DIW ECON
Das Consulting-Unternehmen des DIW Berlin

ECOFYS
sustainable energy for everyone

How can climate financing in the EU be improved to achieve the 2030 climate and energy targets?

Discussion Paper

How can EU climate financing be improved to achieve the 2030 climate and energy targets?

Discussion paper

Authors: Moritz Schäfer, Charlotte Cuntz (Ecofys)

Reviewer: Dr. Petra Opitz (DIW Econ)

Date: 09 May 2016

Project number: CLIDE15268

Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety

Disclaimer: The views and opinions expressed in this Discussion Paper are those of the authors and do not necessarily reflect the official policy or opinion of BMUB.

ECOFYS Germany GmbH | Albrechtstraße 10 c | 10117 Berlin | **T** +49 (0)30 29773579-0 | **F** +49 (0)30 29773579-99 | **E** info@ecofys.com | **I** www.ecofys.com
Managing Director C. Petersdorff | **Register Court:** Local Court Cologne | **Chamber of commerce Cologne** HRB 28527 | **VAT ID** DE 187378615

1 Objective

This paper was developed by Ecofys for the German Ministry for the Environment (BMUB) to serve as a briefing and discussion paper for the Conference on how to improve climate financing in the EU towards 2030 targets, taking place on 18 May 2016 in Brussels. It is based on research conducted by Ecofys and DIW Econ as part of the project "Analysis of options for optimal implementation of climate finance in the EU", funded by BMUB.

The objectives of this paper are as follows:

- Describing the **current situation** (Chapter 2)
- Laying out **fields of action** of climate action financing in the EU (Chapter 3)
- Formulating researcher's **suggestions for improvement** (Chapter 4)

The inputs and results of the presentations and discussions at the Conference will again feed into a brochure that will be published by BMUB in 2017 to serve as an input for further discussions on future climate finance in the EU.

2 Current situation

The European Union (EU) has set itself a long-term goal to become a competitive, low-carbon economy by 2050 and to reduce its greenhouse gas (GHG) emissions by 80-95% compared to 1990. EU Member States (MS) agreed on concrete targets on the way to this long-term goal and together have committed to reducing GHG emissions by at least 40% (domestic) compared to 1990, increasing the share of renewable energy to at least 27% and reducing projected future energy consumption by at least 27%[1] by 2030 ("2030 climate and energy framework").

In Paris in December 2015, world leaders agreed to keep global temperature rise "well below 2°C above pre-industrial levels**"** as well as to "pursue efforts to limit the temperature increase to 1.5°C above pre-industrial levels". Furthermore, G7 leaders agreed on the "decarbonisation of the global economy during the course of this century" at the G7-Summit in June 2015. Considering lifetime expectations of new installations and renovation cycles, investment choices taken up to 2030 will be critical to achieving these long-term EU climate and energy targets in an economical way and avoiding stranded assets. A stable investment framework and large investments in a low-carbon economy are urgently needed.

Financing of climate action measures has become strategically important for the EU in regards to reaching its 2030 climate and energy targets, thereby reducing energy import dependency and enabling the transition to a low-carbon economy. Despite the introduction of climate mainstreaming, which is aimed at integrating climate action in the entire EU budget by requiring that at least 20% of the EU budget for 2014-2020 (as much as €180 billion) is spent on climate change-related issues, a

[1] Indicative; to be reviewed in 2020 having in mind a 30% target.

large EU climate finance gap remains. In its Impact Assessment on "Energy Efficiency and its contribution to energy security and the 2030 Framework for climate and energy policy"[2], the European Commission estimates that **between 2011 and 2030, around €35 billion annual additional investments are needed to reach the 2030 targets**. In total, yearly investments would need to increase to €188 billion (€851 billion including transport). About half of the needed additional investments (€17 billion) will have to be made in energy efficiency measures, especially in buildings.[3]

Public funding alone can never be sufficient to finance the measures necessary to achieve the climate and energy targets. But if public funding is spent in an efficient and effective way ("better spending"), the Commission estimates that current EU funds, in combination with national funds, can be sufficient to trigger the needed energy savings in the lead up to 2030. To achieve this, available public money (together with national and regional funding) for climate action needs to be fully absorbed, used in an efficient and effective manner, and provided to leverage significant private investment.

3 Fields of action

In addition to the climate quota of 20%, the main EU climate finance instruments under the current Multiannual Financing Framework (MFF) are the EU Structural and Investment Funds (ESIF)[4], the LIFE Programme and parts of the Connecting Europe Facility (CEF), which are accompanied by the climate action activities within the Framework Programme for Research and Innovation (Horizon 2020 including the ELENA facility). The EU Emissions Trading System (ETS)-based funding instruments NER300 (in future the Innovation Fund), the newly proposed Modernisation Fund under EU ETS IV, the European Energy Efficiency Fund (EEEF), and especially the European Fund for Strategic Investments (EFSI) will deliver additional investments in energy efficiency and renewable energy measures. Furthermore, the European Investment Bank (EIB) and European Bank for Reconstruction and Development (EBRD) also use EU public funds to finance climate action in EU MS. The following analysis focuses on EU financing for energy efficiency measures.

The potential of available EU funds for energy efficiency investments has so far not been fully realised. The main challenge for the public domain in the EU and its MS is to use available funds effectively and to create a more adequate institutional framework that increases incentives for private investors (demand side). At the same time, framework conditions in the private sector need to be improved in regards to, for example, technical expertise (supply side).

[2] European Commission (2014): Impact assessment - Energy Efficiency and its contribution to energy security and the 2030 Framework for climate and energy policy. Part 1, p. 48, Table 8.
[3] If the EU energy efficiency target is increased to 30%, additional needed investments for energy efficiency are calculated at €54 billion.
[4] European Regional Development Fund, European Social Fund, Cohesion Fund, European Agricultural Fund for Rural Development, European Maritime & Fisheries Fund

The most common barriers for climate investments in energy efficiency measures in the EU are:

- Insufficient and counterproductive target setting and incentives (e.g. delayed and unambitious implementation of EU regulations, uncertainties about policy and investment framework, fossil fuel subsidies)
- Lack of technical capacity and information on the side of project developers and financial institutions (e.g. lack of knowledge on energy saving potentials, lack of data on impacts of energy efficiency investments)
- Fragmented, small-scale projects with high transition costs and perceived high investment risk, project developers lack capacity to develop bankable projects
- Lack of access to finance (e.g. dedicated energy efficiency financing programmes)
- User-investor-dilemma
- Impeding rules and practices on financial markets (e.g. liquidity and equity capital obligations as per Basel III)

In the following, the use of EU public funds and instruments for financing energy efficiency projects and programmes are discussed.

European Regional Development Fund (ERDF) and Cohesion Fund (CF)

During the 2007-2013 MFF, **EU-27 MS[5] allocated about €6.1 billion or 2% of funds they received through ERDF and CF to energy efficiency** (of which an estimated €3.4 billion to energy efficiency in buildings).[6] Considering the overall investment needs for energy efficiency measures and the fact that a low-carbon economy and environment are priority investment areas of the funds, this can be considered a fairly low share. One reason for this is that energy efficiency ranked rather low among MS' national priorities.

However, it can be assumed that the shares of energy efficiency investments will increase in the current programming period (2014-2020), as minimum quotas for climate action were also set for the structural funds.[7] The Commission estimates that investments in climate action within the current ESIF will be twice as much as in the programming period 2007-2013.

[5] Croatia is not included here as it only became an EU MS towards the end of the 2007-2013 MFF period.
[6] Ramböll Management Consulting & Institute for European Environment Policy 2015: Energy efficiency in public and private buildings – Progress Report Work Package 8. Ex-post evaluation of Cohesion Policy programmes 2007-2013, focussing on the European Regional Development Fund (ERDF) and the Cohesion Fund (CF), p. 5;
http://ec.europa.eu/regional_policy/sources/docgener/evaluation/pdf/expost2013/wp8_final_report.pdf
[7] Within the current programming period, MS are obliged to assign minimum shares of their EFRD budget to climate action (20% in more developed regions, 15% in transition regions, and 12% in less developed regions).

With regards to the effective use of the funds, an absorption rate of around 90% in average[8], and the fact that only 5% of the funds were leveraged with innovative financing instruments in the ESIF 2007-13 period, leave untapped potential.

LIFE Programme

Since 2005, only 37 energy efficiency-related projects have been co-financed through LIFE, with an overall amount of about €37 million. More than two thirds of these projects have been realised in just three EU-15 MS: 14 projects in Spain, six in Italy and five in France. Notably, the **Czech Republic is the only EU-13** MS[9] that has used LIFE finance for energy efficiency investments thus far (one project).[10] Generally, the absorption of LIFE funds by EU-13 MS is low. A mid-term evaluation of the EU Commission of the LIFE+ Programme in 2010[11] showed that, with the exception of Slovakia, no EU-13 MS fully absorbed the nationally allocated funds between 2007-2009, whereas six EU-15 MS exceeded their national allocation by far. Therefore, the national allocation method was abolished again in the current 2014-2020 programming period.[12]

The fact that six energy efficiency projects are already being funded under the current 2014-2020 MFF (all in EU-15 MS) indicates an increased use of LIFE for financing energy efficiency measures since the introduction of a stand-alone climate component of the programme in 2014. Furthermore, in December 2014, an innovative financing instrument for energy efficiency was introduced under LIFE, named "Private Finance for Energy Efficiency" (PF4EE). It aims to facilitate the access of private banks to energy efficiency projects. For hedging their investment risks, €80 million are earmarked of the LIFE budget to fund credit risk protection and expert support services. This will be leveraged by EIB, making €480 million available in long-term financing.

European Fund for Strategic Investments (EFSI)

As of April 2016, 57 projects in infrastructure and innovation have been approved by EFSI, of which 22 are in the energy sector[13]. Among these are **seven energy efficiency projects** covering energy efficiency in residential buildings, industry, CHP, smart metering, and the establishment of Energy Efficiency Funds. Even though EFSI does not have a geographic focus, **all of the 22 projects in the energy sector that were granted funding are located in ten EU-15 MS**.

---

[8] The exact figure is difficult to determine as the figures of Greece and Croatia are not representative.
[9] EU-13 MS are those MS that joined the EU 2004 (Estonia, Cyprus, Czech Republic, Hungary, Latvia, Lithuania, Malta, Poland, Slovakia and Slovenia), 2007 (Bulgaria and Romania) and 2013 (Croatia).

[10] LIFE project database: http://ec.europa.eu/environment/life/project/Projects/index.cfm?fuseaction=home.getProjects&theme-ID=117&projectList,
[11] EU Commission 2010: Commission Staff Working Paper – Mid-term review of the LIFE+ Regulation; http://ec.europa.eu/environment/life/about/documents/com2010_516_final.pdf
[12] DG Climate Action 2011: Q&A on the LIFE programme; http://ec.europa.eu/clima/policies/finance/budget/life/faq_en.htm
[13] EU Commission (2016): The Investment Plan for Europe – State of Play April 2016. Energy and Climate Action. http://ec.europa.eu/priorities/sites/beta-political/files/energy-ip-state-of-play-april_en.pdf

Promising elements for scaling up energy efficiency projects include the newly introduced European Investment Advisory Hub (EIAH), which provides technical assistance, and the European Investment Project Portal (EIPP), which aims to attract investors as well as provide visibility and information about investment projects. The EIAH and EIPP are tackling the barriers of fragmented small-scale projects and high risk perception combined with technical assistance at EU and local level. It can be expected that further energy efficiency projects will be funded under EFSI.

European Energy Efficiency Fund (EEEF)

Between 2011 and April 2016, financing commitments were made for **ten projects** under EEEF, totalling €116.8 million. This is a small share of the total number of project proposals submitted through the EEEF website, which had already surpassed 700 in December 2013.[14] Among the ten projects that were granted funding, **€73.6 million were spent on energy efficiency projects**. The beneficiary countries include **five EU-15 MS** (France, Italy, the Netherlands, Germany, Spain) and **one EU-13 MS** (Romania). An additional €14.2 million were allocated for technical assistance for 16 public beneficiaries in eight countries.[15] However, the grant money of the European Commission Technical Assistance Facility came to a previously determined end in March 2014, leaving the fund currently without the provision of technical assistance.

EIB climate finance

The EIB has committed itself to dedicating at least 25% of its lending to climate action projects, and applies an Emissions Performance Standard (EPS) to electricity generation projects that rules out carbon intensive projects that are not in line with EU targets.

Between 2010 and 2014, the EIB provided more than €90 billion on climate action, mainly through loans. In 2014, 19.1 billion were invested in climate action projects (of €80.3 billion in total), and about **12%** or €2.3 billion, were allocated to **energy efficiency measures** (compared to 40% for sustainable transport, 31% for renewable energy).[16] **About 90% of the overall EIB's climate action lending** 2009-2013 went **to EU-15 MS**, with the largest share (more than 70%) allocated to Spain, France, Germany, the UK and Italy. **EU-13 MS** (Poland, Romania, Czech Republic and Hungary) **only had a share of 9%** in the EIB's climate action lending portfolio.[17]

The 2015 "EIB Operations Evaluation Report for Climate Action" finds that, while EIB has played an important role in supporting renewable energy investments and has contributed to achieving the MS' national renewable energy targets, this is not yet the case for energy efficiency. With regards to energy efficiency, the allocation of funds is thus far not correlated with the distance-to-target of the different MS. Furthermore, the evaluation holds that the Bank should place a greater emphasis on the

[14] European Energy Efficiency Fund: http://coopenergy.eu/sites/default/files/Events/8_LeonePattofatto_CdP.pdf
[15] EEEF Quarterly Report 2015- Q4.
[16] EIB (2015): Finance for climate action; http://www.eib.org/attachments/thematic/climate_action_en.pdf
[17] EIB 2015: EIB approach to supporting climate action;

climate impact of its portfolio rather than only focusing on project volumes, which may lead to a different type of project mix in the future.[18]

EBRD climate finance

In 2006, the EBRD introduced its "Sustainable Energy Initiative" (SEI), which aims to increase investments in energy efficiency and renewable energy, develop instruments for the mobilisation of private capital, improve framework conditions for private companies, and ultimately surpass political and market barriers in the area of energy efficiency and renewable energy.[19] Since 2006, the EBRD has invested more than **€18 billion** through SEI, of which **more than half went to energy efficiency projects**.[20]

Between 2006-2013, about 18% of SEI funds (total: €13.42 billion) were allocated to the region "Central Europe and Baltic States", which includes nine **EU-13 MS** (Estonia, Croatia, Latvia, Lithuania, Poland, Slovakia, Slovenia, Czech Republic and Hungary). Furthermore, Romania, Bulgaria and Greece are represented in the EBRD region "South Eastern Europe", which received about 19% of the funds.[21] EU-15 MS are not eligible for EBRD funds.

Results

Three key results can be drawn from the analysis:

1. With the exception of the EEEF, PF4EE and the EBRD's Sustainable Energy Initiative, the presented EU climate funds have not prioritised energy efficiency measures up to now;
2. Where the financing of energy efficiency measures is one among many options, MS only make little use of EU climate funds to invest in energy efficiency;
3. The general use and absorption rate of available EU climate funds is significantly higher in EU-15 MS than in EU-13 MS.

[18] EIB (2015): Operations Evaluation – Evaluation of EIB financing of climate action (mitigation) within the EU 2010-2014, pp.8, 12; http://www.eib.org/attachments/ev/ev_climate_action_eu_2010-2014_en.pdf
[19] EBRD (2013): Financing Sustainable Energy – EBRD Actions and Results, http://www.ebrd.com/downloads/research/brochures/sei.pdf
[20] EBRD (2015): EBRD steps up green financing in build up to Paris climate conference; http://www.ebrd.com/news/2015/ebrd-steps-up-green-financing-in-build-up-to-paris-climate-conference.html
[21] EBRD 2013: Financing Sustainable Energy – EBRD Actions and Results

4 Researcher's suggestions for action

The following suggestions to improve the efficient and effective use of EU public funds for energy efficiency measures are based on the analyses carried out within the scope of the research project. They can serve as a basis for discussions at the conference.

- **Ambitious national energy efficiency policies are essential** (i.e. energy efficiency standards, legal regulations, national energy efficiency action plans, etc.). Improving national frameworks and providing robust long-term investment conditions would significantly drive energy efficiency investments, including through the use of EU climate funds, in MS. Ambitious implementation of the European Energy Efficiency Directive and the Energy Performance of Buildings Directive provide good starting points.
- **A stronger focus of the different EU funds on energy efficiency is needed in order to better recognize the "efficiency first" principle**. Quota for energy efficiency investments per country should be considered when structuring EU funds in the future, while taking into account MS' national circumstances and potentials. In doing so, the experience with national allocations, as in the case of the LIFE Programme, should be taken into account. Only a combination of a targeted design of the available funds and improved national framework conditions will ensure an increased use of EU public funds for energy efficiency investments.
- **To increase the absorptive capacity in EU-13 MS, the framework conditions in these countries need to be improved**:
  - Strengthening of the institutional structures of the implementing authorities;
  - Expansion of the information/visibility of the financing instruments in collaboration with local authorities;
  - Expansion of technical assistance for finance institutes and potential project developers.

  For a more detailed determination of the reasons for the insufficient absorption of climate funds, the EU Commission, should, as was done in the case of the LIFE+ Programme, evaluate the reasons for the insufficient use of the different EU climate finance instruments.
- **More grants should be provided for technical assistance (TA).** To develop, finance and implement large-scale energy efficiency projects, ample know-how is needed. EU support facilities such as ELENA provide useful support to MS in creating bankable energy efficiency projects. In line with this, grants for missing TA facilities should be provided, e.g. for the EEEF. Alternatively, it could also be assessed how different existing TA facilities could be combined or linked.
- **An increased use of innovative finance instruments is needed to mobilise additional private capital.** In the 2007-2013 MFF period, 95% of ESIF money was allocated in the form of grants, whereas innovative finance instruments played only a minor role. Newer funds and instruments, such as EFSI, EEEF or the PF4EE, provide more innovative forms of financing such as guarantees or risk participation through which public funds can mobilise private capital. The

share of innovative finance instruments should be increased and EU public funds used to blend with private sector investments.

- **If available funds from ESIF that were allocated to climate action in the Operational Programmes are not fully used by MS, the EU Commission should be able to re-allocate this money.** Climate-earmarked money, if not being used, should be directed to other EU funds through which it can be invested in renewable energy and energy efficiency projects (e.g. in an EU-wide tendering scheme). Besides the general finance gap as described above, the energy targets for 2030 are either indicative (efficiency) or set on EU-level (renewables), which might pose a threat to their achievement. Hence, it is important that money allocated to climate protection measures is actually spent on climate protection measures.
- **The establishment of a comprehensive and consistent monitoring system is needed** in order to allow for an evaluation of the climate impacts of energy efficiency investments and their contribution towards the achievement of the EU 2030 targets. A uniform set of indicators should be introduced along with instructions for MS on how to report on them to allow for comparability among EU-funded project and programmes. Reporting of the indicators should become mandatory for programmes and projects that use EU climate funds.

DIW ECON
Das Consulting-Unternehmen des DIW Berlin

ECOFYS
sustainable energy for everyone

ECOFYS Germany GmbH

Albrechtstraße 10 c
10117 Berlin

T: +49 (0) 30 29773579-0
F: +49 (0) 30 29773579-99

E: info@ecofys.com
I: www.ecofys.com