

Landscape of Climate Finance in France

2017 Edition – Executive Summary

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Between 2013 and 2016, up to €32bn
of investment contributed each year
to climate mitigation in France.

In 2016, the investments are divided between 14.5 billion euros for energy efficiency, 5.9 billion euros for the development of renewable energies and 9.2 billion euros for construction and updating of sustainable transport and network infrastructure. Investments in the development and renovation of the country's nuclear capacity, in non-energy processes and the reduction of emissions of other GHGs than CO₂ are estimated at 2.1 billion euros.

THE STUDY IN BRIEF...

The Landscape of Climate Finance is a comprehensive study of domestic financial flows in favour of climate and the broader energy transition in France¹. The study maps the flows supporting investments leading to greenhouse gas mitigation across the French economy.

Findings are compared from year to year and assessed in comparison to projected investment needs to achieve national GHG reduction targets and other energy transition objectives.

The principal objective of the study is to support public debate on the role and relevancy of public and private financial flows in support of climate-related investments.

The Landscape of Climate Finance is based on the aggregation of a large number of publicly-available sources. All results reflect explicit methodological choices made by the authors and should thus be understood as estimates of the order of magnitude of flows, with varying degrees of uncertainty. Results are updated annually and revised according to the availability of new sources and evolutions in the methodology.

¹ The 2017 Edition looks at climate investment financial flows over the 2011-2016 period, updating the figures found in previous editions. This edition provides provisional estimates of climate investment in 2017.

Between 2011 and 2013, investments increased by 2.6 billion euros to 32.1 billion euros. They were then stable in 2014, 2015 and 2016. The first estimates available for 2017 total 31.5 billion euros.

This overall stability masks more marked variations by investment areas: investments in energy efficiency increased between 2011 and 2016, from 11.6 to 14.6 billion euros. After increasing by 50% between 2011 and 2013, spending on sustainable infrastructure declined in 2014 and 2015, and has since been stable. Renewable energy investments decreased from 8.6 billion euros to 5.3 billion euros between 2011 and 2013, and have remained at this level since then.

64% of investment is made by households and private companies

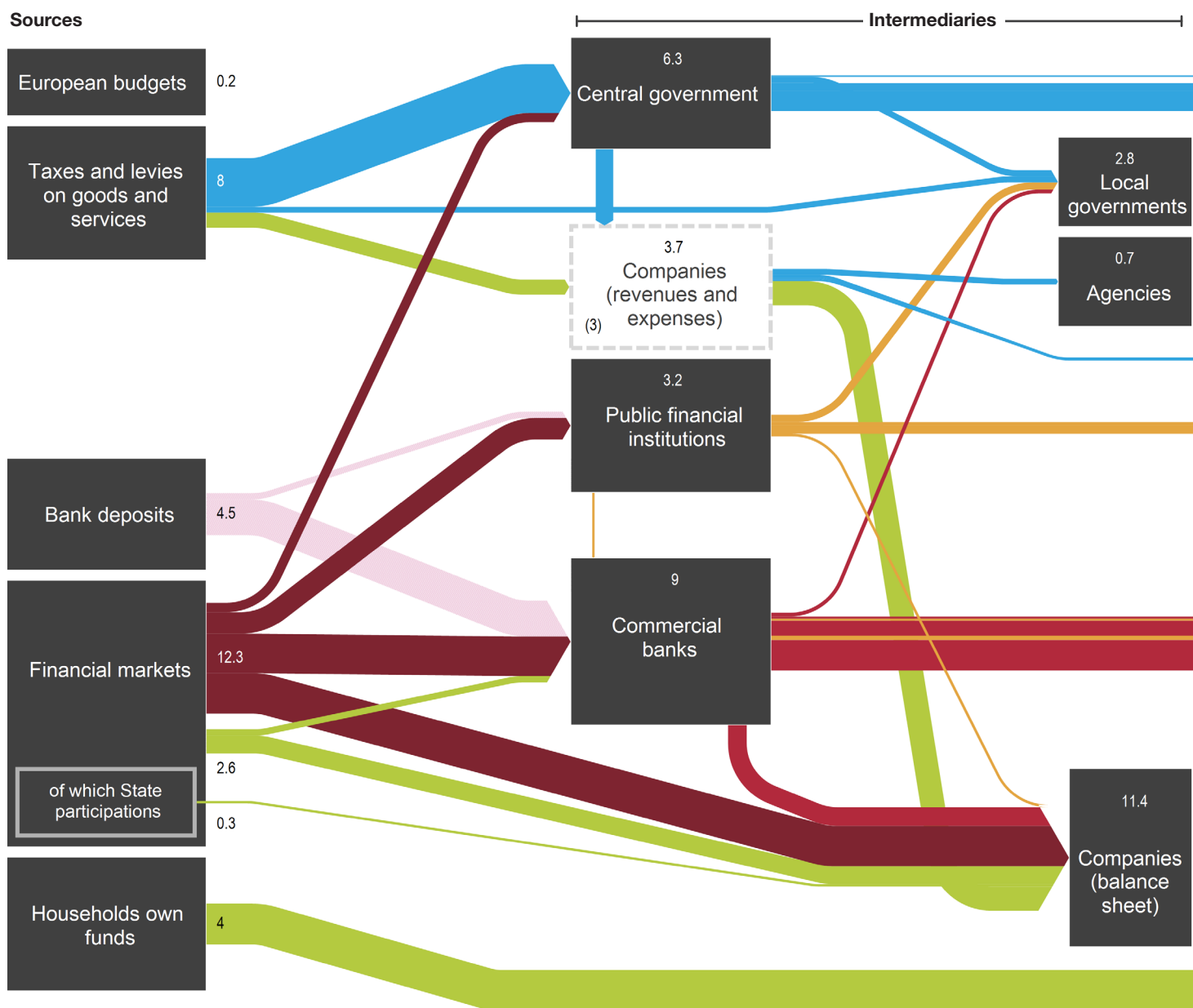
Household spending totalled 10.8 billion euros, or 33% of climate investment in France in 2016. The majority of these investments were in the building sector. To finance these investments, households mainly used their own funds (4.4 billion euros) or commercial bank loans (3.3 billion euros). They benefited from a total of 2.7 billion euros of public grants and subsidies.

Companies and project developers invested 9.8 billion euros in favour of climate, 31% of climate investment in 2016. They made the majority of these investments in centralized power generation and networks, including renewable electricity generation (3.3 billion euros). Whether using project finance or balance sheet financing, companies mainly mobilize bank and bond financing (5.5 billion euros) or their own equity (2.5 billion euros).

As project developers, the central government, local governments, social housing authorities and public infrastructure managers (such as SNCF Réseau and RATP) made 11.4 billion euros in investments in 2016. Their principal source of the funds for these investments came from public sources, totalling 3.8 billion euros. Social housing authorities also borrowed from Caisse des Dépôts (1 billion euros for energy efficiency works).

The Landscape of Climate Finance: a financial value chain...

(in billion current euros, in 2016)



The Landscape of Climate Finance maps investment in tangible (physical) assets securing reduction of GHG emissions in France. This includes construction and equipment acquisition costs and some durable goods as used in national accounts (e.g. vehicles). This excludes the costs of, preparatory studies, operating costs, administrative costs and public procurement costs. Debt represented on the flowchart includes loans and bonds issued by or to project developers, but does not include the reimbursement of previously borrowed funds.

Acronyms:

NE = not estimated

<.1 = amounts of less than €100 million. To maintain clarity, these amounts are not represented graphically but are still included in the total of each box.

(1) As project developers, i.e. investing in their own buildings or durable goods. Local governments include public transport authorities ("autorités organisatrices des transports", or AOT).

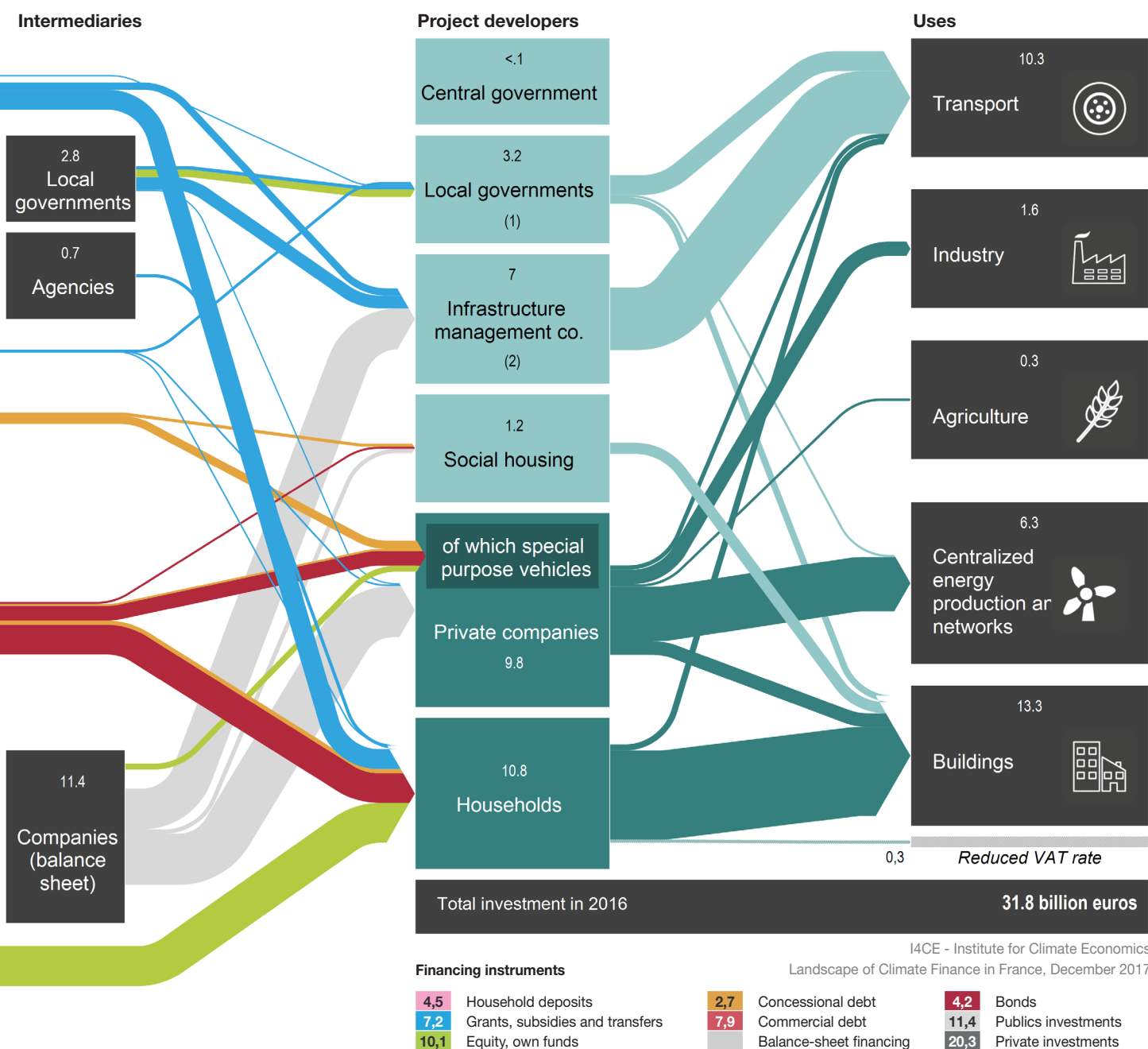
(2) Public operators include SNCF Réseau (known up to 2014 as RFF), Voies Navigables de France (VNF) and RATP for investment in public transport infrastructure in the Ile de France region.

(3) Consumption of goods and services on which levies are raised. Proceeds from these levies are dedicated to the financing of low-carbon investment. This includes the transport levy ("versement transport"), carbon auction revenues and the value of white certificates (CEE).

The main sources of climate finance are:

- Public fiscal revenues, European budgets, and use and service charges mainly directed to the national and local governments;
- Financial markets, providing capital in the form of debt or equity to public and private intermediaries or directly to project promoters;
- Self-financing of projects by households.

... supporting project developers in their climate investments



To finance their investments, project developers employ four main types of instruments:

- Grants, subsidies and transfers, that include no financial obligation for the beneficiary;
- Concessional debt, in the form of loans with better interest rate, maturity or guarantees than market-rate debt;
- Commercial debt, loans issued by private banks at market conditions;
- Equity, in the form of the project developer's own funds and resources,

generally mobilized without an intermediary.

For companies (public or private), debt and equity are often raised at the corporate balance sheet level, while special purpose vehicles use principally non-recourse financing.

Public and private project developers are typically the owners of the assets generated by the investment. Their investments are made in several sectors; each sector can include actions in one or more uses related to climate change mitigation and the energy

transition, such as energy efficiency, development of renewable energies or the building of sustainable infrastructure.

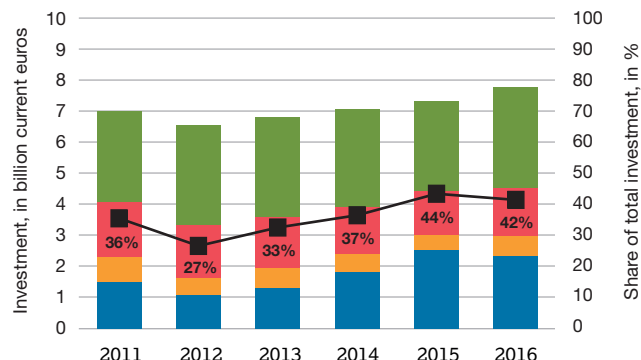
The Landscape of Climate Finance only aggregates spending and funds engaged at the time of the investment (capital expenditure). Some financial instruments contributing to a project's financial profitability during its lifetime, such as carbon pricing systems or feed-in tariffs for renewable energy, are not represented on the flowchart.

Since 2013, the public sector has driven more than half of the funding supporting investments

Measuring the share of publicly-driven funding allows an analysis of whether climate investments depend principally on public support, or on the economic and regulatory conditions making the financing of projects viable for the private sector.

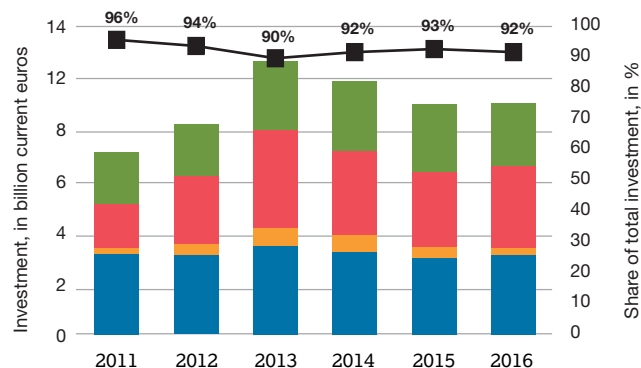
House retrofitting: an increase in investments and in the share of publically driven finance

Investments have risen since 2012, from 7.7 to 8.9 billion euros. Grants, subsidies and transfers have played an increasing role in funding these investments. Publicly-driven funding, which also includes concessional debt to households and investments by the central government, local authorities and social housing authorities, accounted for 44% of investments in 2015 and 42% in 2016.



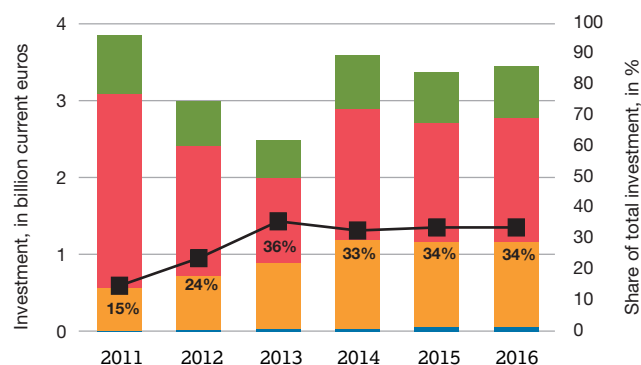
Transport: investment in infrastructure decreased since 2013, while investment in the purchase of low-carbon vehicles increased

In the transport sector, infrastructure investments totalled to 8.8 billion euros in 2016, and was characterized by a high proportion of publicly-driven funding in the form of projects combining public subsidies and disbursements from central, regional and local authorities and loans made by infrastructure managers. On the other hand, the purchase of low-carbon vehicles was mainly financed by households and businesses, increasing from 100 to 780 million euros between 2011 and 2016.



Renewable electricity generation: stabilizing investment levels and the role of public financial institutions

The decrease in renewable electricity purchase prices led to a fall in investments from 2011 to 2013. Since 2014, a constant average of 3.4 billion euros has been invested per year. Investment came principally from companies, in the form of special purpose vehicles mainly relying on bank lending. The share of funding from publicly-driven schemes, in particular concessional debt and credit lines issued by public financial institutions and banks, increased between 2011 and 2013 and has since been stable.



- Grants, subsidies and transfers
- Concessional debt
- Commercial debt
- Equity, own funds
- Share of publicly-driven finance (in %)

Publicly-driven finance is comprised of investments by public project developers (national and local governments, public housing offices and public operators including infrastructure managers) as well as grants, subsidies and transfers and concessional debt issued to private project developers (households and companies). For more information, see p.80 of the full report of the 2016 edition of the *Landscape of climate finance in France* (available in French).

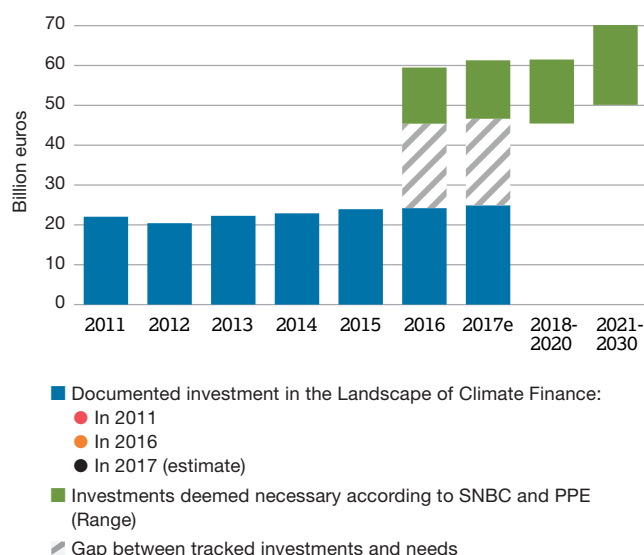


Between 45 and 70 billion euros of annual investment by 2030 would be needed to achieve the objectives defined by the National Low Carbon Strategy (SNBC) and the Multiannual Energy Plan (PPE)

In 2016 and 2017, the annual gap between investments and needs represents between 20 and 40 billion euros

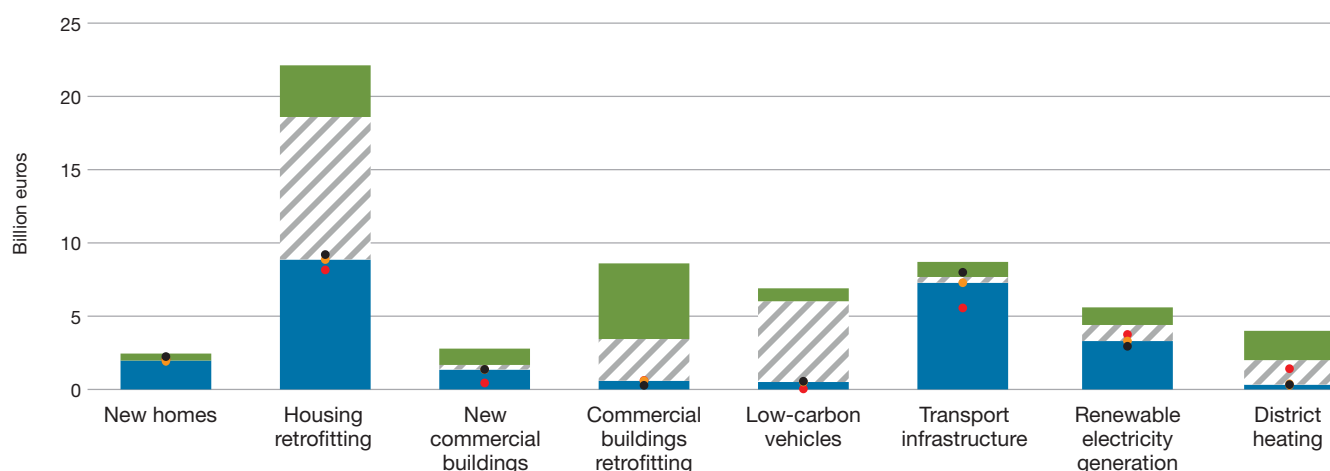
Using a comparable perimeter, climate investments identified in 2016 and estimated for 2017 amount to approximately 25 billion euros. At the same time, estimated needs from the National Low Carbon Strategy (SNBC) and the Multiannual Energy Plan (PPE) range from 45 to 60 billion euros. The annual estimated investment needs remains within this range up to 2020. Between 2021 and 2030, the annual investment needs are estimated between 50 and 70 billion euros.

COMPARISON OF INVESTMENTS TRACKED IN THE LANDSCAPE OF CLIMATE FINANCE AND ESTIMATED INVESTMENT NEEDS ACCORDING TO THE SNBC AND THE PPE



The needed investments are distributed unequally across sectors

BREAKDOWN OF INVESTMENT GAPS BY SECTOR



In absolute amounts, the gap between current investment and estimate investment needs is concentrated in the building sector, primarily in the retrofitting of private homes. For retrofitting of commercial buildings, low-carbon vehicles and district heating, investment needs

are low in absolute amounts, but represent several times the level of current investment. For renewable energy production, sustainable transport infrastructure, current investment is close to the level of estimated investment needs.

¹ I4CE estimates the annual investment needs based on the quantified targets established in SNBC and PPE. The estimate is for fixed capital expenditures for GHG emission reduction in the building, transportation, power generation and heat network sectors. The need for investment in research or development, in agriculture, in industry or for adaptation is not sufficiently documented to be quantified in this analysis. For each sector, the estimate identified the volume needed (number of renovated dwellings, installed MW, km of infrastructure to be built) and assigns one or more price trajectories according to the ranges observed in recent years or anticipated in the SNBC and the PPE.

I4CE published a detailed note on the calculation of investment needs based on SNBC and PPE targets, available (in French) at www.i4ce.org/download/evaluation-investissements-objectifs-climat-2017

The use of financing instruments depends mainly on the size of the project and the type of developer

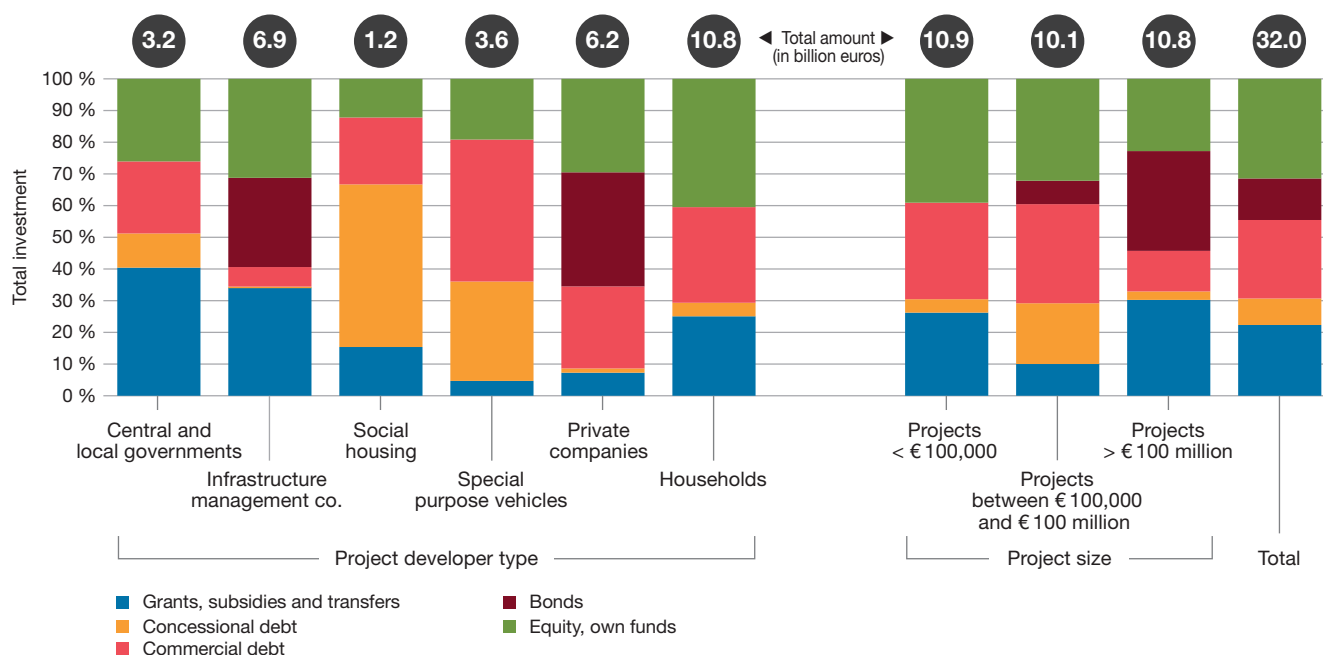
Each project developer used a specific mix of financing instruments

Subsidies, grants and subsidies represented more than 25% of the total projects for communities, infrastructure managers and households. For social housing authorities and renewable electricity special purpose vehicles, concessional loans, contracted from Caisse des Dépôts and BPI France, represented respectively from 30% to 50% of the total cost of the projects. In particular, large companies and infrastructure managers used bonds to finance their investments. The share of equity was the most important for households.

The size of projects also influences the type of instrument used

Grants, subsidies and payments were used for more diffuse projects (less than 100,000 euros), particularly by households for new construction, housing renovation or vehicle acquisition. These instruments were also used for major infrastructure projects (projects of more than 100 million euros). Conversely, concessional debt mainly financed medium-sized projects (100,000 to 100 million euros), such as the renovation of public buildings or the generation of renewable electricity. Commercial debt from banks was used for diffuse and medium-sized projects, while large projects are characterized by a more frequent use of bond issuance by large companies, commercial banks and infrastructure managers. The share of own equity was higher for diffuse investments, highlights the difficulty of mobilizing private finance for smaller projects.

LOW-CARBON INVESTMENT FUNDING INSTRUMENTS BY PROJECT DEVELOPER AND PROJECT SIZE, 2016



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