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Voluntary agreements in the field of energy efficiency and emission reduction: Review and analysis of experiences in the European Union

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ABSTRACT

A number of Member States of the EU have introduced voluntary agreements (VAs) that aim to deliver energy savings and emission reductions via increased energy efficiency in different end-use sectors, mainly targeting industry.

Where there is a successful track record of cooperation between public authorities and the private sector, VAs can offer advantages to public authorities in comparison to legislation, most importantly better flexibility when introduced or updated, greater acceptance by industry, possibility for tailor-made solutions e.g. at the level of industrial sectors and opportunity to overcome the information asymmetry between public authorities and private actors. Nevertheless, VAs have been criticized for lack of specific obligations and lenient targets, as well as for deficiencies in compliance monitoring and self-reporting and difficulty in establishing the policy additionality of VA activity.

This paper analyses the design of existing VAs in terms of general framework, targets and sectors, obligations and commitments, motivation to join, reporting and monitoring provisions, and results of existing VAs as reported by national authorities. The paper summarizes the key characteristics of voluntary agreements and gives recommendations for the successful application of this policy tool.

1. Introduction

Voluntary agreements are tailor-made negotiated covenants between the public authorities and individual firms or groups of firms, which include targets and timetables for action aimed at improving energy efficiency or reducing GHG emissions and define rewards and penalties. VAs differ with respect to their form, legal status, structures and provisions, parties and enforceability. The International Energy Agency defines a VA as "a contract between the government and industry, or negotiated targets with commitments and time schedules on the part of all participating parties" (IEA, 1997).

In this article the broad term voluntary agreement (VA) is used to denote policy portfolios that cover at least the following elements[1] :

- Binding nature of agreements once a party joins;
- Quantitative targets (energy efficiency improvement, energy savings, carbon reductions) and/or commitments on the side of signatories to implement significant actions over a reasonable timescale;
- Reporting provisions, monitoring of compliance and evaluation of results;
- Accompanying measures on the side of public authorities (e.g. tax rebates, information, financial incentives, etc.).

The first point deserves special attention: even though parties decide voluntarily whether to join an agreement or not, once they have acceded, they are under an obligation to comply with the rules and requirements of the agreement, possibly facing some sort of penalty or sanction in case of non-compliance.

The article provides an up-to-date review of experience of EU Member States with VAs in the domain of energy efficiency in all end-use sectors as of mid-2010, and draws conclusions on their effectiveness and flexibility. It aims to point to success factors and barriers in the design and practical implementation of VAs, drawing conclusions from the most advanced VAs in place about the guiding principles of an optimal operational framework of VAs. The article aims to enrich and update the body of literature on cross-country analysis of VAs in the field of energy efficiency, energy conservation and emission reductions (see, for example, IEA, 1997; Menanteau, 2001; Starzer et al., 2003; Baranzini and Thalmann, 2004a; Baranzini and Thalmann, 2004b; Persson and Gudbjerg, 2005; Price, 2005; Bertoldi and Rezessy, 2007). The paper provides a practical guide to policy analysts and practitioners about the

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[1] Other voluntary programmes, which do not entirely fit in the above definition, include generic environmental declarations and other unilateral commitments by industry. This article does not discuss entirely voluntary measures and declarations – such as klima:aktiv in Austria – as they do not fit with the framework for VAs outlined above.

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strengths and weaknesses of VAs and the background factors that can facilitate or hinder the success of their implementation.

Sections 2–6 look at specific design elements of existing VAs, such as general framework, targets and sectors, obligations and commitments, motivation to join, as well as reporting and monitoring provisions. Section 7 presents the results of existing VAs as reported by national authorities, while Section 8 presents comparative aspects of VAs and legislation. Section 9 concludes by summarising the key characteristics of voluntary agreements, success factors and barriers.

Initially VAs in the following EU countries were studied: Austria, Bulgaria, Belgium, Denmark, Estonia, Finland, France, Germany, Greece, Italy, the Netherlands, Romania, Slovenia, Sweden and the UK. Subsequently, it was decided to exclude the countries, whereby VAs were at pilot project phase (Bulgaria, Greece and Romania) due to the uncertainty related to sustaining this policy beyond the pilot project phase. In addition, Austria, Italy and France were excluded. In Austria the Klima:aktiv program is not a system of agreements, but an umbrella for voluntary programs; a previous pilot project VA discontinued with the entry into force of the European Emission Trading Scheme (ETS). In France the AERES agreements expired and were not continued with the introduction of the ETS. In Italy there are voluntary statements, which do not fit in the framework of VAs as described above. Finally, Hungary, Poland, Portugal and Spain reported their intentions to introduce VAs under their first National Energy Efficiency Action Plan under Directive 2006/32/EC, but have not done so as of mid-2010. Thus, the paper covers VAs in Belgium, Denmark, Estonia, Finland, Germany, Ireland, the Netherlands, Slovenia, Sweden and the UK.

In addition, there are voluntary agreements between the central authorities and local or regional authorities. Finland and the Netherlands offer notable examples with energy efficiency related VAs with the public sector: in its Municipal Sector Agreements, Finland has transposed numerous provisions of Directive 2006/32/EC on Energy End-Use Efficiency and Energy Services (ESD), including but not limited to the ones relevant to the public sector. In addition, in the UK there is a set of targets and agreements with the devolved administrations concerning e.g. carbon neutrality of Government estate, emission reductions in administrative estate, and energy use in Government buildings. These local-level agreements in the UK are not covered in the present article because they do not meet the pre-requisites for VAs.

The principal methodology applied is a combination of a literature review, supplemented by a brief expert questionnaire distributed via email among national public authorities in charge of energy efficiency across all the Member States of the EU. The generic structure of the questionnaire revolved around the structure of the VAs (targets and sectors, obligations and commitments, motivation to join, as well as reporting and monitoring provisions). Based on their previous work in this field the authors could tailor make additional country-specific questions to clarify particular aspects of each VA. In addition, previous work of the authors allowed them to target the questionnaire to the exact national departments (or sometimes experts) in charge of VA design and implementation. More than 20 national experts responded to the questionnaire; in many cases the authors followed up for clarification via telephone or email. We had at least 1 expert opinion for each country covered in the article. Project reports, governmental publications and other documents were consulted to verify the information gathered through the questionnaire.

Finally, when it comes to terminology, in this paper we discuss VAs in the following energy end-use sectors: industry, public and commercial, transport and agriculture. The terms industrial branch and industrial sector are used interchangeably, meaning goods-producing segment of an economy. The term public sector refers to public authorities, while the commercial sector refers to the private service sector.

2. General framework

In the environmental field VAs date back to the mid-90s. In the field of energy efficiency, however, only a handful of Member States of the European Union have solid experience with implementing national VAs for more than 10 years, most notably Denmark, Finland and the Netherlands.

At present, the large majority of VAs across the EU have been focussed on industrial process energy consumption (e.g. Belgium, Denmark, Estonia, Ireland, Sweden and Slovenia). Yet, beyond large industrial energy users, this instrument is increasingly applied with respect to medium-size industrial energy users, the service sector and, most recently, transport. Finland and the Netherlands place a strong focus on VAs as a preferred policy for an increasing number of sectors beyond industry.

At European level, the new EU Plan for Energy Efficiency[2] to reach the 2020 target of 20% energy saving adopted by the European Commission in March 2011 points that the European Commission will continue to work with industry to encourage voluntary agreements on implementing energy efficiency processes and systems. The Plan specifies that these VAs should be based on clear targets, methodologies, measurement and monitoring schemes and can include the dissemination of good practice.

Directive 2006/32/EC on energy end-use efficiency and energy services aims at providing the necessary indicative targets as well as mechanisms, incentives and institutional, financial and legal frameworks to remove existing market barriers and imperfections that impede the efficient end use of energy. Its purpose is to create the conditions for the development and promotion of a market for energy services and for the delivery of other energy efficiency improvement measures to final consumers. The Directive – whose upcoming revision has been announced in early 2011 – stipulates that VAs should be transparent and contain, where applicable, information on, at least, quantified and staged objectives, monitoring and reporting. The Directive mentions VAs in the context of improving energy efficiency in the public sector (Art. 5), working with energy distributors, distribution system operators and retail energy sales companies (Art. 6), as well as energy audits being part of VAs (Art. 12).

The best established VAs in the EU – in Denmark, Finland, the Netherlands, Sweden, the UK – have been introduced well before Directive 2006/32/EC entered in force. These Member States – along with others with newer VAs, such as Ireland – generally tend to make reference to their VAs in the 1st National Energy Efficiency Action Plan (NEEAP) required under the Energy Services Directive (ESD), often pointing to the existing VAs as a major measure to deliver energy savings in the industrial sector.

A notable example is Finland, where all major provisions of the ESD have been incorporated into a new set of VAs, introduced for the period 2008–2016. Some Member States have introduced VAs with implicit or explicit reference to Directive 2003/96/EC on minimum taxation of electricity (e.g. Sweden).

Another group of Member States have indicated in their 1st NEEAPs that they intend to use VAs in order to achieve their national targets, but have not implemented any VAs as of January

[2] The Plan has been adopted as Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions. Energy Efficiency Plan 2011. SEC(2011) 280 final, SEC(2011) 277 final, SEC(2011) 275 final, SEC(2011) 276 final, SEC(2011) 278 final, SEC(2011) 279 final.