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Voluntary agreements, implementation and efficiency.

European relevance
of case study results.

Reflections on transferability
to
voluntary agreement schemes
at the European level.

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The VAIE project

The report is part of the VAIE project, a collaborative European research project involving researchers in Denmark, Germany, the Netherlands, France and Sweden. The VAIE project investigates the conditions under which voluntary agreements can be expected to achieve environmental targets in an efficient way. The total project includes models based on economic theory, case studies of voluntary agreements in five countries, an analysis of the actual outcome in relation to the baseline, and the present discussion of the relevance of observations for the development of policies at the EU level. All reports are available for download from the project web site.

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All VAIE project reports are available at www.akf.dk/vaie/index.html.

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1. Introduction

As a policy instrument, voluntary agreements often fascinate policy-makers [1]. This is fuelled by a number of assumed advantages, such as the opportunity for co-operation rather than confrontation [2], speed and flexibility [3] and the cost-effectiveness [4].

Some advantages might even be accentuated at the European level: Co-operation has added advantage at the European level where the culture of consensus decision is strong. Flexibility is extra attractive for policy makers dealing with an economy less homogeneous than the average national economy. Speed is certainly welcomed by policy-makers otherwise faced with the slow-winding European legislative process. Cost-effectiveness is eagerly sought by European policy makers facing tight administrative budgets and staff limits.

This report examines lessons from the VAIE case studies that may be useful to policy makers engaged in the development of voluntary approaches at the European level. These case studies are about voluntary agreement schemes for industrial energy efficiency deployed in Denmark, France, Germany, Netherlands, and Sweden. For a summary of these case studies, please refer to the the VAIE final report [10]. More detailed information is available in the VAIE national reports [6, 7, 8, 9, 11].

It needs to be emphasised that the empirical base is very narrow. The "lessons" presented can only be hypotheses, based on an inductive leap from a very narrow experience. The reader will need to check these hypotheses against her own broader experience and personal judgement.

The discussion is structured under these headings:

- What are useful lessons?
- The need for substance on the public side.
- The need for administrative capacity.
- Focus is essential.
- Addressing the vanguard or the rear-guard?
- Are sanctions necessary?
- An alternative approach: Combination with national efforts.
- Conclusions.

Background information is presented in two appendices:

- Appendix A: Institutional lessons.
- Appendix B: Policy lessons.

2. What are useful lessons?

To judge whether a lesson may be useful for the development of voluntary approaches at the European level, it is important to pay attention to the specific characteristics of this level of governance. Specifics emphasised in this report are the subsidiarity principle, the difficulty of reaching decisions in certain areas (such as taxation) and the limitation of economic and administrative resources.

What is useful depends on aims. Most voluntary agreements examined in the VAIE study have aims that are quite modest and do not deviate clearly from business-as-usual. This presentation is based on the supposition that policy makers now have higher ambitions and want to implement policies that are likely to turn European industries away from

business-as-usual [5]. Case study lessons that do not point in this direction are not regarded as useful, except in a negative sense.

A voluntary agreement scheme can be implemented as a stand-alone policy instrument, or it can be part of a complex policy mix, including taxes, subsidies, regulation, etc. Voluntary agreements appear to have a potential in both ways. The Netherlands agreement scheme [6] is largely a stand-alone scheme, whereas the Danish agreement scheme [7] is tightly integrated with taxation. A voluntary agreement scheme can be directed towards large parts of industrial production, as in Germany [8] and the Netherlands, or towards specific niches as in Sweden [9] and Denmark. It is not necessarily the broad applications that bring out most clearly the advantages of voluntary agreements. They could have their greatest potential in niche applications. This report attempts to avoid bias in favour of grand solutions, and to direct attention equally to the usefulness of voluntary agreements in more complex types of policy mix and in niche applications.

3. The need for substance on the public side.

Whereas energy taxes disturb industry, subsidies hurt budgets, and regulation reduces flexibility, voluntary agreements are often suggested as a less painful road to CO₂-reduction [3, 4]. The hope might be to achieve CO₂-reduction without any coercion, simply by bringing societal actors together in responsible and mutually beneficial action [2].

There may indeed be a potential for such responsible and mutually beneficial action, but the VAIE case studies give no hint that it can be achieved at low cost [10]. An evaluation of the Danish scheme in fact indicates that voluntary agreements are the most costly part of the Danish policy mix, which also includes energy taxes and subsidies. Voluntary agreements make sense in the Danish policy mix, not because they are in any way simple or cheap, but because they are directed at specific productions where other national policy instruments fail.

The cases studied for the VAIE report do not give any indication that the private side is prepared to deviate from business-as-usual unless substantial bargaining chips are put on the table by the public side. Where this is not the case, as in Germany [8] and France [11], there is nothing to indicate any significant departure from pre-established company plans. Where substantial offers have been made, as in Denmark, the Netherlands and Sweden, some additional efforts are evident, even though their effect is difficult to assess.

Denmark has the most clear-cut tit-for-tat scheme. A substantial economic reward is involved, in the form of energy tax reduction to the individual company. This has attracted the voluntary participation of all major energy intensive companies, and has allowed the public side to negotiate from a position of strength and to elicit very specific investment commitments. On a much more modest scale, the Swedish scheme is also quite clear in its offer of subsidies, though the demands on companies are more vague.

In the Dutch scheme the bargaining chips used by the public side are less tangible and of a more political nature. It involves a formalised promise to refrain from other regulation and from energy taxation for the participating industries. Apparently, this is also the case in Germany, but at closer inspection the German offer is much less substantial than the Dutch offer. First, the offer is legally formalised only in the Netherlands, not in Germany. More importantly, the threat against which protection is offered, was much more credible in the Dutch than in the German case. In the latter case, nothing indicated that industry really had to fear any taxation or regulation. A promise to refrain from an action that is

anyway unlikely, obviously carries little weight in a negotiation. In the Dutch case the threat of taxation or regulation was much more credible, given the national traditions, the political situation and the public opinion. Thus, the Dutch authorities negotiated from a position of strength, as did their Danish colleagues, although in a more intangible way, involving an offer of political protection rather than direct economic benefits.

So the lesson appears to be, that it is only worthwhile for the public side to negotiate voluntary agreements from a position of strength, i.e. when a situation has evolved where the public side is able to offer a really tangible award or to table a highly credible threat [12]. Opting for an agreement when a credible threat does not yet exist, can place the public side at a disadvantage in negotiations [14]. Negotiations on basis of hypothetical threats that the private counter party has no reason to judge as credible, are unlikely to produce effective voluntary agreements, and may even produce voluntary agreements that are counterproductive in the sense, that they create obstacles to the political process and discredit the concept of voluntary agreement.

If this lesson is taken to the European level, the complex and often long-winding policy-making process that is characteristic of European institutions, obviously pose a problem. It is difficult for any single European institution to table a credible threat of regulation or taxation, because the private counter-party is well aware of the need for fairly broad consensus among the institutions and the member states, and also knows the time-dimension of consensus making in this complex political system. To the extent that member states have more institutional concentration of decision-making power, it can be argued that political threats are more easily made credible at the national level. To the extent that shifts in power between government and opposition parties are part of the national tradition, it can be difficult for the private side to be complacent about threats of taxation or regulation voiced by opposition parties, and it makes sense for risk-averse business representatives to take out "insurance" in the form of voluntary agreements that binds future political decisions by legal means or by political compromises involving opposition as well as government parties. Obviously, these arguments do not apply equally to all member states, as there are significant differences in their institutional arrangements and political traditions. But when national governments in certain countries say, "unless we get a voluntary agreement, we intend to legislate ...", it may carry more weight than if a similar threat is issued by the European Commission, which is known to have its hands tied in many more ways.

Even though it may seem attractive to use voluntary agreements as a means of circumventing the complexity of the European legislative process, the arguments put forward here and the evidence from a comparison of the national schemes would indicate that this is unlikely to be an effective strategy. Quite to the contrary, exactly because the European legislative process is complex and long winding, European authorities need to build their negotiating position more carefully than national authorities, and be more aware of the need to negotiate from a position of strength. Posturing is even less likely to work at the European level than at the national level.

So the question is, what European authorities might credibly offer in negotiations? Protection against taxation would seem like a weak bargaining chip. Considering the experience of the 1990s - when the Commission worked hard, but without success, for some kind of harmonised energy taxation - European industry is likely to feel quite well protected against energy tax decisions on the European level. There is probably only one way now, that the Commission could gain credibility for the tax threat, and that would be when it actually has a tax directive in its hands, and is threatening to use powers given to it by this directive, or is offering some kind of exemption from the directive. Before that kind of situation has been established, it would hardly seem worthwhile to attempt to negotiate voluntary agreements on the basis of a European level tax threat. Even though

it might be tempting to reproduce successful national experience in this respect, the analysis of the conditions for national success would warn against such an attempt.

While European authorities may lack the tax-chip at the negotiating table, they ought to be able to offer other benefits, that better reflect their real strengths. Some real strengths, that might be exploited, are:

- European budgets, i.e. the option to provide subsidies.
- Supervisory powers in relation to national subsidies.
- Regulations concerning the single market.

The Swedish case is an example of an agreement scheme fuelled by subsidies. The Danish scheme is also, from a strict legal viewpoint, a subsidy scheme (pay-back of tax, not reduction of tax rates). European authorities are labouring under a tight budget restriction, but still it might be more realistic to find funds to include a subsidy element in voluntary agreements, than to base such agreements on a threat of taxation. If voluntary agreements are focused narrowly, as in Sweden, the funds need not be huge. Instead of finding new funds, it might be possible to tie old funds to a voluntary agreements. For instance, European research grants could be made available to large companies only on the condition that they have EMAS certification [15, 16] or are party to a voluntary agreement.

Given the budget restrictions on the European level, it might be even more attractive to use national subsidy schemes as incentive to participation. Community acceptance of national subsidies to large companies could be made conditional on their participation in European level voluntary agreements or on EMAS certification.

Single market regulations could also be used to promote voluntary agreements. Mandatory labelling schemes could be imposed on industries or companies, that are unwilling to engage in a voluntary agreement. Rules for public procurement could be changed in such ways that companies participating in European level voluntary agreements are likely to get preferential treatment. In energy intensive industries, the privilege of trading in the single market might even be restricted to such companies as are participating in voluntary agreements or otherwise can prove their energy efficiency credentials.

The national experience reported here cannot tell anything about the usefulness of such alternatives, but it does indicate the need to search for effective negotiation chips. As the European level has a unique combination of mandates and policy instruments, compared to the national level, its bargaining chips should probably reflect this unique combination, rather than emulate the actual bargaining chips used by national governments. The lesson that can be learned from the national level is only about the importance of having something substantial to offer the private side, not about the exact offers to make. [17]

4. The need for administrative capacity

Sanguine views are often expressed about VAs as a means to reduce administrative costs [4]. But reports from countries that have really worked to make VAs effective tend to show that VAs are no easy ride. "The implementation and enforcement of negotiated agreements require capable, flexible and creative people who can negotiate and distinguish between features and details. They require the permanent training of people. These are high standards, but the point is that negotiated agreements do not require less. On the contrary. We have seen in the Netherlands that the introduction of negotiated agreements requires a change in the culture of permit-granting authorities and enforcement personnel that will go on for many years to come", writes Biekart [18]. He is echoed by Glasbergen [19], mentioning as prerequisites "a professional bureaucracy and

some experience with the participation of organized interests in the development of policy" and noting that "bureaucracy, so often disparaged by the business community for the paperwork that it generates, has only expanded".

Cases studied for the VAIE report give no indication that deviations from business-as-usual can be achieved without a significant commitment of administrative resources [10]. The two most effective schemes, in Denmark and the Netherlands, are based on impressive administrative capacity building.

The Dutch scheme emphasises collective commitment to an agreed CO₂-target. The government bargains with an industry association, which must bring its members in line, i.e. negotiate with members until a satisfactory aggregate commitment is reached, and establish a system to provide members with assistance and supervision. Superficially, this might seem feasible with modest administrative resources on the public side. But closer study of the Dutch scheme indicates that this is not the case. To be an effective counterpart to the industry associations, the public side has needed to build quite deep knowledge about each industry, and to insist on negotiation on basis of quite detailed analysis and planning. It simply has not been possible to set appropriate targets for the individual industry without such efforts on the public side. So the real advantage for the public side is limited to the implementation phase, where it can indeed leave many tasks to the private side - as long as a reliable monitoring system has been established that allows the public side to assess progress towards fulfilment of the negotiated collective target.

The Danish scheme works mainly through negotiations with individual companies about specific energy efficiency investments and management improvements. The negotiations are based on energy audits by independent auditors and on suggestions made by these auditors, so that much of the basic fact-finding is delegated to third parties. Still, the energy authority needs the capacity to digest and assess these audit results to such an extent that they can be used effectively in negotiations with individual companies. It also needs a capacity to monitor implementation, including frequent renegotiations based on changing circumstance and new information. If the Danish scheme was simply scaled up to European size, it would require a responsible agency with 600-1000 civil servants, involved in great details with negotiating and supervising the specific investment activities and energy management systems of ten or twenty thousand production units.

The French scheme has required much less capacity building on the public side. This is partly because it is limited to a few industries, but even more because the negotiation of targets has been done rather casually. Basically, the prognoses presented by the associations have been accepted by the public side, so that the main value of the agreement is the formal transformation from prognosis to commitment. This seems too un-ambitious to be worth emulating at the European level. Denmark did try a scheme with more modest administration before the present scheme was implemented, with rather unsatisfactory results. Sweden does have success with a very small administration, but only because the scheme is targeted at companies in the environmental vanguard and consists in support for genuinely voluntary efforts by these companies.

If reduction of the administrative burden is essential, it is of course possible to shift it to some extent away from the public administration and towards independent agencies or organisations, or other types of third parties. But this is already done to a considerable extent in the Dutch and Danish cases. In the Danish case, for instance, in addition to administrative capacity developed internally on the public side, a large corps of independent energy auditors is involved in compilation and assessment of information, thus preparing the ground for negotiations and providing the background needed for monitoring. Keeping this corps honest and competent is one of the tasks of the public

administration. Furthermore, such third-party resources cannot be assumed to be readily available on a European scale. Just like the public administration itself, they need to be carefully built and nurtured.

Thus, the national experience examined in the VAIE study should warn against the idea that voluntary agreements might be a way to get results with small administrative resources. In this respect, the term "voluntary" can be deceptive, because it invokes an image of civil society acting on its own, without a need for public administration. But if the agreements are based on a tit-for-tat exchange, the public side obviously needs to verify that it is getting what it has paid for. This requires a competent and resourceful administration. The demands on this administration tend to be high because of the very flexibility that is one of the benefits of voluntary agreements. The logic is basically the same as when for instance an auto manufacturer decides to out-source the manufacture of parts to independent subcontractors, thus replacing a command-and-control system with a system based on voluntary relations. To manage these voluntary relations he needs a sophisticated administration that can handle negotiations, contracting, quality control, etc. The administrative resources needed for this are not necessarily smaller than those needed for command-and-control in the old system. The more he wants to exploit the advantages of the market through more flexible relations to subcontractors, the more essential is the capacity and competence of his procurement organisation.

5. Focus is essential

It follows from the arguments above, that any suggestion for reproduction of national voluntary agreement experience at the European level needs to start with a hard look at the resource situation at this level, politically, economically and administratively:

- Is such *money* available in European budgets, that companies can be offered substantial economic benefits? Or is there a *credible* political threat of taxation or regulation, that industry can avoid by subscribing to voluntary agreements?
- Is there a European *administration* able to handle the complexities of an effective voluntary agreement scheme? Could it be built? Should it be built?

Assuming that most observers would tend to answer these questions in the negative, there may still be room for effective voluntary agreements on the European level, but to conserve resources they would need to be highly focused, or they would need to be combined with national action.

Even at the national level, agreement schemes tend to be fairly focused. The Danish and French authorities have focused rather narrowly on *energy intensive industries*. The Dutch emphasise that voluntary agreements are only relevant for industries with a *well-functioning industry association*, demonstrating an effective commitment to compliance and involving companies covering at least 80% of the specific industry's energy consumption.

A pragmatic approach to focus at the European level might be to address only such energy intensive industries as have a proven European *capacity for collective action*. The Dutch and French cases present different models for the structure of such collective agreements. But collective agreements can be successful only if companies within an industry are able and willing to work together to find solutions and distribute obligations among themselves. This depends on a strong industry association or an industry structure set up for oligopolistic behaviour, i.e. dominance by a few large companies. Of course encouragement by the public side is important for the actual use of such structural potentials, but the structures need to be in place for the model to work [20]. Consequently, the reproducibility of the Dutch or French model on the European level depends on the existence of similar organisational or structural preconditions.

Associations with ability to discipline their members are not common on the European level. Therefore, the best chance for reproducing the collective model is probably in industries dominated on the European level by a few large companies that the Commission may be able to bring together in an agreement, if it can provide sufficient incentives.

A more principled approach to focus might be strict use of the *subsidiarity principle*, i.e. asking where the members states most clearly fail, and where the Community has the most chance of doing something that member states cannot [21].

This might lead to focus on a few *energy intensive* industries, dominated by *large companies*, and with *extensive intra-European trade*. In such industries there are several arguments in favour of European action:

- national governments are reluctant to impose taxes or strict regulations, because this might easily tip the competitive balance in favour of companies in member states with less active policies, i.e. create a kind of self-discrimination in the single market.
- national subsidies are a way out of this self-discrimination problem, but it is difficult to define the line where they start to be discriminatory against companies in other member states, i.e. work against the single market. In contrast to national subsidies, European subsidies would secure a level playing field.
- the transnational structure of large companies may tend to make national action ineffective, as companies may move production internally, i.e. shop for subsidies and tax advantages with little effect on aggregate CO₂-emissions.

The French and German cases illustrate the possibility of concentrating on large companies. In these cases, free riding by smaller companies could be disregarded for two reasons. First, it has little effect on the aggregate results, nor probably on the longer-term technology dynamics of the specific industry. Secondly, it may not be any real problem for the large companies, who are more worried about competition from other large companies. If the Community concentrated on an agreement scheme that secures a level playing ground between large companies, it might be left to member states to develop policies in relation to smaller companies.

If the number of companies is effectively reduced by this type of selective approach, the task of negotiating and supervising voluntary agreements may become manageable. An administrative capacity of the same absolute size as in the Netherlands or Denmark might be sufficient if the number of companies were brought down to the same level as in these countries. The task of casting effective bargaining chips may also be easier if it is done only in relation to specific selected industries, as the raw material for tailoring these bargaining chips could be specific advantages for which these industries are dependent on European level institutions and decisions, i.e. advantages arising from the single market, from existing subsidies, from external trade policies, etc.

6. Addressing the vanguard or the rear-guard?

The Swedish scheme provides an altogether different approach to focus. It does not address itself to any particular industry, but to firms that want to position themselves in the environmental vanguard [22] through ISO 14001 or EMAS certification [15, 16, 25].

These certification schemes are fairly open in their definition of environmental problems. They would not by themselves require firms using "clean" energy sources such as electricity or natural gas to define their energy use as an environmental problem. However, by joining the Swedish type of agreement, companies seeking ISO 14001 or EMAS certification commit themselves to include energy efficiency in their management system for environmental improvement, i.e. to have energy efficiency targets, to have

plans for their fulfilment, to have a monitoring system, and to have all of this reviewed periodically.

Administratively (as seen by the public side), this is a much less demanding than the Danish or Dutch models. It is self-controlling in two ways. First, ISO 14001 or EMAS certification is about the firms development of their own capability for environmental excellence, not about interaction with a public agency. Secondly, the resources given to the firm, which is money for the energy audit, cannot really be used for anything except improvement in energy efficiency. It would be rather ridiculous for a firm to go through the troublesome motions of audit and certification, without a serious intention of improving performance. Economically, it can be argued that self-selection improves social economic efficiency [26].

The result is an entirely different use of public resources than in the Danish and Dutch schemes. In the Danish scheme, the largest resources are clearly devoted to the most backwards companies. This is true for the administrative resources, as there will usually be little to negotiate or monitor in the case of front-runners, i.e. companies that already have a ambitious energy management system and a good investment record for energy efficiency improvements. It is true as well for the subsidies that often come along with agreements, i.e. for energy audits and investments. And most significantly, it is true for the tax reductions, as these are larger (in absolute terms) the less energy efficient the company is. In the Swedish scheme, in contrast, there is no money for anybody except the front-runners.

This difference is a reflection of diverging philosophies about the interaction between state and market. The Swedish idea is to enhance competition, by focussing narrowly on a select set of environmentally high-performing companies, and helping them make further progress, i.e. to distance themselves from the average. By increasing the performance differential, competition is given more to work on, assuming that the market is demanding environmental excellence. By emphasising certification and adding an extra energy efficiency label, the differences in performance become more transparent to the market. The devil might then take the rear-guard, by its failure to compete in a market that increasingly demands environmental excellence, or by its failure to satisfy regulators that have their eye on best practice (which the scheme help to improve), or simply as it is weeded out by growing energy taxes.

The philosophy of the other schemes examined in the VAIE study emphasises the rear-guard, which they seek to advance, by some combination of assistance and pressure. Obviously, this tends to be a more adversarial process, politically more troublesome, and more demanding of resources for administration as well as for subsidies. It also has the quality of being a more solidaristic approach, aiming to help the weak rather than promote the strong.

The Swedish *focus* on a vanguard would in some ways seem well adapted to emulation on the European level. The low administrative costs would be a major advantage. The lack of dependence on associations would be valuable. The scheme fits fairly well with instruments that are available to the Community, such as subsidies, certification, labelling, and competition regulation (for instance rules for public procurement). It does not depend on instruments that are presently unavailable or less available to the Community, such as energy taxes or the ability to exert politico-administrative pressure on companies.

The *methods* for achieving this focus might need to be different on a European level. The Swedish approach only works in a context where a vanguard of significant firms are already committed to ISO 14001 or EMAS certification as means to enhance their competitiveness in the market. On a European level, this may be less common.

7. Are sanctions necessary?

Sanctions are extremely rare in the cases examined in the VAIE study [27]. Two main reasons are evident. First, targets tend to be modest or vague. Secondly, the public side tends to rely on the desire of firms and associations to be seen as reliable and honest partners, i.e. on voluntary compliance. Whether this cosy relationship is actually working is difficult to judge. The lack of sanctions usually goes hand in hand with weak monitoring, which further diminishes the incentives for compliance. In any case, the need for firms to be seen as reliable and honest partners depends on the intensity and importance of their relations with the authorities and the general public. If such relations are intense, there might conceivably be significant informal sanctions. Such relations tend to be less intense on the European level, except perhaps for a few very well known transnational brands that need to worry as much about their European image as about their national image. Thus, even if the relaxed attitude to sanctions may sometimes work at the national level, it is hardly transferable to the European level.

Those national schemes that are most substantial in their offers and demands are also those that have gone furthest in establishing a working sanctions system. A number of companies have been expelled from agreements in the Netherlands. One Danish company had to repay one years worth of tax rebates and pay full energy tax in the future, due to non-compliance with negotiated investment plans. There have been several Danish cases of serious warnings to consultants, who had not shown sufficient diligence or competence in their energy audits.

It would certainly seem wise for European authorities to adopt at least the Danish and Dutch experience in this regard, i.e. to make certain that sanctions are available, and that they are also used, at least occasionally. But obviously, in a system of voluntary agreements, such sanctions need to be accepted by the private side. Its willingness to submit to an agreement with sanctions is likely to depend strongly on the substance of the benefits offered by the public side. It is probably no coincidence, that the strongest sanctions are accepted in Denmark, who also provides the most substantial economic benefits.

The types of sanctions that can be imposed depend a great deal on the benefits offered to participating companies. In Denmark this connection is quite straightforward, as the sanctions simply mirror the benefits: The benefit is a tax rebate, and the sanction is an annulment of this rebate. In the Netherlands the relation is more complex, as the major benefit offered is a collective one. The sanctions for individual non-compliance cannot be a simple negation of this collective benefit. Instead, non-performing companies can be transferred to a regulatory regime involving their environmental permit.

This difference between the Danish and Dutch approach to sanctions point to a problem that needs even more serious consideration at the European level. If agreements are collective, what sanctions are then available against individual companies? As cohesion is weaker at the European level, than in a small nation like the Netherlands [28], this problem needs to be dealt with more seriously at the European level. The Danish case indicates a possible solution, but as tax reductions are not among the instruments directly available to European authorities, no direct emulation of the Danish example is possible.

Thus, the national experience provides no clear model of sanction mechanisms that are reproducible at the European level. It only indicates the importance of developing such mechanisms.

8. An alternative approach: Combination with national efforts.

The arguments above would indicate that the scope for effective European voluntary agreements is limited. It seems unwise to embark broadly on a European voluntary agreement policy. Success is likely only if the effort is focused on industries where the best preconditions are found, if administrative and budgetary resources are taken carefully into account, and if bargaining chips are developed on basis of existing mandates and resources, rather than political mirages and hypothetical threats.

A greater scope for European level involvement may be found in actions that combine the European with the national level. As partner in voluntary agreements, member states seem in many respects to be in a stronger position than European authorities [21]. But it is not possible to conclude, that voluntary agreements should be left to the national level, as the cases examined in the VAIE study also indicate severe shortcomings on the national level, and a potential for stronger European involvement to improve the effectiveness of voluntary agreements. In particular, the member states have problems with the single market, which in many ways limit their ability to develop effective schemes. Shortcomings of the national level are discussed also by Torvanger & Skodvin [31].

The limitations on members states capacity for action are particularly evident in these fields:

- Credible threats of energy taxation are difficult to table in negotiations with the energy intensive industries, as they are known by both parties to have unwanted effects in the single market, i.e. to hurt the competitive position of national industry, create unemployment, etc. This consideration has been observed in all case studies as an important factor shaping national voluntary agreement policies.
- Subsidies are also difficult to table in negotiations, because they easily come in conflict with Community law. This problem required a lot of attention in the Danish case.
- Transnational companies do not fit well into national agreement schemes. There are signs in some of the cases studied that voluntary agreements engage transnational companies less effectively than national companies. Diverging and contradictory national approaches to voluntary agreements may lead to a certain balkanisation of energy management within transnational companies.

On the other hand, the member states have certain obvious strengths as policy level, compared to the European level:

- Larger administrative resources, closer to companies. The importance of this is particularly evident in the Dutch and Danish cases.
- Larger budgets in which to find means for economic incentives. This is evident in the Danish and Swedish cases.
- Ability to table more credible threats of taxation and regulation. This is obvious in the Dutch and Danish cases.

Combination of European and national action, taking into account the strengths and weaknesses of each level, may indeed be the most promising road to more effective voluntary agreements [32]. The most effective European voluntary agreement policy may be one that stimulates national action, removes hindrances, and provides some co-ordination. The cases examined for the VAIE study provide inspiration for a few illustrations of the potentials of a combined approach, as outlined in the table below.

Combination examples		Inspiration	Relevant experience
<i>European framework for national VAs.</i>	To allow national tax reductions and subsidies, the Commission might define certain minimum requirements for national VAs. Some contingency could be involved, so that the benefits allowed would depend on the targets of the VAs. The framework might be modified for specific industries through negotiation with European associations, but only in a direction that increases the scope for effective national action.	Danish scheme	The Commission already works this way, as evident from the Danish case. But it could be done more proactively, giving greater freedom of action for ambitious member states, and more incentive and guidance for less ambitious member states.
<i>European VAs combined with national taxation or subsidies.</i>	For industries where a European VA is established, national tax reductions and subsidies might be allowed only for those companies that join the European VA.	Danish scheme	The Swedish case is an example where national subsidies are associated with voluntary submission to a European directive (EMAS).
<i>National VAs combined with European subsidies.</i>	Environmental or non-environmental subsidy schemes at the European level, or other benefits to firms under European law, could be made contingent on participation in national VAs that fulfil certain minimum criteria.	Swedish scheme	The idea is similar to "cross compliance" within the CAP (Common Agricultural Policy), allowing member states to specify environmental conditions that farmers must meet to be eligible for subsidies given for non-environmental reasons [33, 34].
<i>European VAs combined with national policies for public procurement</i>	Single market law could allow discrimination in public procurement between companies that participate in European VAs and companies that do not participate.	Swedish scheme	The Swedish agreement scheme, with its emphasis on certification and labelling, clearly encourages some sort of environmental discrimination by buyers. European legislation could make such discrimination more effective and more acceptable in national public procurement policies [35].
<i>European VAs combined with local permits</i>	Local authorities could be encouraged to recognise European VAs in their permission procedures.	Dutch scheme	Local authorities in the Netherlands accept participation in national VAs as proof of sufficient environmental efforts in the particular field covered by the VA.

Strategies involving combination of European and national action have some resemblance to national strategies where voluntary agreements are used as an element in a policy mix rather than as a stand-alone policy. The VAIE study has found the most effective national schemes to be part of a policy mix [10]. Other studies [26, 37, 39, 40] also point to the advantages of policy mix strategies. Often the arguments put forward in

these studies in favour of a policy mix would apply also to combination of European and national action.

9. Conclusions

According to the principle of subsidiarity, voluntary agreements should be implemented at the European level only if that would have significant advantage over national action.

Action at the European level, rather than the national level, would have these potential advantages:

- Being more consistent with the development of the single market.
- Allowing higher demands on energy efficiency without negative effect on competitiveness and employment.
- Stimulating company-wide environmental management in transnational companies.
- Allowing the set-up of more extensive branch networks for exchange of information and experience.
- Helping less experienced member states catch up.
- Providing for deeper administrative competence and use of more advanced comparative methods, as the number of similar companies and productions would be greater than at the national level.

Therefore, a general prejudice in favour of European level agreements seems reasonable. But the VAIE study results would warn against premature conclusions based on such general arguments. The specific experience from industrial energy efficiency agreements at the national level, as examined in the VAIE study, indicates that success depends on parameters, that are not easily reproducible at the European level. This calls for caution, so that decisions to proceed on a European level is not based excessively on consideration of abstract advantages, but are based also on more practical considerations and a careful study of specifically relevant national experience.

Such considerations would seem to indicate that the combination of national and European level actions has more potential for success, than the pursuit of wholly European approaches. Most of the advantages of European level action could be exploited also by combined actions, whereas the strength of national action could simultaneously be preserved.

To judge from the national experience examined in the VAIE study, action exclusively at the European level should probably be confined to highly focused actions, directed at industries that are particularly amenable to European action. It should be carefully prepared through the development of a strong bargaining position on the public side, never based on vague political threats, but always on the ability to offer tangible and substantial benefits to the private side. It would need to include targets that are either carefully worked out to be self-controlling, or are embedded in a credible system for monitoring and sanctions.

Appendix A: Institutional lessons

„Institutions are the rules of the game in a society or, more formally, are the humanly devised constraints that shape human interaction“. This simplified definition by North [41] briefly defines the meaning of the term „institution“, as it is used in this appendix. More extensive reviews of the concept are found in [42] and [43]. While this is a fairly common definition in the social sciences, it deviates from vernacular or legal usage. In our terminology, the single market, the EMU or subsidiarity are European institutions - whereas Parliament, Council or Commission are not.

The purpose of this appendix is to draw lessons relevant for VAs at the European level from the national case studies included in the VAIE project. The selection of topics must be understood not as a reflection of the relative importance of these topics, but as a reflection of the content of the VAIE case studies, i.e. the material available for comparative analysis and the relevance of this material for policies at the European level. Topics, for which empirical evidence is lacking, or where no obvious lesson can be drawn, are not discussed. Thus, this appendix is certainly no substitute for comprehensive discussions of institutional factors that influence the effectiveness of VAs, as found in [18, 26, 37, 44, 45]. Nor is the appendix a substitute for a comprehensive discussion of institutional problems at the European level, as found in [14, 46, 47]. Rather, the content of the appendix should be understood as comment or input to such more comprehensive reviews, based on a specific (and limited) empirical material.

The national information included in the appendix has been drawn from the country reports of the VAIE project [6, 7, 8, 9, 11], supplemented occasionally by other sources [18, 26, 37, 40, 48, 49, 50], and has been enhanced through a dialogue with the researches responsible for country reports. For brevity, it has been necessary to exclude many details and peculiarities. The reader is therefore advised to use the tables only to gain a comparative overview, and not as a substitute for the national reports. The author of the present report has attempted to weigh the evidence from different reports on an identical scale, i.e. to suppress as much as possible divergences in assessment that arise from the fact that the national studies have been performed by different research teams in widely different institutional and policy contexts. Consequently, the final responsibility for the assessments and the terminology in these tables lies with the author of the present report, who have emphasised comparability and easy understanding over strict adherence to the inputs provided by the partners.

1. Institutional overview

The table on the following page provides a brief summary of the agreements schemes that provide the empirical foundation for the appendix. More comprehensive comparisons are found in [10].

page 17, Appendix A	Denmark	Sweden	Germany	Netherlands	France
1. Institutional overview					
Basic idea of the scheme.	Energy intensive production units committing themselves to energy efficiency investments and energy management get a reduction of energy taxes.	Companies preparing for ISO 14001 or EMAS certification get subsidies for energy audit and publicity.	In return for energy efficiency commitments by industry, the government refrains from taxation and other measures.	In return for energy efficiency commitments by industry, the government refrains from taxation and other measures, and makes additional subsidies available.	In return for CO ₂ reduction commitments by industry, the government refrains from taxation.
Private side	Individual companies or production units. (In a few cases assisted by a collective framework agreement with the relevant industry association)	Individual companies or production units.	The national organisation for manufacturing industry and several associations representing specific industries.	Associations representing specific industries.	Industry associations or individual companies.
Formality	Legally binding. Required measures clearly specified. Clearly enforceable.	Legally binding Vague demands. Not really enforceable	Has no legal force. Was formalised only in the form of a statement to the press by each side.	Legally binding, Agreed efficiency targets clearly specified Not really enforceable.	Has no legal force. The format is an industry commitment in front of the Minister for the Environment
Duration	3 years. Extension possible after new negotiation.	Typically 3-4 years.	10 years.	Mostly 4-8 years.	Mostly 4 years (counting from the time of signature).
Negotiation process	Formal negotiation with each company. This negotiation is based on documentation from an energy audit and a detailed proposal for an action plan presented by the company. Renegotiation of details is very common.	The company signs a pre-defined contract text. No formal negotiation, but there may be some informal discussions concerning mutual expectations.	A few weeks of intense high-level consultations, without any detailed documentation.	Complex negotiations (6-18 months) with each industry organisation, based on extensive analysis and documentation.	Negotiations with each industry organisation (or company) based on documentation.

2. Negotiation process

One important issue in the negotiation process is the availability of *information*. The public side needs information for the negotiation process itself as well as for the subsequent monitoring. In the negotiation stage information is needed about the options available to firms and industries. This helps the public side define its demands in the negotiations, develop its negotiation strategy, and more generally to increase the efficiency of the policy mix of which VAs would usually be only one element [51]. Subsequently, information is needed for the monitoring process, to check compliance with the agreements.

Firms may be willing to give more complete or relevant information in the context of a voluntary agreement, than what the authorities are legally mandated to require under existing regulation, or can realistically expect under future regulation. The cooperative atmosphere created by the VA may also induce firms to improve the quality of information gathering and also otherwise make the information more trustworthy.

In the agreement schemes examined in the VAIE study, only Danish and Dutch authorities have used the agreements as a vehicle to improve their information situation. In both of these countries, the authorities receive a wealth of new information as a result of the VAs. In other countries this is not the case. This seems mainly to reflect the authorities own priorities. There is no indication in Sweden, Germany or France, that the authorities have made any great effort in the negotiations to improve their access to information, whereas in Denmark and the Netherlands, a new informational regime has clearly been on the government agenda and has been effectively forced on the private side, as a precondition for getting voluntary agreements.

The information available to the public side in the negotiation process can have great influence on the outcome of negotiations. Therefore, significant efforts have been made to secure accurate and complete information in those countries (Denmark and the Netherlands) that have attempted to create a new informational regime. The table below shows in particular the level of sophistication with which this task has been addressed in Denmark.

Another issue, on which several authors have commented, is the *subject being negotiated*: Are negotiations about environmental target-setting, or only about ways to reach targets that were pre-defined in a separate political process? It is hardly surprising that NGOs strongly advice in favour of pre-determined targets. "The targets of an agreement must be set beforehand at the policy level and be confirmed by parliament. They must not be negotiable by industry" [52]. Similar views are often mirrored by researchers. For instance, Ashford & Caldart [53] argue that "negotiated compliance" would often be the most effective voluntary approach. ELNI [44] finds that the agreements are more effective when targets are pre-defined in a democratic process, because this sets a better stage for negotiations and adds pressure from the public in the implementation stage. This type of orthodoxy is questioned by some authors on basis of formal modelling. Segerson [13] finds that with a strong background threat of legislation or an ability on the public side to provide subsidies at low social cost, VA negotiations may result in superior environmental protection. In a VAIE report, Gårn Hansen [54] introduces a concept of policy process efficiency, and shows that under certain conditions negotiated target setting may produce more demanding targets than a more conventional policy process. Similar conclusions would follow from Grepperud's argument [55], that one of the advantages of VAs is to allow political horse-trading between environmental and non-environmental policy issues.

In Commission documents, support can be found for both views. "The negotiation of such agreements needs as a pre-condition a clear commitment and determination by the authorities to pursue well defined environmental objectives ... It is certainly helpful to set the general targets through legislation", is the general view [46]. "Industrial associations that are interested in environmental agreements are invited to come forward with proposals for concrete targets", is the specific procedure suggested by the Commission for meeting Kyoto targets [56].

Observations concerning the agreement schemes studied for the VAIE report seem to support the orthodox view. The two most effective schemes (in Denmark and the Netherlands) also have a well-defined institutional separation between target setting and negotiation, whereas the situation is more muddled in the less effective schemes.

The literature occasionally includes discussions concerning the most appropriate *hierarchical level* for negotiations. ELNI [44] found that the effectiveness of agreements were greater when actors most involved in the implementation stage were also actively involved in the negotiation stage. The authors suggest that this is true for both sides in the negotiation, so that effectiveness is increased for instance by involving local government in the negotiation stage (in case it has something to do in the implementation stage), as well as by negotiating directly with firms, rather than with industry associations as intermediaries. On the other hand, Börkey et al. [26] point to the risk of regulatory capture if VAs are negotiated by staff too involved in daily administration and with insufficient supervision by upper administrative levels. As a safeguard against regulatory capture they propose a parliamentary veto against VAs.

In the agreement schemes examined in the VAIE study, the most effective agreements are negotiated on the public side by staff close to the daily administration. It is staff that is also involved in the subsequent monitoring and renegotiations. There is no evidence of any intensive supervision from upper administrative levels. On the other hand, some less effective agreements have been negotiated at a much higher level. On the private side the most effective agreements were often negotiated at a fairly low level by staff specialised in energy issues, as experts, consultants or energy managers. Negotiation at the level of company presidents or industry association presidents produced some of the less effective agreements. These observations would seem to support the findings of ELNI [44], rather than the warnings of Börkey et al. [26]. It needs to be added however, that the observed cases of negotiation at low hierarchical level are also cases where negotiations are based on a strong framework of prior parliamentary and/or government decisions (legislation in the Danish case, well-defined targets in the Dutch case), empowering low level civil servants as well as guiding their actions. This type of framework is lacking in the other cases.

Institutional *lessons* for VAs at the European level appear to be:

- that voluntary agreements can indeed be an instrument to provide the public side with information considerably in excess of what is available under existing legislation, and can thereby be an instrument for more enlightened decision making on the public side.
- that targets should usually be pre-defined through authoritative political decisions, and not be part of the negotiation. Exceptions from this rule could be advisable in specific cases, but only on basis of a prior analysis showing why this may be a superior strategy.

- that high level negotiations may not produce the most effective agreements. A better institutional approach is probably the unilateral establishment by high-level actors of a strong framework of legal instruments and/or authoritative targets, enabling low-level civil servants to perform the negotiations, taking advantage of good knowledge of the industry and the private counter parties. (The Dutch experience, with NOVEM as an independent organisation, might even be interpreted as a successful outsourcing of negotiations, based on prior fixed targets. The limited staff resources of the Commission might make such alternatives attractive).

page 21, Appendix A	Denmark	Sweden	Germany	Netherlands	France
2. Negotiation process					
<p>Information available in the negotiation process.</p> <p>Origin and degree of consensus.</p>	<p>Negotiations are based on a complete energy audit for each production unit, performed according to government specifications. The audit includes specific suggestions for efficiency improvements. These suggestions include payback time calculations. The information is disaggregated to the level of individual energy consuming processes and installations.</p> <p>The audit secures a high level of independent information. It is performed by a consultant chosen by the company from a list of consultants authorised by the public side. It is subsequently subjected to a peer-review process, conducted by an independent certification organisation.</p> <p>The consultant is regarded primarily as the company's advisor, but must follow the government guidelines. Potential pressures from the company are counteracted by the peer-review process, as it is not in the interest of the consultant or the company to have the audit questioned in this process.</p> <p>The public side sanctions consultants that are seen to deviate from professional standards. 8 consultant are on an "observation list", the last warning before they lose their authorisation.</p> <p>This procedure secures a high degree of consensus about the final version of the audit, which is used as starting point for negotiations. Many controversial issues are settled between the company and the independent experts before the start of formal negotiations.</p>	<p>(Not relevant as there is no negotiation.)</p>	<p>No significant analysis or documentation was used.</p>	<p>Negotiations are based on an exploratory survey conducted on company or industry level. The survey includes potential conservation measures and results. Experience shows that this inventory usually indicates a higher potential than companies previously estimated as feasible.</p> <p>The surveys are conducted by an independent consultancy, that is trusted by both sides.</p>	<p>Data provided by the private side was accepted as the basis for negotiations.</p> <p>The government also had available its own study of industry-by industry energy efficiency potentials, conducted a few years before the negotiations. This study identified efficiency potentials through a comparison with best observed performance for a large number of technologies. The study had limited impact on the negotiations, as there was no consensus on the findings. But it did provide some inputs to the debate on technical solutions for particular industries.</p>

page 22, Appendix A	Denmark	Sweden	Germany	Netherlands	France
What is negotiated: Targets or implementation?	<p>Implementation.</p> <p>The basic requirements on firms (investment criteria, organisational measures) have been defined unilaterally by the public side, and are not up for negotiation, unless the private side can suggest other ways of achieving equivalent improvements in energy efficiency.</p>	<p>Emission targets are defined unilaterally by firms.</p> <p>Basic targets for organisational change are defined unilaterally by the public side.</p> <p>The is no negotiation on either.</p>	Targets and implementation.	<p>Implementation.</p> <p>The aggregate target is determined unilaterally by the public side, but there is some room for negotiating the distribution among industries.</p>	<p>Targets and implementation.</p> <p>The public side suggested targets that were expected to be acceptable to industry, as they were based on business-as-usual projections. The suggested targets appear to have been accepted without much negotiation.</p>
Characterisation of the negotiation process	<p>Given the audit and the government-defined criteria for an agreement, there is only limited room for negotiations.</p> <p>Outstanding questions are negotiated in a co-operative way, with emphasis on overall results, rather than specific measures.</p> <p>In fact, the largest amount of negotiation seems to take place in the implementation process, after the agreement has been signed. The private side often wants to do things differently than agreed, and the public side is quite flexible about changes, as far as there is no reduction of results and no significant delays.</p>	(Not relevant)	Both parties needed to make a quick show of their ability to secure results, before the Berlin conference (COP1). Agreement was more important than substance.	A co-operative effort, where the parties more or less are in agreement on the need to intensify energy efficiency efforts, discuss how they can support each other to achieve this goal, and work together to formalise a regime for co-operation.	<p>Partly a co-operative effort to get enough action to avoid the risk of CO₂ taxation and negative effects on competitiveness.</p> <p>Partly a show, where the parties sit together in order to proclaim, "that something is now getting done". The government was reassured that measures already planned by industry would be sufficient to achieve French Rio commitments.</p>

page 23, Appendix A	Denmark	Sweden	Germany	Netherlands	France
At what political/administrative level are negotiations concerning the individual VAs performed?					
<i>public side</i>	<p>Typically by junior civil servants in the national energy administration.</p> <p>In the normal course of the negotiations, two junior civil servants, one with a technical background and one with a background in social sciences or law negotiates with the company.</p> <p>Senior civil servants (chief of section or higher level civil servants) are only involved in special cases.</p>	<p>No formal negotiation. Informal consultations are exclusively on a junior civil servant level in the national energy administration.</p>	<p>Start of negotiation by the prime ministers office and with top-level actors from the environmental and economic ministries.</p> <p>Then negotiations were taken over by two senior civil servants from the environmental and economic ministry.</p>	<p>Negotiations are done by senior civil servants.</p>	<p>The key negotiator was the Minister for the Environment Initial negotiations of the VA also involved other high level officials from the national energy administration and the Industry Ministry, but they didn't have a role in striking a deal.</p>
<i>private side</i>	<p>The energy manager of the company or other senior company representatives.</p> <p>It is fairly common that the actual negotiations are performed by the independent energy consultant who conducted the energy audit. He then represents the company in a kind of mediator role.</p>	<p>Informal consultations are typically performed by the energy manager of the company.</p>	<p>A negotiation group formed by the energy policy experts from the major industry associations, coordinated by the national industrial association.</p>	<p>An expert from the industry associaton together with energy experts from the major companies in the industry.</p>	<p>Presidents of companies and industrial associations.</p>
Could the negotiation process be successfully reproduced at the European level?	<p>Yes, with moderate difficulties.</p> <p>The Danish process depends on detailed and reliable information, clear rules, plenty of administrative manpower and a significant economic benefit offered by the public side.</p> <p>Similar conditions could be fulfilled at the European level, with moderate difficulties.</p> <p>If these conditions were fulfilled, a large number of similar negotiations could certainly be made by staff of the European Commission.</p>	<p>Yes, easily.</p> <p>Because there is no real negotiation. A prepared standard form is signed.</p>	<p>Yes, but only if similar weak results were acceptable.</p>	<p>Difficult.</p> <p>On the public side, it would require an administration with much higher capacity for detailed industry analyses than presently available to the Commission. This would require several years of institution building.</p> <p>On the private side, European industry associations are in general much too weak in their mandate to commit their members, and usually also in their analytical capacity. Some exceptions may be the steel and chemical industries.</p>	<p>Difficult.</p> <p>Negotiations at European level might face the same acute asymmetric information problem regarding how ambitious goals on CO₂ reduction could be asked from industry without imposing too high costs,</p> <p>The reliance on negotiations at a high level makes a reproduction difficult, as the number of companies is greater on the European level and the associations are weaker in their ability to commit their members.</p>

3. Compliance and sanctions

"Covenants, without the sword, are but words", wrote Hobbes [57]. In this spirit, some authors [18, 40, 44] regard the institutionalisation of a system of monitoring and enforcement as pivotal for the effectiveness of voluntary agreements. Croci & Pesaro [58], in a study of 27 voluntary agreements in Italy, found that adequate mechanisms for checking the firms' success in reaching set objectives were missing. More than half of the agreements did have well defined and legally binding commitments, but none had sanctions or any other form of penalty in case of non-compliance. Without such mechanisms, the legitimacy and social acceptability of VAs were found to be endangered. Börkey et al. [26] refer to "a credible mechanism of sanctions for non-compliance" as one of the safeguards against major drawbacks of negotiated agreements.

Other authors, while also emphasising the importance of monitoring, conceive of this more as a communicative process than as part of an enforcement system. Glasbergen [50] understands the effects of Dutch VAs in terms of the learning process they trigger. A momentum for change results from the process of drawing up improvement plans and from the establishment of a systematic monitoring system. Companies are stimulated to investigate energy saving options more thoroughly than before. As a consequence, many companies approach energy issues more actively and in a more structured way, and say so themselves.

In the agreement schemes examined in the VAIE study, and summarised in the table below, compliance is judged to be high in those cases, where an effective monitoring system is in place, i.e. Denmark and the Netherlands. In these countries, sanctions are also available and occasionally used, though the main instrument for securing compliance is an extensive communication process. Sanctions have been accepted in these cases without significant opposition from the business community. However, the main characteristic of these countries is not the use of sanctions, but a continuous and often very detailed communication with firms, institutionalised in the form of an monitoring system with a high level of capacity and competence.

Lessons for VAs at the European level appear to be:

- that sanctions are only found in those VAs that offer the most substantial rewards to the private side, as discussed above (page 12). When substantial rewards are offered, it is feasible to reach agreement on mutual commitments including a system of sanctions.
- that the actual use of sanctions is possible without major conflict with industry representatives (and may even be welcomed as a protection against free riders).
- that a differentiated system of sanctions would be preferable, so that it is possible to enforce discipline without resorting to draconian measures.
- that even if sanctions can be helpful, it is effective monitoring that is the key to compliance. Highly developed institutions for the monitoring of performance is an important characteristic of effective agreement schemes.

page 25, Appendix A	Denmark	Sweden	Germany	Netherlands	France
3. Compliance and sanctions					
Does the agreement give the public side access to performance information, that did not have in beforehand?	Yes, an extensive right to information.	Not formally.	No.	Yes, access to energy conservation plans at the start of the agreement and in following years access to monitoring results.	Yes, information on CO ₂ emissions, but on an aggregate level that is unlikely to reduce the asymmetric information problem.
Does the agreement provide for any sanctions (beyond peer pressure and bad publicity)?	Yes. Cancellation of future and past tax rebates. If agreed investments are not made, tax rebates can be cancelled backwards approximately one year. If information were withheld or misrepresented, tax rebates can be cancelled backwards for the whole period of the agreement.	Yes, but not much. As the main government contribution is the paid energy audit, which is provided up front, the government doesn't have much left to use for sanctions if the firm is subsequently found to default on its commitments. Mainly, right to use the EKO-energi label can be withdrawn. But as the label is not much used, this is a very weak sanction.	No	Yes. Firms can be pressured by the specific industry association or the national energy administration. Firms can also be expelled from the agreement, which gives bad publicity. The agreement can even be cancelled for the whole industry covered. This deprives firms of some financial resources and technical assistance and moreover firms must then comply with regulatory energy requirements included in their environmental permits.	No
<i>are sanctions mostly symbolic, or are they severe enough to make a breach of the agreement uneconomical?</i>	Severe. Fulfilling the agreement would often be cheaper than paying the normal energy tax.	Mostly symbolic. The firm would lose certain advantages, but on the balance it might well save money through a breach of the agreement.		Somewhere in-between. The firm would lose certain advantages, but would also save some money.	
<i>are they being used?</i>	Yes. (one case so far).	No.		Yes. Several firms have been expelled from the agreements, because they did not meet the obligations or demonstrated a passive attitude towards the agreement. Others have left the agreement on their own accord. In total, 45-50 contracts have been terminated.	

page 26, Appendix A	Denmark	Sweden	Germany	Netherlands	France
Reasons for the choice of sanction mechanisms.	<p>The reason for the severe sanction is that the agreements are related to tax reductions, i.e. a substantial state subsidy. Both European and national regulation require that the administration of such scheme is strict.</p>	<p>Participation is entirely voluntary. If companies join the programme, they are expected to be reliable partners. No elaborate system of sanctions is required.</p> <p>This reflects a national political culture with high expectations concerning the seriousness of business partners, and a policy style that emphasises a clear distinction between regulation and voluntary collaboration.</p>	<p>During the negotiations, emphasis was put on concluding an agreement at all, and less attention was given to sanctions.</p> <p>As targets are very close to business-as-usual, sanctions did not seem important.</p>	<p>Initially no sanctions mechanisms were included as the basis for the VA is mutual trust.</p> <p>Later when some industries or firms did not comply, sanctions (fairly weak) were introduced.</p>	<p>The French Constitution does not allow for laws, regulations or agreements to set and enforce "collective" objectives. That means that whenever a collective objective is fixed, it is not enforceable, unless it is translated in firm-level commitments or standards.</p> <p>Even a single-firm VA is difficult to make enforceable. A court ruled (on constitutional grounds) that the government is not allowed to sign contracts enforceable under the law involving commitments which refer to areas of government regulation (to avoid a clash between the jurisdiction of government and its role as civil part in a lawsuit).</p> <p>A collective VA can become enforceable if it is attached to a regulation. An example is the collective packaging-recycling scheme. Participation in this scheme exempts firms from a decree stating that each individual firm is responsible for the recycling of packaging.</p>

page 27, Appendix A	Denmark	Sweden	Germany	Netherlands	France
<p>To what extent does significant non-compliance occur without the use of sanctions? What is the reason why available sanctions are not being used?</p>	<p>Significant non-compliance is quite rare.</p> <p>Problems are often solved through renegotiation, where companies are allowed to substitute with other measures (if this can be done without significant delay), or where changing circumstances are taken into account (reduced production might motivate a recalculation of the pay-back times, on which the agreement is based).</p> <p>Many small neglects (e.g. in relation to the energy management) and delays happen without being sanctioned. In these cases the neglect is pointed out by the public side. The company is given a new (short) deadline after the expiration of which the agreement will be cancelled, if the company hasn't complied. The reason why the public side does not sanction non-compliance immediately is that only a very severe sanction (revocation of tax reduction) is available.</p>	<p>Difficult to judge.</p> <p>As the agreement is quite soft, it is rather difficult to define non-compliance.</p>	<p>At the industry level compliance is high, as would be expected with targets very close to business-as-usual.</p> <p>At firm level, there appears to be significant free riding by smaller companies, but as the targets are not formally distributed to the firm level, this is not non-compliance in a strict sense.</p> <p>This free riding by smaller companies does not usually compromise the industry results, as these depend much more on the achievements by the large association members.</p>	<p>Difficult to judge.</p> <p>At the association level, there are no significant compliance problems, but at the level of single firms there seems to be more problems.</p> <p>A possible reason why sanctions were not used for quite some time is that agreement covers a ten-year period and targets are defined for the end of the period.</p> <p>Moreover the agreements are on an industry level. In the early days of the agreement scheme, there was little interest in the commitments of the individual firms.</p>	<p>CO₂ targets defined relative to production volume are likely to be met.</p> <p>Some absolute CO₂ targets are also likely to be met. But others are compromised by higher-than-expected growth.</p> <p>Compliance with the relative targets is hardly surprising, as these targets were set at a level reflecting improvements that were already decided or even implemented at the time of negotiations.</p>
<p>Is there any significant free-rider problem?</p>	<p>No.</p> <p>The national energy administration would exclude a company from the industry agreement in the event of non-compliance.</p>		<p>Not among the larger companies. (Commitments are very close to business-as-usual)</p> <p>There appear to be a free-rider problem among smaller companies.</p>	<p>No.</p>	<p>No free-rider problems have been observed.</p> <p>But the willingness of companies to make an effort depends on whether they are involved in a restructuring/investment process. (This might not be a free-rider problem, but an example of the flexibility of collective agreements).</p>

page 28, Appendix A	Denmark	Sweden	Germany	Netherlands	France
<p>Would the methods used to secure compliance be likely to work also at the European level?</p>	<p>Yes, with roughly the same effectiveness.</p> <p>Individual obligations may also work at the European level. Courses and information may work just as well at the European level</p>	<p>Yes, due to the use of EMAS and ISO-14001 standards as the main instruments to secure compliance.</p>	<p>Only if the targets are equally un-ambitious. .</p>	<p>No.</p> <p>Industry associations must have strong organisational capabilities and a certain amount of authority.</p> <p>There must be an organisation trusted by both sides with sufficient competence and capacity to check companies individually.</p>	<p>No.</p> <p>The mechanism for pressure is not likely to be reproducible at the European level.</p>

4. Verification.

Verification is an important institutional foundation for the control of compliance and the use of sanctions. It can also be a major administrative burden resulting from voluntary agreements. This burden may even be larger than for command-and-control methods, because negotiations can add to the complexity of commitments.

The literature emphasises the importance of a suitable institutionalisation of verification. Often verification through an independent third party is recommended [26, 38, 52]. Such independence is hardly a panacea, however, as illustrated by Biekart [18], demonstrating how the involvement of a third party can also be a means to reduce openness and accountability.

In the cases examined in the VAIE study, the most comprehensive verification efforts are found in Denmark and the Netherlands. Both of these countries have built a significant administrative capacity for verification, but they have taken opposite positions on the question of third party verification. Denmark has mostly avoided involvement of third parties in the verification process, and usually handles the verification in direct contact between the civil service and the firms. The Netherlands has built a strong independent organisation, NOVEM, with responsibility for all verification. Only quite limited information is passed from this organisation to the civil service and the public. In spite of these differences in the formal set-up, there are also significant similarities. Both countries have emphasised a close relation between negotiation, monitoring and verification, as these tasks are mainly performed by one organisation, typically using the same staff for all aspects of relations to a specific industry.

The comparison between Denmark and the Netherlands does not confirm the importance of third-party verification. Rather, the important issue seems to be the creation of sufficient administrative capacity for verification independent of firms and industrial organisations. Whether this is done in the form of independent organisations or directly in the civil service, seems much less important. The choice of organisational forms seems more important in relation to other issues, such as political control and openness.

The other countries examined in the VAIE study have much weaker verification. It may still be effective, as in the German case, but only because the commitments have a form that is easily verified. As such generalised commitments are unlikely to be sustainable when more significant CO₂ reductions are required, the German verification experience has little relevance for future European VA policies.

Taking these considerations into account, and summarising information from the table below, the lessons for VAs at the European level appear to be:

- that a serious effort at verification requires the build-up of significant competence and administrative capacity
- that it is less important (for verification) whether this build-up takes place within the civil service or in independent third party organisations. This difference is mainly important for other issues (transparency, political control).
- that the effectiveness of verification also depends on the type of results to be verified. Some results (specific investments, CO₂ reduction targets) can better be verified than others (effectiveness of energy management systems).
- that the effectiveness of verification is also contingent on the precision of the commitments included in the agreements.

Most of the observations concerning verification would be relevant also for regulation as policy instrument, and therefore has little relevance for the choice between these types of instruments. The verification problems observed have more relevance for the choice

between VAs and taxes, as taxation would typically be based on parameters that are easily measured and verified.

page 31, Appendix A	Denmark	Sweden	Germany	Netherlands	France
4. Verification.					
<p>Who verifies compliance with the agreements?</p>	<p>Verification is basically done by staff of the national energy administration.</p> <p>Occasionally independent consultants are employed by the administration to supplement its own verification capacity.</p> <p>For special investigations required in the agreements, verification by an independent agency is sometimes required.</p> <p>In the (few) collective agreements, industry associations can have the task of co-ordinating the reporting to the national energy administration.</p> <p>In-house verification by government staff has been chosen as the main method, because the national energy administration wishes to maintain in-house competence and to stay in close touch with industry. It also reflects the fact that the administration has sufficient capacity to do most of the verification, even if the staff lack knowledge about specific production processes.</p>	<p>Verification is basically done internally by company staff.</p> <p>Compliance with external commitments is required by EMAS and ISO 14001 standards, and must be monitored internally in order to conform to the standard.</p> <p>The actual working of this is checked periodically by certification agencies.</p> <p>Staff of the national energy administration tries to stay informed through informal contacts and visits in companies.</p> <p>This strong reliance on self-verification reflects the wish of the national energy administration to take advantage of the EMAS and ISO 14001 standards, and the wish to work as a service organisation rather than a bureaucracy.</p>	<p>Verification is basically done by an independent organisation, RWI.</p> <p>RWI does this on a contract paid jointly by industry and government.</p> <p>The results of this verification are monitored by staff in three ministries (Environment, Economy, Industry)</p> <p>This arrangement was chosen due to the lack of sufficient administrative capacity in any of the ministries, and due to the wish to create a neutral institution for verification.</p>	<p>Verification is basically done by staff of an independent organisation, NOVEM, formally a private company.</p> <p>This approach has been chosen because NOVEM already had know-how about energy conservation in the industry and moreover could act as a more or less independent intermediary between on the one hand the Ministry of Economic Affairs and on the other hand the industry associations and the firms. The agency could also guarantee the confidentiality of specific information as it is formally outside the public administration and not subject to the same rules of open access to information.</p>	<p>Verification is basically done by staff of the ministry for the environment.</p>

page 32, Appendix A	Denmark	Sweden	Germany	Netherlands	France
<p>Please describe the verification process that ensures compliance after the agreement has been signed.</p>	<p>Verification is based on self-reporting from the companies.</p> <p>The staff of the national energy administrations checks yearly reports against agreed commitments. If necessary, they request additional information, require meetings, renegotiate if necessary. (Inspection is possible but rarely practised).</p> <p>Documentation for investment projects is often available because the costs have been documented in connection with a subsidy application. Otherwise, they can easily be verified by copies of invoices.</p> <p>When special investigations are required by the agreement, the company must report the results, and in some cases the report must be verified by the verification agency.</p> <p>Implementation of energy management must be described and the results evaluated by the company as part of the self-reporting.</p>	<p>Verification is based on EMAS and ISO 14001 procedures.</p> <p>These require the company to internalise its external environmental commitments, and to maintain procedures for review of results and policies.</p>	<p>Verification is based on self-reporting from companies and on official statistics.</p>	<p>Verification is based on self-reporting from companies.</p> <p>Companies must typically deliver their energy conservation plan and their monitoring results to the national energy administration</p> <p>The energy conservation plan and the monitoring results must be in accordance with some pre-defined guidelines. The plan must be updated regularly.</p> <p>The staff of the national energy administration checks:</p> <ol style="list-style-type: none"> (1) if these documents are actually delivered and updated; (2) if they conform to guidelines; (3) if measures outlined in the energy conservation plan are implemented or not; (4) if results are satisfactory and enough effort has been put into implementation. 	<p>Verification is based on self-reporting from companies or associations.</p> <p>The staff of the ministry simply gathers information from the companies or associations who signed the VA.</p> <p>At the association level, one person is in charge of gathering information from participating firms.</p>
<p>What is the size of the staff employed to verify the fulfilment of the agreements?</p>	<p>10-15 persons in the national energy administration. But they also have other tasks.</p> <p>36 man years have been granted to the national energy administration to the administration of both agreements and investment grants agreements/178 companies covered in 1997</p> <p>The administrative cost in the national energy administration in relation to CO₂ reduction: 4-8 EURO/ton (more expensive than both taxes and investment grants)</p>	<p>Unknown.</p>	<p>1 full time researcher, at RWI.</p> <p>Additionally, a total of 3-4 persons work part-time with the agreements in the involved government departments and in the national industrial association.</p> <p>Some staff resources are also used in the various industry associations.</p>	<p>Each industry has its own co-ordinator in the national energy administration, who is besides other tasks responsible for the verification of the agreement. It is unknown whether more people are involved in the verification process.</p> <p>An average monitoring cycle per industry per year costs about ECU 50000 for the participating industry and about the same for the supporting organisation.</p> <p>Number of industries covered amounts to 26, with an energy consumption of 520 PJ</p>	<p>At most 1 high official and two intermediate officials are involved in verification for all the VAs. But they certainly do not work full time on this task, as they are in charge of industrial pollution more generally.</p>

page 33, Appendix A	Denmark	Sweden	Germany	Netherlands	France
What is your judgement on the effectiveness of the verification?	For investment projects: Quite effective For other agreed activities, such as energy management: Less effective.	Difficult to judge.	Effective.	Moderately effective	Ineffective
What is the reason for the effectiveness / ineffectiveness of the verification?	For investment projects: Verification is simple. For energy management and special investigations: Self-reporting is required, but it is difficult to check the content.	Monitoring is probably so strongly institutionalised in the majority of participating companies, that plain cheating is difficult and unlikely (as with economic accounting). Most companies would probably prefer to be open about compliance problems.	As the agreement is only concerned with aggregate performance on industry level, verification is fairly simple.	Several reasons: - energy conservation plans do not contain enough detailed information to check results and give feedback; - There is not enough access to detailed information to check results; - differences in monitoring systems among the industries; - too much use of correction factors; - discrepancies between agreement figures and energy statistics.	The public side see the VAs as industry declarations of good intentions and not as regulatory instruments. There doesn't seem to be any strong desire to evaluate them.
Could the verification mechanism be successfully reproduced at the European level?	Yes. But it might be too costly.	Yes. Assuming that EMAS and ISO 14001 certification is reliable in all member states. But the possibilities for fraud with subsidies and misuse of the official label may require more attention.	Yes.	Yes and no. The format could be reproduced by a decision on the European level, since most of the loopholes are known. But the actual verification could hardly be done without a national intermediary. It requires large amounts of detailed data and mutual trust between verifying authorities and the firms.	Not worth reproducing.

5. Openness and accountability.

As a social institution, openness is an important foundation for accountability. In order to hold polluting firms and public authorities accountable, the public (and its agents, such as media and NGOs) needs access to information about energy efficiency potentials, commitments and results. This view is often reflected in command-and-control systems implemented for environmental purposes. Even though there are considerable differences between countries, environmental command-and-control systems tend to be fairly open. Standards are usually defined through the parliamentary process or through some kind of administrative hearing process. Permissions for individual firms are often granted or revised after a process of public hearings. A great amount of written documentation is produced in these command-and-control procedures, and a significant part of this material may be available to the public.

Voluntary agreements are sometimes described as more communicative than command-and-control methods. This may be true in the sense, that face-to-face negotiations may involve more intensive and free communications between authorities and business representatives, and may include more in-depth discussions of thorny issues and more creative search for innovative solutions. But at the same time, this communication may be more informal and even secretive than typical for command-and-control methods. Negotiations may involve less written materials, or access to written materials may be more restricted. In countries, where openness is not a general legal norm of public administration, but contingent on specific legislation, the public may have less access to documentation, because it is provided voluntarily, outside a legal framework demanding openness. Performance may be monitored by a third party, or even by self-control, which may tend to reduce the amount or quality of detailed information available to the authorities and the public.

Observations from the case studies, as summarised in the table below, suggest that voluntary agreements compromise openness in those countries that have a strong tradition of openness (Sweden, Denmark, the Netherlands). In these countries, VAs appear to somewhat undermine existing institutional foundations for accountability. In countries with more secretive traditions (France and Germany) the observations are contradictory. The evidence does indicate a potential in these countries for using VAs to increase openness. But partly this openness appears to be contingent on the PR needs of specific industries, and to be subject to change according to unilateral decision by industry. When that is the case, there is obviously no firm institutional foundation for accountability.

These observations are consistent with concerns about transparency expressed in the literature. An EEA report [38] regards wider use of VAs as dependent on improved credibility and accountability, which again requires greater transparency all the way from negotiation to evaluation. Börkey et al. [26] point to transparency concerning the environmental performance and potential of individual firms and industries as a significant safeguard against agency capture. Biekart [18] is critical about the lack of openness concerning the company level in Dutch long term agreements on energy efficiency, and remarks on the inferiority of these agreement compared to normal regulatory procedures. He argues that public access to information on the results of agreements and the performance of individual companies should be an essential design criteria for VAs. One of the reasons he gives is that public access to information "provides a strong impetus for companies not to stay behind, but rather to stay even with the pack, or even perform better than others for reasons of market opportunities or public relations". Thus, openness may be intimately related to the environmental effectiveness of VAs.

As explained above, there is a certain logical nexus between VAs and reduced openness and accountability, so that attempts to make VAs more open may run against some of the other motives for using VAs. This is confirmed by the moderately negative observations from countries with strong traditions for openness. When considering VAs at the European level, this suggests a need for careful attention to such questions, particularly in light of the present emphasis on increased openness and accountability at the European level [59].

page 36, Appendix A	Denmark	Sweden	Germany	Netherlands	France
5. Openness and accountability.					
Was the process of establishing the AS an open process, which could be followed by all interested parties and by the media?	Yes, at least in the parliamentary phase.	No, as it was a completely internal process in the national energy administration.	No	Yes, but it happened rather quickly.	No
What was the amount of public debate concerning the agreement scheme?	Very little public debate. But the energy taxes, that were part of the same package, were hotly debated and covered extensively by the media.	No public debate	A few journal articles and some research discussion	Fair coverage by some of the media.	Public debate before, but not during or after the negotiation.
What documentation is available concerning the individual VA?	The following materials are available, but with deletion of all sensitive business information: The agreement itself, including all appendices. Progress reports by companies. All correspondence in and out of the national energy administration concerning progress reports, verification, renegotiation and sanctions. Official evaluations made by third parties contain quantitative information on the aggregate results, but not on the individual VA.	The following materials are available, but with deletion of all sensitive business information: The agreement itself, but it is a standard text and very brief. (½ page). Published environmental reports by the participating companies. These would usually have to comply with ISO 14001 or EMAS standards, and in fact they are often are more informative than required. Additional information that companies are required to make public according to the EMAS standard.	The text of the agreement and reports on fulfilment. But there is little information in these materials, and the quality and content of the specific industry reports differ significantly.	At the industry level, a lot of information is available, but not on the firm level. The industry level material that is available includes: - the text of the agreement, including all appendices; - progress reports by the private side; - evaluations by the public side of performance and fulfilment of the agreement.	The text of the agreements, as published in the Bulletin Officiel. No other materials are available. (Not even general evaluations).
What is the situation for a journalist or politician, who wants to check up on the results of the VAs?	Information is available, but requires a lot of work to dig out.	Information is available, but requires a lot of work to dig out. Would be difficult to conclude anything, because the targets are soft and the available company information is not specifically about the agreements.	Information is available, but requires a lot of work to dig out.	Information is easily available, as long as your investigation does not go deeper than the industry level.	Information is not always available. But things are changing, as more and more information is being put on the web site of the ministry for the environment and the ADEME
To the extent that information is available, is it also reliable?	Yes	Yes	Yes, more or less.	Yes	Yes
To the extent that information is unavailable, is this because it does not exist on the public side, or because of secrecy.	Secrecy concerning sensitive commercial information.	It does not exist on the public side.	Non-existing, or not compiled and processed in an appropriate manner	Information on firm level is secret.	A mix of both, at a time when the government is deciding how climate policy will be pursued.

page 37, Appendix A	Denmark	Sweden	Germany	Netherlands	France
Is there more or less openness about the commitments contained in VAs, than there is about similar regulatory demands on companies?	Probably less openness. Regulatory demands are less likely to be secret.	Less openness. Regulation would typically require more extensive reporting, and a lot of this information would be available to the public.	More openness.	Less openness. Regulatory demands (e.g. the environmental permit) are accessible for the public.	There is no problem in obtaining info on commitments
Is there more or less openness about the results of VAs, than there is about results of similar regulatory demands?	The same or less openness. Materials on fulfilment of regulatory demands are less likely to be secret.	Less openness. Regulation would typically require more extensive reporting, and a lot of this information would be available to the public.	More openness.	More openness.	It is quite difficult in general to get access to policy evaluations and results.
To what extent do the industry associations or companies involved in VAs themselves publicise their commitments and results?	No activity	The participating companies want a green image, and typically do a lot of PR for this purpose. Most of them publish yearly green accounts. But the EKO-Energi scheme is often regarded as a small part of the green activity, and therefore only receives casual mention.	Significant efforts by some industries, that feel a need to improve their environmental image. Other industries are quite passive. Typically, it is the participation that is publicised, not the information needed to evaluate the performance.	Publicise substantial detail, in their annual environmental reports or similar documents, of sufficient quality to allow an evaluation of their performance.	They publicise it, in their annual reports and business forums without much detail. The packaging glass industry initially embarked upon a campaign of open information, but later changed policy.

6. Role of industry associations

The pro's and con's of involving industrial associations in voluntary agreements is a recurrent theme in the literature. Glasbergen [19] regards the mediating role of industrial associations as important for the kind of targeted pollution policies that has been developed in the Netherlands, and argues that "an institutionalised field of societal actors" is a precondition for a successful policy of voluntary agreements. Börkey et al [26] demonstrates a number of potential gains from collective schemes. In a VAIE report, Glachant [60] shows that in collective schemes, an efficiency argument can be made for a strong industrial association as mediator in the distribution of targets, rather than having the regulator deal directly with firms, or firms bargaining directly among themselves.

On the other hand Ashford & Caldart [53] warns against the dependence on bargaining power, rather than regulatory power, that may result from attempts to negotiate industry-wide voluntary schemes. "The relative bargaining power of the stakeholders largely determines the outcome, unless it is checked at the end of the process by a government agency with a strong sense of trusteeship for the congressional policy it is charged with implementing. Agencies who see themselves as *mediators* of the negotiation, or who otherwise relinquish their statutory role as trustees, help to promote a market-like result through the operation of the consensus process". Good results are only likely if the agency involved has both the means and the will to take a firm position. Börkey et al [26] more extensively outlines the problem of regulatory capture by strong organisations.

The con's tend to be related to the involvement of industrial associations in the policy definition or target setting process, whereas the pro's tend to be related to involvement in the implementation process, including the distribution of the collective target among firms. National experience and political culture would also seem to be an influence on the position of different authors.

The schemes examined in the VAIE study demonstrate, that certain industrial associations are in fact credible and valuable partners in voluntary agreements. They are willing and able to commit themselves and demonstrate also an ability to commit their members. The institutions that were important for internal discipline were mainly found to be informal institutions, such as dialogue and peer pressure. Thus, an assessment of the potential of industrial associations should not focus on legal aspects, but needs to consider the strength of more soft mechanisms for cohesion and discipline.

A comparison of the schemes examined in the VAIE study shows that there is in fact a choice concerning the involvement of industry associations. The Netherlands case [6] demonstrates that close cooperation with industry associations is workable, and does not necessarily entail the negative effects discussed in the literature. The French case [11] is a weaker example pointing in the same direction. On the other hand, the Danish case [7] shows that it is possible to have a successful scheme without the involvement of industry associations. The Swedish case [9] provides a weaker example in the same direction.

The choice has not been forced by the institutional set-up of these countries. The Netherlands may often be regarded as the prime example of a European country with a successful neo-corporatist tradition [28], but Scandinavian countries such as Denmark and Sweden are usually regarded as fairly close to the Netherlands in this respect. Rather it appears to be a political choice. The causes for this choice are not quite evident from the case studies, but it appears to depend not only on different governmental policies but also quite strongly on the willingness of the associations to commit their members collectively in this policy area.

Transposed to the European level, the institutional lesson would appear to be:

- if (as in the Netherlands) strong industrial associations exist on the private side, and are reciprocated by a partner on the public side with clear goals and a strong bargaining position, a policy of collective voluntary agreements can indeed be successfully implemented.
- but voluntary agreements can as well be successfully implemented on an individual basis.
- there is considerable freedom of choice between these options.

The freedom of choice is limited at the European level by the limited availability of associations that can credibly commit their members. An assessment of European associations as potential partners would need to take into account, that the most important institutional preconditions found on the national level are not of a legal nature, but has a more sociological character, reflecting the effectiveness of dialogue and peer pressure. These soft institutions are not likely to be equally well established on a European association level.

As evident from the Danish national report the willingness of associations to commit themselves and their member must not be taken for granted either.

page 40, Appendix A	Denmark	Sweden	Germany	Netherlands	France
6. Role of industry associations					
If associations are counter-parties, how do they secure compliance by their members?	<p>Associations are only involved in a few cases.</p> <p>Even in such cases, agreements are signed by each individual company.</p> <p>In principle the association is not obliged to do anything to make the companies comply. They do however arrange courses and try to motivate the companies.</p>	(Not involved)	<p>They don't secure compliance.</p> <p>They do to a certain extent use peer pressure for minor issues, in some industries.</p> <p>Where firms belong to international mother firms, very little influence is seen.</p>	<p>The association has a strong organisational role in the agreements and stimulates the implementation on firm level (organising workshops, trade fairs, communication with authorities etc.)</p> <p>Moreover the association can put pressure on the firm to put more efforts in the implementation.</p>	<p>By internal pressure and debate in the association. In the collective case studied for the report, there was considerable dialogue among firms, promoted by the multi-issue nature of the agreement (it also included other environmental issues).</p>
Are these methods effective?	<p>The involvement of associations is not meant to secure compliance.</p> <p>Compliance is a matter between the national energy administration and the individual company.</p>		<p>Yes, but probably only because the targets are so close to business-as-usual.</p>	<p>Yes</p>	<p>They seem to be.</p> <p>In the collective case studied for the report, apparently the two largest firms exert considerable pressure on the third firm (a medium size enterprise) in the industry.</p>

7. Relation between national VAs and European institutions

As described in the literature [46, 47], there is a large potential for conflict between national VAs and European institutions, particularly the single market. But for the agreements studied here, legal problems have been quite limited. This reflects the fact that these agreements mainly are about the manufacturing *process*, whereas the main focus of European law is on *products* and their free movement [61]. The main area of legal concern has been rules on state subsidy to industry, a concept including also contingent tax exemptions. Problems relating to these rules were observed in the Danish case, but were solved without negative consequences for the agreement scheme, by careful design and through the introduction of certain safeguards [63].

A more important stumbling block has been the practical implications of the single market. Member states have feared that strong demands would work to the detriment of domestic industries, due to the unrestricted competition in the single market. This has been a major factor working *in favour* of voluntary agreements, as a sophisticated means of getting as much action as possible without significantly hurting the competitive position of domestic industries. But it has also been a factor limiting the effectiveness of voluntary agreements, as member states have not dared to impose significant additional costs on their industries.

Observations might indicate that firms with foreign ownership have some trouble fitting into national VAs. Some demands made by national governments (investment criteria) may contradict the centralised governance desired by some transnationals. Some approaches may be dependent on values or organisational traditions that are more typical in domestic firms than in foreign firms. It seems plausible that joint responsibility and social cohesion are more easily established when government and top management share the same national culture and are part of the same national society. Evidently, in this field, there is likely to be some contradiction between the institutionalisation of a single market and the use of VAs as a national policy instruments. But these contradictions do not seem to amount to a legal contradiction, considering how the single market is legally framed at present.

Based on the case studies, a few lessons might be drawn for VAs at the European level and for the interaction between European and national VA policies:

- The most advanced experience demonstrates that moderately effective national agreements can be constructed within the existing European framework, without creating significant competitive problems for domestic industries. Ineffective agreements or even inaction cannot credibly be attributed to competitive problems in the single market.
- On the other hand, policy makers in the Netherlands and Denmark have probably gone close to the limit of demands that can be implemented in national VAs, unless a more favourable European framework is created. Thus, to enable further progress in such front-runner member states, a more supportive European framework for VAs is clearly needed.
- There is some contradiction between VAs at the national level and the importance of transnational firms in energy intensive industries. While firms may emphasise consistent corporate governance of such strategic issues as investments and environmental performance, national VAs makes it difficult to maintain such consistency. (The French head office may have an absolute CO₂ ceiling, the Dutch branch a relative CO₂ ceiling, the Danish branch no CO₂ ceiling but investment commitments, the Swedish branch no CO₂-ceiling but needs ISO-14001 certification, and the small German branch can act as free-rider to the disadvantage of major German competitors. There is a lot of room for environmental arbitrage, or plain confusion).

page 42, Appendix A	Denmark	Sweden	Germany	Netherlands	France
<u>7. Relation between national VAs and European institutions</u>					
Has the agreement scheme met with problems caused by competition in the internal market?					
<i>National companies have been reluctant to commit themselves due to competitive pressure from companies in other member countries with less ambitious policies.</i>	No.	No.	No.	Not much. On the one hand the 20% target was considered as ambitious, but on the other hand firms knew that the agreement would take into account their economic situation. Moreover the LTA was a better option than the proposed energy tax, regarding the competitive position in Europe.	No.
<i>The effectiveness of the VA scheme is undermined by imports from other EU countries.</i>	No.	No.	No.	No.	No.
<i>Production units or companies with foreign ownership have been more difficult to involve than national companies.</i>	Maybe. Some production units who are part of multinationals have problems with investment obligations, as all large investment must be approved by the head office.	Yes. The participants are almost exclusively companies of Swedish origin.	No.	No indications for such a problem.	Mainly French firms and industries have been involved (e.g., the chemical industry, which is fairly internationalised, has not signed a VA)
Has the VA scheme met with problems arising from European law or from intervention by EU authorities?	Yes, but the problems were solved. The state subsidy restrictions have been an important issue in the agreement design. The Commission has required clear and enforceable commitments by companies in return for the tax advantage.	No.	Not the agreement scheme as such. But a proposal to use the declaration as basis for favourable treatment in relation to the new German eco-tax was taken off the table, as it would probably be in breach of state subsidy rules (because the declaration is too vague, has no sanctions, etc.)	No.	No.

page 43, Appendix A	Denmark	Sweden	Germany	Netherlands	France
<p>Did the VA scheme need approval by EU authorities? What were the main reservations and conditions</p>	<p>Yes, because it is related to large state subsidies. Strict requirements have been necessary. In the current debate on the future of the agreement scheme, the national energy administration advocates a less strict scheme. This may be difficult to combine with the tax rebate. (The Danish Audit Department also demands that the control with state subsidies is strict)</p>	<p>No.</p>	<p>No</p>	<p>(no information)</p>	<p>No</p>

8. Conclusions

The conclusions summarised here are based on the specific case studies performed for the VAIE project, i.e. a narrow empirical material. In this sense, the conclusions are really only hypotheses that must be weighted against other evidence and theoretical considerations.

The conclusions are limited to such topics, for which this empirical material provides evidence. Other topics, that may be equally or more important, but for which the VAIE case studies provide no good evidence, are disregarded.

With these reservations in mind, the following are tentative conclusions relating to European level VAs or the interaction between national VAs and European regulation:

- (a) High-level negotiations may not produce the most effective agreements. A better institutional approach is probably the unilateral establishment by high-level actors of a strong framework of legal instruments and/or authoritative targets, enabling low-level civil servants to perform the negotiations, taking advantage of good knowledge of the industry and the private counter parties.
- (b) Targets are better pre-defined through authoritative political decisions, and not part of the negotiation. Exceptions from this rule could be advisable in specific cases, but only on basis of a prior analysis showing why this may be a superior strategy.
- (c) Voluntary agreements can provide the public side with information considerably in excess of what is available under existing legislation, and thereby support more enlightened decision-making on the public side.
- (d) It is feasible to make agreements with sanctions and to employ sanctions without major conflict with industry representatives.
- (e) A differentiated system of sanctions is preferable, so that it is possible to enforce discipline without resorting to draconian measures.
- (f) Even if sanctions can be helpful, it is effective monitoring that is the key to compliance. Highly developed institutions for the monitoring of performance is an important characteristic of effective agreement schemes.
- (g) A serious effort at monitoring and verification requires the build-up of significant competence and administrative capacity.
- (h) It is less important whether this build-up takes place within the civil service or in independent third party organisations.
- (i) The effectiveness of monitoring and verification depends also on the type of targets. Some targets (e.g. specific investments, CO₂ reduction targets) are better suited for monitoring and verification than others (e.g. effectiveness of energy management systems).
- (j) A need for caution, particularly in light of the present emphasis on increased openness and accountability at the European level. The positive potential observed in Germany and France is hardly relevant at the European level, because it is too limited and contingent to be consistent with the degree of openness now expected from European authorities. The moderately negative

observations from countries with strong traditions for openness seem more relevant for future European VA policies. Of course, these somewhat negative observations could also be used in a positive sense, as indication of improvements needed in future VA policies. But as explained above, there is a certain logical nexus between VAs and reduced openness and accountability, so that attempts to make VAs more open may run against some of the other motives for using VAs.

- (k) Both individual and collective agreements can be effective. But choice is limited by the availability of associations that can credibly commit their members, and are willing to do so. Collective agreements require a partner on the public side with clear goals and a strong bargaining position.
- (l) Moderately effective national agreements can be constructed within the existing European framework, without creating significant competitive problems for domestic industries. Ineffective agreements or even inaction cannot credibly be attributed to competitive problems in the single market. But a more supportive European framework for VAs is needed to enable further progress in front-runner member states.
- (m) There is some contradiction between VAs at the national level and the importance of transnational firms in energy intensive industries. While firms may emphasise consistent corporate governance of such strategic issues as investments and environmental performance, national VAs makes it difficult to maintain such consistency.

Summarising, the findings do not indicate any pressing need for VAs at the European level. The existing institutional set-up, where national VAs work under single market rules, is workable and still allows most member states great room for improvement of national policies. Only a few member states have advanced to a stage where further progress may require a new European framework or a transition to European VAs.

If a transition is made to European VAs, it would seem advisable to reserve these for areas where the Commission can demonstrate a position of real political and administrative strength, to work under politically pre-defined targets, to emphasise the access to information, to insist on an effective regime of monitoring, verification and sanctions, and to construct a regime of transparency and accountability. Experience demonstrates that this level of ambition is realistic, in the sense that such agreement schemes actually exist at the national level and seem to be working. On the other hand, national experience indicates that less ambitious schemes may be unrealistic in the sense that they do not really make any difference.

Appendix B: Policy lessons

For the interpretation of the policy experience from national VA schemes, political science makes available a range of conceptual models, extending from the idealistic (e.g. collective will) to the cynical (e.g. garbage-can model). The conceptual model chosen here is a quite un-sophisticated tit-for-tat model, where a voluntary agreement is understood as the result of an exchange between parties that each pursue their own goals [65]. Liefferink draws attention to the similarity with exchange relations found in neo-corporatist arrangements, but also notes that VA relations are less fixed and lack the tri-partite structure typical of many neo-corporatist arrangements [40].

Within this type of conceptual model, it is assumed that effective VAs come about only when the public side is able to offer substantial benefits to the private side, and visa versa [17]. The main difference between the national and the European level is assumed to be in the nature and size of these benefits. Therefore, the logic of the following sections is to outline the benefits offered by the two sides at the national level in the agreement schemes covered by the VAIE study [6, 7, 8, 9, 11], and to ask whether the same or similar benefits would be available as bargaining chips at the European level. If they are not available, the specific national VA policy cannot be effectively reproduced at the European level. If they are available, a reproduction may be possible and a discussion is relevant of the advantages or disadvantages of a European level VA compared to the national level.

1. What are member states offering their private counterparts?

This section shall examine the specific case studies to see, what member states are actually offering their counterparts, i.e. what elements of the agreement schemes have successfully promoted private participation in VAs or have been successful in actually achieving CO₂ reductions or energy efficiency improvements.

For each of these elements of success, these questions shall be discussed:

- can EU do the same?
- how?
- would EU action have any advantage over national action?

The most successful bargaining chips found in the case material can roughly be categorised in this way:

- (1) Protection against other policy measures
- (2) Marketing advantage
- (3) Contingent energy tax relief
- (4) Subsidies

1.1. Protection against other policy measures

The protection provided against other policy measures is often assumed to be a major benefit provided to private partners by VAs [13, 38, 50, 54]. With a twist to this, Liefferink emphasises the reduction of uncertainty about future policies [40]. Protection can take the form of an explicit legal or political promise by the public side to refrain from additional regulation or taxation, or it can be implicit in the strategic considerations on the private side, without any explicit statement from the public side [55]. In the VAIE meta-

study of 19 VAs, Gårn Hansen [54] found in most cases a clear threat of traditional regulation if the VAs failed, whereas tax threats were rare.

Protection against other policy measures is emphasised in the Dutch and German case studies. In the Dutch case there is a formal commitment by the public side to refrain from other policy measures. In the German case there is similar expression of intention, but without any legal force. In the other agreements schemes studied, there is no explicit promise by the public side. The French case contains some evidence of implicit strategic considerations on the private side. The Danish and Swedish cases do not even show evidence of this type of expectations on the private side. Thus, the cases are quite divergent in this matter. In the two most collective schemes (Germany and the Netherlands), the private side clearly expects protection against other policy measures. In the two schemes not based on collective negotiations (Denmark and Sweden) there is no evidence of this type. The two most comprehensive agreement schemes (The Netherlands and Denmark) are at the opposite extremes as far as protection against other policy measures is concerned.

Could European VAs offer similar benefits to the private side?

This question includes matters of form as well as of substance.

As far as the form of protection is concerned, the options available to European authorities are not much different from those available to national governments. Formal legal commitments to refrain from taxation or regulation are in conflict with constitutional law in several member states, and would usually also be precluded at the European level [46]. Promises of a political nature can be made by the European Commission as well as by national governments.

As far as the substance is concerned, the division of responsibilities between the national and the European level tend to make the benefits available at the European level less impressive than those at the national level. Protection against future taxes or quantitative restrictions is the benefit most eagerly sought by the private side. But European authorities are unlikely to be able to provide such benefits, as member states are carefully guarding their prerogatives in these matters.

How?

If, despite these reservations, there is still a desire to offer protection as a bargaining chip, do the case studies provide any experience that might be reproduced?

The new Dutch long term energy efficiency covenant [66] (signed 1999, in force until 2012) shows one way to deal with restrictions on the ability of the public side to make legally binding commitments concerning future taxation or regulation. The text of the covenant does include promises by the public side concerning future regulation and taxation, but with a host of reservations reflecting the legal and political complications of such promises. This is balanced by clauses that liberate the private side from its commitments under the agreement, in case the public side does not fulfil its promises. If the private commitments included in the VA are significant, this kind of contingency gives also the public side a significant incentive to abide by the VA, even when there is no legal obligation to do so, and even in circumstances where a new parliament or government is tempted to renounce promises made by a previous parliament or government. The same contingency model could be used in VAs at the European level. It would bypass the restrictions on legally binding commitments, and might well be viewed by the private side as a satisfactory proxy for a VA based on firm legal commitments by the public side.

Concerning substance, European authorities can offer protection either against their own actions or against actions by member states. In the field of energy efficiency and CO₂-emissions however, there is not much European action to protect against, and the private side seems more worried about regulation and taxation on the national level. The European authorities are therefore rather impotent as far as offering protection against their own action. What would really be valuable for the private side, would be European protection against national action, in particular taxation and quantitative CO₂-restrictions. Legally, such protection is certainly possible, for instance in the form of directives defining maximum obligations that can be imposed by national governments. But politically it is difficult to envision any such directives passing the council. First, they would contradict the present emphasis on member state responsibility for CO₂-reduction, and the allocation of Kyoto-commitments to the member states. Secondly, several member states are watching quite eagerly over their sovereignty in questions of taxation and environmental protection, and are particularly jealous over their right to impose taxes and regulatory measures additionally to minimum standards decided at the European level. Thus, the European Commission is hardly able to promise much in terms of protection against national action.

In conclusion, as far as protective benefits are concerned, the European Commission seems unable to offer benefits of such substance as can national governments, and therefore has a quite weak negotiation position in this respect.

Advantages over national action

As far as the ability to offer protective benefits is concerned, it is difficult from an to find any advantage to VAs at the European level, compared to the national level.

To the contrary, there would appear to be major disadvantages from an environmental perspective. As European action in the energy field is more consensus-based and typically slower and less radical than action by member states, European action would often seem as less of a threat to the private side than national action. Protection against European action would therefore appear as less valuable than protection against national action, and would therefore buy less from the private side in a bargaining situation.

Individual action by member states has been a major driving force in development of European energy policy. Putting limitations on individual member state action for the sake of giving the European Commission stronger bargaining chips in VA negotiations seems quite out of proportion and might well do more damage than could ever be gained from European VAs.

In conclusion, it seems wisest at the European level to refrain from any offer of protection, neither against European nor against national action, as a bargaining chip in VA negotiations, and thus not to attempt a reproduction of national models based on this type of offer. In this respect the German and Dutch models seem unsuitable for emulation at the European level, even though other aspects of the Dutch model may be more fit for reproduction.

1.2. Marketing advantage

VAs can provide a benefit for participating companies or industries in their relation to markets that value environmental commitments [23, 24, 26, 58, 67]. "Green consumers" springs to mind, but professional markets can be equally demanding. Companies with ISO 14001 or EMAS certification [15, 16, 25] is supposed to be environmentally

demanding in their procurement policies. Others may also be positively impressed with a green image. An important market is also the labour market, where a company must find its staff [68]. In some countries, newly educated professionals, such as engineers, tend to put emphasis on the "environmental correctness" of their future employers. A green image may be of considerable value for a company in the intense competition for qualified labour, that is now characteristic of the high-end youth labour market in some member states.

Marketing advantages are emphasised in the Swedish and French case material. A specific label and other forms of publicity is one of the principal benefits that the Swedish AS offers the participating companies. In France there is no similarly formalised marketing advantage, but observations from the glass and aluminium industries indicate that the VAs have been seen as means of "shaking off" a somewhat negative environmental image, and thereby gaining a stronger competitive position in relation to other products. In the Danish, Dutch and German case studies, there is no indication that marketing advantages have been considered by the participating companies or organisations.

Could European VAs offer similar benefits to the private side?

It seems that the European Commission could easily offer marketing advantages similar to the Swedish or French cases. Companies that participate in such VAs would always have the opportunity to stress this fact in their marketing. Nothing prevents the commission from helping them with this, through different forms of publicity or through more formalised label schemes like the Swedish EKO-Energi label. The more effectively the VA is publicised by the Commission or the private participants, the greater the marketing advantage of participating.

How?

The marketing advantage of VA participation is greatest if it is exclusive, i.e. reserved for certain companies or industries and denied to others. If everybody is part of a VA, the marketing advantage would disappear. From this perspective, a European VA policy would be most effective if it is selective, and would target only those companies or industries that are most seriously engaged in environmental improvement. By selectively involving these companies or industries in VAs, the Commission would help Europe develop environmental champions. In the markets, these participants would pose a competitive challenge for non-participants. Competition would be increased by the VAs in two ways: The demands put on the participating companies would make them even greener than before, and thereby increase the distance between the best and the worst environmental performance, i.e. give a larger performance differential for competition to work on. The publicity concerning the VAs would enhance the role of the environmental competition parameter, compared to other competition parameters, thereby making the differences in environmental performance more important for the aggregate competitive position of all companies.

This concept of VAs differs radically from the concept of regulation. It is a concept where the public authorities work *with* the market, by making competition fiercer, rather than *against* the market, through regulation.

This idea of supporting champions is quite explicit in the Swedish agreement scheme, which does not at all attempt to cover all companies. There is no indication that there is any similar idea in the French policy design. In France the competitive advantage seems

more like an accidental benefit, discovered by the private sector rather than the authorities.

Advantages over national action

The European level would clearly have advantage over the national level for a VA policy directed at enhancing the competitive position of environmental champions. First of all, large companies often work with their image on a global scale, rather than a national scale. A label of environmental excellence given by the European Commission would fit much better in European and global marketing efforts than a similar label given at a national level, which would usually be difficult to use in other countries. Secondly, the European Commission would have more companies to choose among as partners. This would allow a more selective and consistent approach than would be possible at the national level, especially in the smaller member states. Thirdly, action at the European level may have greater legitimacy than national action because of the weaker bonds between companies and public decision makers compared to the national level. At the national level, there is a greater risk that a selective choice of partners for VAs would be interpreted as (or might even in fact reflect) some kind of favouritism or clientelism. The experience from European competition policy seems to indicate, that the European Commission is more likely than national authorities to be respected as an objective judge of company behaviour, and therefore is also able to be more consistent and decisive in selective interventions. Lastly, action at the European level would be more consistent with the internal market. Marketing advantages conferred at the national level could work as a discriminatory instrument, or might be interpreted in that way.

In conclusion, it seems wise at the European level to pursue selective VA policies, aimed at enhancing environmental competition. Such policies can well coexist with other types of VAs on the national level, and clearly shows added value at the European level. In this respect, the principles of the Swedish model are worth reproducing, even if the details may be less convincing or relevant.

1.3. Contingent energy tax relief

To the extent that energy taxes are implemented in member states, relief from such energy taxes becomes a strong VA bargaining chip for the public side.

Energy tax relief is the foundation for the Danish agreement scheme. Danish energy taxes are high, even for industry, but a substantial relief is offered to energy intensive industries that engage in a VA. This conditionality has been quite successful, and has elicited very concrete and detailed commitments by industry. This type of tax relief is not part of any other agreement scheme examined in the VAIE study.

Could European VAs offer similar benefits to the private side?

As there is no European energy tax, nor any minimum requirements on the member states, the European Commission cannot directly emulate the Danish type of contingency between VAs and tax relief.

Indirectly however, working in conjunction with national taxation, the Commission may well build a system of European VAs based on contingent tax relief. This might be done by using the Commission's power to supervise and regulate state subsidies,

How?

Relief from national energy tax, as provided in the Danish agreement scheme, is legally a form of state subsidy, and as such closely supervised by the Commission. This supervision provides the Commission with a potential entry point into VAs. Such an entry could take two forms:

- (1) A soft entry, where the Commission is not directly party to any VAs, but gradually develops a European framework for such VAs, specifying what types of companies or production activities that are eligible for VAs, defining minimum commitments by the private side, defining minimum controls and sanctions, etc.
- (2) A rough entry, where the VAs are taken over directly by the European Commission, whereas the tax relief is still a matter of national policy. The Commission might simply use its powers over state subsidies to restrict tax reliefs to such industries or companies as are covered by a European VA.

In both forms, the tax burden and the size of tax relief would still be determined by each member state, whereas the *eligibility* for the tax relief would be basically determined at the European level.

Combinations of the two approaches are quite possible. The rough entry might for instance be restricted to some key industries, and the soft entry used for the rest of industry. The soft entry might be combined with industry-specific VAs at the European level, setting the framework for national VAs. The rough entry might be combined with a considerable scope for national VAs to fill in details and add extra commitments and conditionalities, or even with mandates to national agencies to negotiate VAs on behalf of the Commission.

In effect, this would be a European VA scheme working only for those member states that are willing to impose significant energy taxes on their industries. But it would secure a certain degree of harmonisation within this group, and might well also increase the pressure on other member states to introduce or increase energy taxes.

Advantages over national action

The combination of European VAs with national tax relief would have several advantages over the present purely national approach.

First of all, it would contribute to a more level playing field among companies in different member states. The efforts required to get a specific amount of tax relief could be more or less uniformly defined. This establishment of a level playing field might also pave the way for acceptance of higher taxes and stronger conditionalities. It might also reduce discriminatory effects between companies in member states with and without energy taxation, as the benefits ("state subsidies") allowed to participating companies could be more liberal in a joint agreement scheme sanctioned by the European Commission than in national agreements schemes more suspect of hidden discriminatory intentions.

Secondly, the greater distance between authorities and companies in a European agreement scheme, would tend to make it more robust against pressures from individual companies or industries that want tax reliefs for which they should not really be eligible. It can be very difficult for national decision makers to withstand such demands that are often coupled to employment, regional development, competitiveness of national industry, etc. The European Commission can certainly not be assumed to be immune against such pressures, but it does benefit from an increased distance to individual companies and local political constituencies.

Finally, a European system of VAs would be helpful for companies with production in several member states. Even if the tax incentives would be different in each member state, the performance requirements would be more uniformly defined. A company might for instance meet the same requirements on its energy management system in all countries. Or it might meet the same basic demands on energy audits and the same methods for calculation of payback for investments. The difference between countries could be narrowed down to rather well defined *additional* demands, rather than fundamental differences in agreement approach. A member state with a high energy tax, offering therefore also a high tax relief, may for instance demand that all investments with a pay-back of 6 years be carried through, whereas a member state providing less economic incentive may require a more modest pay-back period. The advantage would be, that projects are identified in the same way in both member states, that payback periods are calculated in the same way, that the same consultants can service company plants in both member states, that company headquarters can easily compare reports from both member states.

In conclusion, it seems wise at the European level to recommend national reproduction of the Danish idea of contingent tax relief. To the extent that it is adopted by more countries, the European Commission might gradually introduce some harmonisation in the underlying VAs. The model can only be reproduced however, if member states act first by introducing energy taxes for industry, combined with contingent tax relief. Only when this has been implemented at the national level in more countries, is there really any scope for harmonisation in the form of some kind of movement towards European VAs based on national taxation and tax relief.

1.4. Subsidies

Subsidies are traditional incentives used by the public side, even without any form of VA. In fact, as subsidies are typically contingent on some action on the private side, they may often involve some negotiation between the two sides, at least informally. Thus, the dividing line between subsidy schemes and voluntary agreement schemes can be rather blurred.

Somewhat surprisingly, subsidies are used very little as bargaining chip by the public side in the cases examined by the VAIE study. Only in the Swedish case is a subsidy found to be a major bargaining chip used by the public side. In no other case has any formal link been found between subsidy and VA. But often subsidies enter into the total package of relations between the public and private side, even if there is no formal link. In the Danish case, for instance, the energy audits and some of the investments required by VAs are eligible for substantial subsidies, which clearly facilitates the VA as it reduces costs for the private side. Thus subsidy and VA policies are mutually supportive: The VA negotiation process may increase awareness among firms concerning subsidies available. The subsidies can make it easier for firms to accept measures in the VAs required by the public side. But formally, there is no link between VA and subsidy. The same subsidy would be available without a VA - the difference is only, that without a VA the private side has less incentive to ask for the subsidy. The Netherlands also have a broad subsidy program and unlike other countries examined in the VAIE study, they also have income tax breaks for firms making energy efficiency investments. Again there is no formal connection with the voluntary agreement scheme, but actually the policies are mutually supportive. By reducing the costs of the measures required in VAs, the subsidy and tax policies clearly makes it easier for firms to commit themselves to VAs, and/or makes it realistic for the public side to require tougher targets in the VAs.

Could European VAs offer similar benefits to the private side?

There are no important restrictions on the European Commission's ability to offer subsidies, except simply the need for a budget from which they can be paid.

EU subsidies can provide a favourable framework for national agreement schemes, as well as they can be an element of VAs on the European level.

How?

The EU is already an important source of subsidies for energy efficiency measures. This might well be developed into a bargaining chip for voluntary agreements. To the extent that European VAs are seen to increase the effectiveness in the use of budgetary resources, additional budget allocations might come easier. Thus, a virtuous circle is conceivable between VAs and increased allocations for subsidies.

Alternatively, instead of relying on its own budgetary resources, the European Commission might also try to link national subsidy schemes to European VAs. The acceptance of national subsidies beyond a certain level could be made conditional on the existence of a European VA framework, so that large national subsidies are available only to industries or companies participating in VAs at the European level. Or working the other way round, the European Commission could be empowered to offer money for subsidies within national agreement schemes, on the condition that these schemes fit into some kind of European agreement scheme.

Advantages over national action

The availability of EU subsidies would create a significant push on member states that have been slow to implement agreement schemes to promote energy efficiency. The conditionality of the subsidies could promote a more general and uniform application of VA policies in member states. This again would create a more level playing field between companies and between plants inside companies.

With a more level playing field, it would also be possible to have a higher level of subsidies than presently allowed by European regulation. Larger subsidies might work in favour of deeper commitments by the private side in VAs.

In conclusion, as the European level is somewhat handicapped compared to the national level in its ability to offer tax reliefs or protection, subsidies might be more important at the European level as the key offer to the private side in voluntary agreement schemes. It would seem wise at the European level to consider the possibility of tying present budgetary means to agreement schemes, rather than distributing money on the basis solely of the merit of individual activities or investment projects. A successful combination of subsidies with VAs might also create conditions favourable for additional budget allocations.

2. What are member states demanding from their private counterparts?

Ideally, the question to ask here would be, what business is offering to member states. But the cases examined in the VAIE study do not reveal much in the way of offers by the business side. Rather, the business contributions in the agreement schemes seem to be governed by demands defined by the public side.

It might be argued that this contradicts the logic of VAs. An important argument for VAs is their superior flexibility and potential for adaptation to the realities of business. But the cases examined in the VAIE study hardly give any indication of initiatives by the business side to exploit these presumed advantages. No instances have been found of the private side suggesting innovative ways of integrating CO₂-reduction into general business strategies, of emphasising competition instead of regulation, of bench-marking results - just to mention some of the ways that CO₂-reduction policies might potentially be better adapted to business logic. The private side seems reactive rather than proactive. In negotiations it seems preoccupied with reacting to measures proposed by the public side, rather than putting forward counterproposals that show alternative ways to achieve CO₂-reductions. Thus, private side contributions to VAs have tended to be defined by the public side, i.e. by demand rather than offer. This would seem to go against the presumed advantage of voluntary agreements. If the public side really knows best, what business should do, then regulation might be a more appropriate policy tool than voluntary agreements. Arguments for the advantage of voluntary agreements are typically based on the concept, that business knows better what to do. But such superior ability to define the way forward has not really materialised in the cases examined in the VAIE study.

The demands made on the private side are categorised in this way:

- Quantitative CO₂-targets.
- Organisational change.
- Change of investment criteria and commitment to specific investments.

It needs to be observed, that these categories do not by far exhaust the potential demands that could reasonably be included in VAs. They simply reflect the types of demands that were observed in the cases examined in the VAIE study. Other relevant demands may concern change of energy sources, change of raw materials, change of products, R&D activities or information exchange and networking. For some of these policies, action at the EU level may have significant advantages over national action. Networking for information exchange may for instance be more acceptable between companies that do not compete as directly with each other, as would often be the case within a single member state. Demands concerning R&D might be co-ordinated with the EU's large programmes for industrial R&D, and thus entail a combination of subsidies with voluntary agreements. As the cases examined in the VAIE study include no examples of such demands or combinations, there are no relevant "lessons" for the European level to discuss. Except of course the observation that such possibilities, being left unexplored at the national level, might constitute potential areas for original policy developments at the European level.

2.1. Quantitative CO₂-targets

In principle, committing industry directly to quantitative CO₂-targets offers both sides substantial advantages, compared to other commitments. For business it gives a maximum of freedom to choose the most cost effective means of achieving CO₂-reduction. For the public side, it does away with a lot of uncertainty about the effect of policy instruments, as it ties directly to the public side's own CO₂-commitment. All agreement schemes examined for the VAIE study aim at reduction of CO₂-emissions. But this does not mean that they all commit the private side on this issue. Some countries have chosen to make agreements on measures, rather than results.

Quantitative CO₂ commitments are found in the Dutch, French and German cases. The French case includes commitments in absolute terms, i.e. in the same form as the Kyoto-commitments. This is also the case for some German industries. The Dutch case defines

commitments exclusively in terms of CO₂- and/or energy-intensity of production. So if production goes up, CO₂-emissions are also allowed to go up. Obviously, this type of commitments does not give the public side any direct assurance in relation to national Kyoto commitments. Quite to the contrary, they may actually make the national emissions less governable, as industries with VAs are free to expand their CO₂-emissions in an economic upturn, and are protected by the VAs against additional policy measures. This puts a greater burden of adaptation on other industries and non-industrial energy consumers. It could be argued that this type of relative commitments is also rather ineffective for exploiting the potential advantages of VAs on the business side. Among the flexible CO₂-reduction options available to business are for instance emphasis on production quality rather than quantity, changes of product mix, sectoral drift, or relocation of production to locations where energy is available with less CO₂-emissions. Relative commitments tend not to favour such options, but typically fit better with a conservative approach, where products and locations are the same, but technology is made more energy efficient, often with a capital-intensive approach. Also, relative commitments have perverse effects in the business cycle. The demand for improved efficiency is less of a burden in an economic upturn, where new investments provide for a good deal of efficiency improvements at fairly low cost, but more of a burden in an economic downturn where firms are typically stuck with their existing plants, have less scope in a technical sense for cost-effective improvements of efficiency, and also less access to capital. This is clearly a pro-cyclical mechanism that may produce unwanted macroeconomic effects as well as it will create a great deal of uncertainty about national CO₂-commitments in an economic upturn.

Accordingly, the European Commission would be well advised not to reproduce the relative form of commitments that are reported in this study, but rather to make demands for absolute commitments conforming to the form of the Kyoto-commitments [69].

Could similar demands be made in European VAs?

Yes, but some form of reconciliation with national CO₂-commitments is needed.

How?

Quantitative commitments could be made by individual companies (as is partly the case in France) or by industry associations (as in the Netherlands, Germany and partly in France). The latter approach requires the existence of industry associations with a strong mandate from their members and with the capability of enforcing discipline. This may be less realistic at the European level than at the national level. Commitments by large individual companies seem like a more workable option at the European level.

A simple way of reconciliation with national Kyoto-commitments would be to take certain industries with European VAs out of the national commitments, and transferring them to European CO₂-quota to be managed by the Commission. Otherwise it might be necessary to get national approval for each VA, as the member states would otherwise lose the ability to manage this part of their CO₂-emissions. Or the member states would have to be allowed to impose additional policy measures. The latter option would be difficult to accept for the private side as it would take away much of the incentive to engage in a European level VA.

Advantages over national action

The principal advantage of European agreements would be that they create a more level playing ground in the single market. By doing this, such agreements would also allow higher demands on companies than is realistic at the national level.

Additionally, European VAs would allow for transnational flexibility inside participating companies or among companies represented by an interest organisation. Efficiency measures would no longer have to be implemented in a specific country, but could be implemented wherever they would prove most cost effective.

Finally, VAs on a European scale would include a sufficient number of companies to allow quantitative comparisons and benchmarking. This can be quite difficult on a national scale, particularly in the smaller member states that may just have one production facility within a specific line of production, or at least too few plants for meaningful benchmarking.

2.2. Organisational change

Some kind of institutionalisation of energy efficiency values and activities inside companies is essential for a permanent change of efficiency trends [50]. This typically takes place under the heading of "energy management". Demands for this are important parts of Danish and Swedish, and also have a certain role in Dutch and French VAs, but not in the German VA. In the Swedish VAs, the elaboration of a system for energy management is the core demand made on participating companies, who are assumed to bring their organisation in line with ISO 14001 or EMAS requirements, and prove this through external certification. Some French VAs also demand ISO 14001 certification. The Danish VAs are also quite specific in their demands concerning energy management, and the Danish authorities are increasingly emphasising this aspect of the VAs.

Could similar demands be made in European VAs?

Yes, quite easily, as the EMAS and ISO 14001 standards are already available as references.

How?

The EU has in fact been pioneering the concept of certification of environmental management standards through the EMAS programme. It would be quite simple to demand such certification as part of VAs. The detailed requirements have already been worked out and an established certification practice already exists, based on several years of experience.

Advantages over national action

The advantages of European action are rather modest, because a lot has already been achieved through the development of the EMAS and ISO 14001 standards. The latter in particular is also already so strongly entrenched, that national agreement schemes tend to gravitate towards it. The main advantage of European action would be to speed up certification activity in some remaining member states, and thereby ensure a more level playing field.

Another advantage of European action would be related to the future of the EMAS standard. A co-ordination of the development of the standard with demands from the public side included in VAs would be somewhat easier at the European level, than if VAs are exclusively national.

2.3. Change of investment criteria and commitment to specific investments

Restrictive investment policies within business enterprises are often identified as a major barrier for energy efficiency. Firms are usually very restrictive in their deployment of financial resources for purposes, that are not related to core business activities. The maximum accepted payback period is usually in the range of 1½ - 3 years [70, 71, 72].

A relaxation of such norms is demanded in the Danish agreement scheme. In order to get a VA, companies must accept to implement all investment options with a 4-year payback period. Each investment project that is shown by the independent energy audit to conform to this criterion is specified in the individual VA as an explicit legal commitment accepted by the company.

In the Swedish case the demand for relaxed investment criteria is much less explicit, but some form of investment criteria reflecting the companies environmental policy would need to be defined by the company itself as part of the environmental planning required for ISO 14001 or EMAS certification [73]. The environmental management programme required for certification of a firm must specify means and time frame for achieving the obligatory environmental objectives and targets. Thus, this firm programme would often need to include a commitment to specific investments [74]. Case study observations indicate that some companies are in fact changing their investment activities to fulfil their commitment to environmental improvement. This includes the acceptance of longer payback times for energy efficiency investments than for similar non-environmental investments.

Some of the French VAs also include an ISO 14001 commitment. Formally, this looks like a much stronger policy mix than in the Swedish case, because the French companies (unlike the Swedish companies) also commit themselves externally to specific CO₂-targets. ISO 14001 requires that such external commitments be internalised in the environmental policy of the company, and consequently that the company explicitly defines means and timetables for meeting such commitments.

In the Dutch and French cases, documentation provided by the private side during the process of VA negotiation and implementation includes the description of several investment options that might contribute to fulfilment of the CO₂-commitments. Thus the private side does describe a certain scenario for how CO₂-reductions might be achieved, without thereby committing itself to any specific measures. (Unless it has ISO 14001 certification, in which case it is not at liberty to disregard the means and timetables of its own environmental programme).

Only in the German case are the VAs entirely void of any reference to investments or investment criteria.

Could similar demands be made in European VAs?

Yes, if methods are selected that do not create excessive administrative burdens.

How?

Precise demands on investment criteria or for specific investments are clearly an effective way to make an agreement "stick", i.e. to secure that it has some substance. But it does require a substantial administrative capacity for negotiation and control of detailed commitments, and also a capacity for administrative flexibility and speed in order to achieve a smooth adaptation of commitments to new knowledge, new technological developments, and changing business conditions. This might make such demands impractical at the European level.

The combination of quantitative CO₂-commitments with ISO 14001 certification, as seen in some French cases, seem like a much more manageable method for securing an effective investment programme. The ISO 14001 certification guarantees the public side, that the CO₂-commitments cannot be treated as just symbolic commitments or otherwise handled lightly, but that they must be internalised in the form of explicit commitments to specific measures, including a timetable.

The Danish combination of independent energy audits with specific demands on investment criteria seems to work quite well and is balanced in the sense that a significant number of additional investments are made, without reaching a point where this is criticised by the private side as misuse of investment capital. There is also evidence of success for the Swedish reliance on the internal drive for new criteria and additional investments as part of the EMAS and ISO 14001 certification process. Both policies are reproducible at the European level, but the Danish model make high demands on administrative capacity.

Advantages over national action

A definition of investment criteria at the European level would create a more level playing field for competition between companies and for decisions inside companies. This would also allow the setting of more severe criteria.

A mark-up of requirements in the EMAS standard would require action at the European level.

For the accumulation of knowledge that may be necessary for mandating specific investments, the European level would have an advantage of scale.

Investment mandates at the European level would create a significant demand-pull for new energy efficiency technology, that might contribute to a virtuous circle of technology development and demands for technology implementation. This is less likely at the national level, due to the smaller size of markets.

Notes and references

- [1] "The choice of environmental agreements appears to be based rather on a political fashion or else on the expectation of minimum resistance by industry" [44] (p.131).
"Many officials feel they have nothing to lose and everything to gain because, for example, climate change objectives will not be achieved without an innovative approach such as voluntary actions and cooperative agreements" [37] (p.62).
"Ministries were often hardly able to substantiate why they expected a covenant to be more effective or efficient in a given context, and whether this outweighed the drawbacks of the instrument" (Lieffering [40], citing the Dutch Court of Audit).
- [2] "There is widespread belief that a less confrontational, more interactive approach to achieving energy and environmental policy will bring greater results" [37] (p.62).
- [3] "The enticement of voluntary programmes is that generally they are simpler to design, easier to negotiate and faster to implement." [37] (p.66).
"Many officials believe that voluntary programmes can achieve energy and environmental objectives faster than regulations because the development of new regulations can take years of research and approval. ... Implementation can start almost immediately after agreements are approved" [37] (p.62).
- [4] "Partnerships between governments and industry, as a cost-effective alternative to command and control regulation, are a major feature of national programmes to mitigate energy related CO₂ emissions" [37] (p.3).
"The advantages for governments are basically gaining CO₂ reductions at relatively low cost in terms of administration and time" [37] (p.69). "The advantages for government are the prospects of gaining CO₂ reductions relatively quickly with low costs" [38].
"Many officials feel that voluntary programmes might be cheaper to implement than comparable regulatory programmes" [37] (p.64).
"One Canadian official stated that only four administrators were needed for a specific voluntary programme compared with about 400 for a comparable regulatory programme". [37] (p.63).
- [5] The Commission argues that environmental agreements "must go substantially beyond 'business as usual' ". [56] (p.8).
- [6] M.G. Rietbergen, M. Breukels and K. Blok. *Voluntary Agreements – Implementation and Efficiency. The Netherlands' Country Study. Case studies in the sectors of paper and glass manufacturing*. NW&S 99073. Utrecht University, 2000.
- [7] Katja Sander Johannsen & Anders Larsen. *Voluntary Agreements – Implementation and Efficiency. The Danish Country Study. Case studies in the sectors of paper and milk condensing*. Copenhagen: AKF Forlag, 2000.
- [8] Stephan Ramesohl & Kora Kristof. *Voluntary Agreements – Implementation and Efficiency. The German Country Study. Case studies in the sectors of cement and glass*. Wuppertal Institute for Climate, Environment, Energy, 2000.
- [9] Jonas Kågström, Peter Helby and Kerstin Åstrand. *Voluntary Agreements – Implementation and Efficiency. Swedish country study report. Covering the EKO-Energi programme. With case studies in pulp and paper and heavy vehicle manufacturing*. Lund University, 2000.

- [10] Signe Krarup & Stephan Ramesohl. *Voluntary agreements in energy policy – implementation and efficiency*. (Final report from the VAIE project). Copenhagen: AKF Forlag, 2000.
- [11] Martina Chidiak. *Voluntary Agreements, Implementation and Efficiency. The French Country Study: Case studies in the sectors of Packaging Glass and Aluminium*. Paris: CERNA, 2000.
- [12] A formalised argument pointing to the same conclusion is developed by Segerson & Miceli [13]. Biekart [18] also stress the need for substance, but in a somewhat different discourse, where this is about rewards rather than threats. An Italian twist is frequent complaints by firms that the public side makes promises without delivering. Private side actors mention this as perhaps the main obstacle to voluntary agreements [58]. Appendix B includes a more comprehensive review of bargaining chips used by the public side in the VAIE cases, and a discussion of their reproducibility at the European level.
- [13] Kathleen Segerson & Thomas J. Miceli. Voluntary environmental agreements: Good or bad news for environmental protection? *Journal of environmental economics and management*, vol. 36(1998), pp 109-130.
- [14] Peter Dröll. *Negotiated solutions at the Community level. Paper presented at International workshop on negotiated solutions to environmental problems*. Utrecht, March 1997.
- [15] EEC. Council Regulation No. 1836/93 of 29 June 1993 allowing voluntary participation by companies in the industrial sector in a Community eco-management and audit scheme. *Official Journal*, L168, 10/07/1993 p. 0001-0018.
- [16] Karola Taschner. Environmental management systems: The European regulation. *Jonathan Golub (ed.). New instruments for environmental policy in the EU*. London: Routledge, 1998, s. 215-241.
- [17] The tit-for-tat logic on which this report builds its argument, is not always the logic assumed by policy-makers. In its guidelines for VAs at national or local level [46], the Commission states that "the substantive contractual obligations will usually lie with the industry, as the objective of the agreements is to guide the environmental performance of industry", The obligations foreseen for the public side are such matters as "setting up a statistical data base, facilitating the exchange of information, coordinating research or reporting or to provide for prior consultation in case of doubts regarding the compliance with the agreement", i.e. hardly anything that much helps the bottom line of potential industrial partners. In most cases it is assumed that a formal commitment by the public side "will not be needed, since a public authority entering into an environmental agreement would act in contradiction with itself if it took regulatory measures while the agreement proves to be effective", though "implicit is often the understanding that no legislative action will be proposed if and as long as the agreement works satisfactorily". This is not the balance of commitments found in effective agreements schemes examined in the VAIE study. In these, the promise to refrain from legislative action is either quite explicit (the Netherlands) or the public side provides substantive economic benefits (Denmark).
- [18] Jan Willem Biekart. Negotiated agreements in EU environmental policy. *Jonathan Golub (ed.). New instruments for environmental policy in the EU*. London: Routledge, 1998, s. 165-189.
- [19] Pieter Glasbergen. Modern environmental agreements: A policy instrument becomes a management strategy. *Journal of environmental planning & management*, 1998, vol.41(6), p.692ff.

- [20] Dröll [14] states that "agreements are only appropriate where a manageable number of players covers most of the sector concerned or where European business associations are able to effectively negotiate on behalf of their national member associations".
- [21] "Environmental agreements can be conceived at national as well as Community level. In many cases, the national level may be the more appropriate one", states the Commission [56].
- [22] The reasons why firms might choose such policies are not discussed in this report. Please refer to [23], [24], [26] (pp. 24-30), [58] and [67].
- [23] Peter Helby. *Voluntary agreements: The plurality of business motives*. Working paper, Lund University, Environmental and Energy Systems Studies, 1999.
- [24] Michael E. Porter & Claas van der Linde. Toward a new conception of the environment-competitiveness relationship. *Journal of Economic Perspectives*, vol. 9(4), Fall 1995, p 97ff.
- [25] CEN, European Committee for Standardisation. *Environmental management systems – Specification with guidance for use*. ISO 14001:1996.
- [26] Peter Börkey, Matthieu Glachant & François Lévêque. *Voluntary approaches for environmental policy. An assessment*. Paris: OECD, 1999.
- [27] See also Appendix A, page 24.
- [28] See [29], [30] and [37] (p.63).
- [29] Jan van Putten. Policy styles in the Netherlands: Negotiation and conflict. *Jeremy Richardson (ed.). Policy styles in Western Europe*. London: Allen & Unwin, 1982, s. 168-196.
- [30] James Meadowcroft. Co-operative management regimes: A way forward? *Pieter Glasbergen (ed.). Co-operative environmental governance: Public-private agreements as a policy strategy*. Dordrecht: Kluwer, 1998, pp 21-42.
- [31] Asbjørn Torvanger & Tora Skodvin. *Implementing the Kyoto protocol. The role of environmental agreements*. CICERO Report 1999:4. Oslo: Center for International Climate and Environmental Research.
- [32] Any such combination would entail certain coordination problems and a potential for contradictions. Still, it is difficult to agree with the view on environmental agreements (EAs) expressed by Torvanger & Skodvin [31] (pp.40-41): "To the extent that EAs are meant to be supplementary to legislation, the level of governance at which EAs are developed must correspond to the level of governance of the legislation which regulate target group behavior. If target group behaviour mainly is regulated by legislation at the national level, EAs to supplement this legislations also need to be developed at this level of governance. If, on the other hand, target group behavior mainly is regulated by legislation at the Community level, EAs also need to be developed at Community level to ensure the best possible legislative compatibility."
- [33] Commission of the European Communities. *Agenda 2000: For a stronger and wider Europe*. COM(97)2000, Brussels, 1997.
- [34] Commission of the European Communities. *Directions towards sustainable agriculture*. COM(99)22, Brussels, 1999.
- [35] Officials responsible for public procurement have for a long time expressed their frustration concerning this issue. Even if they require no more than EMAS certification, i.e. support a voluntary approach established by a European directive [15], they may be acting against the rules of the single market and would risk

- complaints and litigation. Until now (seven years after EMAS was established by directive), their frustration has only been met with a promise that the Commission shall "analyse the question of whether purchasing entities can require suppliers to have a certified environmental management system, in accordance with the Environmental Management Auditing System (EMAS) of ISO standard 14001" [36].
- [36] Commission of the European Communities. *Single market and environment*. COM(99)263, Brussels, 1999.
- [37] IEA. International Energy Agency. *Voluntary actions for energy-related CO₂ abatement*. Paris: OECD/IEA, 1997.
- [38] John Newman. *Evaluation of energy-related voluntary agreements*. Paris: IEA, 1997. (Paper subsequently presented at the International Workshop on Industrial Energy Efficiency Policies: Understanding Success and Failure, Utrecht, June 1998).
- [39] European Environment Agency. *Environmental Agreements – Environmental Effectiveness*. Environmental Issues Series, No. 3, Vol. 1. Copenhagen: European Environment Agency, 1997.
- [40] Duncan Liefferink. New environmental policy instruments in the Netherlands. *Jonathan Golub (ed.). New instruments for environmental policy in the EU*. London: Routledge, 1998, s. 86-106.
- [41] Douglass C. North. *Institutions, institutional change and economic performance*. Cambridge: Cambridge University Press, 1990.
- [42] Ronald L. Jepperson. Institutions, institutional effects and institutionalism. *Walter E. Powell & Paul J. DiMaggio (ed.s): The new institutionalism in organizational analysis*. Chicago: University of Chicago Press, 1991, pp. 143-63.
- [43] W. Richard Scott. *Institutions and organizations*. Thousand Oaks, Calif.: Sage Publications, 1995
- [44] ELNI. Environmental Law Network International (ed:). *Environmental agreements: The role and effect of environmental agreements in environmental policies*. London: Cameron May, 1998.
- [45] Jonathon Hanks & Marianne Steneroth Sillén. *Introducing voluntary environmental agreements for industrial energy efficiency in Sweden. A discussion document*. Lund: Lund University, International Institute for Industrial Environmental Economics, 1999.
- [46] Commission of the European Communities. *On Environmental Agreements*. COM(96)561, Brussels, 1996.
- [47] Ruth Khalastchi & Halina Ward. New instruments for sustainability: an assessment of environmental agreements under Community law. *Journal of Environmental Law*, 1998, vol.10, no.2, pp.257-290.
- [48] Peter Helby. Voluntary agreements in Danish energy intensive industries. *ENER-Bulletin*, no. 20, 1997, pp.127-138.
- [49] Peter Helby. *Oplæg til evaluering af den grønne afgiftspakke fra 1995*. Arbejdsrapport fra Energistyrelsen. København: Energistyrelsen, 1996.
- [50] Pieter Glasbergen. Learning to manage energy by voluntary agreement: The Dutch long-term agreements on energy efficiency improvement. *Greener Management International*, Summer 1998, no. 22, p.46ff.
- [51] Martina Chidiak, Matthieu Glachant & Lars Gårn Hansen. *Theoretical Perspectives on the Efficiency of Voluntary Approaches to Promote Energy Efficiency*. VAIE project, task A final report. Paris: CERNA, 1999.

- [52] EEB. European Environmental Bureau. *Voluntary agreements*. Brussels, 1996. (As reproduced in [38], p.50)
- [53] Nicholas A. Ashford & Charles C. Caldart. Negotiated environmental and occupational health & safety agreements in the United States: Lessons for policy. CAVA working paper, no. 99/10/14. Copenhagen: AKF, 1999.
- [54] Lars Gårn Hansen. The Political Economy of Voluntary Agreements: A Meta Study. *Martina Chidiak, Matthieu Glachant & Lars Gårn Hansen. Theoretical Perspectives on the Efficiency of Voluntary Approaches to Promote Energy Efficiency. VAIE project, task A final report*. Paris: CERNA, 1999, pp.33-52.
- [55] Sverre Grepperud. Frivillige avtaler. *ProSus - tidsskrift for et bærekraftig samfunn*. 1998, no. 4, pp. 4-15. Oslo.
- [56] Commission of the European Communities. *Preparing for implementation of the Kyoto protocol*. COM(99)230, Brussels, 1999.
- [57] Thomas Hobbes. *Leviathan or the matter, forme and power of a commonwealth ecclesiasticall and civil*. 1651, chapter 17. (Quoted from: Oxford: Blackwell, 1955)
- [58] Edoardo Croci & Giulia Pesaro. *Voluntary agreements in the environmental sector - the Italian experience*. Paper for the CAVA workshop in Ghent on November 26-27 1998 (CAVA Working Paper no. 98/11/5). Milan: IEFE, Università Bocconi, 1998.
- [59] Indeed, the Commission argues that transparency "is crucial" for the effectiveness of VAs, and suggests that participating firms are made subject to the relevant articles of the directive on freedom of access to information on the environment (90/313/EEC), meaning that they have to grant access to information as if they were public authorities [46] (pp.3+12).
- [60] Matthieu Glachant. The informational efficiency of negotiated agreements. *Martina Chidiak, Matthieu Glachant & Lars Gårn Hansen. Theoretical Perspectives on the Efficiency of Voluntary Approaches to Promote Energy Efficiency. VAIE project, task A final report*. Paris: CERNA, 1999.
- [61] Technical specifications for products, including voluntary agreement, have to be forwarded to the Commission for prior screening [62].
- [62] Directive 98/34/EC of the European Parliament and of the Council of 22 June 1998 laying down a procedure for the provision of information in the field of technical standards and regulations. *Official Journal*, L204, 21/07/1998, pp. 37-48.
- [63] The most interesting reservations made by the Commission [64] were these: (1) The voluntary agreements must in fact commit the enterprises to significant investment in energy efficiency. (2) The Danish authorities must implement a control system that tightly supervises the actual implementation of the commitments agreed with the enterprises. (3) The list of energy intensive processes eligible for energy tax reduction must be revised every year. (4) Enterprises receiving an energy tax reduction must not have a net economic advantage from the arrangement. (5) The energy tax reduction must not place Danish enterprises in a more favourable position than competing enterprises in other EU countries, which decide to implement CO₂-taxes.
- The last reservation would seem to have a significant dynamic potential. It would mean that if other countries decide to implement a tougher regime for their energy intensive industry, Denmark must either follow suit, or abandon the its own CO₂ taxes [48].
- [64] Europa-kommissionen, Generalsekretariatet. *Skrivelse af 25.9.95 til Danmarks faste repræsentation ved den Europæiske Union, angående statsstøttesag nr. N 459/95, Danmark, j.nr. SG(95) D/11907*. Bruxelles, 1995.

- [65] For a formalised version of such a model, see [13]. For an alternative conceptual model, refer to Porter & van Linde [24]. In the view of these authors, it is conceptually mistaken to think of environmental improvement as "a kind of arm-wrestling match" where one side pushes for tougher standards while the other side "tries to beat the standards back". Instead, the interaction between the public and private sides should be conceptualised on basis of the understanding that market demand is changing towards products with low environmental impact, and that companies can only preserve their competitiveness by responding to this change.
- [66] Ministerie van Economische Zaken. *Convenant Benchmarking energie-efficiency. versie d.d.1 april 1999*. 's-Gravenhage, 1999.
- [67] Richard N. L. Andrews. Environmental regulation and business 'self-regulation'. *Policy Sciences*, vol.31, 1998, pp.177-197.
- [68] Peter Helby. EKO-Energi. A Swedish public voluntary programme targeted at firms with ambitious environmental goals. *Journal of Cleaner Production* (article under review).
- [69] This logic, i.e. Kyoto pointing towards absolute CO-targets in future VAs, was also recently observed by the Commission [56].
- [70] Olof Arwidi & Stefan Yard. Investment planning in some Swedish companies - criteria and uses. *Scandinavian journal of managements studies*, vol. 1(4), May 1985, pp. 271-296.
- [71] Esbjörn Segelod. *Resource allocation in divisionalized groups - A study of investment manuals and corporate level means of control*. Aldershot: Avebury, 1995.
- [72] Stanley Block. Capital budgeting techniques used by small business firms in the 1990s. *The engineering economist*, vol. 42(4), summer 1997, pp. 289-302.
- [73] "The organisation shall establish and maintain documented environmental objectives and targets, at each relevant function and level within the organisation. When establishing and reviewing its objectives, an organisation shall consider ... its technological options and its financial ... requirements. The objectives and targets shall be consistent with the environmental policy, including the commitment to prevention of pollution" [25] (section 4.3.3). "When considering their technological options, an organisation may consider the use of best available technology where economically viable, cost-effective and judged appropriate" (Annex, section A.3.3., which constitutes advice on the use of section 4.3.3). To comply with this, the company evidently must establish formally some kind of procedure for comparing technological options with financial requirements, and determining which technological options are economically viable and cost-effective, and this procedure must be consistent with the targets and objectives stated in the environmental policy.
- [74] "The organisation shall establish and maintain (a) programme(s) for achieving its objectives and targets. It shall include ... the means and time-frame by which they are to be achieved." (ISO 14001:1996, section 4.3.4).