REPORT TO:

FRANCOIS DE RUGY
MINISTER OF STATE,

MINISTER OF ENVIRONMENTAL AND SOLIDARITY TRANSITION

BRUNO LE MAIRE
MINISTER OF ECONOMY AND FINANCE

FOR THE CREATION OF FRANCE TRANSITION

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RISK SHARING MECHANISMS TO MOBILIZE 10 BILLION EUROS OF PRIVATE INVESTMENTS FOR ENVIRONMENTAL TRANSITION

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Context and purpose of the mission

During the summer of 2018, Nicolas HULOT, Minister of State of Environmental and Solidarity Transition, and Bruno LE MAIRE, Minister of Economy and Finance, entrusted Pascal CANFIN, former Minister of Development and Director of the Foundation WWF France, and Philippe ZAOUATI, President of Finance for Tomorrow and CEO of Mirova, with the drafting of a report to study the usefulness of risk-sharing financial instruments in the context of financing France's transition to carbon neutrality in connection with the discussions conducted around the November 2018 Climate Finance Day.

For a successful transition, the challenge is "to invest more, but more importantly to invest better". Since public funding alone is not enough to meet this challenge, the challenge for public action is to bring about a massive reorientation of private flows. In addition to proposals to change the regulatory or fiscal framework, the government is interested in the role that innovative financial risk-sharing mechanisms could play in maximizing the leverage effect of public funds.

In this context, the mission aims to produce recommendations for the implementation of financial instruments in which public money is used as a risk-sharing tool, in order to increase the involvement of private investors in the financing of sectors in transition facing an investment deficit such that their development remains insufficient to meet public policy objectives.

This report is an extension of the first reports made at the French and European level on green finance:
- the report of the Canfin-Grandjean Commission of June 2015, Mobilizing Climate Finance, a roadmap to finance a carbon-free economy that identified the challenges of climate finance ahead of COP21;
- the Ducret-Lemmet report of December 2017, For a French strategy of green finance, which drew up a list of avenues of action that could be broken down at the French level; this report and its recommendations aim to make some of them concrete by means of experimental proposals;
- the final report of the European Union High Level Expert Group (HLEG on sustainable finance) of January 2018, Financing a sustainable European Economy.

On the basis of this roadmap, this report:

- examines issues related to the use of public financial instruments for ET (I)
- establishes an overview of financial instruments developed at French and European level (II)
- assesses the extent to which they could respond to under-investment situations in certain critical sectors in France in order to succeed in their ET (III)
- formulates concrete observations and recommendations to initiate the transition to the scale of the French ET through the use of risk-sharing financial instruments (synthesis and recommendations).

The report takes into account, in its recommendations for the use of financial instruments, comprehensive public risk management policies that are or could be deployed (regulation, taxation, support for the structuring of value chains, etc.), accounting and budgetary issues, the need to best mobilize existing programs, particularly at European level, while limiting the risks of moral hazard.

Synthesis and recommendations

Interviews conducted from August to October 2018 with representatives of public authorities, public and private financial institutions, industrialists and project leaders and representatives of civil society), the review of various publications and existing financial instruments lead us to a series of observations:

The transition faces a deployment challenge that includes a funding gap

- Despite increased climate financing since 2014, France is gradually accumulating a significant investment deficit in view of its objectives (investment being understood throughout the report as gross fixed capital formation, including investments from institutional investors and bank financing). This gap is observed at the macro-economic level - for the year 2018 alone, an additional 10 to 30 billion euros would be needed (I4CE, 2018) - and its accumulation year after year will make it all the more difficult to fill. All actors combined, the financial flows unfavourable to the climate remain high (€73 billion in 2017 - I4CE 2018). The size of the investment gap varies from sector to sector. While some renewable energies are now viable and mature markets (wind, photovoltaic), other sectors, despite the existence of mature technologies and techniques as well as a certain economic profitability, are failing to develop on a significant scale and face funding difficulties. This is particularly the case for the energy renovation of buildings, the deployment of low-carbon vehicles, and some renewable energies such as agricultural anaerobic digestion. Beyond the climate issue alone, other environmental sectors, such as the large-scale agro-environmental transition, are under-invested today.

- This deficit of development is explained on the one hand by the financiers, who point out an insufficiently profitable flow of projects ("pipeline"), and on the other by the carriers of projects who identify an insufficiency of affordable financing or of financing adapted to their operational needs. This suboptimal investment situation is dysfunctional, in one case at the level of the project or the activity in demand for financing, and the other at the level of the supply of financing. Multiple market failures can explain these differences, including: high and even overestimated uncertainties and risk perception, private profitability below social profitability due to significant externalities, lower economic profitability compared to other sectors or relative to the cost of financing, information asymmetries between project promoters and financial actors, particularly in the case of new technologies or activities.

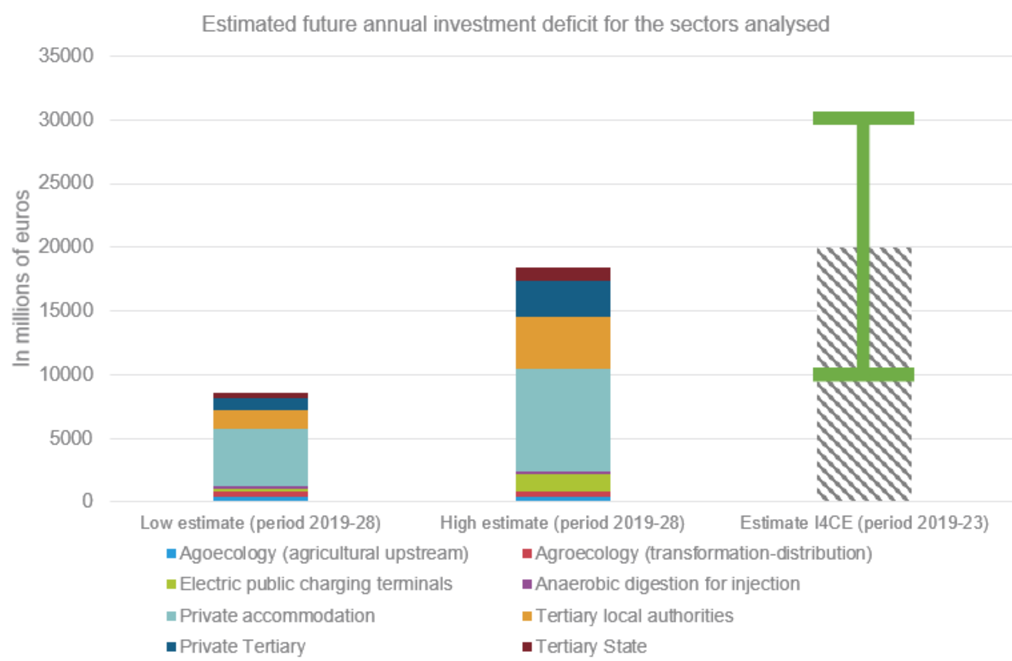
- These two explanations (lack of profitable projects, lack of affordable financing), taken in isolation, do not seem to us sufficient because these two dimensions of the equation are interdependent and closely related. In particular, we consider that the offer on financing is not neutral: the release of the investment requires a combination of sectoral measures (regulation, standards, sectors) but also a mobilization of the financing able to incite and accompany the structuring of projects. We must at the same time encourage financiers to support the emergence of projects and help emerging projects to meet the expectations of the financial sector.

But the financing potential of the transition is there

- **The private financial sector has indicated its willingness to become more involved in financing the transition, but currently remains too little, both in the banking sector and investors**, with financial flows unfavourable to the climate which remain at high levels; similarly, expertise specific to transition is not developing quickly enough, in both the public and private sectors (with in particular few private equity teams); the paths evoked so far to increase the banks' interventions via changes in the prudential regulation (green supporting / brown penalising factor) are not a consensus and have not yet been successful; a large number of institutional investors committed to the transition report their difficulty in deploying their investments, in particular because of the difficulties with investing directly or via asset managers in small projects, still the majority in the energy transition sectors.

- **On an exploratory basis, we analysed certain sectors of the transition for which investment deficits had been identified**: energy renovation of buildings, road mobility, agro-ecology and agricultural anaerobic digestion. We sought to understand the extent of the investment gap, its causes, possible public policy responses, and conducted an initial analysis of the utility of using instruments. These analyses require in-depth ex-ante studies, which were also carried out for the agro-ecology sector for a year and a half by Mirova-Althelia. Analyses in the other areas, in the limited time and resources allocated to the mission, also made it possible to make initial observations, but they will have to go further into detail and be reviewed over time and may be extended to other sectors.

- **In the sectors analysed alone, the investment deficit could be between € 9 and € 19 bn per year**, over the period with highly variable weights depending on the sectors considered. For comparison, I4CE in the 2018 edition of its Panorama estimates that the deficit could be between 10 and 30 billion euros per year by 2023.



Source: I4CE 2018 and ADEME and Mirova-Althelia analyses

Note: The estimate of I4CE was based on SNBC and EPP guidance for 2015-16 and is shorter than that used for the sector analyses of the report (10 years). I4CE costing does not include the needs associated with agroecology, energy efficiency in industry, or the deployment of charging stations. For the renovation of buildings, the sectoral figures presented in this report are based on the work of I4CE. For the other sectors, they are the result of analyses carried out by ADEME and Mirova-Althelia.

- **Unfunded investment needs could offer significant opportunities**: 500,000 homes to be renovated by 2020, the deployment of 100,000 electric charging stations by 2023 (EPP 2018 target) or a network of hydrogen stations is starting to interest some private investors (investment funds specialized in mobility), but on a very insufficient scale; energy efficiency projects and acceleration of thermal renovation of housing and private and public tertiary buildings require innovation in the mode of financing but also technical support from project promoters in the spirit of the initial reflections carried out by third-party finance companies supported by the Juncker Plan; nearly 1,000 agricultural anaerobic digestion projects could be financed to reach the 10% renewable gas target; French organic agricultural production does not meet the needs of processors and distributors and the transition, particularly in the field of livestock farming, requires significant investments in all these areas.

- **This investment potential is also a potential for job creation. For example, among the sectors analysed**, the energy retrofit sector, which combines the largest investment gap and a relatively high employment intensity, could see the most important creations - between 59,000 and 127,000 additional FTEs over the period. Bridging the investment gap in anaerobic digestion for the injection of biogas could be accompanied by a doubling of employment in phase with investment for the industry, going from 700 FTEs to 1,650 FTEs. Regarding the deployment of charging stations, the lack of data does not allow us to produce an estimate. In agroecology, 9,000 FTEs could be sustainably converted and 4,000 FTEs created in a relatively labour-intensive sector.

- **The use of public-private risk-sharing financial instruments (guarantees but also subsidized loans, equity and quasi-equity) for certain sectors perceived as too risky or with relatively limited private profitability seems to us in this respect a particularly interesting way** to mobilize private sector financing and projects. They make it possible to respond to underinvestment situations resulting from market failures and contribute to a better use of public expenditure, provided that any windfall effect is kept to a minimum (which would mean using public money "to improve" private financing that could easily have been mobilized without this help), but to accept to create an effect of opportunity by the public signal (i.e. emulation in terms of the emergence of projects, structuring of financing and technical support).

- **There are many examples of innovative financing of this type internationally** (investment program in junior fund shares by KfW, hydrogen infrastructure financing mechanisms in Japan and California, Green Investment Banks); the main one at European level (but not the only one), the Juncker plan, has demonstrated their effectiveness despite margins of improvement, particularly with regard to explicit signalling towards the transition; it has had a virtuous effect on the European economy and the operation of the EIB.

- **We particularly note the interest of integrating these public-private risk-sharing financial instruments into a holistic approach to public action**, that is to say, aiming at an environmental and social impact through the complementary use of tools. public policies (regulation, taxation and sometimes subsidies), financial risk-sharing instruments, and technical assistance measures to facilitate the response of economic actors and citizens to the implementation of new constraints. A differentiated approach by sector and by type of economic actor (large companies, SMEs, households by type of income) also seems essential to us.

- **While risk-sharing financial instruments are in no way "magical instruments", and while their use should be framed and especially articulated with other measures of public action, they could contribute to effectively supporting the deployment of certain areas of transition.** The time and resources of the mission did not allow for defining this pipeline of projects in detail. However, the exchanges made it possible to identify relevant tracks that could be FT's main lines of work. We have a more detailed example with regard to agroecology, which shows what can be done using a risk-sharing idea when all stakeholders come together. Among the others that have been identified, note in particular the ideas of:

- Taking over the SFTE [1] project for the thermal renovation of public buildings, with a more balanced risk-sharing philosophy;
- Encouraging the renovation of tertiary and private residential buildings by studying, beyond what is set up for modest households (Guarantee Fund for Energy Renovation (FGRE):
    - development of the refinancing capacities of Third-Party Financing Companies, additional provisions for households via the EIF and / or the establishment of guarantee schemes and advance subsidies for suburban housing;
    - development of favourable conditions for a receivables securitization program;
- Establishment of a loan guarantee fund for low-carbon recharging infrastructure, covering project promoters against the risk of under-utilization during the first years of operation, coupled with the implementation of low-carbon vehicle sales quotas for car manufacturers;
- Creation of a capital contribution tool for the deployment of anaerobic digestion, potentially in the form of an investment fund with a public guarantee tranche.

But French financial instruments, although numerous, do not yet allow for passage on the scale of the transition

- **Numerous mechanisms for support and correction of market failures already exist at the French level** (interventions by ADEME, Bpifrance and CDC, certain aspects of the PIA). Concerning the financing needs of innovation, the financial instruments mobilized seem to be up to date. On the other hand, when deploying existing large-scale solutions, the mobilisation of financial instruments is insufficient and often inappropriate. Deployment is all the more difficult because it involves not only financing technologies, but also supporting changes in use.

- **In a more or less strong way, depending on the sectors, the public interlocutors and the current aid devices are atomized and varied**; it is often very complex for project leaders to find both financial support and technical support: if the "one-stop shop" remains a complex ideal to implement, improve the coherence and readability of the national system, mobilise the private financial sector but also the local authorities to provide global and territorial support for certain sectors seems necessary to us.

[1] Energy Transition Financing Company

- **While the private sector ripple effect is often taken into account and sometimes measured, we have not identified in public institutions a clear and shared doctrine** on public-private risk-sharing financial instruments, nor in terms of articulation with other public intervention tools (regulations, technical assistance, creation of common good, etc.), or in terms of mobilizing private financing, through a measure of leverage and additionality of interventions despite a context of very constrained public spending;

- **Although financial instruments exist in all institutions (CDC, BPIfrance, Ademe, AFD), specialized teams on public-private arrangements in public institutions are rare**: it is a brake on the development of financial instruments, even if there is a desire to go further in this direction; CDC's willingness to be the national operator of the future Invest EU plan is also an opportunity to link actions at national and European level with regard to financial instruments and financing of transition.

As a result, we believe that it is necessary:

- to experiment with a public-private investment scheme focused on the deployment of large-scale transition solutions, integrating major public operators, local governments, national and local banking networks, and investors;

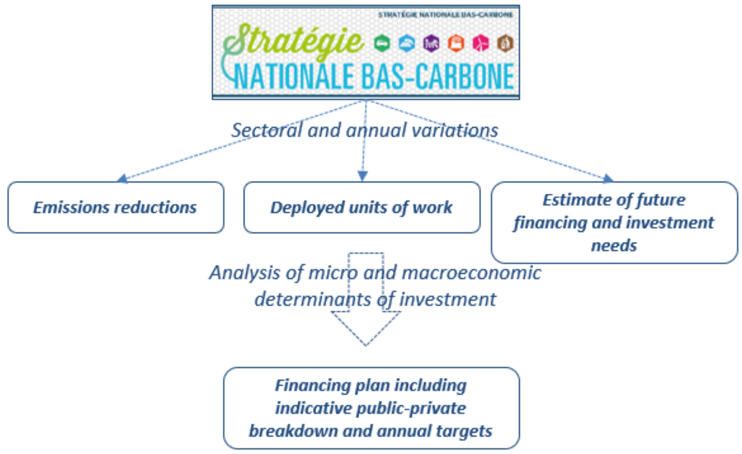
- to send a strong signal to the private financial sector, through experimentation that would be both a credible alternative to the establishment of a Green Supporting Factor and enhance the incentive for investors and the banking sector to innovate and be able to consolidate their concrete involvement in financing the transition.

Recommendations

The following recommendations fall within the scope of the mission, which is limited to the use of risk-sharing financial instruments. These proposals, however, will be all the more likely to bear fruit if their implementation is part of a strong political process through the **establishment, at the level of the Ministry of Economy and Finance and the Ministry of Environmental and Solidarity Transition, of a joint project management of the French energy and environmental transition.**

In line with the proposals of the Ducret-Lemmet report, we support the observation of the need to define and follow a "business plan" or transition deployment plan. In this respect, project management is necessary in order to:

- pilot and disseminate within public institutions the priority of accelerating the energy and environmental transition in all public policy choices;
- **establish a financing plan for the National Low Carbon Strategy (SNBC 2) and the Multiannual Energy Program (EPP 2),** that is to say, based on the targets to be achieved in terms of GHG reduction (annual and by sector):
    - an estimate of the units of work to be deployed to achieve this (e.g., area of buildings renovated for energy purposes, number of electric vehicles);
    - an estimate of future financing needs with a refined sector by sector calculation, and the definition of the public-private articulation of this financing desired by the public authorities;

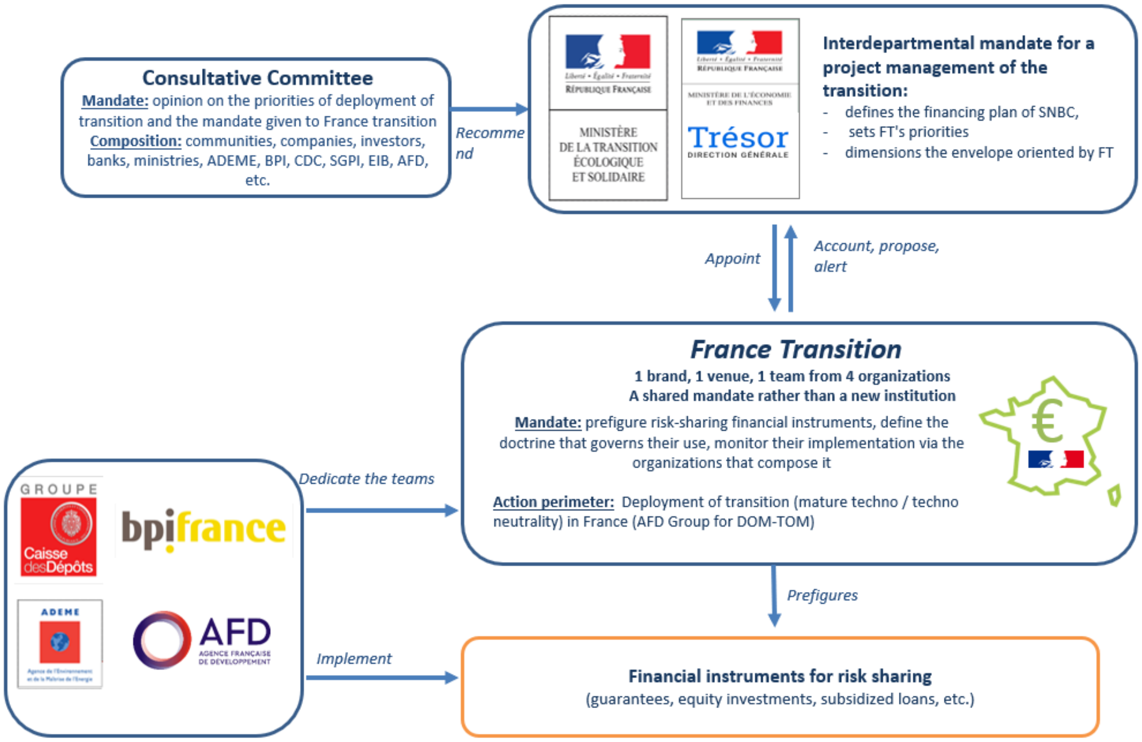


- accordingly, commission the dedicated public investment team that we recommend creating as part of these recommendations;
- ensure the coherence and good contribution of other public policy actions (regulations, taxation, etc.) to the energy and environmental transition objectives;
- continuously monitor the achievement of the deployment and financing objectives, and adjust the public policy tools accordingly.

Recommendation 1: bring together a public investment team dedicated to energy and environmental transition in a unique approach: France Transition

- Using seconded teams made available by the public financial institutions involved in financing the transition (CDC, BPI France, ADEME, AFD for the Overseas Territories), set up a multi-disciplinary, specialized team in innovative financing tools and partnership with private actors;
- Without necessarily creating a new institution, bring together these investment teams under a common label, France Transition, and in a single place in order to favour the joint work of the various institutions and the agility of the system;
- Entrust this team with prefiguring risk-sharing financial instruments to maximise the leverage effect of public funds on private financing for the deployment of the energy and environmental transition in France;
- Ensure supervision of France Transition by the Ministries of Environmental and Solidarity Transition and by the Ministry of Economy and Finance, General Directorate of the Treasury.

Organisation proposal for France Transition



France Transition is mandated at an inter-ministerial level involving both the Ministry of Environmental and Solidarity Transition and the Ministry of Economy and Finance. The ministries set the guidelines for France Transition, consistent with the technical and economic framework set by SNBC2 and PEP2, and monitor the implementation of its activity.

The Ministries are advised on the orientations to be taken by an advisory committee bringing together representatives of the public and private sectors: appropriate ministries, SGPI, operators and state agencies (CDC, Bpifrance, Ademe, AFD), local authorities, companies, private financial sector.

ADEME, BPI, CDC and AFD (as part of its overseas operations) are pooling dedicated teams within France Transition. They identify the needs and prefigure the financial instruments for each sector with regard to the needs of the transition, with a view to maximising the financial and environmental additionality effect: analysis of the investment deficits with regard to the objectives of the SNBC, identification of appropriate financing structures, exchanges with private financial actors, possible calls for projects, etc.).

The structuring and actual operational implementation of risk-sharing financial instruments is then carried out by each of the different operators:

- the CDC for community funding,
- Bpifrance for the financing of companies,
- AFD for the Overseas Territories,
- ADEME to encourage projects, provide the necessary technical assistance and finance through its intervention programs.

Recommendation 2: develop a doctrine for the use of public-private risk-sharing financial instruments at France Transition level

The implementation of such a doctrine should in particular:

- Define the conditions for the use of financial instruments with a view to sharing risk by ensuring an acceptable risk distribution and potential gains between the public and private sectors, with the aim of generating a ripple effect on the involvement and behaviour of the private sector;
- Grant public operators a high degree of flexibility and a sufficient level of resources to be able to mobilise different types of financial instruments, including guarantees but which can integrate other instruments (equity, semi-equity, subsidized loans, etc.) or specific procedures (first loss interventions, junior share investments, etc.);
- Systematically consider supporting the deployment of financial risk-sharing instruments through technical assistance and experience-sharing mechanisms in support of project promoters;
- Foster financial innovation (new instruments, investment teams, increased public sector expertise and banking networks and investors) in favour of transition through regular France Transition tenders vis-à-vis the private financial sector;
- Think about the use of financial instruments over time by defining the modalities for withdrawing public financing and taking over the relays via the establishment of viable markets;
- Define new impact measurement and communication indicators adapted to these financial instruments for policy makers and citizens.

Formalise the proposals of this doctrine during the year 2021 to validate them at the end of the first financial year of 3 years in 2022.

Recommendation 3: focus France Transition's interventions on deployment of the transition and provide it with a first funding envelope of 1 billion euros to generate 10 billion in private investments over 3 years, or between 10% and 30% of SNBC-EPP investment needs.

- Entrust France Transition with an intervention envelope of 1 billion euros coming from budgetary and / or European resources (see recommendation 4), to be rolled out over 3 years, allowing the mobilisation of 10 billion euros of projects (average leverage effect targeted of 10, but may range from 3 to 12 depending on the projects, instruments and risk levels);

To do this, focus France Transition's interventions on:

- the risks associated with deploying the large-scale transition (rather than innovation).
- deployment of technology and infrastructure, but also of devices facilitating changes in the habits and behaviour of citizens, essential to the acceptability and success of the transition;
- the aggregation of small transitional projects, supporting the role of territorial actors, in particular local authorities and local banking networks.

The first case studies carried out during the mission thus made it possible to make an initial estimate of fundable objects:

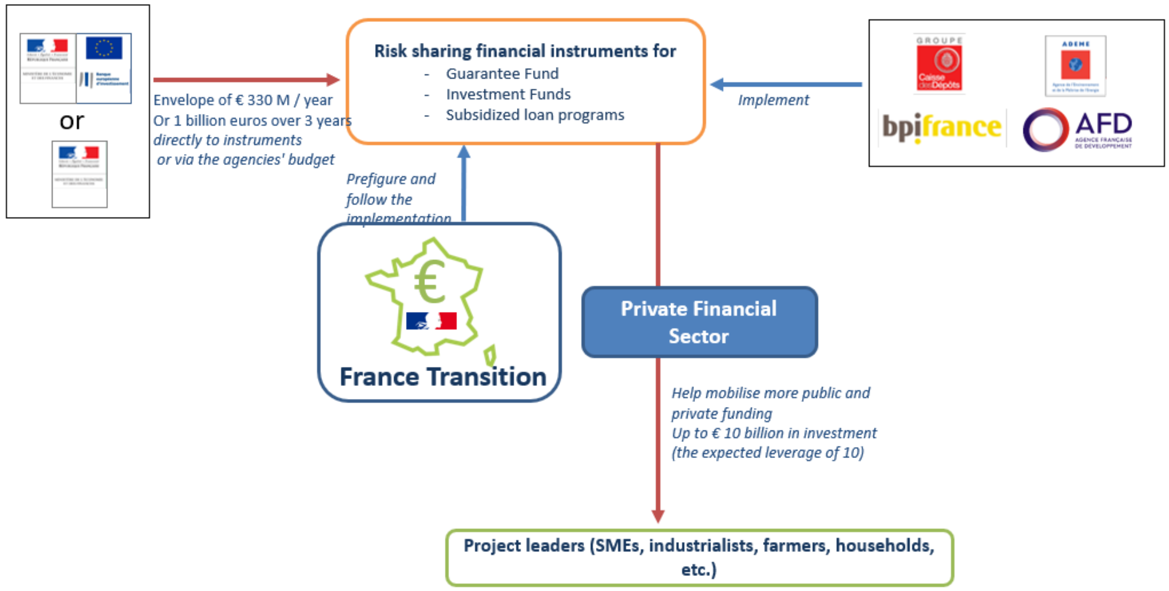
Sector	Project profile-type	Units of work per year (2019-2021)	Need for additional annual investment from here 2021[1]
Agroecology	Conversion to organic farming of farms in various sectors; investment in downstream cooperatives	4,700 farms To be determined downstream	Up to € 400 million for farms Up to € 400 million downstream (SMEs, cooperatives, etc.)[2]
Thermal renovation of buildings	Renovation of private housing in individual or collective homes; renovation of public and private tertiary buildings	380,000 private dwellings Tertiary: 17 million square meters	Between € 6.8 billion and € 15.4 billion
Anaerobic digestion	Units on the farm for injection on the gas network. Projects supported by farms	Approx. 70 units [4]	Approx. € 200 million
Mobility: Focus on the low-carbon road	Classic (<22kW) and fast (<50kW) accessible electric charging terminals	15,500 electric charging stations [5]	Between € 60 M and € 360 M

Recommendation 4: Optimise France Transition's interventions in coherence and coordination with the European Union and the future Invest EU scheme

- Evaluate the appropriateness of using European funding for the future Invest EU scheme, in the context of a possible 25% delegation of the plan to financial institutions in the Member States: an envelope of 500M euro could be flipped to France Transition, making it possible to limit the budgetary contribution to 500M;
- Structure France Transition's intervention framework in close consultation with the European Commission to ensure its compatibility with European regulations on state aid;
- Bringing together French and European interventions on the national territory by systematising co-investment in own funds of the State or local authorities in support of equity investments of the EIB.

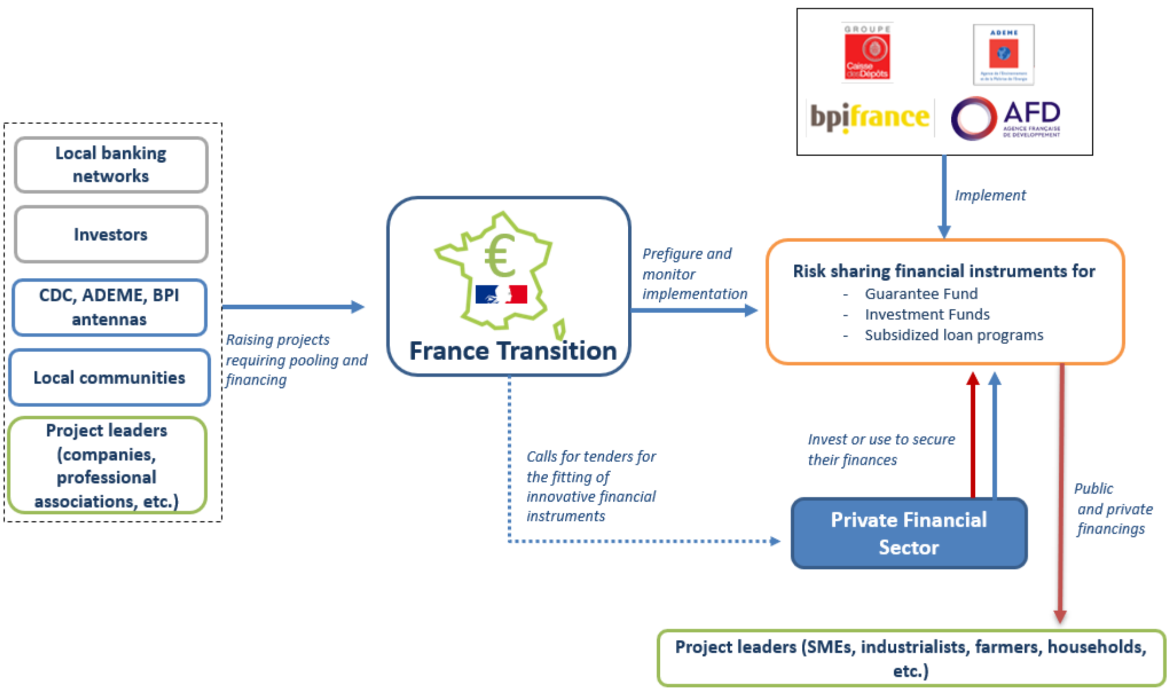
1 Compared to 2017 level and LTECV, SNBC, EPP targets
2 Current investments are not known. These amounts therefore represent a high estimate
3 CAPEX private lgt = € 5k to € 27k / lgt - tertiary CAPEX = € 200 to € 500 / m
4 CAPEX = € 5M / unit on average
5 connection costs, installation and engineering include

Proposal for a financial scheme



France Transition does not have its own budget but an intervention envelope, which is then allocated to the institutions that compose it according to the projects and the type of financial instrument developed. The financial instruments that it follows and coordinates appear in the State budget and / or the entities that make it up and that operate the financial instruments. France Transition follows their good implementation by the adapted institutions.

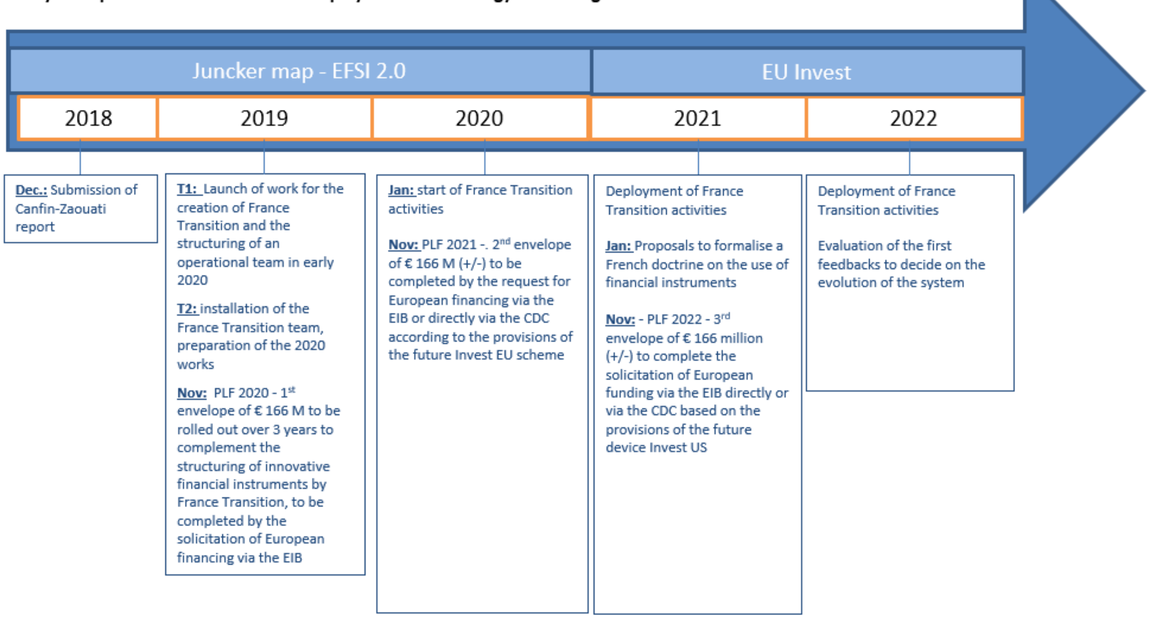
Operational scheme proposal



Recommendation 5: Create the conditions for greater private and public sector collaboration in ET funding.

- Establish a forum for ongoing dialogue between project leaders, public financial institutions and private financiers to share the objectives, strategies and feedback of France Transition. The working group "Innovative financing" of the Finance for Tomorrow initiative could be the draft of this dialogue forum and build on the Paris Europlace network;
- Communicate widely among private actors the doctrine of France Transition, particularly in terms of equitable sharing of risks and potential gains between the public and private sectors;
- Reinforce the homogeneity, standardisation and readability of project analysis procedures between public funders in order to facilitate procedures and reduce transaction costs for project promoters and financial intermediaries.
- At the beginning of 2022, ensure the first assessment of France Transition's action by the Court of Auditors to support formalisation of its intervention doctrine, by examining in particular the additionality of its financing to prevent windfall crowding out of private finance as much as possible.

Provisional timetable for the creation of France Transition
A 3-year experiment to accelerate the deployment of the energy and ecological transition in France



Implementation of this scheme could be rolled out over 3 years (2019-2022) and prepared starting in 2019. In addition to the structuring of a team dedicated to France Transition, it will involve a total of 500 million euros of money from the state, or 166 million euros per year over 3 years, with the aim of mobilising an equivalent amount at European level by applying to the EIB within the framework of the current EFSI scheme of the Juncker Plan, or as part of the future Invest EU scheme.

A first envelope of € 166 million could be adopted under the PLF 2020. A second equivalent envelope may be considered for PLF 2021, to be revised upwards or downwards depending on the opportunities identified and the evolution of the project flow.

In 2022, an initial evolution of the system can be carried out according to the achievements of this first experiment in order to determine its evolution over the period 2023-2026.

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Warning

The analyses, opinions and proposals mentioned in this report represent the vision of the authors commissioned, Pascal Canfin and Philippe Zaouati, as of the date of publication and do not commit them in a personal capacity. The human resources made available by the various structures that contributed to the design of this report do not commit them.

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