

# Bottlenecks in funding of green investments

## DNB Position Paper

### Key points

- The main bottlenecks for green investments are insufficient carbon pricing and the uncertainty surrounding a long-term government climate policy. Better carbon pricing and a clear long-term government policy vision on climate change (possibly embedded in a climate act) are therefore necessary.
- Other bottlenecks in funding of green investments include maturity mismatch, the lack of clear standards, insufficient venture capital, and the fact that green projects are often small scale.
- A bigger role for institutional investors can help reduce these bottlenecks, with the government potentially playing an intermediary role. The Sustainable Finance Platform is currently examining the existence of unnecessary constraints caused by supervision rules.
- Green bonds may also be helpful to reduce maturity mismatch and small scale activities. The concomitant guidelines must, however, be harmonised at international level.

### *Insufficient green investments*

The current level of investments in renewable energy and energy conservation is not sufficient to achieve the emission reduction target of the Paris climate change agreement. This applies equally to the Netherlands and worldwide. In order to cap global warming at 2° Celsius, the International Energy Agency (IEA) projects that green investments<sup>1</sup> must double to USD 500 billion a year by 2020 and then double again to USD 1 trillion a year after 2030.<sup>2</sup> In the Netherlands, too, green investments need to be stepped up. In 2014, investments in sustainable energy and energy saving totalled approximately EUR 5 billion.<sup>3</sup> McKinsey estimates that based on the current technologies, EUR 10 billion must be invested annually

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<sup>1</sup> Green investments are defined as investments that contribute towards reducing carbon emissions. They primarily concern renewable energy and energy conservation.

<sup>2</sup> IEA (2012)

This assumes 80% emissions reduction by 2050. To achieve 95% reduction, 1.5 times as many investments are necessary.

<sup>3</sup> PBL Netherlands Environmental Assessment Agency (2016)

between 2020 and 2040 in order to achieve the lower limit of the agreed climate objectives. The bulk of investments is needed for the built environment and energy generation, but transports and industry are also in need of substantial investments. The majority of these investments must come from private parties, meaning that market incentives must be made to appeal to this group of investors.

***Low carbon price is undermining the green investments business case***

The main reason that green investments have remained below the envisaged level is that the external effects of carbon emissions are not being priced adequately at present. Carbon pricing can take the form of a carbon tax or a system for trading carbon emission permits, like the European Union Emissions Trading System (ETS).

Emissions trading regulates the amount of carbon emissions, but it provides no certainty as to the costs of reducing emissions, which constrains investment decisions. Due to the surplus of allowances, the price of a permit to emit a tonne of carbon dioxide under the ETS was very low at EUR 5 in 2016. This means that there is no attractive business case for green investments (see Table 1). The European Commission has announced measures to reduce the surplus of allowances, but this will not be sufficient to deal with the problem: carbon prices are projected to remain too low for a long time to come to generate green investments (EUR 23 in 2030 according to recent estimates by PBL Netherlands Environmental Assessment Agency) and the ETS remains vulnerable to demand shocks.<sup>4</sup>

**Table 1. Minimum carbon price for viable green investments<sup>5</sup>**

Investment	Wind farms on land	CCS	Coal to gas in NL	Wind farms at sea
Carbon price	20	10 – 80	45 – 130	170

<sup>4</sup> Brink, C. (2016)

<sup>5</sup> Begemann, E. et al. (2016), Rooijers, F. et al. (2014)

For sectors that are not governed by the ETS, direct taxation of emissions is the more obvious choice. The current energy tax induces exemptions and fees rather than consistent carbon prices across the different sectors in the energy mix.

### ***Bottlenecks in green investment funding***

Wavering government policy The business case for green investments often depends on government policies that are uncertain in the long term. It is not only about carbon pricing; the fact that no suitable carbon price has materialised demands different policy instruments, e.g. regulations and subsidies. The uncertainty is fuelled by the fact that there is no clear vision on long-term objectives and the transition routes for the different sectors. Uncertainty about long-term government climate policies increases the risk costs of green investments.

Maturities Green investments often demand relatively high investment costs that only deliver returns in the long to very long term, which exposes banks and investors to relatively high liquidity risks. For institutional investors, the long recouping time is less of a stumbling block as they mainly have long-term commitments. Consequently, a part of their investment portfolios can be illiquid as long as the spread and balance suit the nature of the financial commitments. We need to further examine the extent of the negative impact that the liquidity requirements set by supervisory authorities have in practice on the scope that institutional investors have for making green investments.

Standards Financing of green investments is being hampered by the lack of clear standards and definitions. There are many standards for disclosing exposures of businesses to climate change, but they cannot be easily compared, which makes it more difficult for financial institutions to properly assess the level of sustainability of investments and take climate risks into account.

Venture capital The best suited financing form partly depends on the development phase that an investment project is in. For sustainable innovations that are still at the start-up phase, it is often too early to estimate the expected returns. At this stage, financing by means of risk-bearing capital often is the more obvious choice than seeking bank funding. However, in European countries there is relatively limited venture capital available as compared with the United States. In addition,

there are indications that relatively many green start-ups in the Netherlands fail compared with other European countries.<sup>6</sup>

Scale Large-scale projects at a mature development stage with viable business plans (e.g. wind farms) virtually always find funding in the form of bank credit, bonds or equities.<sup>7</sup> Owing to their size, these projects are also interesting for institutional investors. It is more difficult to find funding for small-scale projects as for many capital providers, these projects are not worth the trouble of making a thorough solid risk analysis. To make smaller projects more attractive, they could be pooled into investments of sufficient scale with attractive risk/return profiles. To this end, Dutch institutional investors established the Dutch Investment Institution (NLII). This has, however, not yet led to additional green investments, which suggests that there are still obstacles to overcome or that the green business case is not viable without government intervention, or both.

#### *Green financial products*

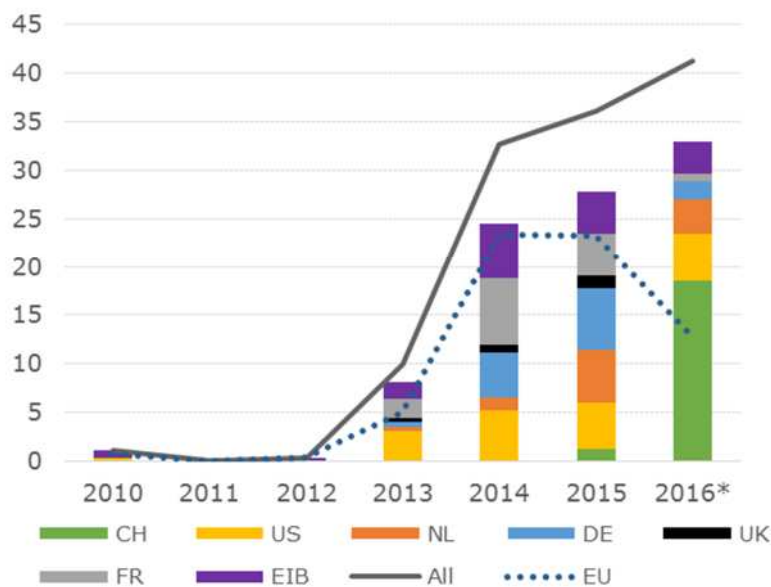
There are various green financial products on the market. By earmarking these products as "green", investors can often capitalise on tax benefits. Under the Netherlands Green Projects Regulation, investors can for instance borrow funds at lower costs to make green investments. The regulation is financed by offering green savings or investment forms that deliver tax benefits. Private parties are offered lower interest rates, which the bank uses to finance green projects against attractive conditions. "Green mortgage loans" are on offer to buy sustainable housing or to greenify homes. Green mortgages on the whole have slightly lower interest rates and allow a higher LTV ratio (106% rather than 102%).

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<sup>6</sup> Van der Vooren, A. & Hanemaaijer, A. (2015)

<sup>7</sup> SER (2013), SER (2016)

**Figure 1. Issue of green bonds by country**  
(in USD billion)



Source: Dialogic. \*2016 data available until July 19th

Green bonds are bonds that are issued to enable green investments. They often combine various types of green projects. Globally speaking, green bonds still only account for a very small proportion of financial flows (0.15% of the total number of bonds), although the issue of green bonds soared over the past few years to USD 42 billion in 2015 from USD 3 billion in 2012 (see Figure 1). The European Investment Bank issues the majority of green bonds in the EU. The Netherlands is the fifth largest issuer of green bonds worldwide. The main issuers are NWB Bank, the Entrepreneurial Development Bank (FMO), and BNG Bank.

Green financial products may help ease the bottlenecks of maturity mismatch and small-scale projects and reduce the capital costs of green investments. Investors have been showing a growing appetite for green bonds, also driven by institutional investors who have committed to making their investment portfolios greener. At the same time, the absence of generally accepted definitions (and criteria to define whether bonds are actually green) is hampering the credibility and the development of the green bond market. There currently are vast

differences between countries: in China for instance "clean coal" can be financed with green bonds. There is also a risk of "green washing", where activities or enterprises are profiled as green, whereas this is open to interpretation.

### ***Making the built environment more sustainable***

The problem of scale is especially relevant in built-up areas. In absolute terms, the biggest investment challenge is here, but it must be taken up by small parties like households, foundations and enterprises. Office buildings are required to have energy labels of at least C from 2023 onwards. There are no compulsory energy labels in place for residential buildings.

Green investments for rented homes are primarily made by housing associations. They can finance the necessary investments without major hurdles.<sup>8</sup> Their investments can be partially recouped by raising rents, as the maximum rent allowed has since 2015 been tied to the energy label of the house. In addition, housing associations are able to attract cheap funding, owing to the government guarantee underlying their loans.

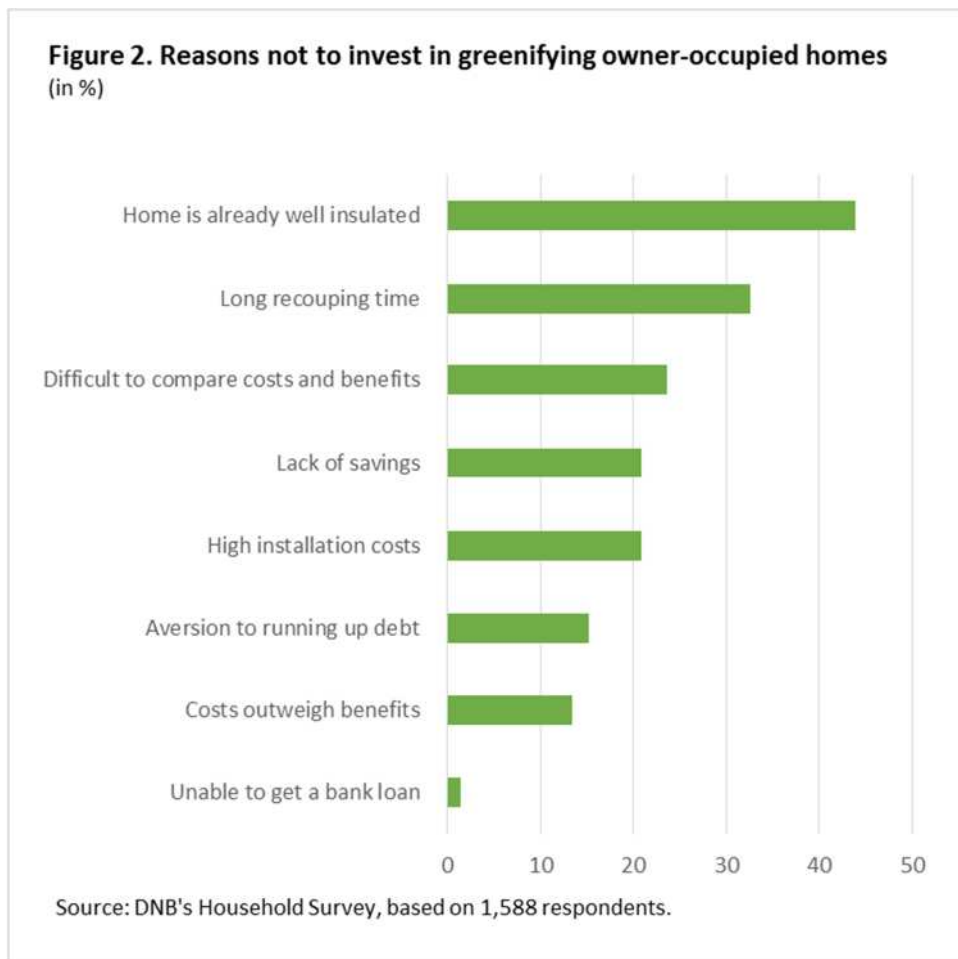
On the whole, the owner-occupied sector does not have much trouble obtaining funding, but aversion to borrowing and uncertainty do play a role here.<sup>9</sup> A poll in DNB's Household Survey revealed that homeowners mainly use their savings to finance investments to greenify their homes. The past decade saw 45% of homeowners invest in making their homes more energy efficient (insulation or sustainable energy). Only 4% of them financed these investments by means of bank loans. Of the households *not* making investments to greenify their homes in the past ten years, a mere 1.4% said that this was due to their not being able to get a bank loan (see Figure 2). More frequently stated reasons include a lack of savings and an aversion to running up debt. Respondents also indicated that they shied away from making investments as they have trouble comparing costs and benefits, or because installation costs are too high. Another point is that the investment

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<sup>8</sup> Schilder, F. et al. (2016)

<sup>9</sup> There are various measures that will facilitate access to funding for households. Since 2014, households have been able to turn to the energy conservation fund to obtain loans at attractive interest rates for investments in energy efficiency. In addition, there are many subsidy schemes (ISDE, STEP) and regional funds for private green investments. And mortgage loans taken out to greenify homes can be financed up to 106% of the value of the home (rather than 102%).

recouping time almost always exceeds the period of subsidies and tax relief guaranteed by the government.



***Policy implications***

- The main bottleneck for sustainable investments is the low and uncertain carbon price. This is why the ETS needs to be reformed. The most effective way to deal with the surplus of emission allowances and fortify the system against shocks is introducing a minimum price for emission allowances, which is increased in predefined stages. It would also be beneficial to opt for accelerated phasing out of emission ceilings, and to adjust the allocation of free emission allowances quicker to the realised production levels. Apart from the ETS itself, energy taxation can be improved to achieve consistent carbon

prices, among other things by ending the energy tax exemption for energy-intensive industries.

- To provide more certainty to investors in terms of policies, the government must commit to a long-term perspective on the required transition, and map clear targets and transition paths for the different sectors and time frames. This can be done by means of a climate act with a governance structure, under which the government would be obliged to publish at regular intervals whether its objectives and interim objectives are being achieved.<sup>10</sup>
- A bigger role played by institutional investors may help take away specific bottlenecks (maturity mismatch, venture capital), but lack of scale is often a problem. By acting as an intermediary, the government may be able to overcome information asymmetry. Government intervention must of course be weighed up against the cost of information collection and risk assessment. Government failure is also looming, with the main reasons being politically motivated risk assessment, the shift of risks that should lie with private investors, and efficiency (there already are numerous subsidy schemes, funds and tax arrangements to boost sustainable investment, making fragmentation a lurking danger).
- Every now and then, there are indications from the financial sector that the scope for green investments is being curbed by supervisory requirements (especially relating to manageability and illiquidity).<sup>11</sup> Follow-up studies are needed to identify unnecessary barriers for institutional investors from a supervision perspective and how to remove these barriers. One of these studies is currently being performed by the Sustainable Finance Platform, a partnership of financial market operators, government agencies and supervisory authorities. The aim of this platform, set up by DNB, is to promote and encourage attention for sustainable funding in the financial sector.
- Green bonds may help in enlarging the capital supply for green investments, reducing maturity mismatch, and pooling of smaller projects. "Greenwashing" must, however, be prevented as much as possible by harmonising country-specific guidelines for green bonds at international level.

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<sup>10</sup> DNB (2016a)

<sup>11</sup> See also DNB (2016b)



- Capital available for green investments can be further increased by better describing climate risks of non-sustainable investments. Detailed carbon footprint reports and energy transition plans will make it easier for financial institutions to factor in climate risk. Clarity about exposure to climate risk requires unambiguous standards that must be applied by all relevant parties and will help to put a realistic price on climate risks. A recent report by the Financial Stability Board (FSB) Task Force on Climate-related Financial Disclosures has a number of recommendations for achieving this.

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