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Saving energy is not easy
An impact assessment of Dutch policy to reduce the energy requirements of buildings

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HIGHLIGHTS

- We assessed the Dutch energy saving policy for the build environment.
- For *new buildings*, the policy mix works well, but its contribution to the policy targets is limited.
- For *non-residential buildings* the existing law can be enforced to a greater degree.
- For *privately owned homes* a more compelling policy is needed.
- The Dutch energy tax is an important pillar of the current energy saving policy.

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ABSTRACT

The Dutch Government stimulates the application of energy efficiency measures to reduce the energy requirements of buildings, which are responsible for about 20% of the Dutch CO_2 emissions. For our assessment, we followed a qualitative approach, due to a lack of data. We reviewed the mix of policy instruments and used stakeholder surveys and interviews. We found that energy use is not very likely to decline fast enough to achieve the Dutch policy targets for 2020. For *new buildings*, the policy mix works well, but its contribution to the policy targets is limited. For *non-residential buildings* the current Act, which obliges enterprises to take cost-effective measures, could be enforced to a greater degree. For *privately owned homes* a more compelling policy is needed. An alternative policy option would be to make taxation dependent on the energy label of residential houses. This would stimulate residents to take action while retaining the desired autonomy. For *rental housing*, binding agreements between municipalities and housing corporations may lead to more energy saving measures. Finally, we conclude that the Dutch energy tax is an important pillar of the current policy. It provides higher cost-effectiveness of energy saving measures and legitimates more strict energy efficiency standards.

1. Introduction

The European Union's goal is to reduce CO_2 emissions by 20% by 2020, compared with 1990 emission levels. On a national level, the Dutch Government lowered its initial reduction target (Menkveld et al., 2010) from 30% to 20% (Klimaatbrief, 2011). To achieve this target, the built environment is important. About 20% of all Dutch CO_2 emissions are emitted within the built environment (Vringer et al., 2014) from the use of fossil fuels, such as natural gas. The Dutch Government stimulates the implementation of energy saving measures in the built environment, fossil fuel is not declining fast enough on its own. There are many reasons why the energy saving rate is not as fast as desired; not even when energy saving measures bring important benefits, such as paying for themselves within a few years, offering added comfort, and reducing housing costs. Currently, owner-occupiers and tenants are sometimes unable to influence the energy quality of their buildings. They are insufficiently informed, lack knowledge, cannot carry out measures themselves, or they are not interested in making the effort. Moreover, builders are not inclined to build more energy-efficient buildings, as this may harm their competitive position. The financial advantage of future low energy bills is often underestimated by home buyers. They are not prepared to

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pay a higher price for a more energy-efficient house, even when the total housing costs would be lower (mortgage repayments plus energy bill). To help investors take saving measures and because of the long history of energy saving policy and existing political constraints, the Dutch Ministry of the Interior and Kingdom Relations (BZK) implemented a mix of policy instruments, including an energy tax, various subsidies and energy efficiency standards for newly constructed buildings (BZK, 2011). Dutch policy is of course in line with the EU Directive on the energy performance of buildings (EPBD).

The Dutch Ministry of the Interior and Kingdom Relations (BZK) requested PBL Netherlands Environmental Assessment Agency to make an impact assessment of the energy saving policy for the built environment. Their goal was not only to gain more insight into the effects of the policy, but also to obtain advice on how the policy could be made more effective and efficient. The central question to be answered in the assessment was:'How can the government stimulate investments in energy saving measures in the built environment more effectively and efficiently?' To answer this question we formulated three research questions:

- To what extent are policy goals being achieved?
- How is the policy shaped?
- How does this policy influence investment decisions?

1.1. Limitations of the assessment

This impact assessment was limited to the policy as described in the "Plan of Action Energy Saving in Built Environment" (BZK, 2011). The objective of this plan of action is threefold:

- To contribute to the European target of 20% CO_2 reduction by 2020, by means of energy saving in the built environment;
- To use energy saving as a means of allowing people more control over the increase in their living expenses;
- To use energy saving to boost the construction sector.

For this assessment, we focused on the CO_2 emission reduction target and related energy saving goals. The assessment did not address possible effects on housing costs, the construction sector (employment) or the financing of investments. Nor did we investigate the extent to which energy saving measures in the built environment would be more or less effective or efficient than those in other sectors, such as industry or traffic and transport. Furthermore, additional policy was excluded from the assessment, but is mentioned where applicable. In particular, the 2013 Dutch Energy Agreement for sustainable growth (Nationaal Energieakkoord; SER, 2013) – signed by over 40 parties, including national, regional and local authorities, employer organisations and trade unions, nature conservation and environmental organisations, financial institutions and NGOs – was taken into account in our assessment of the target range, but we did not address any of the new or modified instruments named in the Energy Agreement.

2. Approach

We combined a judging and a reflective assessment (see also Teisman et al., 2002), given its objective. Thus, we tried to assess the policy's current efficiency and effectiveness. In addition, we also attempted to provide more insight into the obstacles that make policy instruments less effective, and/or into the reasons why one or more instruments could not be used in practice.

Fig. 1 shows the policy chain, in which policy effectiveness is determined by its impact in relation to the policy target. Its efficiency is the impact in relation to the policy effort. A quantitative policy impact assessment is the quantification of the effectiveness and efficiency of policy instruments, by

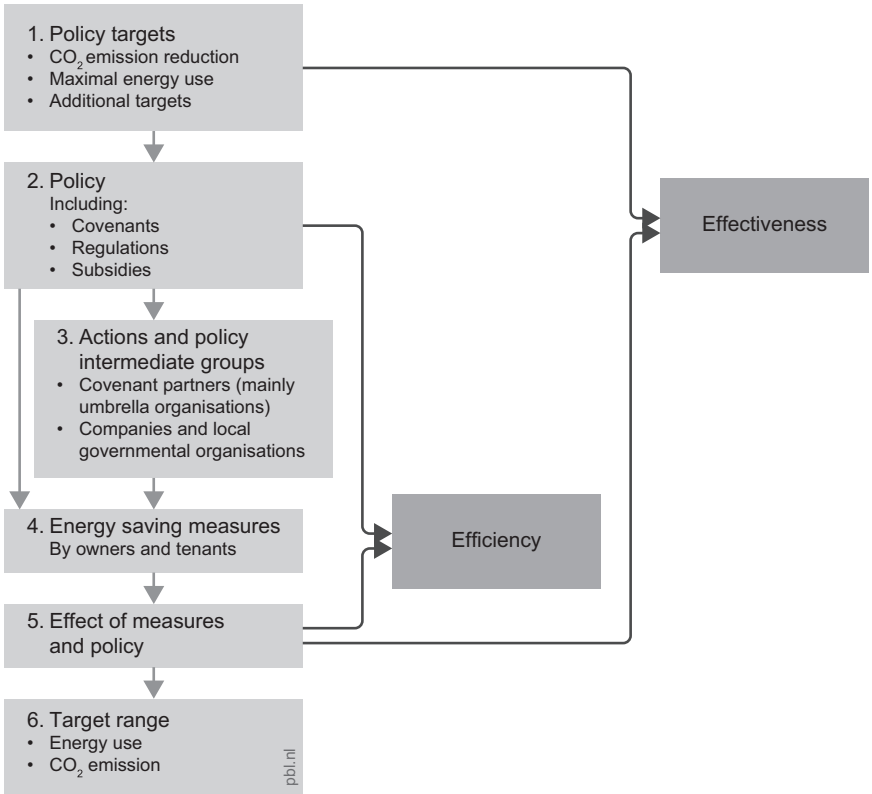

Fig. 1. Policy chain for the Dutch energy saving policy for the built environment.