

Transferring the Dutch success of voluntary agreements with industry to other countries

Nicole van Beeck
SenterNovem
The Netherlands
n.van.beeck@senternovem.nl

Keywords

energy policy, industry, energy efficiency, voluntary agreements, long term agreements, knowledge transfer

Abstract

Many countries in Europe, in particular the New Member States, struggle with the effective implementation of EU directives on energy, leaving a large part of the potential for energy efficiency untouched. Voluntary agreements between government and industry appear to be an attractive alternative. The Dutch voluntary agreement scheme, called Long Term Agreements (LTAs), has proven to be a flexible cost-effective instrument that can complement the EU emission-trading scheme to better exploit the full energy efficiency potential in industry. Recently, several countries have expressed their interest in the Dutch approach.

This paper addresses the transfer of the Dutch LTA approach to other countries, based on experiences in Bulgaria and Romania. In particular, the paper describes the key factors which determine the success of the LTAs and discusses an approach (including indicators) for successful transfer of Dutch LTA knowledge to a different economic, legal, and socio-cultural context.

A first project on LTA knowledge transfer in Bulgaria shows that the LTA concept can be transferred successfully to other countries, if the transfer process is divided into phases, and cultural aspects and key factors for success are taken into account.

Introduction

For many countries, energy efficiency (EE) is more than ever of strategic importance, offering an inexpensive route to increase the security of energy supply, reduce CO₂ emissions, and improve competitiveness. This is also reflected in recent publications of the European Commission, such as the Energy Efficiency Green Paper (Doing More with Less, 2005), the Directive on the performance of buildings, the Directive on end-use energy efficiency and energy services, the Eco-design Directive, and the Energy Efficiency Action Plan.

The European Commission (EC, 2006a, p.6) states that 20 % of total primary energy consumption in 2020 can be avoided by implementing new and existing policies and measures, and using today's cost-effective energy efficient technologies. This potential implies a saving rate of 1.5 % per year on top of the 1.8 % per year of the 'baseline' developments¹. The full potential of cost-effective energy savings in 2020 is estimated to range between 25–30 % depending on the end-use sector (see Table 1).

Table 1 shows that the second largest saving potential (in absolute terms) can be found in industry, even though its potential expressed in percentage of the final consumption per sector ranks lowest. Note that these potentials can differ considerably per country. For instance, the IEA (IEA, 2004, p.1) states that energy intensity and energy consumption per unit of production is much higher in economies in transition (EITs) than in the EU15, and the full potential for energy saving in EITs can

1. The EC (EC, 2006c, p.8) uses a baseline scenario that assumes no additional action is taken, resulting in energy savings of 1.8 % per year up until 2020 due to: autonomous improvements (0.85 %), the impact of previous measures (0.35 %) and structural changes (0.6 %).

Table 1. Estimates for the full potential of cost-effective energy savings in the end-use sectors of EU-25 in 2020 compared to 2005.

Source: (EC, 2006a, p.6).

Sector	Full energy saving potential of EU-25 in 2020	
	(Mtoe)	(%)
Manufacturing Industry	95	25%
Residential (Households)	91	27%
Tertiary (Commercial Buildings)	63	30%
Transport	105	26%

range up to 30-50 % of total final consumption. According to the EC (EC-DGTREN 2006, Annex 1), a substantial part of this potential can be exploited cost-effectively by simply implementing existing EU directives more rigorously.

However, many countries struggle with an effective implementation of the EU-Directives. The EE Action Plan (EC, 2006a, p.9) notes that there are presently infringement procedures open against 20 Member States for either non-notification or bad application of legislation related to energy efficiency.

There is a wide range of policy instruments that can be used to improve energy efficiency (see, for example, IEA DSM (2005), EC (2006a), EC (2005), most of which are commonly applied in the majority of the EU member states. Probably the most obvious instrument is information dissemination, as information is a prerequisite to raise awareness and initiate change. However, disseminating information alone does not usually bring about substantial change, and effects of information campaigns tend to fade away as soon as the campaigns are ended (AER, 2006)). Nonetheless, information in the form of feedback appears to be essential in sustaining changes. Although the effects of education and training usually last longer than public campaigns, they are limited to a much smaller scale due to their intensive and time-consuming character. Moving up from soft to more stringent policy instruments, financial incentives such as subsidies and tax benefits have proven to be effective in seducing people to change. Free riders are, however, difficult to exclude. Regulation is the most stringent of policy instruments, and is relatively simple to introduce, but not always easy to enforce. In the last two decades, market-based instruments seem to be in favour, where governments determine goals and set up accompanying frameworks, and the market is left to sort out the most efficient way to work within the frameworks. The EU emission-trading scheme (ETS) is one example of such an instrument. Although market based instruments are in theory very powerful and cost-effective, in practice they have undesirable side effects due to market failure.

One effective instrument has not yet been mentioned: the voluntary agreements (VA). In the 1980s and 1990s, this instrument was introduced in many countries, including Germany, Austria, Denmark, Italy, and the UK (SenterNovem, 2006a, p.10). And the success that the Netherlands has shown with its voluntary agreements with industry has certainly set an example, as noted by the EC in their Green Paper on Energy Efficiency (EC, 2005, p.25). How can this success be explained? And do voluntary agreements in industry have an added value now that the EU-ETS is in place?

Indeed, currently it seems as if governments rely only on the EU-ETS to achieve CO₂ emission reductions and energy efficiency in industry, thereby ignoring other instruments. The European Commission also largely ignores industry in its recent documents on energy efficiency, focusing instead on the transport sector and on buildings (EC, 2006a).

However, the ETS, by itself, does not necessarily result in cost-effective EE measures actually being taken (see Section 'LTAs and EU-ETS'). This could leave a substantial part of the potential for energy savings in industry untouched. Voluntary agreements can compensate for these shortcomings, and this paper describes how other countries can benefit from the success of the Dutch VA approach.

The basics of Dutch voluntary agreements with industry

THE LTA CONCEPT

Voluntary agreements can take different forms, but the most common ones are probably those between government and industry. The Dutch Voluntary Agreements (VA) between the national government and industry (and other sectors) are generally referred to as Long Term Agreements (LTAs). It is important to note that in the last 15 years, the Dutch LTAs have evolved considerably, involving more ministries and other sectors². In fact, the second generation LTA scheme (since 2001) has features that differ essentially from those of the first generation. For the sake of clarity, the basics of LTA explained here refer only to the first generation LTAs with the industrial sector. (This can be justified because industry is the target sector for knowledge transfer on LTA, and because the transfer mainly involves elements from the first generation, which is less complex than the second one.)

The Dutch LTAs aim to improve the energy efficiency in the participating industrial sectors on the longer term. The LTAs are *negotiated* agreements, and to make the negotiation process more manageable, sector associations often represent the individual companies during negotiations with the government.

2. At the start of LTAs, the national government was represented by the Ministry of Economic Affairs. Today, also the Ministry of Agriculture, Nature and Food Quality, and the Ministry of Spatial Planning, Housing and the Environment are involved. The economic sectors involved include several industrial sectors, agricultural sectors, and also the services sectors, see <http://www.senternovem.nl/LTA/sectors/index.asp>.

The LTAs are also legally binding, target-based³ agreements (SenterNovem, 2006a): participating companies commit themselves to obtain specified EE targets within predefined periods. The government, in return, commits to facilitate the companies with, for example information and incentives, and it commits to avoid introducing more stringent regulation during the agreement period. The voluntary character of the agreements is reflected in the fact that no company can be forced to sign a contract to join an LTA, and is free to withdraw from it.

The first agreement period (LTA1) started in 1989, and was partly a response to the problems associated with the enforcement of the Environmental Management Act. The agreement period lasted 12 years, and was subdivided into three periods of 4 years. Before the start of each new 4-year period, the participating companies prepare an Energy Conservation Plan (ECP). The ECP contains all the energy saving measures that the company is planning to take in the upcoming 4 years. The ECPs are approved by the municipalities⁴ and serve as a basis for issuing environmental permits. Besides the ECP, companies have to implement an energy management system, and they are required to deliver a progress report annually. If a company fails to comply with the requirements (ECP, annual reports, an energy management system or reaching targets), it can be excluded from the agreement. Even entire sectors face sanctions when in non-compliance: the agreements can be terminated if targets are not met. Excluded companies faced a credible threat of sanctions: They would lose the support in getting their environmental permits and in theory, the municipalities could set more stringent energy-related requirements (such as a fixed percentage of energy savings in 4 years) when issuing environmental permits. These requirements would then also be firmly enforced.

As part of its commitment, the Dutch government commissioned SenterNovem⁵ as independent intermediary. Besides mediating between government and industry, SenterNovem supports the companies in preparing their ECPs, it monitors the annual progress of LTA participants, and it helps municipalities in evaluating the ECPs. In addition, SenterNovem facilitates knowledge exchange through dissemination of best practices, exchange platforms and networks, and provides practical tools, such as a database on energy measures, or a quick-scan to determine the energy saving potential (SenterNovem, 2006c). SenterNovem also manages, for the Ministries, several financial support schemes that promote EE improvements.

As stated above, the primary objective of LTAs is improvement of energy efficiency in industry⁶. Evaluations of the first generation LTAs have shown some remarkable results (SenterNovem, 2001, p.7). In total, the LTA1 period included 32 agreements with industrial sectors covering 90 % of industrial energy consumption. The actual improvement in energy efficiency (22,3 %) exceeded the target of 20 % that was set at the start of

LTA1 in 1989⁷. However, the LTAs resulted in more than just EE improvements; they also contributed to the following national policy goals (Dinica et. al., (2007, p.1197), SenterNovem (2006c)):

- Improvement of the international competitiveness of Dutch companies by lowering the production costs and enhancing learning through networking,
- Improvement of the security of energy supply by reducing the dependency on imported energy,
- Reaching the Dutch targets for emission reductions resulting from Kyoto,
- Effective implementation of the Environmental Management Act,
- Stimulating Dutch innovation through the voluntary adoption of measures and technologies that go beyond the 'business-as-usual'.

Note that the LTAs are part of a larger Dutch policy framework, including regulation, subsidies and tax incentives, as well as information dissemination (see Section on "Policy instruments complementing LTAs" below). This makes it difficult to attribute the exact contribution of LTAs to each of the above mentioned policy goals.

After the success of LTA1, the second agreement period (second generation LTAs, or LTA2) started in 2001 and will end in 2012⁸. There is no overall target set for the second generation LTAs, as each sector uses sector-specific targets. However, the aim is to reach an overall 1.3 % annual EE improvement (baseline 1998). Results from 2005 show that LTA2 is also on track, with a 2,2 % improvement in EE for that year, corresponding to 3,4 Mton of CO₂ (SenterNovem (2006b, p.4)).

POLICY INSTRUMENTS COMPLEMENTING LTAS

As mentioned in the previous section, the LTAs are embedded in a larger framework containing a mix of policy instruments that serve as 'carrots' and 'sticks' to obtain EE improvements in industry, among other objectives. This mix reflects the full range of policy measures available, from information dissemination, to financial incentives, to regulation. *Table 2* gives an overview of these policy instruments complementing LTAs.

KEY FACTORS DETERMINING THE SUCCESS OF LTAS IN THE NETHERLANDS

The factors that explain the success of VA approaches in general have been described by Rezessy et. al. (2005), and Bertoldi et. al. (2003) among others. In this section, the focus is placed on the aspects that proved particularly successful for the Dutch LTA1 approach. The main stakeholders in the implementation process include the Ministry of Economic Affairs, branch associations, individual industrial companies, municipalities, and SenterNovem as independent intermediary. The LTA imple-

3. As opposed to implementation based agreements, which merely require that you make an effort.

4. In some cases, the competent authorities are the Dutch provinces instead of the municipalities.

5. At the start of LTA1, Novem (which only became SenterNovem in 2005) was not yet a government agency.

6. The second generation LTAs (LTA2) started at the end of 2001 and now also includes renewable energy, as part of the so-called 'Expansion Themes'.

7. The target applies for 2000 in relation to the reference year 1989. It relates to energy consumption per physical unit of product and is independent of changes in production.

8. LTA2 is for small and medium sized enterprises (SMEs), while the energy intensive industrial companies (energy consumption >0,5 PJ) can choose to join the Benchmarking Covenant, even though they are now generally eligible for the EU-ETS (SenterNovem, 2001).

Table 2. Policy instruments complementing LTAs. Source: SenterNovem (2006c, 2006d, 2006e), Energiecentrum MKB (2006), VROM (2006).

Type	Instrument	Managed by	Description
Information dissemination & process support	General Information dissemination	SenterNovem	Websites, brochures, guidelines, formats, checklist, etc. to disseminate knowledge and examples of best practices of energy efficiency improvements and energy management in industry.
	Information exchange platforms & networks	SenterNovem	Different Knowledge Networks support knowledge transfer in specific areas (e.g., advanced heat exchanger or process intensification). Also, User Groups bring together different companies from a sector in order to improve the energy efficiency of a preselected subject, like compressed air. The aim is to share and exchange information on the subject and to work together towards energy efficient solutions.
	Database on energy saving measures	SenterNovem	For every participating sector there is a specific list of energy efficient measures. The list is drawn up in close consultation with the sector and energy specialists.
	EPS - Energy Potential Scan	SenterNovem	Scan to make an inventory of a company's energy consumption and possible energy conservation actions, and to map areas in which the energy management can be improved. Complementing scans are the Energy Innovation Scan and the Life-cycle Energy System Scan.
	Decision Support Tools	SenterNovem	Several general and specific decision-making support tools (software) have been developed, such as tools for Return on Investment, improving lighting efficiency, energy efficient cooling/freezing equipment for supermarkets, and waste heat usage for the foundry industry.
	EPA - Energy Performance Audits	Certified energy consultants	Expert advice on the energy performance of a building, including a list of measures to improve its performance.
	SME Energy Centre	Branch associations	Specific advice, services, and products for members (SMEs and branch associations) to improve the energy efficiency and use of renewable energy in each of the participating sectors. Includes an internet information portal.
Financial incentives	EIA – Energy Investment Allowance and other fiscal incentives	SenterNovem	EIA is a tax allowance for investments in EE and RES that allows entrepreneurs to reduce a certain % of an investment in eligible equipment from the taxable profits in the year of investments. In addition, there is a scheme for accelerated depreciation of specific environmental investments (VAMIL), and a tax allowance for specific environmental investments (MIA). All schemes give incentives to the investors in environmentally friendly investments.
	REB – Regulating Energy Tax	VROM	Tax since 1996, as part of a 'greening' of the tax system by placing a tax on consumption of electricity and heat to promote the efficient use of energy. The tax is budget-neutral, since the REB is compensated by a lower tax on labour and capital.
	SKB - Knowledge Transfer Subsidy for Branch Associations	SenterNovem	Generic subsidy program until 2005 to improve the competitiveness of SMEs, which could be used for EE improvements as well. Branch associations are supported to disseminate knowledge on technology innovations.
	Green Investment Funds	Major Dutch Banks; SenterNovem	Green funds aim to attract funding for 'green' projects at reduced interest rates. Banks can offer loans below market interest rates while still making the funds attractive to investors.
Regulation	Wm - Environmental Management Act	VROM; Municipalities	Prescribes environmental permits (issued by municipalities and provinces) for certain companies, including requirements for large energy consumers to make energy conservation plans and to take energy measures with a payback time of 5 years or less (since 1999).
VROM = Ministry of Housing, Spatial Planning, and Environment; EZ = Ministry of Economic Affairs			

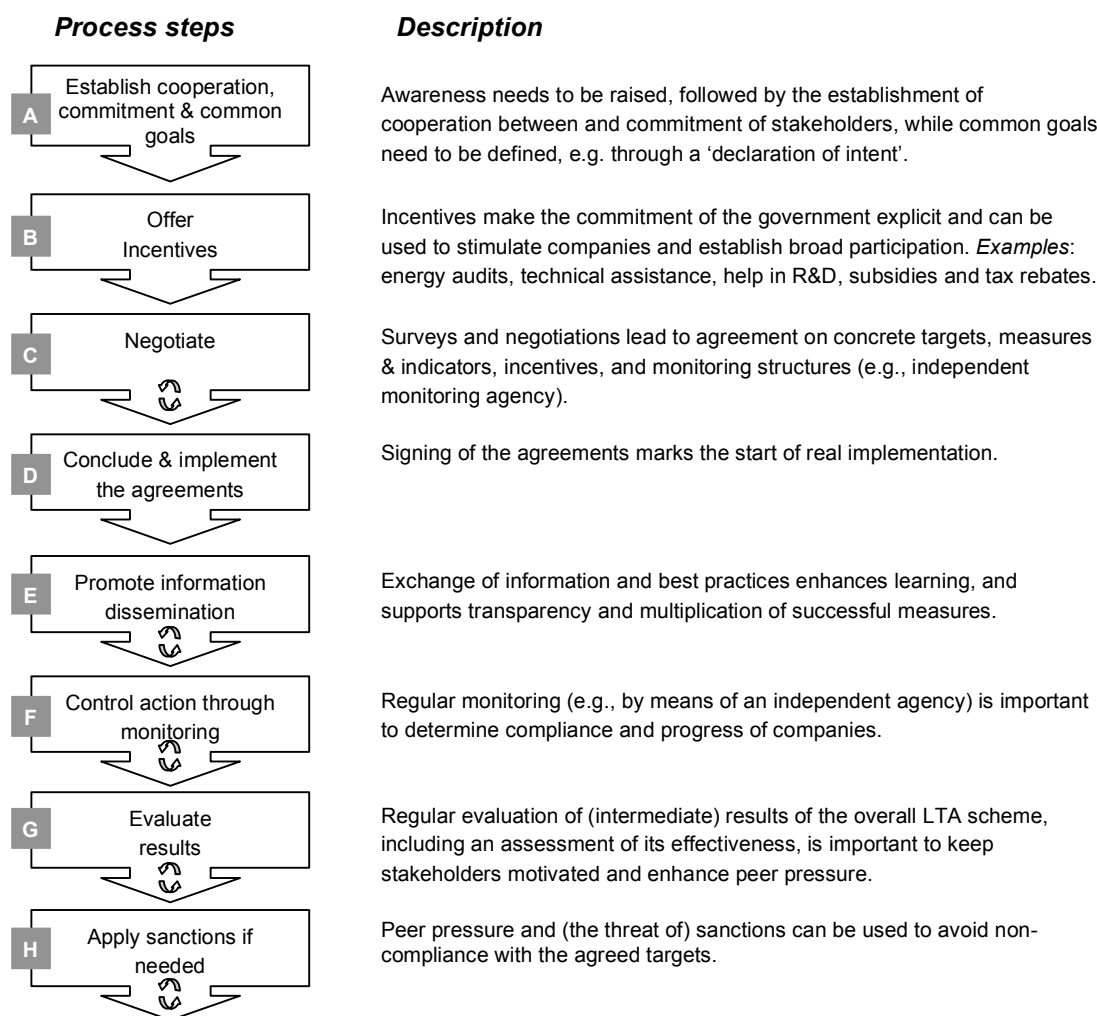


Figure 1. Steps of the LTA implementation process.

mentation process included the following –often recurring— steps (Figure 1, based on SenterNovem (2006a) and Dinica et al. (2007)):

Of course, following these steps is no guarantee for success, they are not even meant to be applied rigorously. They merely help to structure the implementation process. The real factors that determine the success of the Dutch LTA approach are often related to attitudes and interaction between the stakeholders.

These key factors include first of all **awareness** concerning each of the stakeholders' problems and viewpoints, as well as the willingness to cooperate towards a **common goal**. The voluntary character of LTAs requires a **participatory approach**, involving all relevant stakeholders, so that a broad support base exists for implementation of the LTA instrument. One important group in the Netherlands consists of the (**strong**) **sector associations**, which often represent the individual companies during negotiations with the government to make the process more manageable. The participatory approach is also needed to create **commitment** from all parties. Obviously, the companies show commitment when taking energy saving measures, and they expect similar commitment from the government in the form of support and (**financial**) **incentives**.

In addition, **mutual trust** is essential to get stakeholders to cooperate and succeed in negotiating **realistic-but-ambitious**

EE targets for the industry that go beyond business-as-usual. This requires that parties must be able to discuss issues at a fairly equal level. **Transparency** in processes and procedures is equally important, while a **long-term horizon** to reach the goals ensures enough time for learning and change to take place (hence the name *Long Term Agreements*).

During the agreement period, government should refrain from introducing new rules and regulations in order to **reduce the regulatory uncertainty** for the companies. The **targets** set by these companies need to be concrete and **quantified**, while measures and performance indicators need to be determined.

If all this is negotiated and agreed upon, **legally binding agreements** can be signed as the explicit statement of the parties' commitment. Now, the actual operation of the LTAs begins. Obviously, **information** is needed about EE potentials, possible measures and their cost-effectiveness, guidelines and formats for conservation plans, etc, etc. In the Netherlands, this is provided by the intermediary or **facilitator** SenterNovem.

Besides information dissemination, SenterNovem also provides platforms for exchange of good practices, promotes the creation of networks and manages several financial schemes that aim to stimulate EE measures in industry. This way, the LTAs are embedded in a framework consisting of a **mix of policy instruments** that serve as carrots and sticks for EE im-

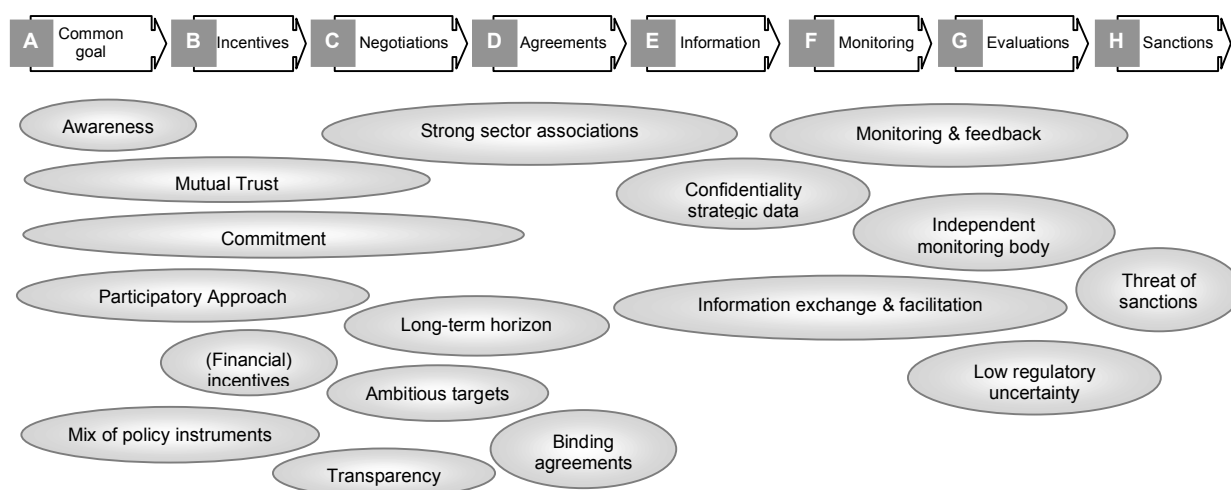


Figure 2. Key factors for success in the Dutch LTA approach related to the implementation steps during which they are particularly important. Note that the size of the ellipse is not an indication for the importance of the key factor relative to the others.

provement (see Table 2). SenterNovem also performs the task of the (initially) **independent monitoring body**, which collects the data of all participants, meanwhile ensuring that strategic information of companies (as far as it would affect their competitiveness) is treated as strictly **confidential**, and gives **feedback on the overall progress** to keep up the motivation and encourage **peer pressure**.

Finally, companies and associations face a real (**threat of sanctions**) in case of non-compliance, consisting of termination of the agreement. This would imply a loss of support in getting the environmental permit, a loss of autonomy in setting and reaching EE targets, and the real possibility of more stringent requirements in the permit. Also, if too many sectors are in non-compliance, the government would introduce more stringent regulation. Note that no relative weight is attributed to the key factors mentioned here, and their importance may vary depending on the sector or the implementation step concerned.

An important lesson learnt from the experiences in the Netherlands is that the LTAs have contributed significantly to internalising EE thinking in the mindset of the companies, especially at the management level where, otherwise, this is often not the case. When asked for their motivation to participate in LTAs, the companies generally mentioned cost savings, improved operations, peer pressure, and improved image. On the other hand, companies proved reluctant to finance external studies and advice unless the effect was immediately clear. Concluding, we can say that LTA is a proven cost-effective and flexible approach for setting and achieving ambitious EE targets.

Of course, cultural aspects explain part of the Dutch success. For instance, the environmental awareness in the Netherlands is generally high compared to other countries, which might motivate companies to participate in LTA to improve their public image. Also, the Netherlands has a tradition of cooperation related to environmental problems (e.g., with dikes), as well as a tradition of solving problems through negotiation. This has created a rather high level of mutual trust between partners. Finally, the “power distance” between groups in Dutch society is low, allowing industry to negotiate with the government at a nearly equal level. All this implies that experiences with the

Dutch LTA approach cannot be transferred to other countries on a 1-to-1 basis; cultural aspects also need to be accounted for. Likely, this will affect the relative importance of the key factors mentioned above: in a particular context, some key factors will require more attention than others. A study on the national context is therefore a prerequisite in any project on LTA knowledge transfer.

LTAS AND EU-ETS

Does LTA or any other existing instrument to promote energy efficiency in industry become ineffective when the EU emissions trading scheme (EU-ETS) is in place? The ETS is a European-wide ‘cap-and-trade’ system introduced in 2005 to reduce the CO₂ emissions of energy intensive companies. Research on the interaction of ETS with other EU and national policies is limited (Haar and Haar, 2006). However, the use of this market-based instrument raises the question whether all other instruments used for CO₂ reduction, including EE instruments, are redundant (thereby making LTA knowledge transfer irrelevant).

The INTERACT study (Interact, 2003) concludes that existing instruments indeed become ineffective, but only if the ETS operates without deficiencies or market failure, and this is not the case. Apart from the fact that the target of ETS is greenhouse gas (GHG) reduction, not EE improvement, in practice the ETS shows several weaknesses. For instance, many Central and Eastern European Countries can profit from ‘hot air’ without having to take abatement measures, and there is still no level playing field. In addition, Bertoldi and Rezessy (2006) remark that the ETS only gives an *indirect* incentive to save energy (through price increases of carbon intensive products). And due to inelastic purchase patterns, the effect on energy efficiency of a possible price increase driven by the ETS is probably negligible. In addition, they claim that companies will not recognize EE as a business opportunity to improve competitiveness and comfort, nor will ETS take away the various barriers that hinder already cost-effective EE projects. Therefore, they conclude that EU-ETS alone cannot be relied upon to significantly increase end-use energy efficiency and renewable energy

deployment. Moreover, there is a threat that ETS might hamper information exchange and learning – and thus innovation⁹ and spillovers – due to the fact that knowledge becomes a competitive advantage in trading. The development and diffusion of new breakthrough technologies is thought to be essential to realise substantial emission cuts (EurActiv, 2006), and would therefore justify additional instruments besides ETS.

So, placing all bets on ETS might prove to be a risky one, and using additional instruments seems wise, even if this implies an increase of the costs of GHG reduction. Even the INTERACT study (2003, p.40) mentions that other policy instruments may be needed to overcome market failures associated with ETS. As one of the solutions, Bertoldi et. al. (2003) propose to use a combination of ETS and LTA to ensure EE improvement. In line with that, we argue that LTA is a cost-effective and flexible instrument to bring about real EE improvements, which can be used complementary to ETS. The two instruments might even enhance each other when revenues from selling CO₂ emission rights are reinvested in additional EE measures. In addition, LTA will enhance technology development and diffusion, thereby overcoming some of the drawbacks of emission trading. If designed properly, the administrative burden associated with LTAs is modest, which is a strong argument to use LTA for those companies that are too 'light' for ETS. Finally, as already mentioned in section 'The LTA Concept', other policy objectives might also be a reason to use the LTA concept. The question which we turn to next is how the LTA approach, the knowledge and experience, can be transferred to other countries.

Transferring Dutch LTA knowledge to other countries

In 2005, the Bulgarian Ministry of Economy and Trade requested the Dutch Ministry of Economic Affairs for support on LTA. This request was soon followed by a similar request from the Romanian Ministry of Economy and Commerce. The approach for knowledge transfer described in this section is based on experiences so far in Bulgaria and Romania (ESDB, 2006)¹⁰. A new LTA project is planned to start in 2007 in the Czech Republic, and possibly in Poland and Hungary as well. The transfer approach consists of three phases: 1) the introduction phase; 2) the 3-track survey & negotiation phase; and 3) the implementation phase.

PHASE 1: INTRODUCTION OF LTAS

Objective: create a support base for Long Term Agreements, as well as commitment among the stakeholders.

The knowledge transfer process starts with creating a support base and commitment among the relevant stakeholders, and for that, they first need to learn the basics of LTAs so that they know what the consequences of their decisions are. This requires a participatory approach during project implementation. Subsequently, Phase 1 provides an analysis of the use of

LTAs in the Netherlands and Europe as well as an analysis of the context in the target country. The outcomes of the analyses are presented and together with the feedback from the stakeholders are compiled in a blueprint for a specific LTA scheme in the target country. This blueprint, in turn, is presented to the stakeholders for feedback, which results in the compilation of a final proposal for an LTA scheme in the target country. The final proposal describes the preconditions for a successful introduction of LTAs in the target country. The report also includes a follow-up strategy tailored to the situation in the target country, and thus serves as the starting point of the second phase.

The development of instruments is not addressed in the first phase. Rather, the support is mainly geared towards managing the learning process. At the end of Phase 1, all participants in the project will have gained insights in:

1. The structure and use of the LTA instrument
2. The added value of using LTAs in the target country
3. How LTAs can be introduced in the specific national context

Finally, the commitment of the stakeholders for follow-up activities can be made explicit through Letters of Intent. Bulgaria successfully completed this phase in July 2006 with the signing of Letters of Intent between the Minister of Economy and Energy and 5 industrial branch associations. Romania is expected to finish this phase in the beginning of 2007.

PHASE 2: A THREE-TRACK APPROACH FOR SURVEYS & NEGOTIATIONS

Objective: Resolving issues & concluding LTAs

The goal of the second phase in the process of LTA knowledge transfer is to conclude (a select number of) actual Long Term Agreements (LTAs) on energy efficiency between government and industry. Before these LTAs can be concluded, however, several issues need to be resolved. These issues follow from the final country report of the first phase, and will likely require additional surveys, consultations and negotiations around three main tracks:

- [Track A] Setting concrete targets for EE in participating industry
- [Track B] Providing government incentives to support EE measures in industry
- [Track C] Establishing an administrative body for facilitation and monitoring

Pilot projects with motivated companies are used to develop general guidelines, training, formats and proposals that form the basis for the negotiations of the final agreements. The second phase for Bulgaria is planned to start in February 2007. The approach of the second phase as described above can only be applied if the first phase was completed successfully and commitment of the participants is high. If this is not the case, alternative strategies need to be developed, such as a greater focus on companies deploying basic energy management that results in direct cost savings.

9. Bertoldi and Rezessy (2006) remark that market-based instruments stimulate innovations only when these bring extra rent to the obliged parties.

10. The approach used in Bulgaria and Romania has been developed using previous experiences from a similar EC project by SenterNovem in China, see <http://www.va-china.com>.

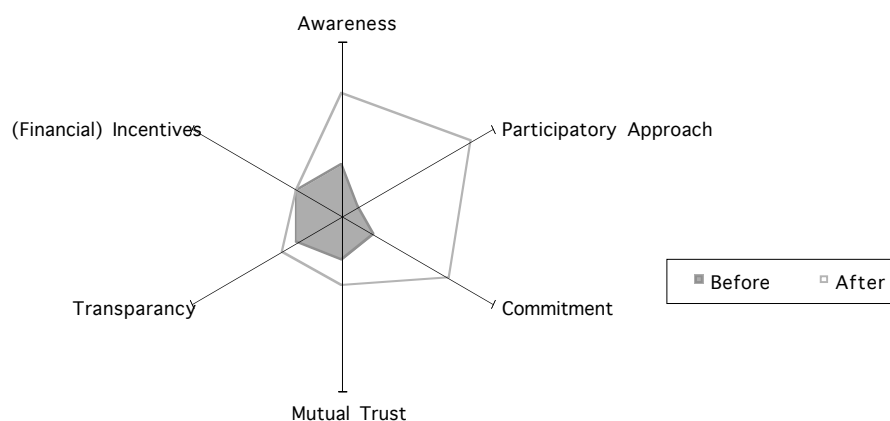


Figure 3. Indicative scores on the key indicators for success at the end of Phase 1 of LTA knowledge transfer in Bulgaria. Scores near the outer boundaries of the web indicate a higher score (improvement) on a particular indicator.

PHASE 3: IMPLEMENTATION

Objective: Monitoring real energy measures

In the third phase, the LTAs are actually executed: Once the LTAs are signed, companies have to start taking real energy measures and monitor their progress. Also, an administrative body for facilitation and monitoring has to be in operation. In this phase, additional support will likely be required for knowledge transfer regarding monitoring capacity. Also, additional tools can be developed, and efforts can be made to conclude LTAs with other companies and sectors. Concrete activities have to be determined based on experiences from the second-phase projects.

Indicators for success in transferring LTA knowledge

In 2006, a 6-month project started on LTA knowledge transfer to Bulgaria, financed by the Dutch Ministry of Economic Affairs (ESDB, 2006). This project covered the first phase of the knowledge transfer approach discussed above. A similar project is currently ongoing in Romania. In the first phase, the efforts focus on creating a broad support base for Long Term Agreements, as well as commitment among the stakeholders. The added value of LTA in the target country is investigated, as well as the requirements for successful implementation. The support during the first phase is mainly geared towards providing general information and managing the learning process, so no details are filled in yet, nor are specific instruments developed. Basically, Phase 1 corresponds with the step [A] 'Establish Cooperation, Commitment & Common Goals' of the implementation process in Figure 1. The importance of this phase cannot be stressed enough – it provides the foundation on which the successes of all other steps will be built. So it is vital to spend enough time to cover this aspect. However, during the project, the Bulgarian industrial parties stressed that they expect the government to provide (financial) incentives as a token of their commitment. This implies that step [B] 'Offer Incentives' also needs to be addressed in Phase 1.

In Bulgaria, the **KISS-principle** (Keep It Super Simple) proved to be very valuable, not in the least when providing information. The stakeholders need time to learn and articulate

what they need in terms of information and support, which implies **dosing the information**, avoiding giving too much at once. This might be an 'open door' but the Dutch LTA approach has evolved over a considerable period of time, building each year on previous experiences, becoming more and more complex. Somehow, it proves difficult for most experts to remember how simple the process began, and take that as a starting point. To allow for learning, the transfer process has recurrent steps, which also allows for getting **feedback from the stakeholders** before finalising studies, blueprints or proposals. Together with the **participatory approach** this creates mutual understanding, with stakeholders beginning to view LTA as part of their own ideas (a **commonly shared goal**), which ensures **commitment**. Also, the participants in Bulgaria expressed the need for a **transparent process** (to avoid situations in which partners that take part in the negotiations have a competitive advantage as a result of insider knowledge). The **sector associations** proved useful in mobilising their members and signing **letters of intent** with the government to make commitments explicit. Also, there was a lot of (inconclusive) discussion on the structure for an administrative/ **monitoring body**.

The experiences in Bulgaria reveal that out of the 17 elements identified as the key factors to the Dutch LTA success (see Figure 2), the following factors appear to be the most decisive in Phase 1 of the transfer process: 1) Awareness; 2) Participatory approach; 3) Commitment; 4) Mutual trust; 5) Transparency; and 6) (Financial) incentives. Figure 3 shows a web diagram with (indicative) scores on the key indicators for successful implementation of Phase 1 of LTA in Bulgaria. A score moving towards the outer boundaries of the web indicates an improvement on a particular indicator. The surface in the centre indicates the scores before the start of the transfer process; the line indicates the scores after completion of Phase 1.

Although it is rising, environmental **awareness** in Bulgaria is still rather low. The project has increased the awareness of project participants concerning the importance and benefits of EE, and the added value of LTA as an instrument to improve EE in their sectors.

All parties showed genuine **commitment** during the project to work towards the implementation of LTA. First of all, the Bulgarian Ministry of Economy and Energy, who originally

initiated the project, was open to discuss the possible use of the LTA instrument with the industrial sector, allowing for a **participatory approach**. The industrial parties, in turn, explicitly showed commitment by signing 5 Letters of Intent with the Ministry of Economy and Energy.

The participatory approach was fairly new for Bulgaria, but all parties appear to support the approach, creating a mutual goal and establishing a basis of **mutual trust**. Note that establishing mutual trust is a slow process that needs to be 'massaged' in following phases. It also requires that parties can discuss and negotiate issues at a fairly equal level.

Transparency and financial incentives will be particularly important in the second phase, especially concerning the surveys that provide input for the negotiations. However, emphasis was put on these indicators during discussions in Phase 1, stressing the importance of a careful consideration in the next phase.

Lessons learned

LTA has proven to be a flexible cost-effective instrument in the Netherlands that can complement the EU-ETS to exploit the full EE potential in industry. Based on experience from the Phase 1 project on LTA knowledge transfer in Bulgaria we believe that the LTA concept can be transferred successfully to other countries, provided that the transfer process is divided into phases, cultural aspects are considered, as well as the key factors for success mentioned in this paper. Of course, the ultimate proof of success of knowledge transfer will lie in a measurable improvement of the energy efficiency in industry in the target country.

The approach used for transferring Dutch LTA knowledge appears to be off to a successful start in Bulgaria, resulting in Letters of Intent between the Ministry of Economy and Energy and 5 sector associations at the end of Phase 1. The main indicators that contributed to this success include the awareness that was created, the mutual trust and commitment that was established, and the participatory approach without which all of this would not have been possible. The flexibility of the approach – with recurrent steps – allows for learning to take place. Indeed, knowledge transfer consists largely of managing the learning process: dosing the information and allowing for feedback loops, in order to successfully transfer expertise on setting up Long Term Agreements that achieve real energy efficiency improvements. In the second phase, particular attention should be paid to transparency of the process and (financial) incentives, also to further the mutual trust of the participants.

As a final remark, the local consultancy that was employed to serve as liaison between the participants and the Dutch experts proved to be an essential aid in the transfer process. This consultancy conducted interviews as well as local studies on the context in Bulgaria. They proved very valuable in picking up the sensitivities and for 'reading between the lines'.

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Glossary

EC	European Commission
ECP	Energy Conservation Plan
EE	Energy Efficiency
EIT	Economy in transition
EU-ETS	European Union Emission-trading Scheme
GHG	Greenhouse gas
LTA	Long Term Agreement
LTA1	First Generation Long Term Agreements
LTA2	Second Generation Long Term Agreements
SME	Small and Medium Enterprise
VA	Voluntary Agreements

Acknowledgements

The author is indebted to Loren Motamedi, Laurent Minère and Erik ter Avest (all from SenterNovem) for their valuable comments on earlier drafts of this paper. Any remaining inaccuracies are solely the responsibility of the author.