

STEP up! The competitive efficiency tender in Germany – step by step towards an effective new instrument for energy efficiency

Nora Langreder
Prognos AG
Goethestr. 85
D-10623 Berlin
Germany

Friedrich Seefeldt
Prognos AG
Goethestr. 85
D-10623 Berlin
Germany

Dr. Lars-Arvid Brischke
ifeu – Institut für Energie-
und Umweltforschung Heidelberg GmbH, Büro Berlin
Reinhardtstr. 50
D-10117 Berlin
Germany

Tim Chmella
Bundesamt für Wirtschaft
und Ausfuhrkontrolle (BAFA)
Frankfurter Straße 29–35
D-65760 Eschborn
Germany

Keywords

Energy Efficiency Directive (EED), tender, competitions, alternative measures

Abstract

With respect to implementing Article 7 (Art.7) of the Energy Efficiency Directive (EED), the idea of an ‘Energy Efficiency Tender’ (EET) was introduced into the political discussion in Germany (cp. eceee 2015 paper 2-345). By the end of 2014, Germany presented the National Action Plan on Energy Efficiency (NAPE) with the newly developed competitive efficiency tender (STEP up!); an innovative approach, which drew inspiration from the ProKilowatt tender scheme in Switzerland and was adapted to European regulations on state aid.

However, the birth and early childhood of STEP up! was not that easy. The scheme had to be adapted to European state aid (and other) regulation, which led to constant loss of strength. The first tenders, starting in 2016, attracted few applications. After 3 years of constant support, STEP up! is strengthening its muscles and ready to leave the pilot stadium. However, sustained and joined efforts were needed to make the program more attractive, starting with the focus on the program marketing, a proactive program support and not yet ending with a continuous improvement of the leading parameters for the efficiency tender.

To begin with the paper reports about the practical experiences gained by the program owner and the evaluation team. Also, the results of the first five calls for tenders, the relevant tender parameters such as the cost/efficiency ratio will be presented. Furthermore, the initial setup and stepwise improvement of the tender design and the program architecture will be

discussed. Finally, the challenges of bringing a new instrument into life with specific respect to the competitive efficiency tender will be addressed.

Overview

This paper is organized as follows. The first sections give a brief overview on the history of the German energy efficiency policy in general with a special focus on the competitive energy efficiency tender (CET), which later was transformed into STEP up! (STromEffizienzPotentiale nutzen – to make better use of electricity efficiency). The next section will describe the configuration of the STEP up! program at the beginning of the pilot phase. The third section provides the quantitative results of the evaluation of the tendering rounds 1 to 5 (with outlook on round 6) and the results of the stakeholder consultations and interviews as well as the continuous improvement of the program and the program marketing over the pilot phase. The paper ends with the conclusion of lessons learnt from the evaluation and an outlook on the relaunch of the CET program in Germany in 2019.

A brief history on competitive tender in Germany

By the end of 2014, Germany presented the National Action Plan on Energy Efficiency (NAPE) with the new developed competitive efficiency tender program (CET) ‘STEP up!’ as one of the key instruments, an innovative approach; which drew inspiration from the ProKilowatt tender scheme in Switzerland and was adapted to European regulations on state aid [BMW 2014].

Germany has a long tradition of Energy Efficiency Policy. The first policies targeting energy savings in buildings were adopted in the early 1980s as a reaction of the first oil crisis of the 1970s. During the first decade however (2000–2010), energy policy was dominated by the implementation of the European Emissions Trading System (ETS), the large-scale implementation of renewable energies in the electricity sector, followed by the phase out of nuclear energy, the so called ‘Energiewende’ (energy transition) in 2011 [BMW 2011b]. The ‘Energiewende’ remains a success story: more and more German nuclear power plants being decommissioned, at the same time a constant growth of renewables could be recorded. The share of renewable electricity has grown up to more than 40 %, as Fraunhofer ISE recently announced [Handelsblatt 180103].

CONCERNS ABOUT ENERGY EFFICIENCY OBLIGATIONS

With Energy Efficiency, however, German policy has always had struggle: when, at the same time, the transposition of the new Energy Efficiency Directive (EED [EED 2012/27/EU] – as a relaunch of the Energy Service Directive, [ESD 2006/32/EC]) – was discussed, it soon became clear, that there was no political majority in favour of an Energy Efficiency Obligation (EEO). Many problems could emerge, as outlined by [Seefeldt, Pehnt & Bornholdt 2015]. Just to mention the most severe concerns about the implementation of an EEO:

- There was an existing and traditional architecture of funding schemes for energy efficiency in all sectors. The role of the obligated parties and the eligible measures in an EEO would have needed to be tailored in detail in different branches and sectors.
- In Germany, there already was an existing and competitive market for energy services. A risk of market distortion was expected.
- The designated ‘obliged parties’ represented a pretty colourful bunch of stakeholders, from small regional oil suppliers over integrated and disintegrated utilities, up to large global energy players with tens of thousands of employees. Many with direct access to the energy consumers, some others without any physical contact to the customer, e. g. energy traders. It still remains unclear, which party should be obliged?
- Very closely connected to that colourful and heterogenous crowd: cost and administrative efforts of an EEO were expected to be high. Even if only big and medium sized players would have been integrated in the system, more than 500 agents would have been covered by an EEO.

THE IDEA OF COMPETITIVE ENERGY EFFICIENCY TENDER

Whereas some studies and stakeholders, such as [ASEW 2012], [Geode 2012] and [Fraunhofer ISI et al. 2012], were in favour of an EEO, others [DENEFF/CO Firm 2012], BUND (Friends of the Earth Germany) [BUND/IFEU 2012/2013] as well as [VKU/ Ecofys 2014] raised the idea to combine an ‘Energy Efficiency Fund’ (EEF) with a market based instrument, the so called ‘Energy Efficiency Tender’ (EET). This idea seemed to break up the standstill, representing a shift from a threatening to a motivating approach instead, based on a competition of the best ideas and economic approaches.

After the Federal elections of autumn 2013, the new ‘grand coalition’ between the conservative and social democrat parties decided to bundle competences for energy policy and the German ‘Energiewende’ in the Ministry for Economy & Energy. The new representatives have called on energy efficiency as the ‘second pillar’ of the ‘Energiewende’ and later even went beyond that, proclaiming ‘energy efficiency first’ in their ‘Green Paper on Energy Efficiency’ [BMW 2017]. To underline this claim, BMWi started the work on the ‘National Action Plan for Energy Efficiency (NAPE)’ with all stakeholders in early summer of 2014. The first NAPE package contains more than 20 measures for energy efficiency and was officially adopted by the Federal Cabinet in December 2014 [BMW 2014].

Implementation and configuration of the STEP up! program

Following the NAPE decision, BMWi has developed the STEP up! program as a pilot program for a competitive energy efficiency tender (CET) in Germany. In many aspects STEP up! was inspired by the Swiss CET program ProKilowatt [BfE 2013] which was started in 2010 by the Swiss federal office for energy (BfE). The program contains all measures of electrical energy efficiency and was very well received with up to 100 projects per year. Germany has widely made use of the Swiss experiences with the program, documented in the evaluation report [BfE 2012] seeking discussions and the exchange of experiences with representatives of the Swiss Federal Office of Energy (BfE) responsible for the implementation of the ProKilowatt program. Hence, Germany adopted some of the generic features of ProKilowatt to the STEP up! program:

1. Technical scope: All types of measures improving electrical energy efficiency are eligible,
2. Project categories: single projects and composite projects (ProKilowatt: ‘programms’, STEP up!: ‘collection projects’) may apply,
3. Selection criterion of the projects: cost-benefit ratio (euro funding per saved kilowatt hours of electricity),
4. Cost effectiveness of efficiency measure: Requirement of a minimum payback period related to electricity costs.

STEP up! was set up as a pilot program to test out a tendering program in the field of energy efficiency. Another component tested in the pilot phase was the development of a measuring concept and the metrological proof of the savings by the finding recipient. Since this is easier to implement and better comparable in the electricity sector than in the case of heat, the program was limited to electrical energy measures, with the possibly to extend it in accordance with the experiences of the pilot phase.

The conditions of energy efficiency funding in Switzerland substantially differ from those in Germany especially due to the following aspects. First, Germany had to develop the STEP up! program in accordance with the EU legal framework of energy efficiency funding and the requirements of the EU single market. Switzerland as a non-EU-member state was able to establish the ProKilowatt program according to national requirements and targets independently from EU restrictions. Second, in Switzerland the ProKilowatt program is the main energy

efficiency instrument on national level, whereas in Germany various and differentiated energy efficiency funding programs as well as further instruments do exist. It was essential to find a way to embed the STEP up! program into German energy efficiency funding policy and to design it complementarily to existing funding programs and instruments. Hence, the design process of the STEP up! program in 2014 was supported by different expertise, e.g. [ifeu 2014], [Stiftung Umweltenergierecht 2015] and studies, e.g. [VKU/Ecofys 2014], [ifeu, LBD 2014].

FUNDING CONDITIONS AND DESIGN OF THE STEP UP! PROGRAM

The STEP up! program was the first competitive energy efficiency funding program in Germany and offered an opportunity to let the market search for the most cost-efficient, feasible savings of electrical energy efficiency. The program was established to support the development of a systemic approach from application of power-saving components to systemic optimisation of processes to tap energy efficiency potentials.

Subject of STEP up! funding were investments in electrical efficiency measures by companies at their own or their clients' assets. The funding was awarded to bids for measures with the most economic cost-benefit ratio (Euro funding per saved kilowatt hours). The maximum admissible cost-benefit ratio of a project was set at 10 ct./kWh.

The following minimum / maximum limits for funding of small projects from €30,000 to 250,000 and for the funding of large-scale projects from €250,000 to 1.5 million were effective in the first and second round. Small projects had to be fully implemented within a period of up to two years, for large-scale projects the maximum project duration was three years.

The funding conditions were determined according to the EU General Block Exemption Regulation (GBER) [EU GBER 2014], i.e. the funding rate was up to 30 % of extra investment costs necessary to achieve a level of energy efficiency higher than the current standard. Eligible for funding were all companies based in Germany, but not municipalities. The payback period of the investment costs of the measures related to electricity costs should be more than 3 years without funding, with an economic lifetime of technical investment of at least 10 years.

The tendering of the STEP up! program was differentiated according to two project categories – individual and collection projects – and two different types of tenders – open and closed tender. In the case of individual projects, the applicant implements efficiency measures within the same company, whereas in collection projects the applicant coordinates the implementation of several similar efficiency measures at third parties. The open tender was defined as open to all types of technologies and sectors, for individual as well as collection projects. The closed tender, on the other hand, focused each round on specific sectors or technologies with known high potentials and constraints and the eligibility for funding was limited to those technologies or sectors.

How has it gone? Quantitative results of the evaluation

STEP up! (STromEffizienzPotentiale nutzen – to make better use of electricity efficiency) started in June 2016 as a CET for electrical energy efficiency measures. According to NAPE 26 to 52 PJ primary energy savings and 1.5 to 3.1 million t CO₂eq reduction of GHG emissions were expected by STEP up! until 2020.

Even though the start of STEP up! was awaited with great interest by stakeholders the first three tendering rounds remained far below expectations. Sustained and joined efforts were needed to make the program more attractive, starting with the focus on the program marketing, a proactive program support and not yet ending with a continuous improvement of the leading parameters for the efficiency tender. Hence, the tendering rounds four and five were more successful with 48 granted out of 67 submitted projects and even 52 submitted projects in the 6th round (approvals are not yet decided). Supported measures show a wide technical variety and range from cross-sectional technology measures like the exchange of ventilation, lighting and chiller systems to specific measures like the installation of a pneumatic conveyor line or the replacement of an induction coil in the processing industry or the optimization of the activation stage in the wastewater treatment.

In the evaluation and accompany of the three years pilot phase the following methods are applied:

- Ex-ante analysis and development of the evaluation concept
- Quantitative evaluation of the funding data of each tendering round
- Survey and interviews among potential applicants and stakeholders
- Case studies
- Survey of the recipients
- Ex-post analysis of the funding data

THE FIRST STEPS AND RESULTS OF THE ROUNDS 1 TO 3

The first three tendering rounds of the program attracted only a few applications. The results were rather underwhelming and only 10 projects out of 32 submitted applications were granted in the first three tendering rounds. The number of applications per round even decreased until the 3rd round. Most of the granted projects were individual projects, only two of them collection projects. The 10 projects of round one to three got funded by an amount of 2.6 million euros and lead to savings of 18 GWh per year of electricity [Prognos/IFEU 10/17]. Most of the granted projects in the first rounds were individual projects in the open tender. Projects were in the fields of white goods, pumps, refrigeration systems, systematic solutions and other technologies.

These results remained behind the expectations so that the program marketing was intensified, and a survey of potential candidates and consultation of the stakeholders were conducted. In the following tender rounds applications raised as shown in the next paragraphs.

RESULTS OF STAKEHOLDER CONSULTATION

After the underwhelming results of the first three tendering rounds the evaluation team was asked to undertake a consultation with representatives of the following STEP up! stakeholder groups:

- Program owners
- Program administrators
- Energy (efficiency) associations

- Multipliers (energy consultants, energy efficiency agencies)

The 15 stakeholder interviews of this consultation were to provide information on the awareness and the attractiveness of STEP up! as well as on the need for STEP up! as a new, additional energy efficiency funding program.

The results of the consultation showed that STEP up! already achieved a considerable level of awareness among relevant stakeholders like energy agencies, energy efficiency networks, industrial associations, energy consultants, energy suppliers, developing energy efficiency services for their costumers as business field and for marketing and companies which are already interested or experienced in energy efficiency funding. The key challenge to achieve a wider impact of the STEP up! program was to find an answer to the question: How to address companies which are not familiar with energy efficiency (funding)?

The stakeholders confirmed the attractiveness of the program because of the following aspects and benefits:

- The unique feature and a substantial benefit of STEP up! compared to existing funding programs is the opportunity to let the market search for the most cost-efficient power saving measures.
- The program approach seemed to be appropriate to support the development of energy efficiency markets.
- The approach supported the testing and realisation of innovative energy efficiency solutions and the systemic energy optimization of processes.
- As a further advantage of the program stakeholders mentioned that the open tender is open to all types of technologies, sectors and companies.

The limitation to electricity efficiency measures was clearly identified as a disadvantage of the program and stakeholders recommended to extend the program to heat measures. Because of the competitive approach STEP up! was associated with higher risks to fail compared to classic efficiency funding programmes. The funding rate seemed not sufficiently attractive for companies, because despite the higher risk companies received the same maximum funding rate like from classic efficiency funding programs. Collection projects were regarded as not attractive for project administrators, because only up to 30 % of the project administrator's overhead costs are eligible costs, hence the administration of this kind of projects is not attractive as business case. This is a main difference to the conditions of the Swiss program.

A number of stakeholders noted that the effort for the preparation of the project application seems to be (too) high, especially regarding the following aspects:

- Identification and description of the energy efficiency measure(s),
- Identification of the baseline for the calculation of electricity savings,
- Time consuming application process and preparation of furnish proof,
- Risk of the quantity of effective saved energy,

- Receipt of potential funding might not outweigh costs and efforts for participating in tendering process and the duty to furnish proof of the (measured) electricity savings.

The stakeholders noted that the preparation of the project application often needs professional support by an energy consultant. The presentation of best practice examples and successful projects could facilitate the application process.

According to the power saving potentials of SME projects, which are often below the minimum STEP up! funding amount for an individual project of 30,000 euros, stakeholders recommended to reduce the minimum funding amount. SME measures in this size granted during the following tendering rounds were for example the installation of a new production cell for grinding wood chisel or of a cloth cleaning machine with filtration.

PROGRAM MARKETING AND CONTINUOUS IMPROVEMENT DURING THE PILOT PHASE 2016 TO 2018

The public relations work has been strengthened during the pilot phase 2016 to 2018. Information material as well as the application support were further strengthened, updated and improved during the tendering rounds. For instance a calculation tool was developed to pre-check the suitability of a project and descriptions of practical examples of projects funded by STEP up!. Comprehensive consulting and application support by e-mail and telephone was consistently available since the fourth round and is increasingly used by applicants.

Internal events, in particular online tutorials, on various topics and workshops were being extended. For external events it was taken greater use of existing stakeholder events on efficiency issues such as annual meetings or specialist group meetings. Multipliers such as sector associations, energy service providers or energy efficiency networks were specifically addressed. Publications on STEP up! were intensified via various newsletters (from the project manager and stakeholders), in relevant journals and online magazines.

As regards the conditions of admission of the program, the following changes have been made:

- Reduction of the minimum funding amount for individual projects from €30,000 to €20,000 and for collective projects from €250,000 to €100,000 for the third round of tenders.
- Opening of closed tenders to projects that also save heat besides electricity savings (combined heat and power projects).

OVERVIEW ON QUANTITATIVE RESULTS OF THE EVALUATION

The described efforts and adjustments in the areas of program marketing, conditions of admission and stakeholder consultation showed their results: From the fourth tendering rounds onwards applications increased significantly up to the sixth and last round of the pilot phase, which is in progress at the moment.

Figure 1 shows the number of applications in the six tendering rounds of the pilot phase of the program. The first three tendering rounds attracted only a few applications as described before. The following tendering were more successful with 48 granted out of 67 submitted projects in the rounds 4 and 5 and even 52 submitted projects in the 6th round (approvals are not yet decided) [Prognos/IFEU 11/18].

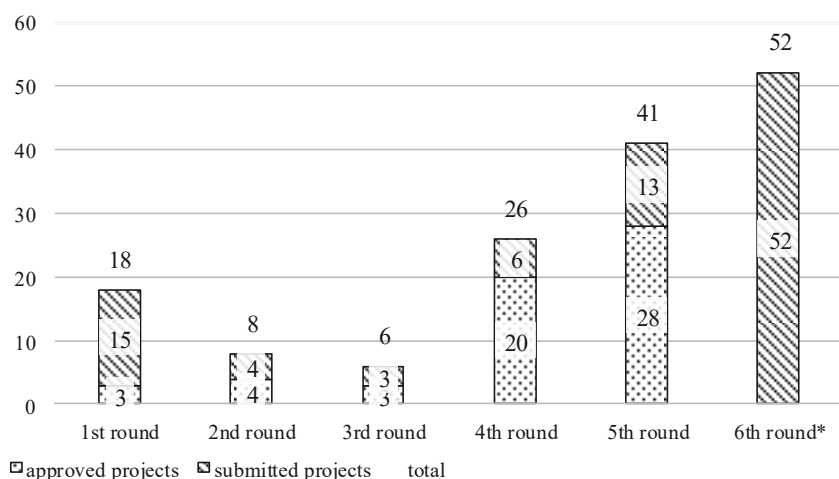


Figure 1. Number of applications over the six tendering rounds (2016 to 2018). * Approvals of the 6th round are not yet decided.

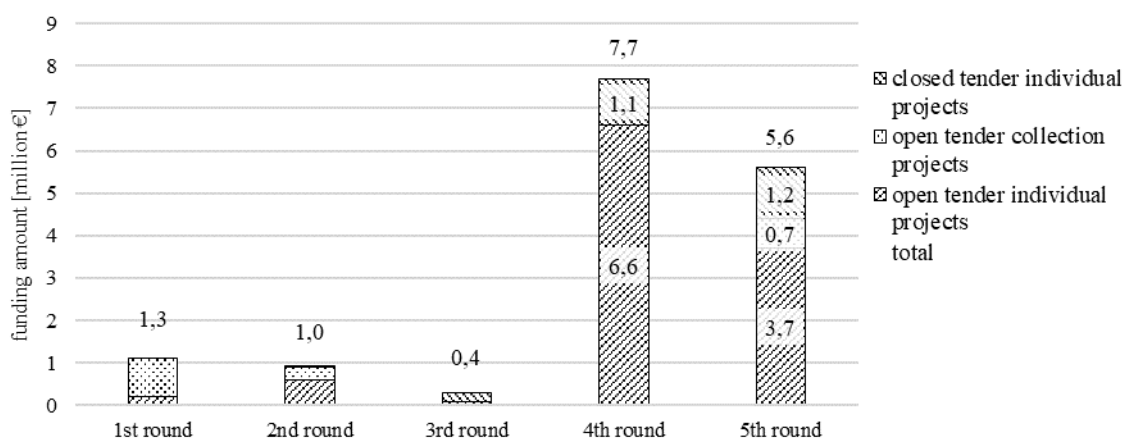


Figure 2. Funding amounts.

The approved funding amounts in each tendering round tell a similar story. In the first three rounds they decreased as the number of applications did. In round four the volume increases up to its maximum at 7.7 million Euro. Due to a bigger amount of small projects in round five the number of projects increases but the funding amount decreases but still stays much higher than at the beginning [Prognos/IFEU 11/18].

The majority of projects (applications and fundings) are individual projects in the open tender. Some projects are also approved in the closed tender, which is always dedicated to a special subject such as energy efficiency in elevators or sewage technology. A smaller amount of funding went to collection projects, but these have never represented a share as large as in Switzerland. In the first five rounds of tenders 64 GWh of electricity savings (0.55 PJ of primary energy) and 33 thousand tonnes of CO₂eq emission reduction per year have been reached.

STEP up! is set up as an open program to all kinds of actors and technologies. Supported projects show a broad range in terms of project size and branches covered. Looking at the sectors of the applicants, it can be seen that most of them come

from the industry. A lot of applicants are also assigned to the energy and the tertiary sector. They range from small or medium-sized businesses over contractors to large international concerns. A lot of supported projects so far can be found in the processing trade, in the field of services and the supply and disposal of waste and water.

A focus on systematic solutions and other technologies can be seen, which are often individual solutions for a specific company or production line. In addition to these, refrigeration systems and ventilation systems have so far been focal points, as shown in Figure 3 [Prognos/IFEU 11/18]. It shows that a support program for specific and individual solutions proves its worth.

Lessons learnt and further development of the program

In the first five out of six tendering rounds 16 million euros of funding have been spent and 64 GWh of electricity savings (0.55 PJ of primary energy) and 33 thousand tonnes of CO₂eq emission reduction per year have been reached. Even though

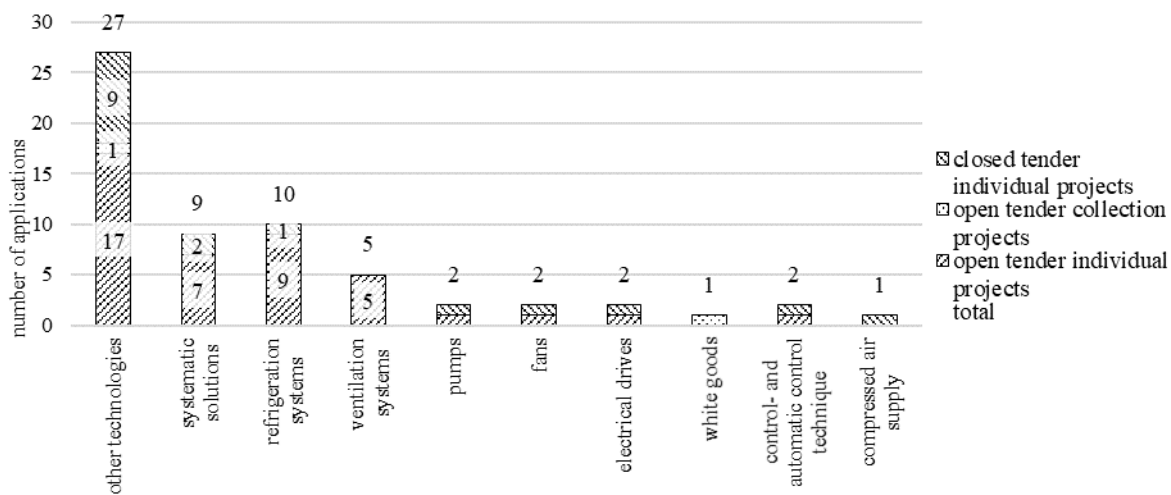


Figure 3. Efficiency technologies sponsored by STEP up!

the program didn't reach the expectations the competitive tender funding has proven its worth; as the increasing amount of applications as well as funding amounts are showing. Interviews and case studies show that the awareness of the program rises, applicants are content with the process and the initial hurdle for an application drops. STEP up! was set up as a learning program during the pilot phase and it was steadily adjusted and optimized. The most important findings of the process are:

A competitive funding program takes time to get used to and requires more effort from applicants. Therefore, an active program marketing is very important, especially close to the target audience. This is important because recipients in the commercial sector have a clear focus on their core business, whereas energy efficiency is often a side business. Also, the close assistance of applicants, commercially and technically which has been covered by the project manager is necessary before and during the application process in form of direct consultation or by providing different calculation tools and fact sheets.

STEP up! has above all its strengths in the openness to actors and technologies. Supported projects show a wide range in terms of project size and branches covered. This advantage should be strengthened and restrictions should be reduced. One main point is the opening to heat savings beside electricity savings to include sector coupling, which has already been tested in the last closed tendering rounds.

The focus of the Swiss program are collection projects (with a project coordinator supported by the funding to initiate similar measures in different companies), which in Germany has not proven themselves due to legal hurdles and less funding of overhead costs of the project coordinator. The experiences show that the competitive tender in energy efficiency will not be a broad program and in Germany, the focus lies on individual systematic measures. But if the program runs continuously, potentials can be exploited long-term which otherwise would not be lifted. Therefore, a continuation is important and also in prospect.

Taking into account the experiences from the pilot phase STEP up! should start in 2019 as a new energy efficiency tender program. The configurations are still under construction but some details are already fixed: The new program will refer to CO₂ emission reductions instead of electricity savings and

thus will be open for all types of energy saved (heat, power, etc.) and to all kind of applicants. A competition is made according to the CO₂ reduction per funding euro. The funding rate will be above 30 %. Furthermore, the submission of projects will be possible at any time and the competition will be set on fixed deadlines to ensure planning security for the companies.

References

- BfE 2012: Egger, M., Wüthrich, A.: *Evaluation der wettbewerblichen Ausschreibungen*. Study commissioned by Bundesamt für Energie, Bern 2012.
- BfE 2013: *Wettbewerbliche Ausschreibungen für Effizienzmassnahmen im Elektrizitätsbereich. Vollzugsweisung zur Durchführung von Ausschreibungen und Umsetzung von Projekten und Programmen*, Bundesamt für Energie, Bern 2013.
- BMWi 2011b: Bundesministerium für Wirtschaft und Technologie (2011-06): *Energiewende - Der Weg zur Energie der Zukunft - sicher, bezahlbar und umweltfreundlich*, Berlin, June 2011.
- BMWi 2014: Bundesministerium für Wirtschaft und Energie (2014): *National Action Plan on Energy Efficiency (NAPE): Making more out of energy*, Berlin 2014-12-03. https://www.bmwi.de/Redaktion/EN/Publikationen/nape-national-action-plan-on-energy-efficiency.pdf?__blob=publicationFile&v=1
- BMWi 2017: Bundesministerium für Wirtschaft und Energie (2017): *Green Paper on Energy Efficiency - Evaluation report on the public consultation*, Berlin 2017-06-02. https://www.bmwi.de/Redaktion/EN/Publikationen/greenpaper-on-energy-efficiency.pdf?__blob=publicationFile&v=4.
- BUND/IFEU 2013: Pehnt, M., Brischke, L.: *'Energiesparfonds und Effizienzgarantie'* Study commissioned by BUND (Friends of the Earth Germany), ifeu - Institut für Energie- und Umweltforschung Heidelberg, 2013.
- DENEFF/CO Firm 2012: Röttmer, N.; Bornholdt, M.: *'Lösungsvorschlag zur Umsetzung eines marktorientierten Energieeffizienz-Anreizsystems in Deutschland'*. Study commissioned by DENEFF, Berlin 2012.

- EED 2012/27/EU: Richtlinie 2012/27/EU des Europäischen Parlaments und des Rates vom 25. Oktober 2012 zur Energieeffizienz.
- ESD 2006/32/EC: Richtlinie 2006/32/EG des europäischen Parlaments und des Rates vom 5. April 2006 über Endenergieeffizienz und Energiedienstleistungen.
- EU GBER 2014: COMMISSION REGULATION (EU) No 651/2014 of 17 June 2014 declaring certain categories of aid compatible with the internal market in application of Articles 107 and 108 of the Treaty.
- Geode 2012: Thomas, H.: *Vorschlag der GEODE zur Umsetzung von Artikel 7 der Richtlinie 2012/27/EU*, Presentation at the Workshop 'Kosten-/Nutzenanalyse von Instrumenten zur Realisierung von Endenergieeinsparungen in Deutschland', 21.03.2013.
- Handelsblatt 180103: Handelsblatt "Ökostrom-Anteil steigt in Deutschland erstmals über 40 Prozent" <https://www.handelsblatt.com/unternehmen/energie/erneuerbare-energien-oekostrom-anteil-steigt-in-deutschland-erstmal-ueber-40-prozent/23823070.html?ticket=ST-510492-jO3BJJoa31z2NqFluZcM-ap2>.
- IEA 2017: Rosenow, J., Cowart, R., Thomas, S. and Kreuzer, F., Motherway, Brian; Sadamori, Keisuke: *Market-based Instruments for Energy Efficiency – Policy Choice and Design*, OECD/IEA Publication, 2017].
- ifeu 2014: Pehnt, M., Gebauer, C., Güsewell, J.: *Ausgestaltung von Effizienzausschreibungen: Spezielle Fragen*. Expertise commissioned by the German Federal Ministry for Economic Affairs and Energy (BMWi), ifeu – Institut für Energie- und Umweltforschung Heidelberg, 2014.
- ifeu, LBD 2014: Pehnt, M., Lanhenke, C., Schlemmermeier, B.: *Energieeffizienz als Geschäftsmodell*. Expertise commissioned by Agora Energiewende, ifeu – Institut für Energie- und Umweltforschung Heidelberg, LBD Beratungsgesellschaft Berlin, 2014.
- Prognos/IFEU 11/18: Seefeldt, F.; Langreder, N.; Heinrich, S.; Tschumi, D.; Spillmann, T.; Brischke, L.; Pehnt, M.: *Erfolgskontrolle finanzwirksamer Maßnahmen für das Förderprogramm „Stromeinsparungen im Rahmen wettbewerblicher Ausschreibungen: Stromeffizienzpotentiale nutzen“ (STEP up!)*, Fünfter Fortschrittsbericht, Berlin, 11/2018.
- Prognos/IFEU 05/18: Heinrich, S.; Langreder, N.; Seefeldt, F.; Brischke, L.; Pehnt, M.: *Erfolgskontrolle finanzwirksamer Maßnahmen für das Förderprogramm „Stromeinsparungen im Rahmen wettbewerblicher Ausschreibungen: Stromeffizienzpotentiale nutzen“ (STEP up!)*, Vierter Fortschrittsbericht, Berlin, 05/2018.
- Prognos/IFEU 10/17: Heinrich, S.; Langreder, N.; Seefeldt, F.; Brischke, L.; Pehnt, M.: *Erfolgskontrolle finanzwirksamer Maßnahmen für das Förderprogramm „Stromeinsparungen im Rahmen wettbewerblicher Ausschreibungen: Stromeffizienzpotentiale nutzen“ (STEP up!)*, Dritter Fortschrittsbericht, Berlin, 10/2017.
- Prognos/IFEU 01/18: Heinrich, S.; Langreder, N.; Seefeldt, F.; Brischke, L.; Pehnt, M.: *Erfolgskontrolle finanzwirksamer Maßnahmen für das Förderprogramm „Stromeinsparungen im Rahmen wettbewerblicher Ausschreibungen: Stromeffizienzpotentiale nutzen“ (STEP up!)*, Zwischenbericht, Berlin, 01/2018.
- Seefeldt, Pehnt & Bornholdt 2015: Seefeldt F.; Pehnt, M. & Bornholdt, M.: *From Theory to Practice: The Development of the 'Competitive Efficiency Tender' in Germany*, eceee Paper 2-345, presented at the eceee Summer Study at Hyères, Presqu'île de Giens, France, 2015.
- Stiftung Umweltenergierecht 2015: Kahl, H., Kahles, M.: *Gutachten zu ausgewählten rechtlichen und administrativen Fragen der Einführung eines Förderprogramms für Effizienzmaßnahmen mittels Ausschreibungen*. Expertise commissioned by the German Federal Ministry for Economic Affairs and Energy (BMWi), Stiftung Umweltenergierecht, Würzburg, 2015.
- VKU/Ecofys 2014: Dinges, K.; Petersdorff, C.; Boeve, S.: *Umsetzungsmodell für Artikel 7 der EU-Energieeffizienzrichtlinie*, commissioned by the Association of Municipal Utilities (VKU) & Ecofys Germany, Berlin.

