

Towards Kyoto – Implementation of Long Term Agreements (LTA) in Industry: Which elements make LTA successful and how to integrate them into the policy mix?

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1. SYNOPSIS

The implementation of LTA schemes needs transparent target setting, careful design of elements and an effective integration into the policy mix.

2. ABSTRACT

The paper presents results from the ongoing pilot action “*Implementation of Long Term Agreements in industry: Improving LTA schemes in Austria, Italy and Norway*”¹ supported by the European Commission, DG Energy and Transport (SAVE Programme) and by national sources. In this project LTA are understood to be “negotiated agreements” (Börkey et al 1999²) aiming to improve industrial energy efficiency.

Based on the assessment of existing national LTA schemes in the EU, the project team analysed different types of negotiated agreements and identified crucial elements necessary for the successful implementation of this instrument on the national level.

The results of this analysis were used to develop draft schemes for negotiated agreements in the participating countries together with an initial proposal on how to integrate negotiated agreements into the existing policy mix, taking into account national (e.g. taxes, regulations) as well as European (e.g. IPPC) and international (Kyoto protocol) policy aspects. These draft schemes are currently checked by interviews with key actors in each country (representatives from industrial associations, chamber of commerce, ministries, energy intensive companies etc.), in order to refine the schemes and to work out recommendations for policy makers.

The paper presents the results of the analysis and discusses crucial elements as well as different approaches on how to design and integrate LTA schemes in the Austrian policy mix, in order to be effective towards the realisation of the Kyoto targets.

3. ASSESSMENT OF EXISTING LTA SCHEMES

In the European Union negotiated agreements are most wide-spread in the field of waste management. In several countries they also cover air emissions (CAVA 2001, p. 23). However, only in some Member States such agreements exist on energy efficiency in industry.

Currently voluntary approaches get more and more attention as instrument to achieve CO₂ reduction targets of the Kyoto protocol, especially in the industrial sector. On the one side industry is trying to avoid new regulation or taxes, fearing negative effects on international competitiveness. On the other side governments as well favour market-based instruments over strict regulatory policy. The crucial questions are: Can voluntary approaches (e.g. voluntary agreements, LTA) contribute substantially to the reduction of CO₂ and to the fulfilment of the committed reduction targets, and what is needed to implement them successfully?

In Austria, Italy and Norway, the countries undertaking the above mentioned SAVE pilot action, the development of LTA in industry is either under way or in consideration. Therefore it was a timely action to support this political process with a targeted activity of know-how transfer and to learn about the crucial elements for industrial LTA by analysing existing LTA schemes and comparing them with the country-specific framework conditions of the participating countries.

Key areas for analysis

In order to ensure a structured comparison of the different schemes key areas for analysis were defined, basically following the axis of time from design and development to implementation of the instrument. These key areas include the driving forces for industry and governments, target setting and the negotiation process in general, accompanying measures, monitoring and evaluation procedures, proposed offers and sanctions in case of (non-) compliance as well as necessary resources.

The selection process of existing LTA schemes to be analysed was mainly driven by the criteria to ensure a certain diversity of approaches, but also by the wish to find similar framework conditions as in the countries participating in the pilot action. The schemes were analysed according to the key areas, then the project team discussed the integration into the policy mix and identified crucial success factors as well as major strengths and weaknesses of each scheme.

The assessment was carried out based on recent analyses of voluntary approaches (e.g. the VAIE project (Krarup Ramesohl 2000) and related case studies) supplemented by direct contacts to involved stakeholders in the respective countries.

Key features of negotiated agreements in the analysed countries

This chapter summarises the key features of the analysed schemes of the 5 selected countries (NL, DK, F, SF, UK). The related tables point out the key areas identified, as they were mentioned in the previous chapter.

The Netherlands (see table 1)

The Netherlands have a long tradition with quantitative environmental goals in general and also with negotiated agreements to fulfil these goals. Since the early 90ies they set up LTA in 30 industrial branches covering about 90% of industrial energy consumption. For the public authorities LTA are a key instrument to increase industrial energy efficiency. The Netherlands are the only country where the agreements are legally binding. By agreeing to these additional efforts industry gets facilitated access to *environmental permits*. The national energy agency NOVEM secures that all participating companies get necessary support (e.g. subsidies, information, energy management and audits). Also the monitoring of the LTA is done by NOVEM (Rietbergen *et al.* 1999). The Dutch LTA scheme has relative quantitative targets, i.e. to increase energy efficiency by e.g. 20% by the year 2000 (compared to 1989), and in general this target seems to be achieved.

At the moment the Dutch LTA scheme is being revised as absolute CO₂ emissions in industry are still increasing. By initiative of the industry a *benchmarking* element was prepared. This development is triggered by the industry's attitude that they would like to be among "the best of the world", but that should be enough. This benchmarking *covenant* covering energy intensive industry will last until 2012 (evaluation 2004) and is the consequence of the obligations resulting from the Kyoto conference in 1997. Companies commit themselves to find out their distance to "the best of the world". They set up energy efficiency plans (by 1_ years after start) to reach this "best of the world" target (Hazewindus 2000). For energy extensive industry a negotiation process is currently going on to start a second tranche LTA scheme.

Table 1. Key Areas Netherlands

| Holland (NL) | | | | | | | |
|---|---|--|--|---|---|---|--|
| General remarks | Driving forces for Govt. / Industry | Negotiation process, contracts | Accompanying measures | Monitoring, evaluation, control | Offers/ sanctions | Resources (human, time, money) | Targets/ effects (expected/ real) |
| <p><i>Up till 1998</i> : 29 industrial agreements (Legally binding) 90% of energy consumption covered by LTA</p> <p><i>Development</i>: Benchmarking Covenant will replace, by 2001, the LTA in energy intensive industries</p> | <p><i>For Authority</i>: Dutch environmental policy; Increasing knowledge in the administration</p> <p><i>For industries</i>: Simplified procedures with environmental permits; Financial and technical assistance; Flexibility</p> | <p><i>Duration</i>: between 12 and 36 months</p> <p><i>Preparation phase</i>: Declaration of intent between Ministry of Economic Affairs and branch associations</p> <p><i>Implementation phase</i>: Letter of accession by individual firms</p> | <p>Companies have to develop energy conservation plans (ECP)</p> <p><i>Novem</i>: Information energy management Consultancy in the preparation of the individual ECP</p> <p><i>Government</i>: Subsidies and tax incentives (e.g. green funds)</p> | <p><i>Consultative board</i>: LTA progress report; forum</p> <p>Monitoring by Novem / consultants</p> <p><i>Paper and board sector</i>: by the Association of Manufactures (Novem verifies the results)</p> | <p>Civil law agreement</p> <p><i>Government</i>: To Refrain from taxation; environmental permits by simplified procedures</p> <p><i>Collective liability</i>: agreement's failure</p> <p><i>Individual liability</i>: Non-compliance of individual commitments and monitoring provision</p> | <p><i>Preparatory phase</i>: 250.000 Euro</p> <p><i>Government expenditure</i> (1990/2000): 658 M ? (but not only related to LTA)</p> | <p><i>Target in industry</i>: Mostly 20% energy efficiency improvement in the year 2000 in comparison with 1989</p> <p>Targets are likely to be achieved, but absolute CO₂ emissions rise due to economic development</p> |
| <p>Policy Mix: strong link to environmental permits, (partly also to tax) and subsidy schemes, so far no link to emission trading, IPPC, EMAS etc.</p> | | | | | | | |
| <p>Critical Success Factors: link to environmental permits, LTA main policy instrument, strong political commitment (based on national energy saving plan).</p> | | | | | | | |
| <p>Strengths:</p> <p>§ Legally binding contracts, managing board, credible sanctions/offers, strong 3rd party, long term stability, individual energy conservation plans/energy management.</p> | | | | | | | |
| <p>Weaknesses:</p> <p>§ High administrative costs, absolute emissions still rising, several branches have own monitoring system.</p> | | | | | | | |

Denmark (see table 2)

Concerning CO₂ reduction policy Denmark counts on taxes. However, for the energy intensive industry it is possible to enter in a voluntary agreement with the Danish Energy Agency (DEA), in order to partly get a tax rebate ("recycling"). These agreements cover about 45% of industrial energy consumption. By signing the agreements companies have to undertake **energy audits**. All identified measures under a **pay back time** of 4 (6) years have to be realised. The audits have to be verified and are controlled by DEA. Firms have to implement **energy management** systems. There exist financial incentives to support the companies (DEA 1999, Krarup et al 2000).

So far Denmark is the only country which evaluated "gross" effects of the agreement scheme. The estimated reduction in energy consumption associated with the agreements is around 9% (without it, it would have been only 1%). Due to identified free riding effects, it is also concluded that subsidies had relative little impact on energy consumption (Björner et al 2000).

Table 2. Key Areas Denmark

| Denmark (DK) | | | | | | | |
|--|--|--|---|--|---|--|---|
| General remarks | Driving forces for Govt. / Industry | Negotiation process, contracts | Accompanying measures | Monitoring, evaluation, control | Offers/ sanctions | Resources (human, time, money) | Targets/ effects (expected/ real) |
| <p>The government has implemented an agreement scheme covering 50% of the industrial energy consumption.</p> | <p><i>Government</i>: 1990, CO₂ emissions should, compared to 1988 levels, be reduced 20 % by 2005</p> <p><i>Industry</i>: - Reduced CO₂ tax</p> | <p>Participants in the negotiations are representatives from the Danish Energy Agency (DEA) and from the specific company (or sector)</p> <p>An energy analysis provides the basis of further negotiations.</p> <p>Typically the process of entering into an agreement lasts up to 8 months.</p> | <p>Energy Audits (with certified energy consultants)</p> <p>Several Investment and Subsidy Schemes such as:</p> <p>"Energy Saving Measures in Business": Subsidies are granted up to 30% of investments in EE projects.</p> | <p>Companies must submit annual progress reports to the Danish Energy Agency documenting the fulfilment of the projects specified by agreements, and the status of energy management systems.</p> <p>Energy audits must be verified by an independent certifying organisation.</p> | <p>Main offer: CO₂ tax exempt if the companies or sectors enter agreements</p> <p>Main sanction: Subsidies are to be returned if DEA concludes that an agreement is not being fulfilled. The CO₂ tax will be imposed in full.</p> | <p>High cost in the preparation time.</p> <p>The administrative costs for the companies are in average 17.000 to 33.000 ?.</p> <p>For the Danish Government, the extraordinary administration costs for the Govt. agencies amounts to 4 mill ? per year.</p> | <p>Target: Trade, Industry and services should contribute to 4% of total CO₂ reductions.</p> <p>Firm target: realise measures with pay back < 4 (6) years</p> <p>"gross" effect: 9% reduction by 1997 (basis 1993), by paying full tax effect only 1%</p> |
| <p>Policy Mix: strong link to tax and subsidy schemes, so far no link to emission trading, IPPC, EMAS etc.</p> | | | | | | | |
| <p>Critical Success Factors: green tax scheme, energy audits</p> | | | | | | | |
| <p>Strengths:</p> <p>The incentive for Danish industry to sign agreements is clear: obtaining the CO₂ tax reduction</p> <p>There is a strong legal basis for the Green Tax system as well as for the relevant subsidy schemes. This secures a long term commitment from the Danish Government.</p> <p>Effective and transparent monitoring and evaluation procedures</p> | | | | | | | |
| <p>Weaknesses:</p> <p>Even higher tax burdens may push some energy intensive industries closer to the decision of moving the business out of the country.</p> <p>The bureaucratic reporting and monitoring routines laid on the companies by entering the agreements may be too much for them.</p> <p>Transaction costs are high (e.g. for audit consultants)</p> | | | | | | | |

France (see table 3)

In 1971 France signed the first voluntary agreement in Europe (cement industry). Driven by the Rio commitments 7 legally not binding agreements have been concluded since 1996. In return the French government stated that no CO₂ tax would be applied towards industry in view of Rio. In France monitoring is done by industry itself.

In the course of the Kyoto targets a new national programme was issued in January 2000. The not completely defined policy mix will include energy taxes towards industry, with the possibility of tax exemptions or reductions for energy intensive firms. A link to *flexible mechanisms* (e.g. emission trading) is foreseen, in order to give industry credits for early action (Chidiak et al 2000).

Table 3. Key areas France

| France (F) | | | | | | | |
|---|---|---|---|---|--|--|---|
| General remarks | Driving forces for Govt. / Industry | Negotiation process, contracts | Accompanying measures | Monitoring, evaluation, control | Offers/ sanctions | Resources (human, time, money) | Targets/ effects (expected/ real) |
| Strong tradition in LTA ("Accord de branche" 1971) 7 agreements (incl. steel, Aluminium) legally non binding (only way to enforce LTA is via fall-back regulations) | <u>For Authority:</u> realisation of Rio commitments '92 consensus approach <u>For industries</u> avoid CO ₂ tax image considerations | <u>Duration:</u> agreements are valid over 10 years, not legally binding Formulation of a standard procedure and text (SEI 1995) but often not applied <u>Negotiation</u> between Ministry of Environment and energy intensive branches / firms (between 18 and 24 months) Also regional level (Rhone Alpes, 5 yr) | Several ADEME programmes (audits, subsidies etc) audits are compulsory Information dissemination However, LTA are not linked to these measures (lack of co-ordination and synergy between LTA and ADEME energy efficiency promotion efforts) Exemption (Rhone Alpes) | Firms report to the ministry (SEI) on branch level, but basically rely on self reporting No monitoring by independent 3 rd party Evaluation is not clear | Access to subsidies, but no real link with LTA No real sanctions (only danger of CO ₂ tax) Rhone Alpes: Fall back regulation, if targets are not achieved | Not found Costs for first stage of preparation can be considered rather low (no explicit analysis of energy saving potentials by the policy side) self reported information from industry | <u>Target in industry :</u> emission reductions are set in specific terms (i.e. per unit of product) and if possible in absolute terms Aluminium industry (2% abs., 19% rel.) Glass packaging industry (10% abs. 19% rel.) <u>Effects:</u> relative targets are achieved, sometimes problems with absolute target |
| Policy Mix: for the time being a CO ₂ tax is planned, 23 (2001)-76 ? (2010) with exemptions for energy intensive industry, a link to LTA and/or tradable permits is discussed | | | | | | | |
| Critical Success Factors: avoiding a CO ₂ Tax | | | | | | | |
| Strengths : § Probably low public costs, compulsory energy audits | | | | | | | |
| Weaknesses : § No link between ADEME programmes and LTA, weak BAU scenario, no real sanctions/offers, unclear monitoring | | | | | | | |

Finland (see table 4)

In Finland the relation between industry and government is traditionally good. Finland prepared first voluntary agreements with quantitative targets in 1992, however, had bad experiences as not many companies were joining these agreements. Thus, in 1997 the agreement scheme was revised. It was agreed that the scheme will be linked to the already existing *energy audit programme*. Each company has now to draw up an individual energy conservation plan. Similar to the Danish scheme the agreement requires the implementation of the identified measures, however, no link to taxes exists. MOTIVA, the national energy information centre, is involved in the monitoring procedure and offers information and know-how to the companies. The agreements are also linked to training and technology programmes. Subsidies are giving for audits and investments. It is foreseen that the evaluation of the voluntary agreement should be done via the same monitoring system as for the *IPPC directive*, following the wish of the two involved ministries for industry and environment (Hellgrén 1999).

Table 4. Key areas Finland

| Finland (SF) | | | | | | | |
|--|---|--|--|--|--|--|---|
| General remarks | Driving forces for Govt. / Industry | Negotiation process, contracts | Accompanying measures | Monitoring, evaluation, control | Offers/ sanctions | Resources (human, time, money) | Targets/ effects (expected/ real) |
| <p>depends strongly on imported energy</p> <p>Industry accounts for 50% of final energy consumption</p> <p>Traditionally good relation between industry and Govt.</p> | <p><u>Govt.:</u> Environ., FCCC, climate change Examples of other countries Increased (adm) effectiveness Flexible energy conservat. tool Bad experience with old VA '92</p> <p><u>Industry:</u> More flexibility without negative effects on comp. Image gains Avoid regulatory measures</p> | <p><u>2 contract types:</u> VA signed between (MTI) ministry and the Confederation of Finnish industry and employers company instrument of accession to the agreement signed by firms and Confed.</p> <p>Contracts are not legally binding</p> | <p>Energy audits or analysis (EAP) individual ECP auditors training by MOTIVA Subsidies for audits and investments <u>Training</u> scheme for company personnel is planned Promotion of new EE techn. by Technology Development Centre (TEKES) <u>Information</u> services <u>Marketing</u> by Confederation</p> | <p>MTI, industrial federation, Motiva and companies form a <u>Managing Committee</u> to control / monitor.</p> <p>Special on-line monitoring system MOTICOP for VA under preparation</p> <p>Annual <u>progress report</u> from firm to federation, annual report by MOTIVA</p> <p>MOTIVA checks company reports</p> <p>Planned interim assessment 2001</p> | <p><u>Offers</u> are mainly subsidies on: audits: 50% for VA firms (others 40%) investments: only for VA firms, 10% if payback > 2yrs, new technologies: 30% open for all</p> <p>There are no real sanctions in place, in case of non compliance the ministry can discharge a firm from VA (after discussion in <u>manag committee</u>)</p> <p>Indirect pressure for auditors to lose authorisation</p> | <p>companies have to appoint energy resp. person</p> <p><u>money:</u> up to 0,3 Mio ?/a for MOTIVA (operates EAP) 1,6 Mio ?/a for energy audits (according to energy costs up to ca 40.000 ?) 1,6 Mio ?/a for investments (5 Mio ?/a for new technolog.) Total 3,5 Mio ?/a (8,5 Mio ?/a) + ? person / a for Confederation</p> | <p>Reduce specific energy consum. Reduce total EC by 10-15% in 2020 compared to BAU</p> <p>Targets per firm in individual ECP (only measures)</p> <p>Target for energy <u>auditing</u>: to cover 80% of energy use by 2005; '99 60 firms (or 75%) already signed VA <u>EAP Evaluation</u>: '98: 20% coverage by EAP, 12% or 1,1 TWh/a savings</p> |
| <p>Policy Mix : some link to environmental law (EE part), IPPC is mentioned in VA (same monitoring), no links to taxes etc., no link to CDM / ET</p> | | | | | | | |
| <p>Critical Success Factors: good relation between industry and Govt (MTI); link to existing auditing scheme EAP</p> | | | | | | | |
| <p>Strengths : credible evaluation/monitoring procedure; experienced and credible 3rd party involved; managing committee; clear political commitment in VA and national energy strategy; independent interim assessment foreseen in VA; link to IPPC</p> | | | | | | | |
| <p>Weaknesses : no sanctions foreseen; no links to regulatory instruments; targets not very clear (BAU?)</p> | | | | | | | |

UK (see table 5)

Driven by the Kyoto process the UK prepares the introduction of a *Climate Change Levy* with voluntary agreements as alternative. These agreements allow industry a *rebate* of up to 80% of the levy as well as additional subsidies. Three *different types* of *contracts* are prepared and the companies can chose which fits them best. The agreements are also linked to the IPPC directive and to *emission trading*. To support industry in their efforts the *best practice* programme is in place.

The official start is planned in April 2001 (UK 2000). To ensure public acceptance the Department of the Environment, Transport and the Regions (DETR) undertook also a consultation process via internet.

Table 5. Key areas UK

| United Kingdom (UK) | | | | | | | |
|--|---|---|---|--|--|---|--|
| General remarks | Driving forces for Govt. / Industry | Negotiation process, contracts | Accompanying measures | Monitoring, evaluation, control | Offers/ sanctions | Resources (human, time, money) | Targets/ effects (expected/ real) |
| Chemical industry is dominating Schemes: Energy Efficiency Agreement within Climate Change Levy (start planned April 2001) Exemptions for: oil, fuel, high efficiency CHP | <u>Government:</u> Estimates a reduction of at least 22% below 1990 level by 2010, which is beyond Kyoto target and which means that UK will be ready to ratify the Kyoto protocol <u>Industry:</u> 80% rebate on the levy | The Government is negotiating the agreements at a sectoral level. Each sector will be represented by the relevant trade association. | Best Practice Programme Free energy checks Capital allowance scheme | Secretary of State checks performance of the sector (and individual participants) against targets and takes a decision on whether or not to certify that the reduction should continue to the next milestone. DETR will undertake independent verification checks of a sample of companies' data. DETR ensures that measurement and reporting systems are robust. | <u>Offer:</u> 80% rebate on the levy The Government will fully recycle the revenues from the levy, principally through a cut in the rate of employers' National Insurance Contributions (NICs) of 0.3% <u>Sanctions:</u> If the target is not met, the rebate is removed until the next milestone (every 2 years). | Economic: No details available Costs for the Best Practice Programme (1 pound of public money has to create 5 pounds of energy costs saved) Enhanced capital allowance scheme (100 M pounds for 1 year); recycling through cutting NICs by 0.3% | Targets not yet set, they will be either quant. (rel. or abs.) for CO ₂ or energy Benchmarking will be part of the scheme Measures for BAT included |
| Policy mix: Links to IPPC and flexible mechanisms (e.g. ET), recycling of levy through cutting national insurance contributions | | | | | | | |
| Critical Success Factors contributing to the realisation of LTA: success with landfill tax leads to climate levy, Kyoto targets can realistically be achieved | | | | | | | |
| Major strengths The CCLA aims at a win-win situation Three basic CCL Agreement options are available to industry, which give flexibility with regard to variations in sector, structure and size. There are clear links to well known and established support measures such as the Energy Efficiency Best Practice Programme. Furthermore, new measures for auditing assistance and enhanced capital allowance schemes will be introduced. | | | | | | | |
| Major weaknesses Even higher tax burdens may push some energy intensive industries closer to the decision of moving the business out of the country. Some sources or uses of energy will be exempt from the Levy, and this may lead to unwanted and rather tax-motivated choice of energy supply and energy use, thus losing the desired, positive attention from a number of companies. | | | | | | | |

4. CRUCIAL LTA ELEMENTS

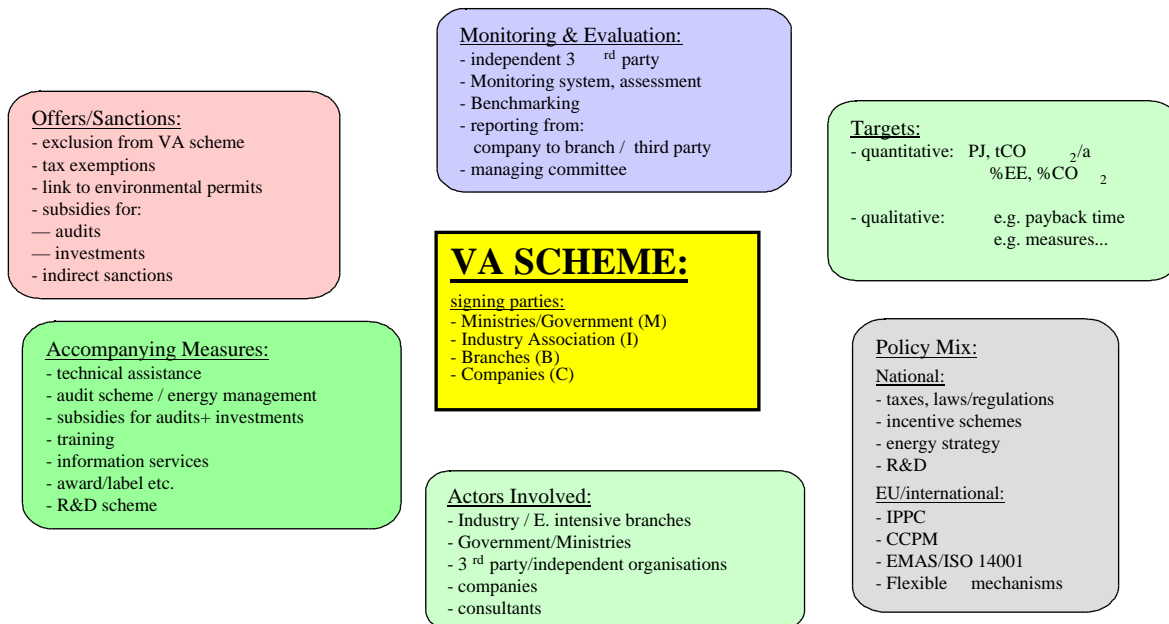
From the preliminary project results the project team made a first attempt to identify LTA elements necessary for a successful implementation of LTA on national level. To be able to do so, major positive and negative aspects related to LTA schemes were summarised (see table 6). This was done in a three-step approach: Firstly the team undertook a brainstorming session on strengths and weaknesses of LTA in order to get the right "feeling" for this instrument. The results were then reflected in a second step by the assessment results. In a third step the findings were discussed with several stakeholders (industry, ministries, experts) in a national *steering committee* meeting (only in Austria), in order to interpret them within in the specific national context. This step is considered to be very important as the national framework conditions of each country can differ significantly.

Table 6. Positive and negative aspects in relation to LTA

| PLUS | MINUS |
|---|---|
| Existing experiences in other EU countries | Effective LTA need resources (personnel, money and time) |
| National Kyoto targets have to be achieved | no clear political Commitment |
| Trust building process between public authorities and industry | Lack of trust and credibility |
| Existing EU directives (e.g. EMAS, IPPC) | no credible offers / sanctions |
| Alternative to „Command and Control“ | Weak legal frame |
| Long term perspective in planning and realisation | Questionable effectiveness |
| Flexibility in terms of contents and time | No Tradition with voluntary approaches |
| Flexible mechanisms (CDM, ET, JI) offer an additional chance | Short term perspective in terms of public subsidies |
| Involvement of independent third parties (preparation / monitoring / evaluation) | doubtful energy efficiency potential |
| Links to existing national policy mix | Absolute targets might effect |

LTA as such represent only an empty framework. They have to be integrated in the existing national policy mix and linked to effective accompanying measures. The framework has to provide all features necessary to allow two parties to enter into a transparent negotiation process concluding in signed contracts. It has to take into account the various players and involve them in an early stage, it has to define appropriate mechanisms if contracts are violated and it has to ensure independent monitoring and evaluation. Fig. 1 presents the major elements which are considered to be essential for a successful implementation of an LTA scheme.

Figure 1. Crucial LTA elements



In the following the role of these elements is highlighted in greater detail.

Actors and signing parties

When designing a LTA scheme it is important to involve relevant key actors from the very beginning. The possible signing parties – mostly a public authority (e.g. ministry of environment and/or industry) and an industrial association, branch or company – have to enter into a negotiation process. For this stage of the process the analysed LTA schemes point at the importance of a trustful, independent and reliable third party, which should assist industry and public authorities and should ensure transparency.

Agreements are mostly signed by industry and governments. In order to ensure the commitment of individual companies, which actually are in the position to realise energy savings, the analysed LTA schemes indicate that a two-level contractual approach might be most appropriate:

In a *frame contract* the government and an industrial association can define the overall goals and targets of the agreement. Single companies should then be able to access the general scheme via an *individual contract* signed with the association. This two-level approach has the advantage that each single company knows what it has to give and what it can expect. If there exists only a contract between the Government and an industrial association the commitment of single firms could be weak. Preferably the contracts should be legally binding but among the analysed schemes this is only the case in the Dutch system (under the civil law).

Target setting

The target setting process has to be clear and transparent and targets should be ambitious but reachable. In general two types of targets are possible: quantitative and more qualitative targets. Although quantitative targets are superior because of their close link to the goal of the agreement and the simplicity of figures etc., also more indirect, qualitative approaches can be a promising option and already proved to be so.

Quantitative targets (DK, F, NL, UK) can either be absolute (e.g. PJ/a or t CO₂/a) or relative (e.g. % reduction / product). Industry is in general not very happy with absolute targets as they might limit their economical growth. However, if LTA should be related to flexible mechanisms such as emission trading, then absolute targets are necessary anyway.

Qualitative targets (DK, SF) can be the obligatory realisation of energy efficiency measures identified through energy audits. Therefore companies entering a LTA have to undertake an energy audit and to establish an energy saving plan. Identified measures which pay off in less than a certain agreed payback time should be realised without subsidies, other measures could be partly subsidised, as well as the audits themselves.

Whether quantitative or more qualitative targets are chosen is often depending on the existing policy mix as well as the political culture in a country. In any case it is important to set milestones to see in an early stage if targets are likely to be met or not.

Accompanying measures

Several analyses show that there exist still essential potentials to reduce industrial energy consumption. This is among others due to the fact that energy matters are mainly not core business for industry (Gilchrist 1998, InterSEE 1998). To give industry support in realising these potentials and thus achieving the targets appropriate *accompanying measures* have to be involved. Technical assistance, information services and adequate training schemes are very often already in place. A crucial element to identify measures but also to evaluate industrial activities are *energy audits*, offered by well trained consultants. The audits could be (partly) subsidised. Financial incentives (linked to certain payback times) also should be foreseen to trigger energy efficiency investments. The analysis results indicate that if such an audit scheme or a similar procedure is not linked closely to the LTA scheme, an effective implementation of LTA seems doubtful.

Offers and sanctions

In order to provide such a voluntary instrument with the necessary power the political will of the contracting parties should be enforced by sanctions or offers in case of (non) compliance. The analysed schemes point out a set of possible sticks and carrots. They include financial incentives or other supporting measures (information services, benchmarking tools) which might be well accepted by industry and easier to be negotiated, but also links to environmental permits and tax exemptions, which might cause more difficulties in acceptance. In any case it should at least be possible to exclude firms from the LTA scheme if they do not perform well.

Monitoring and evaluation

The achievement of the targets has to be followed up through a transparent data *reporting* system and to be controlled through a reliable *monitoring* procedure. The findings from the assessment point out that for preparation, monitoring and evaluation of the scheme a credible and independent *third party* seems necessary. An evaluation of the scheme should be carried out every 2-3 years, to be able to adopt the scheme in case

milestones are not reached in plan. Clearly defined milestones offer also the possibility to apply sanctions over a defined time in case of non-compliance.

Also a *managing committee* should be installed to adopt reports and to deal with conflict situations.

Integration into the existing policy mix

National strategies e.g. on climate change, on energy efficiency or similar fields of action have often targets which can become subject of negotiated agreements. In all analysed cases such strategies provide the political frame for an LTA. Also flexible mechanisms (i.e. joint implementation JI, emission trading ET, clean development mechanisms CDM), being part of the Kyoto protocol, can be linked to LTA (F, UK). They could provide some additional flexibility for industry to reach absolute quantitative targets in case of substantial economical growth.

In general existing taxes, laws, regulations, subsidies schemes etc. have to be taken into account when designing a LTA scheme. As can be seen from the experiences in other countries, taxes are in particular interesting in relation to LTA as they represent a classical “rod” – with the alternative of tax exemptions in case of entering into a LTA. Additionally to national environmental laws and regulations also EU wide guidelines and directives (such as IPPC directive, EMAS, guidelines on state aid) have to be fulfilled and should be taken into account (IPPC in case of SF).

The general lessons learned from the analysis of existing LTA schemes are that not one element is dominating but that there are several possibilities how these elements can be combined to form an effective package, taking into account existing framework conditions of the respective countries.

5. HOW TO INTEGRATE LTA IN THE POLICY MIX?

So far the three countries participating in the project, Austria, Italy and Norway, have developed draft schemes along the key elements which have been identified during the analyses. This chapter focuses on the actual status as well as the way forward in Austria.

Actual Status

Up to now there are no voluntary agreements concerning industrial energy efficiency in Austria. In the course of the discussions on how to achieve the Austrian Kyoto commitment of -13%, voluntary agreements are seen as a possible instrument. In the context of industry voluntary agreements are explicitly mentioned in the climate strategy which is currently under preparation. However, representatives of the Austrian industry are sceptical. In principle they see LTA as an favourable alternative to “command and control” measures, however, they do not see how LTA can be realised so far and they lack trust in the government as partner in the agreement. Moreover, considering that the Austrian industry – like in some other countries – increased energy efficiency in the last decades (Freund et al 2000³), industry claims that it might be cheaper to realise measures in other countries (e.g. via flexible mechanisms). Also the government seems not completely convinced so far that negotiated agreements are the right instrument, fearing that it might not lead to additional industrial efforts towards realising the Kyoto targets.

Given this situation the ongoing pilot action was especially tailored to prepare the ground for implementation by involving key stakeholders and by undertaking a common analysis of the experiences and lessons learned about negotiated agreements so far. To ensure an *early involvement* of relevant *stakeholders* a project steering committee was set up, including representatives from the Austrian industry (from energy intensive companies, the Association of Industrial Energy Consumers, the Federation of Austrian Industry, and the Chamber of Commerce) on the one side, and the relevant ministries (Environment, and Economy and Labour) on the other side. This step is considered to be very important, as *trust* and *transparency* among the possible signing parties is a crucial pre-condition for a successful LTA. Due to the Kyoto process in Austria the project gained more and more importance and is now broadly acknowledged as the basis to investigate the possibilities for LTA in the Austrian context.

The way forward

From the assessment carried out two basic approaches towards LTA can be detected:

- The “tax” approach:
Countries with (existing) CO₂/energy tax schemes might use LTA to justify tax exemptions for energy intensive industry. A typical example seems to be the Danish or the UK case. This approach is also in line with the newly defined EC guidelines on environmental state aid (EC 2001).
- The “audit” approach:
Countries with existing energy audit schemes might use LTA to design a visible and more flexible and effective framework to achieve environmental targets. This seems to be the case e.g. in Finland and UK, but also Denmark fits in here.

Of course in reality these approaches often appear in combination. While the tax approach offers a clear offer/sanction mechanism, the audit approach integrates effective accompanying measures to support companies in achieving their targets.

In the Austrian case each approach as well as a combination of both seems possible as there already exist tax exemptions for energy intensive industries as well as energy audit initiatives. Whether the tax exemptions can be integrated in a LTA scheme cannot be foreseen so far⁴, however, it would provide a strong link to the existing policy mix and thus strengthen the effectiveness of the scheme. The “audit” approach seems feasible as several energy audit schemes are in place, partly on national but also on regional and even local level. Some programmes deal only with energy efficiency (e.g. branch concepts/ mostly regional), others integrate energy in a wider environmental frame (e.g. ECOPROFIT/local and regional; EMAS/national). On national level the environmental subsidy fund managed by Kommunal Kredit AG (a bank acting on behalf of the Government) supports also energy efficiency measures. A possible Austrian LTA scheme should ensure links to all these existing accompanying measures.

Within the project steering committee a number of critical issues related to LTA have been detected so far:

- Does industry still have enough potential to improve energy efficiency?
- Is there a possible WIN-WIN situation?
- Is there a role for EMAS in relation to LTA?
- How could LTA be linked with the flexible mechanisms of the Kyoto protocol and which share of an industrial target is allowed to be realised by them?
- Since the Austrian climate strategy tries to define potentials for each sector (e.g. industry, transport, households, electricity etc), how can it be ensured that e.g. electricity savings realised by industrial companies count for industry and not for another sector?
- Can the possible signing parties trust each other?
- Is it necessary to break down a quantitative target on all industrial branches and if yes how can that be realised?
- How to ensure company commitment, if a branch has several hundred members?
- How a transparent monitoring and evaluation procedure can be ensured?

At the moment interviews are carried out with the climate responsible persons within the ministries and industrial association and chamber of commerce, with representatives of important branch associations and with environmental managers of big industrial companies. They are confronted with the main LTA elements suitable in the Austrian context and with above mentioned issues and how to address them successfully.

First talks indicated that *target setting* is a critical issue (is it possible to agree on a quantitative target? To which extent flexible mechanisms should be allowed to achieve a national target? Should also qualitative targets like pay back time be included?) as well as possible *sanctions* and/or *offers* which both parties can agree on (e.g. tax exemptions, subsidies). Companies want to know what they are supposed to do and what they can get for it. Furthermore the integration of existing accompanying measures is a topic of major importance.

It is expected that this year the discussions on the Austrian climate strategy might lead to a decision whether for the first time negotiated agreements on energy efficiency in industry will be part of the policy mix or not.

6. CONCLUSIONS

The analysis of existing LTA schemes point out a reasonable set of elements which seems suitable to integrate LTA into a given national policy mix. Whether LTA can contribute substantially to the fulfilment of environmental targets is difficult to conclude from the analysis results as so far only one country in the analysis sample actually evaluated the effects of agreements. However, there are some indications that a link to credible enforcement mechanisms together with effective accompanying measures could have this effect.

In the Austrian case LTA seem to offer a window of opportunity to get a stronger industrial commitment in the Kyoto process. LTA could provide industry with a fair share of flexibility while at the same time supporting the government in its efforts to achieve the committed CO₂ targets. However, it needs a carefully designed package of elements and their effective integration into the existing policy mix, to make LTA really effective. And it needs an open dialog between the possible signing parties.

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8. ENDNOTES

¹ carried out by E.V.A. (Austria), IFE (Norway) and ENEA (Italy)

² OECD classification: “... through bargaining between a public authority and industry”

³ Between 1990 and 1995 the manufacturing sector increased energy intensity by about 12 %, however then stagnated.

⁴The matter of Austrian tax exemptions for industry is actually pending at the European Court