from new vehicles.
2. Develop a dense network of charging stations for electric vehicles across France.
3. Strengthen financial support for the acquisition of low-carbon cars and increase penalties for cars that emit the most greenhouse gases.
4. Regulate advertising by car manufacturers.
5. Restrict circulation of the most polluting vehicles in the medium term.
6. Ban the sale of the most polluting cars within the next decade.

FUNDERS

(In billion of euros per year)	Current Annual Average Levels (2016-2018)	Short Term Average Annual Levels (2020-2023)	Medium Term Average Annual Level (2024-2028)
State & agencies	0.2	1.0	3.2
Local governments	-	-	-
Public banks	-	-	-
Commercial banks and financial markets	1.0	5.2	15.4
Companies and those subject to CEE	-	-	-
Households	-	-	-
COMBINED	1.1	6.2	18.6

FINANCING INSTRUMENTS

Financing of purchases of new low-carbon passenger cars



- **Grants:** low-carbon vehicle premium, scrapping premium.
- **Commercial debt:** car leasing, consumer credit.

Scope: acquisition of new passenger cars with tailpipe emissions of less than 50 gCO₂/km, i.e. electric cars and the majority of plug-in hybrids on the market.

KEY CONTRIBUTIONS OF SECTOR

ENERGY & CLIMATE

The SNBC relies on an exclusively low-carbon car fleet by 2050. Electric cars and plug-in hybrids are expected to account for 35% and 10% of new car sales respectively in 2030.

ECONOMY

According to ADEME's *Marchés et Emplois* study, the number of jobs associated with the electric car market amounts to 1,800, and has tripled in 5 years and will most likely continue to grow. Local governments and companies are making major investments to deploy charging stations.



Renewable Electricity Generation

KEY FIGURES

Increase
PUBLIC FUNDING
from:

1.6
billion euros
per year

to

2.3
billion euros
per year

for **renewable electricity production**,
to reach

7.9 billion euros per year
OF INVESTMENT*

*Excluding annual energy utility charges (*charge annuelle de service public de l'énergie*, CSPE)

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1. Maintain the pace of calls for tenders as set out in the French Multi-annual Energy Plan (PPE).
2. Secure the funding dedicated to the remuneration of projects already completed.
3. Involve local governments and citizens more closely in the development and financing of projects.
4. Shorten administrative delays, especially for offshore wind energy.
5. Launch calls for tenders based on a census of unused built-up land.
6. Maintain the current level of public bank involvement (EIB and Bpifrance) in the financing of renewable electricity projects.

FUNDERS

(In billion of euros per year)	Current Annual Average Levels (2016-2018)	Short Term Average Annual Levels (2020-2023)	Medium Term Average Annual Level (2024-2028)
State & agencies	4.6	5.9	7.5
Local governments	-	0.1	0.3
Public banks	1.6	2.2	2.2
Commercial banks and financial markets	1.3	3.9	6.5
Companies and those subject to CEE	0.7	1.5	1.9
Households	-	0.1	0.6
COMBINED	8.1	13.7	19.0

KEY CONTRIBUTIONS OF SECTOR

ENERGY & CLIMATE

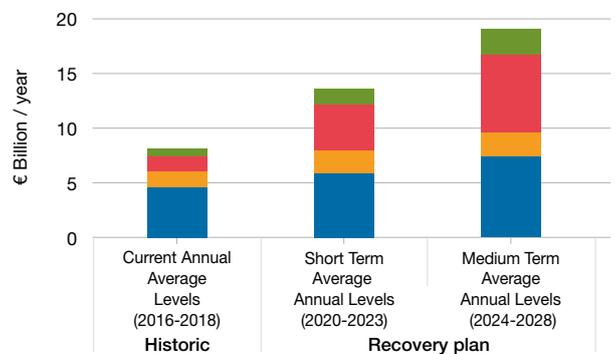
The PPE objectives for electricity production from renewable sources are 27% in 2023, and 33-36% in 2028. The SNBC forecasts an almost complete decarboniation of energy production by 2050, due principally to the scaling up of renewable energies.

ECONOMY

According to ADEME's *Marchés et Emplois* study, the market for the manufacture, installation and maintenance of the main renewable electricity sources provided nearly 30,000 jobs in 2016.

FINANCING INSTRUMENTS

Financing renewable electricity investments



- **Grants:** annual energy utility charges (*charge annuelle de service public de l'énergie*, CSPE), Waste Fund for the cogeneration of renewable electricity from biogas production.
- **Concessional debt:** concessional loans from Bpifrance and the European Investment Bank.
- **Commercial debt:** loans from commercial banks.
- **Equity capital:** equity of project companies.

Scope: investment in the installation of new renewable electricity generation capacity. The production of renewable electricity from household waste incinerators, geothermal energy and marine energy is not considered in this assessment. It should be noted that the CSPEs do not finance new investments, but remunerate existing projects over part of the operating period.

Overview of the financing of studied sectors by funder

CURRENT (2016-2018)

(In billion euros per year)	State and agencies	Local governments	Public banks	Public (net of double counting)	Commercial banks and financial markets	Companies and those subject to CEE	Households	Private	Combined
BUILDINGS									
Retrofitting of private housing	1.9			1.9	3.2	0.6	6.6	10.5	12.4
Retrofitting of tertiary buildings	0.2	0.4	0.1	0.5	0.2	0.1		0.3	0.8
TRANSPORT									
Urban public transport infrastructure	0.2	2.4	0.9	1.6	1.8	0.2	0.2	2.2	3.8
Railway infrastructure	0.7	1.0		1.7	3.5			3.5	5.1
Cycling infrastructure		0.7		0.7					0.7
Low-carbon passenger cars	0.2			0.2	1.0			1.0	1.1
ENERGY									
Renewable electricity generation	4.5		1.6	6.2	1.3	0.7		2.0	8.1
COMBINED	7.7	4.4	2.6	12.7	10.9	1.6	6.8	19.3	32.0

SHORT TERM (2020-2023)

Figures in brackets show changes compared to current situation (2016-2018).

BUILDINGS									
Retrofitting of private housing	2.1 (+0.2)			2.1 (+0.2)	4.7 (+1.5)	1.3 (+0.7)	8.1 (+1.4)	14 (+3.6)	16.1 (+3.7)
Retrofitting of tertiary buildings	0.5 (+0.3)	0.8 (+0.4)	0.7 (+0.6)	1.3 (+0.8)	0.4 (+0.2)	1.2 (+1.1)		1.6 (+1.3)	2.9 (+2.1)
TRANSPORT									
Urban public transport infrastructure	0.2	3.2 (+0.9)	2 (+1)	2.5 (+0.9)	3.5 (+1.7)	0.2 (0)	0.3 (+0.1)	4 (+1.8)	6.5 (+2.7)
Railway infrastructure	1.9 (+1.2)	0.8 (-0.2)		2.7 (+1)	1.4 (-2)			1.4 (-2)	4.1 (-1)
Cycling infrastructure	0.5 (+0.5)	1.6 (+0.9)		1.6 (+0.9)					1.6 (+0.9)
Low-carbon passenger cars	1 (+0.8)			1 (+0.8)	5.2 (+4.2)			5.2 (+4.2)	6.2 (+5)
ENERGY									
Renewable electricity generation	5.9 (+1.3)	0.1	2.2 (+0.6)	8.1 (+2.0)	3.9 (+2.7)	1.5 (+0.8)	0.1 (+0.1)	5.6 (+3.6)	13.7 (+5.6)
COMBINED	11.9 (+4.3)	6.5 (+2.1)	4.9 (+2.3)	19.1 (+6.5)	19.2 (+8.3)	4.2 (+2.5)	8.5 (+1.6)	31.8 (+12.5)	51 (+19)

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